TRANSPLANT
INTERNATIONAL

023 KIDNEY

P1

SURGICAL TREATMENT CHOICES IN URETHRAL COMPLICATIONS FOLLOWING RENAL TRANSPLANTATIONS: WHICH METHOD AND TO WHOM?

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Ureteral stenosis and necrosis are the most common urological complications after renal transplantation. Surgery is the treatment of choice in ureter necrosis, whereas surgery, percutaneous approachments and laser endoureteromy may be applied in ureter stenosis. The aim of this study is to review the reasons and surgical treatment methods of ureteral complications following renal transplantations that were performed in our center. The medical records of 160 patients who underwent cadaver or living donor renal transplantation between 2011 and 2014 were retrospectively evaluated from the hospital medical record network system. Patients who were operated because of ureteral complications were enrolled to the study. Six patients (3, 75%) had ureter stenosis, and 4 patients (2, 5%) had ureter necrosis. Three of these transplantations were made from living donors (2 females and 1 male) and 7 were from cadavers (1 female and 6 males). Extravasation was found in 4 patients due to necrosis, all encountered in second week of operation. Two patients underwent native ureteropyelostomy and two others underwent ureteroneocystostomy for ureter necrosis. One patient underwent ureteroureterostomy, four had ureteroneocystostomy, and one had native ureteropyelostomy for stenosis. One patient had postoperative urine leak who underwent native ureteropelvic anastomosis. Male cadaver donor, transplantation from cadaver, delayed graft function, long duration of cold ischemia seem to be the risk factors for ureteral complications following renal transplantation. Ureteroneocystostomy and native ureteropyelostomy are safe and efficient surgery methods. The treatment method must be established according to patient and reason of disease.

Keywords: Urethral Complications, Renal Transplantations, Surgical Treatment.

Age	Sex	Urethral complication	Treatment	Result	Living/cadaver
38	Female	Stenosis	Native ureteropyelostomy	No complications	Living
40	Female	Stenosis	Ureteroneocystostomy	No complications	Living
26	Female	Stenosis	Ureteroneocystostomy	No complications	Cadaveric
43	Female	Stenosis	Ureteroneocystostomy	No complications	Cadaveric
45	Male	Stenosis	Ureteroneocystostomy	No complications	Cadaveric
42	Male	Stenosis	Ureteroureterostomy	No complications	Cadaveric
42	Male	Necrosis	Ureteroneocystostomy	No complications	Cadaveric
34	Male	Necrosis	Ureteroneocystostomy	No complications	Living
22	Female	Necrosis	Native ureteropyelostomy	No complications	Cadaveric
55	Female	Necrosis	Native ureteropyelostomy	Urine leak	Cadaveric

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P2

EVALUATION OF DIFFERENT ISOTYPES OF VEGF IN VASCULAR REPAIR DURING PRESERVATION: ANALYSIS IN A PRECLINICAL MODEL

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Background: The vascular network is a major target during ischemia reperfusion, with both acute and chronic consequences on graft outcome. It has been shown that the negative evolution of kidney graft function could be linked to a deregulated Hypoxia Inducible Factor 1α (HIF1α) and vascular endothelium growth factor (VEGF) response. We thus investigated the different isotypes of VEGF.

Methods: Two VEGF isotypes (165 and 121) were added to Viaspan solution (25 μg/l). Evaluation took place in a kidney autotransplantation model in Large White pigs ($n = 6$) with a 3 month follow up. Treated groups were compared to sham and uninephrectomized groups. Function recovery, inflammation (pro-inflammation markers measurements) and tubular lesions were evaluated. At 3 months, animals were euthanized and we analyzed the expression of HIF1α, VEGF and TGFβ as well as interstitial fibrosis development.

Results: After 24 h of preservation, function recovery was observed earlier in the VEGF 121 group, a benefit observed during the full follow up. Tubular functions were also significantly improved. At the tissue level, edema was less pronounced in the VEGF 121 group. Use of VEGF 121 significantly limited the expression of pro-inflammatory markers TNFα and HMGB1. Urine and plasma NGAL were lower in both treated groups, with a more definite improvement in VEGF 121 animals. 3 months after transplant, interstitial fibrosis and tubular atrophy were most markedly decreased in the VEGF 121 group.

Conclusion: This study highlights the importance of vascular lesion factors and their interest in regards to repair. Moreover, the type of molecule used is important, with a different impact for each isotype. Our work highlights the fact that the endothelial cell is an invaluable target for therapeutic intervention, with effects on the tubules.

023 KIDNEY

P3

COMPLIANCE TO AND SAFETY OF A PREOPERATIVE CALORIC AND PROTEIN-RESTRICTED DIET: A RANDOMIZED CONTROLLED TRIAL IN LIVE KIDNEY DONATION AND BARIATRIC SURGERY

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Surgery-induced oxidative stress leads to higher risks of perioperative complications and a delay in postoperative recovery. Patients with co-morbidities such as obesity may have an increased risk due to a pre-existing chronic subclinical inflammation status. Previous research indicated the beneficial effects of calorie and protein restriction on ischemia-reperfusion injury. Feasibility and safety of a calorie restricted diet were established, yet marginal effects were observed. Here we investigate the compliance, feasibility and safety of a preoperative caloric and protein-restricted diet in two different patient populations. Thirty live kidney donors and 40 morbid obese patients awaiting bariatric surgery were randomized in three groups: 5 days of a synthetic 30% caloric and 70% protein restricted diet, 5 days of a synthetic isocaloric diet, or no diet. Feasibility and safety were scored via both questionnaires and reported side effects. Compliance was examined via measurement of glucose, insulin, lipid profile parameters, prealbumin and retinol binding protein levels in blood before and after the dietary interventions. A total of 71% of the patients adhered to the restricted diet. The isocaloric control diet was completed by 65%. Minor discomfort during the diet was experienced by 70–75% of the patients and resolved after the diet. The restricted diet did not result in differences in serum levels of glucose, insulin and lipids. Both prealbumin and retinol binding protein decreased significantly after the restricted diet and not in the other groups. A preoperative caloric and protein-restricted diet is feasible and safe in both live kidney donors as well as morbid obese patients awaiting bariatric surgery. Compliance to the diet could objectively be measured via prealbumin and retinol binding protein. These results suggest that a calorie and protein restriction is feasible and safe for studying the effects of preoperative dietary restriction in the clinic.

007 DONATION/RETRIEVAL

P4

THE FIRST REPORT OF TELE-INTENSIVE CARE UNIT IN DECEASED DONOR MANAGEMENT FOR LIVER TRANSPLANTATION TO TREAT AN HEMOPERITONEUM SECONDARY TO HUGE MULTIPLE HEMANGIOMATOSIS

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Background: Patients with growing and non-resectable liver hemangiomas should be followed by a transplant center with extensive experience in complex liver disease. They could be emergently treated with orthotopic liver transplantation, with an expectation of good long-term results.
Materials and Methods: We describe a case of a 37-year-old female affected by liver hemangiomatosis, who was followed for 8 years before, presented with bleeding and required transfusions, developing hemodynamic instability. We listed her for emergent transplant before her sister's living donor work-up could be completed. At time, a liver from a cadaveric donor become available in a small local hospital with no experience in organ donation. Tele-intensive care unit (ICU) technology was used for providing to clinical data electronically physicians, nurses and other critical-care specialists, and creating medication orders and communicating with on-site caregivers to implement changes in donor care.
Results: The recipient was emergent transplanted with a specific customization/application of the telemedicine (TM) system in organ procurement organization by the recipient team. Tele-ICU technology was used for providing an effective ICU service, managing and stabilizing the deceased donor and allowing the procurement to be carried uneventfully.
Conclusions: Tele-ICU technology could be a promising resource for emergent transplantation, reducing the urgent need for a living donation, and allowing a prompt recipient team management of the deceased donor. Our first tele-ICU case offers early confirmation of the feasibility of the TM system in deceased donor management.

025 LIVER

P5

MORPHOLOGIC AND VOLUMETRIC ANALYSIS OF LIVER VOLUME RESTORATION IN SMALL FOR SIZE SYNDROME

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Objective: Considering a single clinical entity the post-hepatectomy liver failure (PHLF) and the small for size syndrome (SFSS), we investigated preoperative parameters that could work as markers of liver regeneration (LR), and looked to create an algorithm for therapeutic decision-making.
Methods: The clinical data of two series of 10 consecutive patients who experienced hepatospecific complications after major liver resection for malignancies (LRM) or adult to adult living related liver transplantation (LRLT) between 2008 and 2013 were analyzed. LR was evaluated by multidetector computed tomography and hepatic parenchymal findings with specific re-examinations of liver biopsies.
Results: A total of 13 cases of SFSS occurred in 8 LRLT recipients, and in 5 patients after LRM. The incidence of SFSS was significantly associated with a greater spleen volume/future remnant liver volume ratio (1.08 ± 0.5; $p = 0.02$) and a reduced number of hepatic tumors (0.58 ± 0.6; $p = 0.04$). A greater degree of LR was not associated with a lesser likelihood of developing SFSS ($p = 0.31$). SFSS incidence and re-examination of post-operative liver biopsies differed according to the evidence of focal endothelial denudation in the portal vein and centrilobular hepatocanalicular cholestasis. We found an association between SFSS incidence and the immunohistochemical overexpression of cytological proliferation marker Ki-67, which was a significant predictor of poor post-operative survival (Table 1).

	Odds ratio	95% Confidence interval	p-Value (*≤0.05)
SFSS incidence			
Size of largest tumor (cm)	0.69	0.442; 1.0957	0.11
Centrilobular hepatocanalicular cholestasis	41.6	2.151; 804.957	0.014*
Patient Survival			
Ki 67 positivity	1.12	1.013; 1.241	0.02*
Size of largest tumor (cm)	1.77	0.819; 3.837	0.14
Centrilobular hepatocanalicular cholestasis	18.6	0.51; 681.29	0.51

Conclusion: SFSS is a rare but dangerous clinical entity characterized by anarchic hepatic regeneration. We suggest focusing on early diagnosis in order to establish non-surgical modulation of the portal inflow, associated with optimization of the medical management.

015 INFECTIONS

P6

DIFFERENT RISK FACTOR PROFILES DISTINGUISH EARLY-ONSET FROM LATE-ONSET BKV-REPLICATION

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Background: Two of three reactivations of latent BKV-infection occur within in the first 6 months after renal transplantation. However, a clear differentiation between early-onset and late-onset BKV-replication is lacking.
Methods: Here, we studied all kidney transplant recipients (KTRs) at our single transplant center between 2004 and 2012. 103 of 862 KTRs were diagnosed with BK viremia (11.9%), among which 24 KTRs (2.8%) showed progression to BKV-associated nephropathy. 67 KTRs with early-onset BKV-replication (65%) and 36 KTRs with late-onset BKV-replication (35%) were identified. A control group of 598 KTRs without BKV-replication was used for comparison.
Results: Lymphocyte-depleting induction, CMV-reactivation, and acute rejection increased the risk of early-onset BKV-replication ($p < 0.05$). Pre-sensitized KTRs undergoing renal retransplantation were those at increased risk of late-onset BKV-replication ($p < 0.05$). Among KTRs with BK viremia, higher doses of mycophenolate increased the risk of progression to BKV-associated nephropathy ($p = 0.004$). KTRs with progression to BKV-associated nephropathy showed decreased allograft function ($p < 0.05$). KTRs with late-onset BK viremia were more likely not to recover to baseline creatinine after BKV-replication ($p = 0.018$).
Discussion: Our data suggest different risk factors in the pathogenesis of early-onset and late-onset BKV-reactivation. While more intensified immunosuppression is associated with early-onset BKV-replication, a chronic inflammatory state in presensitized KTRs may contribute to late-onset BKV-replication.

037 XENOTRANSPLANTATION

P7

THE 3-YEARS EXPERIENCES OF KIDNEY AND HEART XENOTRANSPLANTATION OF PIG TO NON-HUMAN PRIMATE, WHICH IS FIRST TRIALS IN KOREA

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Background: Absolute shortage of donor comparing with want-to-transplantation patient is unsolved problem now, and only possible solution might be xenotransplantation. Before clinical trial, preclinical study using non-human primate should be done and many developed countries have done various solid organ experiments actively and the results are improving. In Korea, GalTKO pig was developed already, but solid organ xenotransplantation studies couldn't be initiated. Islet cell and cornea has been tried, but solid organ transplantation team had never been organized with financial, technical and circumstantial problems.

Methods: From Nov. 2011, our team has initiated heart and kidney first in Korea. We present this initiating 3 years results. From 2011, we have received the governmental fund and established experimental settings for the pig to monkey kidney and heart xenotransplantation. Cynomolgus monkey is used as recipients. We use the immunosuppressants of CD154 ab, rituximab, ATG, Tacrolimus, MMF and steroid.

Results: In 2011, only one case of kidney xenotransplantation was tried and the recipient had been expired on POD1 due to bleeding. From 2012 to 2014, 16 cases of heart and 5 cases of kidney xenotransplantation have been done. Almost every cases of early death before 3 days is due to technical failure, bleeding. However, even these cases do not show any sign of the hyper-acute rejection and anti-GalT antibody. The longest survival of kidney and heart is 25 and 45 days for each. This survival results are relatively poor yet, but longest 3 cases (45, 35, 24 days) of survival is recent cases and so results are improving.

Conlusions: Although solid organ xenotransplantation in Korea is just beginning and we are only team with insufficient resources and results, we expect the continuing experiments and studies to make comparative good results and contribute the development of solid organ xenotransplantation.

023 KIDNEY

P8

INTRAVENOUS IMMUNOGLOBULINS USED SUCCESSFULLY IN EARLY ACUTE ANTIBODY-MEDIATED REJECTION IN RENAL RECIPIENTS – A RETROSPECTIVE ANALYSIS

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Introduction and Aims: Antibody-mediated rejection (AMR) is the predominant cause of chronic renal graft dysfunction and graft loss. Several therapeutic options have been conducted with limited efficacy. The aim of the study was to assess the impact of intravenous immunoglobulins (IVIG) on early (e-AMR) and late AMR (l-AMR) and graft function in renal recipients.

Methods: We analyzed retrospectively 35 pts with biopsy-proven AMR: 23 pts were treated with pulses of methylprednisolon (MP, 3x500 mg iv) and IVIG (1 g/kg) and 12 pts treated with MP and an increase of basic immunosuppressive regimen (prednisone, tacrolimus, MMF). Among IVIG group, 7/23 pts had e-AMR (<3 months after transplantation). Renal graft function has been assessed using glomerular filtration rate (GFR MDRD) at the beginning of the study (GFR _0), at the time of renal biopsy (GFR_1) and 3 months later (GFR_2). Mean observation time was 29 months. Statistical analysis was performed using general linear model with repeated measures.
Results: Among IVIG group, we have found differences in GFR_1 and GFR_2 in e-AMR (mean GFR_1 was 21.86 ml/min/1.73 m^2, CI (10.63 - 33.10), mean GFR_2 was 37.60 ml/min/1.73 m^2, CI (28.15 - 47.04), $p = 0.017$). In l-AMR no differences were found between GFR_1 and GFR_2. Among MP group, mean GFR_1 was 25.80 ml/min/1.73 m^2, mean GFR_2 was 28.98 ml/min/1.73 m^2, p = NS. Donor specific antibodies (>500 MFI) were present in 95% in IVIG group.
Conclusions: IVIG improved renal graft function in e-AMR.

025 LIVER

P9

A RANDOMISED CONTROLLED TRIAL OF NORMOTHERMIC LIVER PERFUSION VERSUS COLD STORAGE IN HUMAN LIVER TRANSPLANTATION

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Background: The current organ shortage crisis affecting transplantation has been identified by the European Commission as an area requiring research. Normothermic machine perfusion (NMP) involves perfusing a liver with oxygenated blood and nutrients at normal body temperature to preserve the organ in a functioning physiological state with potential to improve outcomes after transplantation. An EC-FP7 funded trial has been set-up to investigate this and establish an associated biobank.

Methods: A multinational randomised controlled trial comparing the efficacy of NMP to static cold storage (SCS) has been started in 7 transplant centres in England, Belgium, Germany and Spain. Ethics and regulatory approval have been obtained in all centres and been endorsed by national transplant services, with cooperation from ambulance services and organ retrieval teams. The primary outcome is peak AST measured in the first 7 post-operative days, with multiple secondary outcomes also recorded.

Results: Many challenges arose in setting up this trial, with inconsistencies in regulatory and insurance requirements between different countries and different centres in the same country. A group of transplant technicians were recruited and trained to collect the required clinical data and biological samples from SCS livers. NMP training was delivered through videos demonstrating machine set-up, liver preparation and cannulation before trainees performed normothermic perfusions using pig or discarded human livers. Recruitment started in June 2014 and more than 25% of the required 220 livers have now been transplanted despite higher than anticipated organ discards and withdrawals.

Conclusion: The excessive and inconsistent regulatory burden around clinical trials is a potential obstacle to success. However, with satisfactory sample and data collection it is likely that the yield from this trial will be high in terms of improving clinical outcomes and facilitating related research.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P12

SYNERGISTIC EFFECT OF ISCHEMIC PRECONDITIONING AND ANTITHROMBIN IN AN INTESTINAL ISCHEMIA/REPERFUSION RAT MODEL

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Background: Ischemia/Reperfusion (IR) is unavoidable in organ transplantation. Preconditioning is among the therapeutic approaches used to enhance organ ischemia tolerance. Aim of this study was to investigate whether antithrombin (AT) plays a synergistic role in accentuating the effects of transient intestinal ischemic preconditioning (IPC).
Methods/Materials: Male Wistar rats were housed in a controlled environment and were allowed access to food and water ad libitum. Fifty rats were randomly allocated to 5 study groups (n = 10 per group): 1. Sham, 2. IR, 3. IPC, 4. AT + IR, 5. AT + IPC. Blood samples were analysed to measure the proinflammatory cytokines TNF-a, IL-1b and IL-6. Liver specimens were obtained for the measurement MPO and MDA. Liver biopsies were examined by electron microscopy.
Results: Intestinal IR induced a remote inflammatory response as evidenced by the striking increase in expression of the proinflammatory cytokines TNF-a, IL-1b and IL-6 and also MPO and MDA in the liver. TNF-a levels for group AT + IPC are significantly lower compared to group IPC ($p = 0.014$). The mean IL-1b is lower for group AT + IPC compared to group IPC, but this is not statistically significant ($p > 0.99$). The mean IL-6 is lower for group AT + IPC compared to group IPC, and this is statistically significant ($p < 0.001$). Group IPC has significantly higher MPO levels compared to group AT + IPC ($p = 0.025$). There is no significant improvement in MDA levels for group AT + IPC compared to group IPC ($p = 0.286$). Therefore, TNF-a, IL-6 and MPO levels show that the administration of AT further attenuated the inflammatory response caused by IR, thus suggesting a synergistic effect with IPC. These findings were confirmed by electron microscopy.
Conclusions: The addition of AT treatment to IPC attenuated or prevented damage from IR injury by inhibiting the release of cytokines, lipid peroxidation and neutrophil infiltration.

025 LIVER

P13

ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE IN EGYPTIAN RECIPIENTS AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background and Aims: Understanding the issues pertaining to quality of life is essential for any disease. It is particularly important in orthotopic liver transplantation (OLT) recipients. The aim of this study was to evaluate the impact of liver transplantation on the Quality of life in Egyptian recipients after LDLT.
Methods: Prospective study carried out in Ain Shams Center for Organ Transplantation, Cairo, Egypt. It included 35 recipients evaluated for health related quality of life using Short Form 36 score (arabic version) and Beck Depression Inventory scores pre-transplantation 1, 3and 6 months after.
Results: The mean age for the patients were 49.27 $\pm$ 8.16, 91.43% were males; 48.57% of study patients were highly educated. Fifty seven percent were Child C, mean MELD was 18. Our results showed highly statistically significant improvement in all dimensions of HRQOL after liver transplantation. Physical functioning was 45.00 $\pm$ 34.34 before liver transplantation while 1 and 6 months after liver transplantation it was 57.50 $\pm$ 20.66 and 74.83 $\pm$ 19.27 respectively ($p > 0.001$). The least QOL score before, 1 and 6 months after liver transplantation was role limitation due to physical health dimension with means of 21.67 $\pm$ 40.86, 0.00 $\pm$ 0.00 and 50.83 $\pm$ 29.71 respectively ($p > 0.001$). The mental health dimension was the highest QOL score before liver transplantation with a mean of 51.60 $\pm$ 21.49 and after 1 and 1 months it was 68.53 $\pm$ 12.24 & 79.20 $\pm$ 8.62 respectively ($p > 0.001$). Seventeen patients completed their first year after liver transplantation and the results showed statistically significant improvement in all dimensions of HRQOL 1 year after liver transplantation except in the mental health, role emotional and social function domains.
Conclusion: Health related quality of life is important aspect of liver transplantation procedure that shouldn't be neglected.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P14

A COMPARATIVE ANALYSIS OF BRITISH AND CANADIAN SIKH OPINION AND KNOWLEDGE REGARDING ORGAN AND STEM CELL DONATION

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British and Canadian Sikh membership to the stem cell and organ donation registers are low. Previously, Sikh attitudes and beliefs have been studied with other heterogeneous South Asian communities, creating unfocussed results. Recent British stem cell charity campaigns have spurred a South Asian registration increase of 1200%, possibly due to targeted campaigns. Our online questionnaire assessed stem cell and organ donation knowledge and beliefs among Sikhs.

Results: Organ donation registry is similar for British (35.5%, $n = 43$) and Canadian Sikhs (36.0%, $n = 40$). However, British Sikhs are more likely to be stem cell donor registrants (28.1%, $n = 34$) compared to Canadians (13.5%, $n = 15$).

The main reason British Sikhs joined the stem cell register was due to a targeted campaign (45%, $n = 54$).

Knowledge on stem cell donation is poor compared to organ donation ($p < 0.01$).

The main reason for lack of registration to either the stem cell or organ donation register is having "never considered" joining, at 69% ($n = 161$) and 52% ($n = 121$) respectively.

Discussion: There are increased numbers of British Sikhs on the stem cell register but they appear to know less.

Targeted campaigns could increase membership, but this needs to be balanced with a good knowledge base for registry

023 KIDNEY

P15

DIAGNOSTIC VALUE OF SERUM AND URINARY ENZYMES, CYTOKINES, BETA-2-MICROGLOBULIN IN PATIENTS WITH CHRONIC KIDNEY ALLOGRAFT DYSFUNCTION

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Chronic dysfunction is a leading cause of kidney allograft (KAG) loss. The aim of the study was an additional characteristics of chronic KAG dysfunction using serum and urine biomarkers: enzymes (alanine aminotransferase [ALT], aspartate aminotransferase [AST], gamma-glutamyltransferase [GGT], alkaline phosphatase [AP], N-acetyl-β-D-glucosaminidase [NAG]), interleukins (IL-2, IL-8, IL-10), and beta-2-microglobulin (β2-MG).

Comparative analysis of biomarkers in patients with chronic dysfunction and satisfactory KAG function showed that increased concentration of IL-10 and β2-MG in the serum, and increased concentration and activity of β2-MG, IL-2, IL-8, NAG, AP, AST, GGT in the urine are typical for chronic dysfunction. In multivariate logistic regression analysis only NAG showed significant independent association with chronic KAG dysfunction (odds ratio - 4.13, 95%-confidence interval: 1.21–14.09). The areas under the ROC-curves indicate that β2-MG concentration in serum (0.858 ± 0.061) and urine (0.733 ± 0.079), and the activity of NAG in urine (0.701 ± 0.061) possess the excellent and good discriminatory power for the classification of patients with satisfactory function and chronic KAG dysfunction.

We believe that the increase of β2-MG serum concentration indicates glomerular dysfunction, and in the urine it indicates tubular dysfunction of KAG. Enzymuria, and, first of all, an increase in the activity of NAG, indicates the continuing damage of the proximal tubules epithelium. The increase of concentrations of IL-2 and IL-8 in the urine, and IL-10 in serum may indicate the etiology of chronic KAG dysfunction. For the refinement of the diagnosis of chronic KAG dysfunction the most useful tests (positive likelihood ratio is 10 and 11, respectively) are positive tests for serum β2-MG (>8.55 g/ml) and urinary NAG/creatinine (>34 nmol/(sec×l)/mmol/l). A positive test for urinary IL-8/creatinine (>1.51 pg/ml/mmol/l) is useful (positive likelihood ratio is 5.92).

007 DONATION/RETRIEVAL

P16

DONOR SAFETY CAN BE MAINTAINED WHEN TRAINING SURGEONS IN LAPAROSCOPIC DONOR NEPHRECTOMY IN A SEQUENTIAL MANNER, WITHIN A TEAM ENVIRONMENT

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Introduction: Totally laparoscopic donor nephrectomy (LDN) can be a challenging procedure. Preservation of donor safety is paramount whilst undamaged renal parenchyma and good length of intact renal vessels is required for optimal recipient outcomes. The drive to increase live donor transplants has required increasing the surgical team providing this service. Our aim was to review outcomes with a focus on donor safety.
Methods: A prospectively maintained database of 455 consecutive from 2003 (when LDN was introduced) 20 2014 was analysed. LDN is performed fully laparoscopically with the kidney removed through a non-muscle cutting pfannensteil incision. Surgeons were added to the team in 2005, 2010 and 2013. Patients were reviewed at 3 months.
Results: Of the 455 LDN 98.4% were left and 1.6% right due to the recipient surgeons preference for left sided allografts. Patients had multiple arteries in 30.7% of cases. There were no conversions to open nephrectomy or returns to theatre pre-discharge. Median estimated blood loss was 50 mls (0–2000) and median operative time 150 mins (105–290). Median warm ischaemia time and length of stay was 4 mins (2–10) and 3 days (1–16) respectively. Transfusion rate was 0.9%. Clavien III-IV complication rate was 0.9% (no clavien IV) and clavien I-II 16%. Intraoperative complications included 1 splenectomy and 1 diaphragm injury, both repaired laparoscopically. Complication rate did not significantly alter with the addition of new training surgeons.
Conclusions: Our results compare very favourably with historic series in the literature with preserved donor safety. LDN in our institution is performed by urological surgeons with experience in renal laparoscopy and interest in renal transplantation. Working within a team environment where experienced colleagues can help in challenging cases produces excellent patient outcomes. We believe that total LDN undertaken by experienced laparoscopic renal surgeons represents the current gold standard.

015 INFECTIONS

P17

SUBCLINICAL EPSTEIN–BARR VIREMIA IS ASSOCIATED WITH DECLINE GFR IN KIDNEY TRANSPLANTATION: SINGLE CENTER EXPERIENCE

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Purpose: Post-transplant viral infection is a known risk factor for graft dysfunction and malignancies including PTLD. However, the impact of subclinical Epstein-Barr virus (EBV) infection on allograft injury in the renal transplant population has not yet been well defined.
Method: A single center study was conducted from Oct, 2012 to Apr, 2013. We assessed EBV viremia by PCR in 327 renal transplant recipients.
Results: Subclinical EBV viremia occurred in 14.7%. A multivariable linear regression analysis suggested that subclinical EBV infections are significantly associated with declines in GFR (-2.34 ± 7.00 vs. 0.98 ± 8.17 ml/min, $p < 0.05$), log proteinuria and duration since transplantation.
Conclusion: Our data demonstrated that there is an association between subclinical EBV infections and adverse outcomes in renal transplant patients, despite appropriate post-transplant antiviral prophylaxis. These findings support the need for serial viral monitoring for better outcomes in renal transplant patients.

023 KIDNEY

P18 RELATIONS AMONG HYPERURICEMIA, INFLAMMATION, OXIDATIVE STRESS AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS

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Background: Uric acid is the end product of purine metabolism. Superoxide dismutase (SOD) and malondialdehyde (MDA) are well-known antioxidant enzymes that detoxifies highly oxidant compounds as advanced glycation end products (AGE). The aim of this study was to evaluate the relationships between serum uric acid levels, inflammation and oxidative stress parameters accompanied by arterial stiffness in renal transplant recipients.
Materials and Methods: Fifthy renal transplant recipients (36 male, mean age: 39.2 $\pm$ 11.2 years) with stable allograft function from our renal transplant outpatient clinic were enrolled into the study. All acute cellular and humoral rejections were excluded. According to mean serum uric acid (sUA) levels patients were divided into 2 groups as group 1 (sUA $>$ 6 mg/dl; *n*: 25) and group 2 (sUA $<$ 6 mg/dl; *n*: 25). All patients were evaluated for their standard clinical, biochemical parameters (serum uric acid, C-reactive protein [CRP], albumin), serum AGE, MDA, SOD, FGF-23 and Klotho levels were determined by ELISA method. Pulse wave velocity (PWv) was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system.
Results: Groups were similar in means of clinical (age, gender, duration of transplantation) and biochemical (calcium, phosphorus, parathyroid hormone, sodium, potassium) demographic characteristics. Patients in group 1 had significantly higher CRP (p: 0.031), PWv (p: 0.006), AGE (p: 0.002), FGF-23 (p: 0.001) levels, however significantly lower eGFR (p: 0.024) and MDA levels (p: 0.031). For each 1 mg/dl of increased level of sUA resulted in 0.162 cm/sec of increased level of PWv (p: 0.05, CI: $-$0.006 to 0.330) and 0.003 pg/ml of FGF-23 (p: 0.05, CI: 0.000–0.007). In linear regression analysis, serum MDA (p: 0.027) and FGF-23 levels (p: 0.004) were detected as the predictors of PWv.
Conclusion: We concluded that hyperuricemia was correlated with increased levels.

P19 HYPERURICEMIA TAKES A TOLL IN GRAFT FUNCTION, LEFT VENTRICULAR DIAMETERS AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS

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Background: Cardiovascular diseases are the leading cause of mortality in renal transplant recipients (RTRs). Serum uric acid (UA) levels correlate with many recognized cardiovascular risk factors. The aim of this study was to evaluate the relation between serum UA, graft function and arterial stiffness accompanied by echocardiographic measurements.
Materials and Methods: We performed a cross-sectional observational study of 118 hyperuricemic (serum UA were $\geq$4 mg/dl) maintenance RTRs with stable allograft function at the first year of transplantation. All patients were evaluated for their standard clinical and biochemical parameters. PWv was determined from pressure tracing over carotid and femoral arteries by SphygmoCor system. We calculated the estimated GFR (eGFR) using the MDRD4 equation. Rutine first years transthorasic echocardiographic measurements (ejection fraction [EF], left ventricular end-diastolic diameter [LVDD], left ventricular end systolic diameter [LVSD]) was recorded.
Results: All patients were similar in means of clinical demographic characteristics. Mean serum UA level was 5.7 $\pm$ 1.5 mg/dl. A significant positive correlation was found between serum UA and PWv (*r*: 0.396), systolic blood pressure (*r*: 0.312), LVSD (*r*: 0.275), LVDD (*r*: 0.303), however an invers correlation was detected between serum UA levels and eGFR (*r*: $-$0.530, p: 0.01). For each 1 mg/dl of increased level of UA resulted in 0.6 cm/sec of increased level of PWv (p: 0.001), 0.078 cm of LV systolic diameter (p: 0.013) and 0.06 cm of LVDD (p: 0.005), besides 9.6 ml/min of decreased level in eGFR (p: 0.01). In lineer regression analysis, serum UA (p: 0.001), C-reactive protein (p: 0.024), EF (p: 0.001) and LVDD (p: 0.033) were detected as the predictors of eGFR.
Conclusions: Present study concluded that hyperuricemia can contribute to cardiovascular morbidity and mortality by vascular damage and deteriorating left ventricular functions together with impairing graft function.

P20 IS HYPERURICEMIA RELATED TO MORNING BLOOD PRESSURE SURGE AND NON-DIPPER HYPERTENSION

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Background: Uric acid is the end product of purine metabolism. The term that blood pressure rises before awakening in the morning is called as morning blood pressure surge (MBPS) that is considered to be an independent risk factor for cardiovascular outcomes. The aim of this study is to evaluate the association between impact of hyperuricemia on post transplant hypertension determined by office and ambulatory blood pressure monitoring (ABPM), presence of MBPS and non-dipper status and graft function in renal transplant recipients (RTRs).
Materials and Methods: One hundred RTRs (mean age 37.3 $\pm$ 10.3 years) from our renal transplant outpatient clinic with serum UA levels $>$4 mg/dl at the first year of transplantation were enrolled into the study. We calculated the estimated GFR (eGFR) using the MDRD4 equation. Office and ambulatory blood pressure monitoring (ABPM) was performed at the first year of transplantation. PWv was determined by SphygmoCor system.
Results: Mean serum UA level was 5.3 $\pm$ 1.2 mg/dl. A significant positive correlation was found between serum UA and PWv (*r*: 0.396, p: 0.01), awake systolic blood pressure (*r*: 0.312, p: 0.001), awake diastolic blood pressure (*r*: 0.518) and MBPS (*r*: 0.233) and a negative correlation with eGFR (*r*: $-$0.461). For each 1 mg/dl of increased level of UA resulted in 0.69 cm/sec of increased level of PWv (p: 0.001) and 1.4 mmHg of MBPS (p: 0.03). In subgroup analysis, patients with serum UA $>$ 6 mmHg had a higher incidence of non-dipper hypertension than patients with serum UA $<$ 6 mmHg (53% and 24%, p: 0.02). In lineer regression analysis, PWv (p: 0.01), awake systolic and diastolic blood pressure (p: 0.001) were detected as the predictors of MBPS.
Conclusions: We concluded that post-transplant hyperuricemia should be immediately treated to prevent MBPS and non-dipper hypertension related poor cardiovascular outcomes.

025 LIVER

P21

THE EFFECT OF SYSTEMIC CATECHOLAMINE APPLICATION ON THE MICROCIRCULATION IN LIVER PROCUREMENT

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Introduction: The most vulnerable part in liver transplantation remains the biliary system. There is evidence, that insufficient perfusion during multi-organ procurement plays a major role in the pathogenesis of post-transplant ischemic damages leading to morbidity and mortality as well as graft loss. Due to frequent haemodynamic instability of the donor, there is a necessity for catecholamine application in a high percentage of procurement operations. Evidentially the flow rate inside the hepatic artery is decreased in the presence of catecholamines.
Material and Methods: Fifteen German landrace pigs underwent multiorgan procurement receiving *in situ* and *ex situ* perfusion consecutively while external pressure was applied to the perfusion solution and increased stepwise. Arterial flow rates and pressure in the hepatic and renal artery were measured before and during perfusion. Five animals received catecholamines over a period of 30 min prior to *in situ* perfusion. In order to visualise the perfusion success on the microcirculation, coloured MP were administered after perfusion and detected by microscopy.
Results: *Ex situ* perfusion was able to generate significantly higher values of pressure and flow at all measuring positions compared to *in situ* perfusion. When comparing the catecholamine group to the non-treatment group, *in situ* perfusion deteriorated under catecholamine treatment while *ex situ* perfusion achieved higher values of flow and pressure. MP count revealed the same pattern underlining these observations.
Conclusion: Our results point out the crucial importance of arterial *ex situ* pressure perfusion, especially in case of previous catecholamine exposure.

023 KIDNEY

P22

OUTCOME OF COMMERCIAL KIDNEY TRANSPLANTATION, A SINGLE CENTER STUDY

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Most patients who undergo comercial LURD kidney transplantation has better survival in compare with those stay on dialysis, however a proportional number suffer from fatal complications.
Method: We retrospectively reviewed data of 330 patients, who had been commercially transplanted out side Saudi Arabia and were admitted to security forces hospital, Riyadh between 1990 and 2010 for early post-transplant evaluation and were regularly followed in the clinic.
Result: 330 patients (70% male, 30% female), the mean age at transplantation (41.8 $\pm$ 14.17)years. 6.38% underwent preemptive transplantation, the mean duration of dialysis was 17.9 months. 10.8% of patients have hepatitis C virus infection, only 9% of HCV-infected patients had been managed before transplantation. There were 19 patients (5.7%) lost there allograft within the first post-transplantation week, severe antibody mediated rejection (AMR) was the culprit in 5 cases, and the other 14 patient lost their allograft due to vascular thrombosis (arterial or venous), Surgical wound infection 4.8%, urinary leak 2.4%, and lymphocele 3.9%.

Acute rejection in 18% (91% T cell mediated), allograft survival was 83%, the main cause of allograft failure was IFTA 40%, recurent primary disease was found in 5 allograft biopsy. NODAT was documented in 26%, Persistently abnormal liver function test was observed in 26.5% of HCV group, and only 2 patients of negative group has abnormal LFT, Recurrent UTI in 3.6% with the mean underlying cause was uncorrected urinary tract abnormalities, 7 patients developed post-transplantation tuberculosis, 5 of them were extrapulmonary, and 3 patients died with cmv pneuminits, 2 die with dissiminated fungemia. 5 years patients survival 87%, The mean cause of death was sepsis 51%, then CVS events 18%, liver failure 15.4%.
Conclusion: Commercial kidney transplantation carries very high risk of ealy and late complications with acceptable patients and allografts survival.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P23

CELL ATP AND VIABILITY ALTERATIONS INDUCED BY ISCHEMIA-REPERFUSION IN THE RENAL CORTEX: AN AGENT-BASED COMPUTER MODEL

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Background: In renal transplantation, ischemia-reperfusion (IR) causes graft inflammation and fibrosis, dysfunction and loss. Events involved in IR injury (IRI) grow identified, but their intricacy hampers prediction and therapeutics. We develop a computer model of renal response to IRI at cell/tissue level. Using our previous dynamic model of cortical oxygenation (DYN), we 1) adapt it to a (O2-)steady-state model (STE), 2) couple epithelial (EPI) and peritubular capillary (PTC) cells energetics to O2 level, and 3) couple cell agents health to their ATP level and explore cell fate under ischemia and hypoxemia (37°C).
Methods: Multi-agent modeling tool NetLogo© is used. Model: 10μ-thick cortex slice (300x300μ2). Structure/function reference values from bibliography (REF° RBF = 5.0 ml/min/g, PO_2 = 48 mmHg). In DYN and STE, mean tissue O2 (tPO2 mmHg) is calculated by solving blood perfusion, O2 diffusion and consumption; with 5% error, model accuracy is about 2.0 mmHg.
Results: 1. At REF° DYN & STE oxygenation models yield tPO2 38.1 & 38.9 mmHg; from REF° normo-to anoxemia and from RBF° to total ischemia, DYN and STE give similar tPO2 within 1.4 ± 1.3 mmHg (n = 15). 2. In STE, ATP-modules were added in EPI and PTC, for production (Oxphos, Glycolysis) and consumption (Na-transport, housekeeping): model adjustment was performed yielding: 1) REF° levels: EPI exhibit ATP° 2.5 mM (vs. 7 refs: 2.5 ± 1.1); 2) 80% Oxphos-sensitive ATP in EPI (39% in PTC). Ischemia causes ATP to vanish in 40 min. R3. Cell survival as a function of time and ATP fitted from Lieberthal et al. 1998: when ATP < 2% of control, 70% of cells die in 2 h, similar to independent observations (cf. Glauman et al. 1975). A new cell fate module (apoptosis/necrosis) is evaluated.
Conclusion: Our model reproduces oxygen-dependent ATP and cell viability as observed experimentally. This construct will allow to address, in experimentals and in human clinics, renal IR inflammatory/fibrogenic responses and therapeutics.

007 DONATION/RETRIEVAL

P25

EXPANDING THE LIVING DONOR POOL "2ND ACT": LAPAROSCOPIC DONOR NEPHRECTOMY AND ABO-INCOMPATIBLE KIDNEY TRANSPLANTATION IMPROVE DONOR RECRUITMENT

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Background: In order to safely expand our living donor pool, we recently decided to invest in three directions: analysis of causes of exclusion of potential donors, the results of which we recently published, introduction of laparoscopic donor nephrectomy (LDN) and ABO incompatible (ABOi) transplantation.

Objective: To determine the impact of the new strategy on living donor recruitment and transplantation during a 10-year period at a single institution.
Methods: From January 2005 to September 2014 one hundred-thirty-one living donors were evaluated at our center. Of these, 80 (61%) were genetically related, 51 (39%) unrelated, 119 (90.8%) ABO compatible (ABOc), 12 ABOi (9.1%). The analysis was divided into 2 eras: ERA 1, 2005–2010 ($n = 53$) use of open lumbotomy and acceptance of ABOc only; ERA 2, 2011–2014 ($n = 78$), introduction of LDN and ABOi transplantation.
Results: Fortyfive (34.3%) potential candidates successfully donated, 67 (51.2%) were excluded, 19 (14.5%) were actively undergoing evaluation. Overall, 53 potential donors were evaluated in ERA 1 (8.8 donors/year), 78 in ERA 2 (19.5 donors/year). Excluded donors were less in ERA 2 vs. ERA 1 (62.2%ERA 1 vs. 43.5% ERA 2) while living donor kidney transplantation (LDKT) significantly increased in ERA 2 vs. ERA 1 (3.3/year ERA 1 vs. 7.1/year ERA 2). The establishment of an ABOi LDKT program led to a 15.3% increase of evaluations in ERA 2 (12/78 donors).
Conclusions: LDN along with ABOi LDKT allowed for an improvement in living donors recruitment and correspondent LDKT.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P26 NECROTIC DERMAL LESIONS IN A LIVER-TRANSPLANTED PATIENT: REPORT OF A CASE

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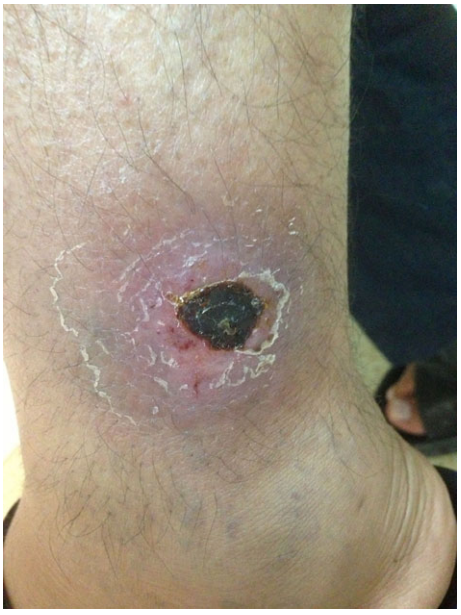
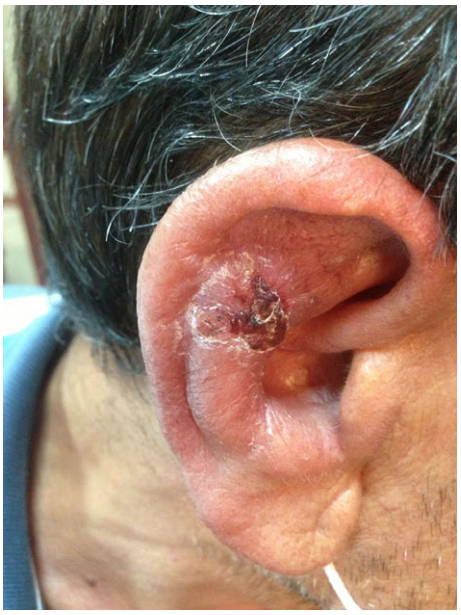
We report a case of a 45-year-old man with necrotic dermal lesions who underwent orthotopic liver transplantation 5 months ago for cirrhosis of liver secondary to HBV and HCC. His chronic immunosuppressive regimen consisted of prednisone and tacrolimus at dosage of 3.5 mg orally twice daily. Consequently, the patient developed skin lesions. Biopsy demonstrated dermal inflammation with foci of necrosis and lymphohistiocytic infiltrate. On labaratory findings liver enzymes were in normal ranges. The evaluation of CMV, tbc and other infectious causes were revealed negative. Then we reduce the dose of tacrolimus to 2 mg mg orally twice a day. Then the dermal lesions regressed withot any aditional therapy. Dermal necrosis maybe one of the very rare side effects of long-term immunosuppressive therapy with calcineurin inhibitors.





P27 A RARE CASUE OF REFRACTORY ASCITES FOLLOWING LIVER TRANSPLANTATION: REPORT OF A CASE

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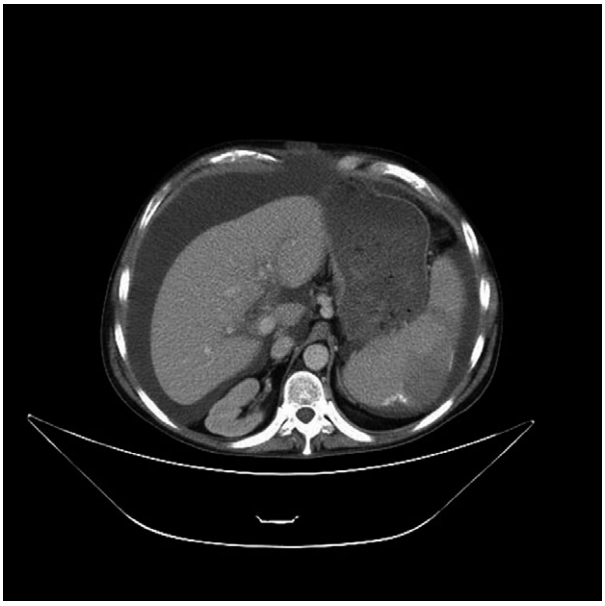
We present a case of a 34-year-old man who underwent liver transplantation for criptogenic cirrhosis and developed refractory ascites on postoperative day 22. Following a prolonged work-up we could not find the cause of the ascites. The laboratory tests including liver enzymes were within normal ranges. In this patient, infectious causes such as CMV and tbc were ruled out. On radiologic tests, computed tomography (CT) scan demonstrated marked ascites with normal flow in VCI, Portal vein and Hepatic artery. Doppler sonography of liver demonstrated normal doppler waveforms in these vessels. Liver biopsy was performed on postoperative day 25. Biopsy shoved no pathologic findings. Radiological and biochemical tests did not reveal renal pathology. Serum-ascites albumin gradient revealed a low gradient indicating ascites of non-portal hypertensive etiology and total protein of ascites fluid was 2.8 g/dl. The ascite fluid culture was negative. We started medical treatment of furosemid and spiranolakton. On postoperative day 45 the ascites was changed from severe to mild sonographically. With the continuation of treatment on postoperative day 60 the ascites were resolved. We stopped the medical treatment of furosemid and spiranolakton. Now the patient is on postoperative 9th month with no ascites.



019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P28

EFFECT OF ADDITION OF AN OXYGEN CARRIER DURING GRADUAL REWARMING AND PERFUSION OF RAT KIDNEYS AFTER 24 H COLD STORAGE

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Background: The concept of oxygenation during organ preservation has been introduced with the aim to support mitochondrial function, restore ATP and protect the organ from ischemia injury. In this study we have investigated the efficacy of M-101 as an oxygen carrier to improve kidney quality compared to dissolved oxygen in an isolated perfused kidney model (IPK).

Method: Rat left kidneys were statically cold stored in University of Wisconsin (UW) solution for 24 h at 4°C. Subsequently, the kidneys were subjected to a gradual rewarming perfusion from 10°C to 38°C for 30 min and reperfusion at 38°C for 60 min with carbogenated (95% O_2/5% CO_2) AQIX® RS-I (Aqix Ltd, UK) and M101 (Hemarina, France) as the oxygen carrier or carboxygenated AQIX® RS-I without M101. Renal function parameters and renal injury biomarkers were measured in the perfusate and urine samples. Tissues samples were collected for mRNA expression, ATP analysis and mitochondria isolation at the end of perfusion.

Results: In the group with M101, renal flow decreased in the reperfusion period and oxygen consumption increased compared to the group without M101 ($p \leq 0.05$). However ATP levels were significantly higher and mitochondrial respiration tended to be better in the group without M101. No differences were found in injury markers level such as LDH and KIM-1 between both groups. Also, no difference in renal function in terms of sodium re-absorption capacity and GFR could be demonstrated.

Conclusion: Adding M101 as an oxygen carrier did not improve energy status or function of 24 hr UW cold stored rat kidneys in the ex-vivo normothermically perfused rat kidney model. Further evaluation of the effect of M101 in a more relevant large animal model will be needed to rule out species or model related bias.

025 LIVER

P29

FACTORS REGULATING 1,25-DIHYDROXYVITAMIN D CONCENTRATIONS IN LIVER TRANSPLANT RECIPIENTS

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Background: Following liver transplantation, the concentrations of 25-hydroxyvitamin D3 (25(OH)D3) and vitamin D binding protein increase whereas the 1,25- dihydroxyvitamin D3 (1,25(OH)2D3) levels remain unchanged. Possible explanations are impaired 1,25(OH)2D3 synthesis in the kidney or enhanced catabolism. The aim of this study was to identify the factors regulating 1,25(OH)2D3 concentrations at baseline and up to 3 months in adult liver transplant recipients.

Patients and Methods: Serum 25(OH)D3, 1,25(OH)2D3 and 24,25(OH)2D3 were measured in 41 patients before, at 2 weeks and 3 months after transplantation. Dose-adjusted tacrolimus concentration calculated at month 3 was used as a "marker" of CYP3A4 activity. Estimated glomerular filtration rate (eGFR) was calculated using the CKD-EPI formula. Regulators of 1,25 (OH)2D3 levels were identified using multivariate linear regression analysis.

Results: The median 25(OH)D3 increased from 18 (range 4–110) ng/ml at baseline to 26 (6–74) ng/ml at 3 months ($p = 0.03$), whereas the median 1,25 (OH)2D3 levels remained stable: 55 (7.5–182) pg/ml vs. 46 (7.5–118) pg/ml ($p = 0.36$) despite an increase in serum albumin (34–41 g/l, $p = 0.02$) and comparable eGFR at baseline and month 3 (94 and 92 ml/min, respectively, $p = 0.15$). At 3 months 19% had 1,25(OH)2D3 1 ng/ml had high 25(OH)D3 at baseline and 3 months and 1,25(OH)2D3 at baseline. The eGFR at 3 months, pre-transplantation Model for end-stage liver disease score, 1,25(OH)2D3 at 2 weeks and the dose-adjusted tacrolimus concentration were the 1,25(OH) 2D3 predictors at 3 months.

Conclusions: Liver transplant recipients are at risk of 1,25(OH)2D3 deficiency despite restored 25(OH)D3. Patients with impaired renal function or high tacrolimus clearance might require supplementation with activated vitamin D analogues.

023 KIDNEY

P30

CORRELATION OF ALLOGRAFT RECIPIENT WEIGHT TO BODYWEIGHT RATIO ON RENAL FUNCTION IN KIDNEY TRANSPLANTATION

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Background: Brenner and Milford showed that there is a certain critically amount of nephrons on receptor kidney function. In a study of graft weight/weight of the recipient index, it was concluded to avoid transplant patients with a low ratio between the graft and recipient weight (<2.5 g/kg).
Objective: To describe the association in the Mexican population between the weight, measurements of the allograft, sex of the donor, and renal function 1 month after renal transplantation.

Material and Methods: Patients transplanted from living or cadaveric donor with 1 month follow up with functional graft from January 1st 2014 to November 1st 2014. Graft measures and weight, weight of the donor, recipient body weight, age, sex of the donor and receptor, pre surgical postoperative and 1 month creatinine, renal function, (CKD-EPI and MDRD) and BMI receptor were consider, and induction.
Results: Donors, 35 (39.8%) women and 53 (60.2%) men; recipients 30 (34%) women, 58 (65.9%) men. 60 (68%) was from living and 28 (31.8%) from cadaveric donor. Receiver BMI was 24.7 (±2.6). The graft measures: longitudinal 11.7 cm (±1.2), transverse 6.4 cm (±0.7) and the width 5.1 cm (±0.7). The weight of graft 152 gr (±33.9). Creatinine at month 1.6 mg (±2.0). Dividing into groups it was observed that length, width of the graft and donor age approached significance. By Linear regression this was significant with regard to cold ischemia time and creatinine at month ($p = 0.000$). Using multivariate analysis significance was observed to these indexes and receptor renal function. (CKD-EPI and MDRD at month) ($p = 0.026$ and 0.041) Donor sex did not influence in receptor renal function at at month. ($p = 0.59$)
Conclusions: There was a direct correlation between the weight of the graft and creatinine at month. The graft/recipient index should be considered as selection criteria in recipients of cadaveric donors.

025 LIVER

P33

PEDIATRIC LIVER TRANSPLANTATION IN CYSTIC FIBROSIS: A SMALL CENTRE REPORT FROM TARTU UNIVERSITY HOSPITAL

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Cystic fibrosis (CF) is one of the most common congenital multisystem diseases in Northern Europe affecting one of 7500 new-borns in Estonia. Approximately 25% of CF patients develop end-stage liver disease (ESLD) requiring liver transplantation (LT). Between 2009 and 2013 two out of 32 LT were performed due to CF, secondary biliary cirrhosis (SBC) and portal hypertension (PH) in Estonia.
Case 1: A 12-year-old girl with CF underwent an LT for SBC, PH and Child C/13 liver insufficiency in 2009. The CF had been diagnosed in her first month of life. From the age of 6 years hepatomegaly was present, complicated later with SBC. There were no postoperative complications. She received triple immunosuppression with cyclosporine (Cy) mycophenalate mofetil (MMF) and prednisolone. The posttransplant problem was to achieve an appropriate level of Cy despite the increasing dose of neoral, probably by virtue of the poor absorption of the drug. At 1.5 years after LT she presented with transplant insufficiency. A liver biopsy showed acute cellular rejection followed by chronic ductopenic rejection. Steroid bolus therapy and anti-thymocyte globulin were not effective. The condition deteriorated progressively and the child underwent a second LT in 2011. Immunosuppression was managed with tacrolimus (TAC), MMF and prednisolone. Two years after the re-LT in 2013 she underwent a colectomy due to severe *Cl. difficile* colitis. At present, 1 year later, she is 18 years old and in good general condition.
Case 2: A 17-year-old boy with CF underwent an LT for SBC, PH and Child C/12 liver insufficiency in 2013. The CF had been diagnosed at the age of 11 months. From the age of 12 years CF was complicated with SBC and PH. There were no postoperative complications. Immunosuppression was managed with TAC, MMF and prednisolone. At present, 2 years later, he is 19 years old and in a good general condition.
Conclusion: LT can be considered an effective therapeutic option for CF with ESLD.

P35

LONG-TERM OUTCOME OF ISCHEMIA-TYPE BILIARY STRICTURE AFTER INTERVENTION TREATMENT IN TWO LIVER LIVING DONORS

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Background: The wall of normal proximal bile duct is often thin with close approximation of the right hepatic artery (RHA), thus isolation of RHA can result in excessive thinning of the remnant proximal bile duct wall during right liver graft harvest. This injury can induce stricture of the donor common bile duct. This study intended to review the clinical course of such ischemia-type donor bile duct injuries which were primarily managed with intervention treatment.
Methods: A retrospective review of medical records was performed with 2 donors who suffered from ischemia-type donor bile duct injury and followed up for more than 10 years.
Results: Right and left liver grafts were harvested from these 2 donors (incidence of 0.05%). Bile duct anatomy was normal bifurcation in 1 and anomalous branching in 1. Bile duct stenosis was detected 1 and 2 weeks after liver donation. They underwent endoscopic balloon dilatation and temporary stent (endoscopic retrograde biliary drainage [ERBD]) insertion. With ERBD tube change per 2–3 months, ERBD tubes were successfully removed in 1 and radiological intervention was necessary in 1. On follow-up over 10 years, they are doing well with no recurrence of biliary stricture.
Conclusion: Based on our limited experience, intervention treatment and subsequent long-term follow-up appears to be an essential and reasonable treatment for ischemia-type biliary stricture in liver living donors.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P37

EFFICACY AND SAFETY OF PRESCRIBING IN TRANSPLANTATION (ESPRIT) GROUP RESEARCH INTO SWITCHES TO GENERIC IMMUNOSUPPRESSANTS BY UK TRANSPLANT UNITS

Stephen Pollard, Atholl Johnston

Efficacy and Safety of PRescribing in Transplantation (ESPRIT) Group

Background: As part of transferring ("repatriating") immunosuppressant prescribing from primary care providers to secondary care, many UK transplant units are switching from branded to generic immunosuppressants. As an independent, multidisciplinary group supporting safe and effective prescribing of immunosuppression, ESPRIT undertook a survey to investigate the process and results of switching.
Methods: A specially-designed questionnaire was distributed to specialist pharmacists in UK renal and liver transplant units. Responses were gathered between November 2014 and January 2015.
Results: Of the 30 unit specialists approached, 20 submitted completed questionnaires; 19 covered renal transplants, five liver and two pancreas/multivisceral procedures. Fifteen units reported undertaking immunosuppressant switches, most frequently from the originator tacrolimus brand (Prograf) to a branded generic (Adoport), in *de novo* and/or established patients. Following switching, 89–99% of patients stayed on the same dosage, 1–2% required an increase and 0–9% a reduction. Between 1 and 6% needed to be switched back, mostly due to side effects, including mouth ulcers, rashes, headaches, flu-like symptoms, nausea, diarrhoea, and hair loss. Between 1 and 7% refused to switch. Monitoring protocols during switches varied widely; timing of "baseline" tacrolimus levels varied from 21 days pre-switch to on the day of switch, although some units took no immediate pre-switch baselines. Post-switch assessments were carried out from 4 to 14 days post-switch. Where dose changes were needed, levels were repeated, sometimes for up to 3 months post-switch.
Conclusions: The potential for dosage changes and newly-emerging side effects mean that close monitoring is needed when switching. To ensure consistency of care and patient safety, monitoring protocols should ideally be standardised. It is strongly recommended that these be agreed and implemented in light of variations revealed by this study.

015 INFECTIONS

P38

ANALYTICAL AND CLINICAL PERFORMANCE OF THE ARTUS CMV RGQ MDX KIT

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Aim: To demonstrate the performance of the FDA-approved artus® CMV RGQ MDx Kit (hereafter referred to as artus CMV Kit) for the detection of CMV DNA in human EDTA plasma samples in the management of solid organ transplant patients undergoing anti-CMV therapy.
Methods: The artus CMV Kit is configured for use with the EZ1® DSP Virus System (EZ1 DSP Virus Kit and EZ1 Advanced XL instrument) for sample purification, and the Rotor-Gene® Q MDx instrument for CMV amplification and quantitation. Analytical performance of the artus CMV Kit was assessed in terms of the LOB, LOD, Linear Range and Precision. Clinical performance of the artus CMV Kit was evaluated during a prospective study at 5 clinical laboratories in the USA. Post-transplantation patients with CMV DNAemia were enrolled. Specimens were collected during the course of antiviral treatment with ganciclovir or valganciclovir (baseline, day 7, 14, 21 and 28 post-treatment initiation and/or day 49 post-treatment/end of treatment). Specimens ($n = 368$) were tested with the artus CMV Kit and another FDA-approved test to compare kit performance.
Results: Negative sample testing gave an LOB value of 99% <0.05 at cycle 45. Probit regression determined the 95% LOD value for gB 3 and 4 genotypes to be 77 IU/ml. The linear range was determined to be from 159 IU/ml to 7.94×10^7 IU/ml. In the clinical study, Deming and Passing-Bablok regression analyses indicated high concordance between the artus CMV Kit and the comparator FDA-approved test.
Conclusion: Analysis of results indicated a high level of agreement with an FDA-approved test. Therefore, the artus CMV Kit effectively measures the CMV viral load of transplant patients and can be used as an aid in the management of patients undergoing antiviral therapy. In summary, the artus CMV Kit gives accurate quantitation over a broad linear range, is standardized using the 1st WHO International Standard and provides detection of a 105 bp, highly conserved target region of the CMV MIE gene.

035 TOLERANCE

P39

THE OPERATIONAL TRANSPLANT TOLERANCE AXIS: MSC – MDSC – TREG/TH17

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Prolonged use of pharmacological immunosuppression is associated with severe detrimental side-effects not least neurotoxicity and increased risk of opportunistic infections of *de novo* malignancies. Additionally, pharmacotherapy is also dependent on patient adherence. The immunomodulatory capacities of mesenchymal stem cells (MSCs) and multipotent adult progenitor cell (MAPCs) are currently the subject of preclinical and clinical assessment in solid organ transplantation. We have demonstrated that in a fully allogenic, rat heterotopic heart transplantation model, 3rd party MAPCs treatment (drug-free immunosuppression) can induce long-term, transferable acceptance and that tolerance was dependent on myeloid-derived immunosuppressive cells (MDSC). Recently we have shown that MSC induced long-term acceptance of allogeneic heart grafts in mice acts via MDSC-mediated conversion of Th17 cells into T(reg) cells. This is consistent with our current clinical observations that exposure to low-dose third-party MAPC is associated with an increased T (reg) frequency. Currently, the long term consequences of modulating the host immune system with allogenic MSC are unknown.

023 KIDNEY

P40

VACUUM AND MESH-MEDIATED FASCIAL TRACTION FOR PRIMARY CLOSURE OF THE OPEN ABDOMEN AFTER RE-LAPAROTOMY IN SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION

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Background: Vacuum and mesh-mediated fascial (VACM) traction for primary closure of the open abdomen in critical ill surgical patients has been shown to result in a higher fascial closure rate and lower planned hernia rate compared to non-traction methods (1). We describe the case of 48-year man who developed acute abdomen 8 days after simultaneous pancreas-kidney transplantation. To avoid abdominal compartment syndrome after re-laparotomy VACM was used for primary closure of the open abdomen.
Methods/Materials: The principle of VACM has been described previously (2). Briefly, a commercial vacuum-assisted wound closure system (V.A.C.® Abdominal Dressing System; KCI, San Antonio, Texas, USA) was used. A perforated polyethylene sheet was placed intra-abdominally to cover the viscera and then a polypropylene mesh was sutured to the fascial edges with a running suture. A polyurethane sponge was placed on the mesh and the whole laparotomy wound was covered with occlusive sheets. Finally, the occlusive sheet was perforated in the middle and linked to a suction device with continuous topical negative pressure (125 mmHg). This temporal abdominal closure system was changed every 2 days twice before the final closure of the abdomen. During the first change, the mesh was cut in the midline, the innermost polyethylene sheet was changed and the mesh was tightened by suturing it in the midline with a running suture. During the last operation the mesh was removed and the fascia was closed along its whole lenght with continous 1-PDS®.
Results: The closure of the abdomen was received after two changes of this abdominal closure system in 5 days. After 12 months' follow-up no sign of ventral hernia is seen, both kidney and pancreas graft are well functioning and patient is physically active.
Conclusions: Vacuum and mesh-mediated fascial traction for primary closure of the open abdomen is effective and safe also in transplant patients. It is easy to use and it provides excellent long-te

027 LUNG

P41

ACUTE REJECTION ATTENUATES THE FUNCTION OF ALVEOLAR FLUID CLEARANCE THROUGH THE MODULATION OF SERUM GLUCOCORTICOID REGULATED KINASE 1

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Background: Lung edema following re-perfusion injury induces primary graft dysfunction after lung transplantation (LTx). The decrease of alveolar fluid clearance (AFC) producing lung edema depends on the function of epithelial Na^+ channel (ENaC) at alveolar type II pneumocytes. According to the regulation of ENaC, serum glucocorticoid regulated kinase 1 (SGK1) supports for ENaC to express on the surface of the cell with trafficking. Therefore we investigate AFC and the expression of SGK1 and ENaC in acute rejection of LTx.

Methods: We performed rat left single LTx with Brown-Norway lung into Lewis rat for allogeneic transplantation, or Brown-Norway rat for syngeneic transplantation. We measured AFC by ex vivo fluid-filled lung model in Day 1 and 3 after re-perfusion, and we examined SGK1 and ENaC expression by RT-PCR and Western blotting.

Results: Histology of the explanted lungs indicated plenty of the inflammatory cell infiltration in allogeneic LTx compared to syngeneic LTx. The AFC in normal Brown-Norway rat was 25.6 $\pm$ 3.1% (AFC $\pm$ SD%). The AFC in both LTx dropped at Day 1 (allogeneic versus syngeneic; 15.7 $\pm$ 8.0% vs. 12.5 $\pm$ 12.1%, $n > 6$, respectively). The AFC in syngeneic LTx recovered at Day 3, however that was dwindled along with the time course in allogeneic LTx at Day 3 (10.1 $\pm$ 16.4% vs. 25.2 $\pm$ 11.6%, $p < 0.05$, respectively). In addition, the expression of SGK1 and ENaC mRNA were attenuated in allogeneic LTx at Day 3 (SGK1; 1.6 $\pm$ 0.3 vs. 2.9 $\pm$ 0.9, $p < 0.05$, ENaC; 1.4 $\pm$ 0.3 vs. 2.8 $\pm$ 0.6, $p < 0.05$). The expression of SGK1 and ENaC protein was decreased in allogeneic LTx as well.

Conclusion: Acute rejection suppressed not only the expression of SGK1 to reduce the trafficking of ENaC to cell surface and also the expression of ENaC in itself. That contributed to the reduction of AFC, that caused lung edema after LTx. We consider that the low AFC due to the role of SGK1 for ENaC expression in acute rejection of LTx may be a major cause of the primary graft dysfunction with lung edema.

025 LIVER

P42

PREEMPTIVE THORACIC DRAINAGE TO ERADICATE POSTOPERATIVE PULMONARY COMPLICATIONS AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background: Thoracic fluid retention after living donor liver transplantation (LDLT) has various negative consequences, including atelectasis, pneumonia, and respiratory distress or failure.
Study Design: We analyzed the clinical impact of preemptive thoracic drainage in 177 patients undergoing adult-to-adult LDLT for chronic liver diseases at a single center. Recipients were divided into 2 time periods. The earlier cohort ($n = 120$) was analyzed for risk factors for postoperative atelectasis retrospectively; the later cohort ($n = 57$), with a risk factor for postoperative atelectasis, underwent preemptive thoracic drainage prospectively. The incidence of post-operative pulmonary complications was compared between these 2 cohorts. All thoracic drainages in both cohorts were performed under mini-thoracotomy, in which we coagulated and divided intercostal muscles and parietal pleura along the superior edge of the rib using an electric scalpel to prevent unexpected bleeding.
Results: Independent risk factors for atelectasis in earlier cohort were body mass index ≥ 27 kg/m^2 ($p < 0.001$), performance status ≥ 3 ($p = 0.003$) and model for end-stage liver disease score ≥ 23 ($p = 0.005$). The rates of atelectasis (21.1% vs. 42.5%, $p = 0.005$) and pneumonia (1.8% vs. 10.0%, $p = 0.049$) were significantly lower in later than in earlier cohort. Moreover, the mean durations of ICU stay (3.6 ± 0.2 vs. 5.7 ± 0.6 days, $p = 0.038$) and post-operative oxygen support (5.1 ± 0.8 vs. 7.1 ± 0.5 days, $p = 0.037$) were significantly shorter in the later than in the earlier cohort. There were no significant differences in the incidence of adverse events associated with thoracic drainages between these 2 cohorts.
Conclusions: Preemptive thoracic drainage for transplant recipients at high risk of postoperative atelectasis could decrease morbidities after LDLT.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P43 A NATIONAL REGISTRY ANALYSIS OF KIDNEY ALLOGRAFTS PRESERVED WITH MARSHALL'S SOLUTION IN THE UNITED KINGDOM

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Background: The preservation fluids most commonly used for renal allograft preservation in the UK are University of Wisconsin Solution (UW, £120/litre) and Marshall's Solution (Hyper-osmolar Citrate, £10/litre). These fluids have never been compared in a randomised controlled trial. The aim of this study was to compare the outcomes of deceased donor renal allografts preserved with these fluid using data from the UK national transplant registry.
Methods: Data regarding deceased donor kidney transplants performed between January 1st 2005 and December 31st 2008 was analysed to allow at least 3 years follow up for all patients ($n = 5027$ kidneys). Following univariate analysis, multivariate logistic and linear regression models were fitted in a stepwise fashion to analyse relationships between donor, recipient and transplant variables and outcomes.
Results: Marshall's Solution was used as the initial aortic flush in 52% of kidney retrievals and as a storage fluid for 80% of kidneys. Marshall's Solution was associated with longer cold ischaemic time, older donors, kidney-only donors (non-liver and non-pancreas), donors with hypertension and donation after brain-death (all $p < 0.01$). After adjusting for confounding factors, the choice of preservation fluid was not associated with the risk of PNF ($p = 0.77$), DGF ($p = 0.42$), acute rejection ($p = 0.30$), renal function at 1 year ($p = 0.20$) or graft survival ($p = 0.82$ in DBD, $p = 0.23$ in DCD).
Conclusions: Marshall's Solution has been used for the preservation of large numbers of kidneys in the UK. It is associated with transplant outcomes that are equivalent to those with UW Solution. Thus, on the basis of this analysis, and cost, a strong case can be made for the continued use of Marshall's Solution as a preferred fluid for renal allograft preservation.

P44 INFLUENCE OF PRESERVATION TEMPERATURE ON ENDOTHELIAL CELLS AND KIDNEY PHENOTYPES

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Background: With the increased use of marginal donors, more sensitive to ischemia reperfusion injury, solutions must be found to improve outcome. As hypothermia is linked to important tissue injury and deleterious impacts on cell metabolism, efforts are made to determine a more optimal preservation temperature. Herein, we conducted a comparison of different temperatures on models ranging from cells to whole organs in a preclinical model.
Methods: We tested this in an *in vitro* model of IR using primary endothelial cells and in ex vivo preserved pig kidneys. In both, 24 h preservation in University of Wisconsin solution was used.
Results: *In vitro*, compared to 4°C, temperatures between 19 and 32°C provided higher protection against cell death (LDH release test), permitting better mitochondrial function (complexes II and V activity tests) and a lower expression of endothelial activation and inflammation markers TLR4, MCP1 and ICAM1. Ex vivo, however, the superiority of 19 or 32°C was lost, as preserved pig kidneys showed similar levels of tissue damage (both tubular dilatation, loss of brush border and endoluminal detachment) at early preservation times, and after 24 h the 4°C kidneys displayed a trend towards less damage. In addition, tissue Monocyte/Macrophage staining was increased in the 19°C and further so in the 32°C preserved kidneys compared to 4°C storage.
Conclusion: Our study shows that although *in vitro* models demonstrated that a higher preservation temperature was preferable for cell survival and function, whole organ testing using preclinical conditions demonstrated an opposite effect. Thus, while the use of more adapted temperatures could be of great benefits for organ quality, there must be thorough investigations of novel concepts at the preclinical levels, with studies ranging from cell and small animal to large preclinical settings, in order to properly appreciate the benefits of innovative preservation paradigms, such as a higher temperature.

007 DONATION/RETRIEVAL

P45

MININVASIVE LIVING DONOR NEPHRECTOMY: AN ITALIAN MULTICENTER OBSERVATIONAL STUDY

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Background: Mini invasive Donor Nephrectomy (MDN) has been widely accepted in living donor kidney transplantation but the current status of MDN in Italy is not known.
Study Design: A retrospective multicenter observational study was conducted on 21 Italian kidney transplant centers.
Methods: Data on MDN performed between January 2002 and December 2013 were collected from the centers participating in the study and entered into a database for statistical analysis. The following parameters were investigated: type of MDN technique, morbidity, mortality, mean hospital stay, outcome of kidney transplant.
Results: Of the 21 contacted centers, 17 (80.9%) responded. These centers performed 759 MDN, 367 (48.4%) with full laparoscopic approach (LAP), 112 (14.8%) laparoscopic with hand assistance (HA), 55 (7.2%) robotic (ROB) and 142 (19%) mini-open (MO). Three centers used LAP, 4 centers HA, 4 centers both LAP and HA, 2 centers ROB, 2 centers MO and 1 center used either LAP, HA or ROB. Fifteen centers used a transperitoneal approach, the 2 centers using MO adopted a traditional retroperitoneal approach. Mean operative time and warm ischemia were 235 and 189 min, respectively. There were no mortality and no life-threatening complications. Twenty-one donors (2.8%) experienced intraoperative complications, open conversion was necessary in 3.3%. Bleeding occurred in 15/759 cases (1.2%), requiring blood transfusions in 13 (1.7%) donors. Minor complications not requiring long hospital stay were reported in 38/759 (5%). There were no cases of primary non function, while 2.1% of patients needed hemodialysis after transplantation because of delayed graft function. Overall, 1 year graft survival was excellent (98.8%). Mean hospital stay was 6 days.
Conclusions: MDN with its various technical variants has been safely introduced in Italy since the last 10 years, allowing for good results and low rate of major complications, comparable with the experience reported in the literature.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P46

INHIBITION OF COAGULATION PROTEASES XA AND IIA ON ISCHEMIA REPERFUSION INJURIES IN RENAL TRANSPLANTATION MODEL

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SUPPORT

Background: Organs from donors deceased after circulatory death represent an important "pool" to reduce organ shortage in transplantation. However, these organs are particularly exposed to ischemia/reperfusion injuries (IRI). We proposed to reduce IRI by targeting coagulation, one of the major pro-lesion pathway during IRI, to limit IR-mediated inflammatory response.
Method: We evaluated the effect of anti IIa (Melagatran) or anti-Xa + IIa molecule (EP) in an autotransplanted kidney pig model. Kidneys were clamped during 60 min (warm-ischemia) and then preserved 24 h in 4°C UW solution. Melagatran or EP molecules were used during cold storage (anti-IIa or anti-Xa + IIa), compared to UW + unfractionated-heparin (UW-UFH) or UW alone (UW).
Results: In our *in vivo* model of ischemia-reperfusion, we improved early kidney function recovery in the anti-IIa and anti-Xa + IIa groups compared to UW-UFH and UW groups. Transcriptomic analysis in peripheral blood leucocytes immediately after reperfusion showed that anti-IIa could decrease expression of RANTES, CXCR3, IL-1b and TRAIL mRNA while anti-Xa + IIa decreased expression of IL-6 and TNFa mRNA. At 3 months after transplantation we observed a better kidney function in the anti-IIa and antiXa + IIa treated groups compared to UW-UFH and UW in correlation with interstitial fibrosis and inflammation. In addition, we observed a reduction of IFNg, TNFa, IL-2 in the anti-IIa group, and a decrease of IL-1b, MCP-1 expression in the antiXa + IIa group, in association with a decrease of tissue leukocyte infiltration in these two groups compared to UW-UFH and UW groups.
Conclusion: We conclude that anti-IIa or anti Xa-IIa use during organ preservation permits a decrease in systemic inflammation post-reperfusion, associated with a decrease in chronic renal inflammation and dysfunction. Coagulation is thus a major pathway of IR injury and preservation strategies should be adapted to decrease its impact on graft outcome.

025 LIVER

P47

IMPROVED SEVERE HEPATOPULMONARY SYNDROME AFTER LIVER TRANSPLANTATION

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Background: Hepatopulmonary syndrome is a severe complication of liver cirrhosis, which is characterized bychronic hypoxia, intrapulmonary vascular dilatation and shunt. The prevalence of HPS varies widely between studies (5–32% of patients) and likely reflects diverse patient populations and varying definitions of hypoxemia. HPS is associated with varying severities of hypoxemia and a room air upright PaO_2_50 mmHg is considered to be very severe hypoxemia. Liver transplantation is the only therapeuticcure forthese patients. This case report describes a patient with typical findings of a severe Hepatopulmonary syndrome, and clubbing fingers, who had correction of HPS by deceased donor LT.
Methods/Materials: The patient was a 32-year-old male with diagnosis of auto immune hepatitis since 13 years ago. His Child-Turcotte-Pugh classification was C and MELD (Model of End-Stage Liver Disease) score was 22. He had been suffered from progressive liver failure with dyspnea, clubbing fingers, and cyanosis. Preoperative arterial blood gas analysis revealed hypoxia (arterial O2 tension of 52 mmHg and O2 saturation of 83%) with a severe extracardiac right-to-left shunt in echocardiography with agitated saline bubble, which suggested an intrapulmonary arteriovenous shunt.
Results: The patient recovered effectively after liver transplantation. The partial pressure of arterial oxygen improved progressively during 2 week postoperative follow up period, (his PaO2 after discharge was 207 mmHg) and his dependency onoxygenwasremoved rapidly after about 1 month.
Conclusions: Management of HPS patients' post-LT can pose additional challenges for the transplant and intensive care unit (ICU) teams. In this report, we presented a patient of severe Hepatopulmonary syndrome, who had typical findings of intrapulmonary shunt detected by echocardiography and clubbing fingers with low PaO2, which was successfully treated by liver transplantation.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P48

INFLUENCE OF THE ENDOPLASMIC RETICULUM IN CELL SURVIVAL DURING COLD ISCHEMIA

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Background: Extended criteria organs use is increasing. Since these are more sensitive to ischemia reperfusion injuries, it is of paramount importance to better understand the underlying mechanism of this pathology in order to design optimized organ preservation strategies. During a stress, protein maturation mechanisms are altered, inducing an accumulation of misfolded proteins which stimulates the UPR (unfolded protein response) through 3 pathways: IRE1α-XBP1, PERK-eIF2α-ATF4 and ATF6. We studied the activation of the UPR in preservation and its consequences.
Methods: We used two models: 1-*in vitro* human endothelial cells subjected to stresses mimicking preservation (UW solution at 4°C/24 h) and reperfusion (regular culture conditions); 2-a preclinical pig kidney model subjected to cold ischemia (24 h in UW 4°C).
Results: *In vivo*, during pig kidney preservation, we show that each pathway has a specific activation kinetic, suggesting a unique role for each in the response to IRI. *In vitro*, we proceeded to deconstruct the role of each pathway using specific pharmaceutical agents (STF083010 to inhibit the endoribonuclease IRE1α, Salubrinal to inhibit the dephosphorylation of EIF2S1 and activate PERK-eIF2α-ATF4, AEBSF to inhibit ATF6), confirmed through siRNA interference. We demonstrate that each of the 3 pathways as a specific activation kinetic, and further that cell survival can be increased through signal modulation between the three UPR branches.
Conclusion: To our knowledge, this is the first study showing the involvement of UPR in IRI physiopathology and the consequences of UPR pathways modulation. Particularly, we show that re-programming of the cell's RNA expression program (both mRNA and miRNA) through IRE1 could plays a key role in cell fate. Our *in vitro* data on cell survival suggest the benefits that therapeutics modulating the UPR could bring to improve organ quality and increase the efficacy of transplantation.

P49

ROLE OF MITOCHONDRIAL MODULATION DURING KIDNEY PRESERVATION: EVALUATION IN A PRECLINICAL MODEL OF DECEASED AFTER CIRCULATORY DEATH DONOR

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Background: Trimetazidine (TMZ), a modulator of mitochondrial metabolism, has shown protective properties in several ischemia reperfusion settings. We evaluated TMZ as an additive to preservation solution in a preclinical pig kidney transplantation model of deceased after circulatory death donor (DCD).
Methods: Groups of 7 animals were studied: sham; uninephrectomized (left kidney nephrectomy); IC60VIA (preservation with Viaspan); IC60VIA + TMZ10 (Viaspan + 10 mg/l TMZ); IC60VIA + TMZ20 (Viaspan + 20 mg/l TMZ). Kidneys were subjected to 60 min warm ischemia prior to collection and flushing with cold preservation solution. Function recovery, oxidative stress, inflammation and histological lesions were evaluated.
Results: Addition of TMZ significantly improved acute kidney function recovery ($p < 0.05$), particularly the 20 mg/l dose, as evidenced by serum creatinine evaluation. Tubular function as well as urine concentration were significantly improved ($p < 0.05$) during the first 2 weeks post transplant. Histological analysis at the end of the first week showed a decrease in kidney necrosis lesions and improvement of repair. During this last week, plasma levels of 8 iso-prostane, lipid peroxydation marker, were also decreased in treated groups, particularly in the 20 mg/l group. Plasma levels of pro-inflammatory cytokines TNF and IL6 were also decreased.
Conclusion: Added to the preservation solution in a model of DCD, TMZ limits the main lesion mechanisms of ischemia reperfusion injury. This type of molecule could also be interesting in conditioning regiments such as abdominal normothermic recirculation.

007 DONATION/RETRIEVAL

P50

SHIRAZ GUIDELINE FOR MANAGEMENT OF BRAIN DEATH CASES

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Objectives: The first kidney, liver and pancreas transplantations were carried out in Iran in Shiraz University of Medical Sciences in 1347, 1371 and 1385, respectively. In the course of time, the need for transplanting organs from brain dead cases has increased in a way that transplantation section of Shiraz University of Medical Sciences is currently practicing more than 400 liver, 40 pancreas and 250 kidney transplantations annually. The fact that a large number of patients waiting in the list for transplantation expire before receiving organs reveals the significance of the process of managing and maintaining brain dead cases.

Materials and Methods: Accordingly the first guideline for managing brain death cases in Iran has been developed in Shiraz University of Medical Sciences and can be applied in other centers. In the course of preparing this guideline, we precisely reviewed the latest guidelines presented by pioneer countries in this domain such as Spain, the United States, the United Kingdom, Australia and Belgium, and used precious experiences of team of specialists of anesthesia in organ transplant center of Shiraz University of Medical Sciences in order to make the guideline sound more native.
Results: The purpose of this guideline is to assess the principles of maintaining brain death cases after diagnosis in the ICU until organ removal in the surgery. The most important medical interventions practiced in brain death cases include: Respiratory aids and ventilator settings. Hemodynamic interventions. Interventions to control body fluids and electrolytes. Cardiovascular aids. Hormonal treatments. Regulation of body Temperature. Monitoring.
Conclusions: Preparing a guideline for managing brain death cases can serve as a great step toward standardization of the process of providing proper medical services for brain death cases and as a result for receivers of organs.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P51

COST EFFECTIVENESS OF BELATACEPT-VERSUS CYCLOSPORINE-TREATED RENAL TRANSPLANT PATIENTS USING RESULTS FROM THE BENEFIT STUDY

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Background: Belatacept (Nulojix) is an immunosuppressant in which improved renal function was observed in *de novo* transplant patients (pts) in the BENEFIT study [Vincenti F et al. Am J Transplant. 2012;12: 210–7]. Recent 7-yr data from BENEFIT [Vincenti F et al. 2015 (In development).] demonstrated continued graft survival and renal function profile favouring belatacept. The objective of this study was to evaluate the cost effectiveness (CE) of belatacept versus cyclosporine (CsA) in *de novo* kidney transplant pts.

Methods: We used an established economic model to project long-term graft and pt survival as a function of 3-yr post-transplant glomerular filtration rate (GFR) data from BENEFIT to estimate the CE of belatacept versus CsA. We evaluated 2 populations: A) across all BENEFIT pts and B) pts with post-transplant GFR < 30 ml/min/1.73 m^2. Outcome was measured in terms of incremental costs, life years (LYs) and quality-adjusted life years (QALYs) to estimate an incremental CE ratio (cost per QALY gained). A lifetime horizon was employed, with National Health Service as payer perspective, using UK 2013 costs with costs and benefits discounted at 3.5%.

Results: In scenario A, total discounted LYs were 14.76 and discounted QALYs were 7.14 for the belatacept cohort, representing an incremental gain of 1.25 (LYs) and of 0.97 (QALYs) compared with CsA. Incremental cost was estimated at £92 053, with a CE ratio that exceeded the UK £20 000 willingness-to-pay threshold. In scenario B, belatacept was associated with an incremental gain in discounted QALYs of 0.46 (4.22 vs. 3.76) compared with CsA and cost saving (-£1478).

Conclusion: Post-transplant GFR is an established predictor of long-term pt and graft survival. In pts with low post-transplant renal function, belatacept was predicted to be associated with improved health outcomes and cost saving compared with CsA.

023 KIDNEY

P52

VALIDATION STUDY OF SF-36 AND DISEASE SPECIFIC QUESTIONNAIRE ESRD-SCL IN SLOVENIAN KIDNEY TRANSPLANT PATIENTS

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Background: Health related quality of life is important indicator of treatment outcomes. Validation study of Slovenian versions of generic questionnaire Short Form -36 (SF-36) and disease specific questionnaire End Stage Renal Disease Symptom Checklist-TM (ESRD-SCL) was done in kidney transplant patients.
Methods: 58 stable kidney recipients responded to questionnaires two times (14–21 days in between). We assessed internal consistency and test-retest reliability. Construct validity was assessed by correlations of ESRD-SCL subscales with related subscales of SF-36. Discriminate validity of the questionnaires was explored in relation to clinical and demographic variables.
Results: Subscales of SF-36 and ESRD-SCL showed good internal consistency with Cronbach's alpha coefficients higher than 0.70 for all scales. Test-retest reliability was acceptable for ESRD-SCL subscales (intraclass correlation coefficients >0.69), but not for SF-36. Low retest reliability can be attributed to limited variability of results with ceiling and floor effect. Correlations among SF-36 and ESRD-SCL subscales supported construct validity. SF-36 subscales Physical Functioning and General Health discriminated well between groups of patients with results of haemoglobin concentrations, serum creatinine and number of medications taken daily bellow/above-median score. Significant differences in several other subscales related to gender, education and employment were found as expected.
Conclusion: Slovenian version of SF-36 and ESRD-SCL showed satisfactory results of internal reliability. Test-retest reliability is appropriate for ESRD-SCL, but not for SF-36. According to good internal reliability of SF-36 we however consider this questionnaire acceptable, but with a limitation to relate its results only to variables measured at the same time. Construct and discriminant validity of the questionnaires is supported by their inter-correlations and in relation to clinical and demographic variables.

025 LIVER

P53 THE PREVALENCE OF METABOLIC SYNDROME IN PATIENTS UNDERGOING LIVER TRANSPLANTATION IN IRAN

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Background: Metabolic Syndrome (MetS) is common among liver transplanted patients and contributes to morbidity and mortality. This study tried to determine the prevalence of metabolic syndrome in patients undergoing liver transplantation (LTx) in Iran.
Methods and Materials: Two hundreds and two liver transplant patients of both genders completed this cohort study information such as age, sex, underlying disease, systolic and diastolic blood pressure, waist circumference (WC), serum levels of fasting blood sugar (FBS), triglyceride (TG), and HDL-cholesterol were recorded. The prevalence of MetS was evaluated 1, 3, 6, 9, and 12 months after LTx.
Results: The prevalence of MetS was 36.6% after 1 month and decreased to 28.2% after 12 months. The lowest prevalence of MetS was detected 9 months after LTx (27.7%). Our data showed a decrease in TG and an increase in HDL level. No changes in blood pressure, WC and FBS were noticed during the study period.
Conclusion: The prevalence of MetS after LTx is high when compared to the normal population. It seems that a change in diet after transplant may affect the prevalence of MetS.

P54 HEPHAISTOS STUDY: DESIGN AND BASELINE DATA FROM EARLY INITIATION OF EVEROLIMUS-BASED TACROLIMUS REDUCTION IN *DE NOVO* LIVER TRANSPLANT RECIPIENTS

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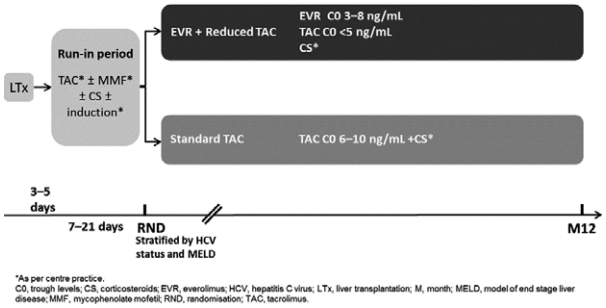
Purpose: Prolonged calcineurin inhibitor (CNI; tacrolimus [TAC]) exposure is associated with nephrotoxicity, and increased recurrence of CMV and HCV infections in liver transplant recipients (LTxR). Everolimus (EVR) prevents nephrotoxicity by facilitating CNI reduction and might offer anti-viral, anti-malignant and anti-fibrotic benefits. Here, we present the design and baseline data from the Hephaistos study evaluating the beneficial effects of early initiation of EVR in *de novo* LTxR.
Methods: Hephaistos is an ongoing 12-month (M), multi-centre, open-label, controlled study enrolling 330 *de novo* LTxR (1:1 ratio; 7–21 days post-Tx) to EVR (C0 3–8 ng/ml) with reduced (r) TAC (C0 < 5 ng/ml), or standard (s) TAC (C0 6–10 ng/ml) (Figure). All patients are administered induction therapy, mycophenolate mofetil, TAC, and corticosteroids as per local practice during run-in period. Randomisation is stratified by HCV status and lab MELD scores at transplantation. The primary objective of the study is to exhibit superior eGFR (MDRD-4 formula) with EVR + rTAC versus sTAC at M12. This study will also assess: the incidence of composite of treated biopsy proven acute rejection (tBPAR), graft loss, or death; the incidences of individual components of the composite efficacy endpoint; renal function by eGFR using MDRD4, Nankivell, Cockcroft-Gault, CKD-EPI and Hoek formulae; incidence of AEs, serious AEs and proteinuria; incidence and severity of CMV and HCV infections and HCV-related fibrosis.
Results: Currently 156 (out of 359 screened) LTxR are randomised (78 in each arm) from 15 centres across Germany. At baseline, mean age (54.04 vs. 54.21), male (77.8% vs. 62.5%), Caucasian (100% vs. 95.8%) and mean BMI (26.01 vs. 26.81) were similar in EVR + rTAC and sTAC arms, respectively.
Conclusion: Hephaistos study aims to show the benefits of early initiation of EVR + rTAC versus sTAC arm by evaluating the renal function, efficacy, and safety especially recurrence of HCC, HCV and CMV in the LTx setting.

Figure: Hephaistos study design



009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P56

FUNCTIONING ORGAN DONATION AND TRANSPLANTATION SYSTEM FOR A SMALL NATION – REALITY OR A DREAM?

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In Estonia first kidney transplantation was performed in 1968, liver transplantation in 1999 and lung transplantation in 2010. The last 10 years there has been a continuing development with the view to optimise the donor organ usage and to provide patients access to all organ transplants.

Aim of the study was to analyse the development of organ donation and transplantation activity over the last 10 years (2005–2014), to assess the impact of changes and establish a basis for further improvements.

On average, 26 deceased organ donors (19.6 pmp) have used every year in Estonia (population 1.3 million). Considerable fluctuations in donation activity were observed – from 10 to 35 actual donors per year. There are 3 active transplant programs – for kidneys, livers and lungs. An average number of kidney transplants per year has been 46 (35.2 pmp) ranged from 19 to 60. Living donor kidneys cover 9.4% of all transplants. Liver and lung transplant program have reached a stable level last 4 years - 9 liver and 3 lung transplantations per year (6.9 pmp for livers; 2.3 pmp for lungs). Preparations for pancreas transplant program are near to the end. Cardiac surgeons are able to implant cardiac assist devices on site and heart transplantations are available in Finland. Twinning program with Austria for heart – lung transplantations is soon to be launched. Estonia has agreements for organ exchange with Baltic States, Eurotransplant and Scandiatransplant. Mean number of harvested organs per donor was 3.7 in 2014, compared to 2.0 in 2005. Proportion of multiple organ donors has reached to 85%.

The organ donation and transplantation system in Estonia has improved significantly. There is a functioning network of procurement hospitals; majority of donors are treated as multiple organ donors; patients have access to all organ transplants. Further challenges are the promotion of living donation and memberhip on organ exchange network.

031 PEDIATRIC TRANSPLANTATION

P57

EVALUATION OF UNDERLYING LIVER DISEASE AND ITS SEVERITY IN CHILDREN WHO REFERRED FOR LIVER TRANSPLANTATION

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Background: Historically, children have an important role in the progression of liver transplantation. This group of patients form a significant percentage of patients included in the Liver Transplant Waiting List, but because of the lack of organs with the proper size, the mortality of this group of patients is very high and is about 25–40%. Since Organ Transplant Center in Shiraz University of Medical Sciences is the only pediatric liver transplant center over the country, so any plan for the patient needs to know the types and severity of the underlying disease and has a great importance.
Methods: The medical records of all patients under the age of 18 years which has been in the case of organ transplant coordination office were studied. The hospital records of all patients contains demographic information including age, sex, abnormal growth, the type of liver disease and the Laboratory data such as albumin, total bilirubin, and INR was recorded on a special form. Based on five criteria listed PELD and MELD Score of patients based on three criteria was calculated and the severity of the condition was determined.
Results: According to the data Cryptogenic cirrhosis (19.2%) has greater rate and biliary atresia (15.8%), and autoimmune hepatitis (11.7%) are in the next levels. Among the clinical symptoms of hepatitis jaundice (85.8%) was the most common as well as ascites (51.3%) and esophageal varices (38.3%) which are in second and third importance and prevalence level. Analysis of results show that the numerical ratings MELD and PELD has no significant differences in any of the age groups and also no statistically association with gender (p value $\geq$ 0.05).
Conclusion: The most common underlying disease which leads to liver transplant includes cryptogenic cirrhosis, biliary atresia and autoimmune hepatitis shown significant differences considering age groups, sex and prognosis.

P58

RISK FACTORS OF MORTALITY IN CHILDREN CANDIDATE FOR LIVER TRANSPLANT

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Background: Liver transplantation has become a well-recognized transplant modality for children with end-stage liver disease. The first indicator to evaluate its efficiency is mortality rate that various factors contribute to success liver transplantation in pediatric patients. The model for end-stage liver disease (MELD score) and pediatric end-stage liver disease (PELD score) are the best available predictor of waiting list mortality among liver transplant candidates. Hyponatremia has previously been shown to be a predictor of pre-transplant mortality in adult. This raises the possibility that or there factors not currently included in the PELD/MELD score such as (serum sodium, gastrointestinal bleeding and encephalopathy) may be associated with pre-transplant mortality. The aim of the present study is to evaluate the complications and mortality of liver disease in children waiting for transplantation understanding the risk factors that predict liver transplant waiting list death may help optimize organ allocation policy and reduce waiting death and to develop a tool that measures patient dependency and disease severity in children with liver disease.
Patient and Methods: This is a single-center prospective cohort study of all patient £ 18 years of age with chronic liver disease listed for liver transplantation. We analyzed medical records of 130 children for mortality risk factor during 2 years period.
Results: Among the children (mean 8.65 $\pm$ 6.02, range 3 mo–18 year; 52.3% boys and 47.7% girls) with most age group (12–18 year) listed for liver transplantation. The most common causes of cirrhosis were biliary atresia (21.5%), cryptogenic cirrhosis (18.5%) and Wilson's disease (16.9%). The most common complication while awaiting transplantation were failure to thrive (76.2%), gastrointestinal bleeding (38.5%), encephalopathy (24.6%), infection complication (16.9%), spontaneous bacterial peritonitis (14.6%), renal complication (3.8%) and pulmonary problem (3.1%). U.

023 KIDNEY

P59 KIDENY TRANSPLANT RECIPIENTS RECEIVING MTOR INHIBITORS EXPERIENCED TWICE AS MANY THROMBOTIC EVENTS: A SINGLE COHORT OBSERVATIONAL STUDY

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Introduction: Thrombotic events are ominous complications in Kidney Transplant Recipients (KTR): KTR receiving everolimus have been shown to have a pro-thrombotic state, which may be associated with more thrombotic events (MTE). We retrospectively analyzed the incidence of MTE in a cohort of unselected KTRs to evaluate if patients experienced more MTE while on mTOR-I.
Methods: 694 adult KTR (51.1 ± 12.8 years, 442 males = 63.7%) with a total follow-up time of 3943 pt-years (5.7 ± 3.7 years per patient). were divided in patients who ever received an mTOR-I (52 since KTx, 115 switched later) and those who have never been on mTOR-I (n = 527). MTE included deep vein thrombosis, pulmonary thromboembolism, acute myocardial infarction and ischemic stroke.
Results: The total time on mTOR-I was 575 pt-years (3.34 ± 2.57 years per patient). No major clinical differences were noted between groups, but patients on mTOR-I were older at the time of transplant (52.4 ± 10.8 vs. 50.6 ± 13.4 years, p = 0.036). During the follow-up, there were globally 59 MTE (8.5%), of which 35 (5.0%) were arterial and 24 (3.5%) venous events. The overall incidence rate of MTE was of 1.50 events per 100 pt-year, 2.78 events per 100 pt-year during mTOR-I therapy and 1.28 events per 100 pt-year while not on mTOR-I, with an incidence rate ratio of 2.18 (95%CI: 1.23–3.87, p = 0.003). MTEs occurred at a mean age of 57.30 ± 8.39 years and at 4.28 ± 3.79 years after starting mTOR-I therapy (range: 7 days – 10.8 years).
Conclusion: While waiting for novel cardiovascular risk models, we believe that immunosuppressive drugs should be considered in the cardiovascular risk evaluation and probably patients receiving sirolimus or everolimus could be considered as having a higher risk of MTE, especially for long time exposures.

P60 WHAT IS THE LEARNING CURVE FOR SINGLE-INCISION LAPAROSCOPIC DONOR NEPHRECTOMY? LESSONS FROM 148 CONSECUTIVE SINGLE-INCISION CASES IN NONSELECTED LIVE DONORS AND IMPLICATIONS FOR PATIENT SELECTION

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Single-incision laparoscopic nephrectomy (SI-LapNeph) requires only one short incision, but is technically more challenging as it is done through a single periumbilical port (as opposed to a multi-port procedure with, for example, a transverse suprapubic kidney extraction incision). The surgical learning curve of this new technique is unknown.
Methods: We studied SI-LapNeph (vertical 5-cm periumbilical midline incision) in 148 consecutive nonselected donors 10/2010—09/2013. All SI-LapNephs were done by a surgeon with >10 years multi-port LapNeph experience. We reviewed donor operation characteristics (duration; kidney extraction warm ischemic time) and other learning curve-relevant perioperative events (eg, conversion to a multi-port procedure; renovascular injury; blood transfusion; re-operation; wound complication). We analyzed donor and recipient outcomes by case Tercile (1st Tercile, Cases #1-#49; 2nd Tercile, #50-#98; 3rd Tercile, #99-#148).
Results: For the 148 donors (39% male), mean age was 43 yrs, mean wt was 75 kg, mean BMI was 26.2; 93% had left LapNeph; and 20% had multiple renal arteries. In all, we noted 6 graft losses at 8 to 39 months posttransplant (98.7% 1-yr graft survival). Other outcomes (p = n.s. for all inter-Tercile comparisons):
Conclusions: SI-LapNeph resulted in excellent donor and recipient outcomes in a setting of significant prior programmatic experience with multi-port LapNeph. These outcomes did not significantly change over time, thus suggesting the absence of a classic learning curve pattern. This finding may reflect the intrinsic technical complexity of SI-LapNeph, and has important potential implications for optimizing training in SI-LapNeph. Furthermore, the incisional hernias and other wound complications remained remarkably constant over time as well, suggesting that any pre-existing periumbilical fascial pathology (eg, rectus diastasis, umbilical hernia) should be taken into consideration when selecting donors for SI-LapNeph.

	1st Tercile (case #1 to #49)	2nd Tercile (case #50 to #98)	3rd Tercile (case #99 to #148)
Donor outcomes			
Mean operating time (min)	257	231	249
Mean warm ischemic time (min)	6	4	6
Donors with ≥1 non-wound complication learning curve event, *n*	8 (12%)	7 (11%)	8 (12%)
Donors with ≥1 wound complication learning curve event, *n*	4 (6%)	3 (5%)	5 (10%)
——incisional hernia, *n*	3	1	2
Recipient outcomes			
Delayed graft function, *n*	1 (2%)	1 (2%)	1 (2%)
Ureteral complication (incl. stricture), *n*	1 (2%)	0	3 (6%)
Technical graft loss, incl. graft thrombosis, *n*	0	0	0

007 DONATION/RETRIEVAL

P61

WHICH CREATININE-BASED FORMULA IS USEFUL TO ESTIMATE GLOMERULAR FILTRATION RATE IN DECEASED KIDNEY DONORS OLDER THAN 70?

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Introduction: The assessment of glomerular filtration rate (eGFR) in old deceased donors is crucial for allocation in renal transplantation: however none of the formulas used to estimate eGFR (Cockcroft-Gault (CG), MDRD and CKD-EPI) was validated in patients older than 70 years. The Berlin Initiative Study first developed the only GFR-estimating formula (BIS1) validated in elderly patients.

Methods: We compared eGFR estimated by BIS1 (BIS1-eGFR) with eGFR estimated with other equations (CG corrected by body surface area (CG/BSA), CKD-EPI and MDRD) in 82 consecutive deceased donors aged more than 70 (76.1 $\pm$ 4.3 years, 42 males = 51.2%).

Results: Mean BIS1-eGFR (70.4 $\pm$ 19.3 ml/min/1.73 m^2) was similar to CG/BSA-eGFR (73.4 $\pm$ 23.8 ml/min/1.73 m^2, p = 0.385), but was significantly lower than CKD-EPI (78.8 $\pm$ 17.3 ml/min/1.73 m^2, p = 0.003) and MDRD (87.5 $\pm$ 32.9 ml/min/1.73 m^2, p 60 ml/min/1.73 m^2 in 10% (2/20), MDRD-eGFR was >60 ml/min/1.73 m^2 in 35% (7/20) and CKD-EPI-eGFR was >60 ml/min/1.73 m^2 in 40% (8/20), with possible strong implication in organ allocation if BIS1 had been adopted.

Conclusion: Taken together these data seem to suggest that the BIS1 formula, so far neglected in the setting of renal transplant, could be considered to estimate GFR in patients older than 70.

023 KIDNEY

P62

SHORT AND LONG-TERM RENAL ALLOGRAFT SURVIVAL OF DECEASED DONOR TRANSPLANTS: A SINGLE CENTER EXPERIENCE IN TURKEY

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Background: Chronic kidney disease is a worldwide epidemic and when end stage renal disease develops, renal transplantation is the best treatment of choice.
Methods: We retrospectively analysed 72 cadaveric transplant patients, which were grafted between January 2002 and October 2013 at Renal Transplantation Unit of Ankara University School of Medicine. Demographic properties, immunologic and nonimmunologic characteristics of both recipients and donors and also posttransplantation allograft function and complications were determined. Factors associated with graft and patient loss were investigated.
Results: Mean follow-up was 60 $\pm$ 38 months. Mean age of recipients were 42 $\pm$ 11 years and 51.4% were male. Pretransplant PRA I or II positivity were seen in 19.7% of patients. Dialysis vintage was 83 $\pm$ 59 months. Delayed graft function was observed in 47.2% of patients and acute rejection was observed 20.8% of patients at the follow-up. 5 patients (6.9%) had graft loss and patient loss was seen in 5 recipients (6.9%). One and 5 year graft survival rates were 94.4%, 92.3%; patient survival rates were 97.2%, 89.9%, respectively. High creatinine value at discharge ($p = 0.001$) and early operative complications, such as ureteral necrosis, urinary leak, perirenal hematoma, ($p = 0.017$) were associated with poor graft survival and both were independent risk factors. Recipient age over 46 years ($p = 0.037$) and presence of cardiovascular disease ($p = 0.017$) were risk factors for patient loss. In multivariate analysis cardiovascular disease was independently associated with patient loss (HR = 6.45 [1.08–38.70], $p = 0.041$).
Conclusion: In this study, while high creatinine value at discharge and early operative complications were assosiated with allograft loss, presence of cardiovascular disease was associated with patient loss in deceased donor kidney transplantation. These data is useful and important for selection of patient, selection of donor, and posttransplant monitoring of the recipient.

P63

COMPLICATIONS FOLLOWING LIGATION OF UPPER LIMB ANEURYSMAL ARTERIOVENOUS FISTULAE

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Aims and Methods: We would like to highlight four clinical cases to illustrate examples of complications that were a direct consequence of simple "ligation" of an arteriovenous fistula (AVF) aneurysm.
Results: *Malignancy:* A 49y renal transplant patient with an 11y thrombosed brachiocephalic fistula presented with swelling proximal to the ligation site. Wide local excision and histology revealed grade III epithelioid angiosarcoma. Despite clear resection margins the patient developed pulmonary metastasis and died within 1 year of presentation.

Stump aneurysm: In a 71y transplant patient, ligation of a brachiocephalic fistula led to a stump aneurysm with progressive enlargement. This was associated with thrombosis in the aneurysm which was subsequently excised.

Thrombosis and distal embolisation: A 59 year old male with a ligated brachiocephalic fistula presented with an acutely ischaemic hand. This was due to the presence of thrombus in the brachial artery stump with embolization down the ulnar artery. This episode was managed conservatively with anticoagulation followed by aneurysmal fistula excision and brachial artery reconstruction.

Infection and phlebitis: A 62-year-old patient with background of Hepatitis C associated immune complex disease had a disused AVF ligated, due to pain associated with phlebitis. The patient continued to have recurrent wound infections and phlebitis in the thrombosed remnant requiring continual antibiotics for 6 months until the remainder of the aneurysmal fistula was excised.
Conclusions: Simple ligation of an AVF may be necessary in an emergency situation, but in the majority of cases these patients remain symptomatic post ligation. We would therefore advocate total excision with reconstruction of the feeding artery as first line treatment of aneurysmal AVF's.

025 LIVER

P64

PROOF OF CONCEPT: LIVER SPLITTING DURING NORMOTHERMIC MACHINE PERFUSION

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Background: Despite utilising extended criteria donors, there remains a shortage of livers for transplantation. Normothermic machine liver perfusion (NMLP) is being trialled to assess its efficacy in viability testing and reducing ischaemia-reperfusion injury. We report a case of an untransplantable liver that remained viable after splitting with concurrent NMLP.

Methods: A liver from a 69 year old female DCD donor, with a warm ischaemic time of 34 min, was rejected for transplantation by all UK centres. After 8 h 49 min of cold storage, NMLP was initiated using the Liver Assist Device (Organ Assist, NL) with a packed red cell based fluid at 37°C. During NMLP, a left lateral + right trisegmentectomy split was performed using a handheld integrated bipolar and ultrasonic device (Thunderbeat, Olympus). Flow parameters, blood gas analysis and bile production were recorded at 30 min intervals. At the end of the procedure, blood flow was confirmed using Doppler ultrasound in each lobe.

Results: Prior to splitting, after 6 h 28 min of NMLP the hepatic arterial and portal venous flow rates were 500 ml/min and 1510 ml/min respectively. Lactate decreased from 13.9 to 3.0 mmol/l and 11 g of bile was produced. Duration of left lateral + right trisegmentectomy splitting was 71 min. Lactate levels before and after dissection were similar in the left and right hepatic arteries and portal veins as well as the IVC (before: 2.7–2.8 mmol/l; after: 2.6–3.0 mmol/l respectively). Bile production continued throughout splitting. Doppler ultrasound demonstrated expected arterial and venous waveforms in both lobes after splitting. No additional blood was required for the NMLP circuit.

Conclusion: Classical left lateral + right trisegmentectomy liver splitting with concurrent NMLP is feasible in maintaining viability of both lobes. Establishment of this procedure has the potential to reduce the effects of cold ischaemic bench splitting on split graft outcomes.

023 KIDNEY

P65 ALLOCATION STRATEGY FOR KIDNEY ALLOGRAFTS IN RETRANSPLANTATION

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Background: Kidney retransplant candidates are often sensitized to a wide variety of HLA antigens and disadvantaged by a reduced chance of receiving crossmatch negative organ and prolonged waiting times. The presence of donor specific antibodies (DSA) is associated with increased risk of antibody mediated rejection (AMR).
Objectives: The study was aimed to assess the incidence of AMR and patient access to retransplantation in two different era of anti HLA antibodies detection and kidney allocation.
Methods: In our study, clinical outcome of 144 patients who had undergone deceased donor kidney retransplantation in 5/2008–12/2013 was evaluated. In 5/2008–2/2011 there was no other limit than positive CDC before retransplantation while in 3/2011–12/2013 kidney allocation was modified using Luminex-based definition of unacceptable mismatches. Unacceptable mismatches were defined as mismatched HLA antigens in previous transplantation against which the recent recipient produces donor specific antibodies (DSA, MFI $>$ 1000) and other DSA were allowed if CDC was negative. The incidence of acute rejection, graft survival and access to transplantation were evaluated.
Results: In 211 out of 234 patients awaiting retransplantation, the anti HLA antibodies were detected in 2011–2013, and in 167 patients the unacceptable HLA antigens mismatches (UAM) for allocation were defined. Retransplantation was performed in 90 patients in 5/2008–2/2011 and in 54 in 3/2011–12/2013. After implementation of new allocation system, the proportion of retransplanted patients from those listed for retransplantation has decreased (62% vs. 35%; $p = 0.0001$) similarly to proportion of performed retransplantations from all deceased donor kidney transplantations (21% vs. 13%; $p = 0.0008$). The incidence of AMR was similar (20% vs. 29%; $p = 0.2253$).
Conclusion: Restriction of previous donor HLA antigens with current antibody production limits access to retransplantation but does not reduce the incidence of AMR.

P66 KIDNEY TRANSPLANTATION IN PATIENT WITH HISTORY OF MALIGNANCIES AND MULTIPLE COMORBIDITIES

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Background: Patients with ESRD (end stage renal disease) who have been successfully treated for cancer are generally considered to be suitable for renal transplantation. The incidensce of colon cancer in renal transplant recipients in not elevated during the first 10 years after transplantation. It is recommended to wait at least 5 years before transplantation for patients treated for colon cancer.
Methods: Case report.
Results: Male patient, 58 years, was diagnosed with pulmonary sarcoidosis 25 years ago. He was on prednisolone therapy. By the time he developed extra pulmonary manifestations including bilateral kidney calcifications and CKD 23 years ago. He had total thyreoidectomy in 1991 due to medullary thyroid cancer. Six years ago he was diagnosed colon adenocarcinoma in C2pT3N2B stage with secondary deposits in lymph nodes. He was treated with 6 cycles of capecitabine after left hemicolectomy. He also had splenectomy. He was diagnosed multi ischemic changes in the brain. From 2011 he developed arterial hypertension and ESRD. He started hemodialysis treatment in 2014. He developed diabetes type 2 two years ago. Control colonoscopy was done a year ago and three polyps were removed. Histopathological analyses showed low grade dysplasia. Tumor markers, CT tomography of whole body showed no recurrence of malignant disease. PET scan of whole body was performed twice in last year and showed no signs of malignant disease.
Conclusion: Patient was treated with living related kidney transplantation. He was treated with basiliximab, cyclosporine, mycophenolate mofetil and prednisolone. He was converted in sirolimus regimen 3 months after transplantation. Patient is under frequent oncology controls with good graft function. In case of someat increased risk of recurrence a longer waiting interval of 5 years should beconsidered. The risk of tumor recurrence has to be balanced against the benefits of renal transplantation for each.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P67

ELEVATED LEVELS OF BIOMARKERS IN PERFUSATE TO IDENTIFY POOR QUALITY MACHINE-PERFUSED ECD/ DCD KIDNEYS

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Background: DCD and ECD kidneys are associated with higher risk of failure compare to SCD kidneys. Therefore we see increasing need to identify sensitive tool to assess quality of these kidneys prior transplantation and predict their outcomes. Hypothermic machine perfusion (HMP) is known to improve transplant outcomes compare to static storage but cannot be used as sensitive kidney quality assessment tool. However, it was suggested that monitoring of biomarkers in HMP perfusate could correlate with early post-transplant outcomes. Some novel biomarkers (e.g. NGAL, KIM-1, AST, LDH) appears offering better accuracy compare to conventional biomarkers (i.e. creatinine) for the diagnosis of Acute Kidney Damage. We conducted study to determine correlation between concentration of NGAL, KIM-1, AST, LDH in machine perfusate of ECD/DCD kidneys and transplant outcomes.
Study: Total, we studied 19 kidney grafts preserved on a LifePort®, perfused with KPS-1 solution. Perfusate was sampled at 15 min, 1, 2 and 3 h. We measured level of NGAL, KIM-1, AST and LDH using automated ELISA assay and correlate with donor/recipient demographics and kidney outcomes (DGF, PNF, eGFR at 1, 3 and 6 months).
Results: Concentration of all biomarkers steadily increased during first 3 h of HMP. Fourteen kidneys developed functional DGF but we found no correlation with the level of biomarkers in this group. No one kidney developed PNF. In two kidneys, NGAL at 15 min strongly correlated with 3 months eGFR (R^2 = 0.092). Levels of other three molecules at 2 h correlated with 3 and 6 months eGFR (R^2 = from 0.102 to 0.243) in same kidneys, but different to those with elevated NGAL.
Conclusion: Our data indicate that concentration of all biomarkers in perfusate correlates with post-transplant kidney function and can be used to identify poor quality kidneys. But more data are required.

023 KIDNEY

P68

THOUGH WE WALK THROUGH THE VALEY OF THE SHADOW WE WILL FEAR NO... MINIMIZING CALCINEURIN INHIBITORS EXPOSURE WITH EVEROLIMUS

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Background: Calcineurin inhibitors (CaIn) chronic nephrotoxicity have significant impact on renal allograft survival. Therefore, minimizing CaIn exposure *ab initio* is important in achieving better outcomes. New protocols with everolimus are being developed raising concerns for its side-effects.
Methods: The authors conducted a one-year retrospective and observational study to compare low-dose tacrolimus (0.15 mg/Kg/day) plus everolimus (study group) with standard-dose tacrolimus plus antiproliferative agents (control group) in a renal transplantation unit in Portugal. The study group included 28 patients and control 34. The end-points were renal allograft function, biopsy-proven acute rejection (BPAR), proteinuria levels, surgical complications and new-onset diabetes after transplantation (NODAT) rates.
Results: Delayed graft function (DGF) was present in 17.9% of the study group vs. 26.5% of the control ($p = 0.352$). Mean serum creatinine ranged from 1.29 to 1.57 mg/dl with no statistically significant differences. Tacrolímus serum levels in the study group were significantly lower on the 3rd, 6th and 9th month post-transplantation ($p = 0.003$, 0.010 and 0.006). Proteinuria levels were low (from 7.04 to 13.93 mg/dl) and similar between groups. There were no cases of BPAR in the study group and only 5.9% in the control group, carrying no significance ($p = 0.498$). Lymphocele and urinary fistula had an 5.9% incidence in control group against none in the study group ($p = 0.498$). Surgical wound dehiscence occurred in 3 patients in both groups. Incidence of NODAT was similar between groups (control 23.5% and study 14.8%, $p = 0.522$).
Conclusion: There wasn't more DGF in the study group and renal allograft function was similar between groups with statistically significant lower CaIn exposure between the 3rd and 9th month post-transplantation and without increasing BPAR rates. Everolimus may be an option for our protocols when preventing CaIn chronic nephrotoxicity is a priority.

P69

EFFECTIVENESS OF PREOPERATIVE HYDROSTATIC DILATATION OF CONTRACTED BLADDER FOR KIDNEY TRANSPLANTATION

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Purpose: Chronic renal failure (CRF) patients may have contracted bladder which is the result of disuse atrophy and fibrosis of bladder mucosa and muscle. Contracted bladder brings many difficulties to conduct ureteroneocystostomy in kidney transplantation. So many authors have suggested that preoperative bladder augmentation using intestine and ureter etc. could have increased success rate in kidney transplantation. These methods, however, have been studied in pediatric tansplantation in most cases and known to have many complication associated with medical and surgical treatment. Since the late 1960s, a hydrostatic dilatation of bladder used as a treatment in patients with urgency, urge incontinence, interstitial cystitis and bladder tumor. We applied this method to dilatate the bladder in recipients who had contracted ones.
Methods: In our hospital, we did 655 kidney transplantations from August, 1990 to February, 2015. Among them, we attempted the hydrostatic dilatation of bladder in 33 patients with contracted bladder <100 cc in capacity. We inserted 18 Fr-3 way Foley catheter and instilled 50–100 cc normal saline gravitationally in 80cmH2O without any kinds of anesthesia. We declamped Foley catheter when patients could not withstand. We repeated it from 5 times to 10 times daily. We started this procedure to the patients 7th day before operation and ceased it at least 2 days before operation.
Results: Predilatation volume ranged 60–100 ml (average 85.6 ± 15.0 ml) and postdilatation volume did 70–250 ml (average 183.3 ± 47.0 ml). There was no complication associated with the hydrostatic dilatation of contracted bladder and ureteroneocystostomy. Double J catheter was not applied in our series. There was no loss of transplanted kidney.
Conclusion: Our results suggest that pretransplant hydrostatic dilatation of contracted bladder can make ureteroneocystostomy more easier and increase success rate of kidney transplantation.

025 LIVER

P70

PERIOPERATIVE CHANGES IN BODY WEIGHT AND SERUM CREATININE LEVELS PREDICT SEVERE POSTOPERATIVE COMPLICATIONS AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background: The short-term morbidity rate after liver transplantation (LT) remains high. Many studies have identified preoperative and intraoperative factors that are associated with post-LT mortality and morbidity. The aim of this study was to investigate the associations between short-term outcomes and perioperative variables, especially serum creatinine (sCr) and body weight (BW), focusing on the changes in these variables before and shortly after living donor LT (LDLT).

Method: Between January 2003 and December 2014, 62 adults underwent LDLT in our hospital. All of these patients were included in the present study, except for one re-transplant case. We examined whether perioperative variables, including the platelet count, sCr, and BW, were associated with severe complications and mortality after LDLT.

Results: Severe complications (Clavien–Dindo grade IIIb or worse) occurred in 32 patients (52%) and 7 patients (11%) died within 90 days after surgery. Receiver-operating characteristic curve analysis and logistic regression analysis revealed that a low preoperative platelet count (cutoff 85 000/mm^3; odds ratio 12.0; $p = 0.02$), a high ratio of BW at postoperative day 5 (POD5) to preoperative BW (cutoff 1.02; odds ratio 9.5; $p = 0.01$), and a high ratio of sCr at POD5 to preoperative sCr (cutoff 1.22; odds ratio 33.3; $p = 0.02$) were independent predictors for severe complications after LDLT. By contrast, there were no independent predictors for operative mortality. The 10-year overall survival rate was significantly different between patients with low ($\leq$85 000/mm^3) or high ($>$85 000/mm^3) platelet counts (43.6% vs. 90.0%, respectively, $p = 0.02$) and between those with high ($\geq$1.22) or low ($<$1.22) sCr changes at POD5 (33.3% vs. 71.2%, respectively, $p < 0.01$).

Conclusion: The preoperative platelet count and the changes in BW and sCr from before surgery to POD5 were independent predictors of severe complications after LDLT.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P71

PRE-TRANSPLANT TACROLIMUS EXPOSURE PREDICTS POST-TRANSPLANT DOSE REQUIREMENT

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Erasmus MC

Background: The aim of this study was to investigate whether pre-transplant tacrolimus (Tac) dose requirement in patients scheduled to undergo kidney transplantation correlates with post-transplantation dose requirement.

Method: The predictive value of Tac dose requirement pre-transplantation on this same parameter post-transplantation was assessed retrospectively in a cohort of 57 AB0-incompatible kidney transplant recipients. These patients started with immunosuppressive therapy pre-emptively 14 days before surgery.

Results: Sixty-three percent of the Tac dose requirement on day 3 post-transplantation was explained by the Tac dose-corrected predose concentration immediately before transplantation. Serum albumin and hematocrit explained an additional 8.5% of the variance in Tac dose requirement on day 3 post-transplantation.

Conclusion: Steady-state Tac exposure before transplantation largely predicts post-transplantation Tac dose requirement.

023 KIDNEY

P72

CIPROFLOXACIN PROPHYLAXIS FOR BK VIRUS NEPHROPATHY IN RENAL TRANSPLANT RECIPIENTS: A PROSPECTIVE COHORT STUDY

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Polyoma (BK) virus nephropathy (BKVN) is an increasingly recognized complication after kidney transplantation. From November 2012, we prospectively prescribed our adult renal transplant recipients ciprofloxacin at 250 mg twice daily from day 1until 6 months after transplantation as a prophylaxis against BKVN. For this analysis, we included transplants until February 2014 to allow for at least 12 months follow up. We monitored BK viral DNA in plasma by quantitative polymerase chain reaction (PCR) at months 1, 3, 6, 9, 12 posttransplant and whenever an unexplained rise of serum creatinine took place and a transplant biopsy was indicated. BK viremia was defined by detection of DNA in plasma at more than 200 copies/ml and sustained viremia by presence of the virus in 2 successive, 3 months apart, plasma samples. A plasma DNA level of 10^4 copies/ml or more was an indication to screen on monthly basis. Immunosuppressive dose reduction or discontinuation was not attempted for any level of BK viremia. Patients who developed an unexplained rise of serum creatinine underwent kidney biopsy. Protocol biopsies were done for highly sensitized recipients only. The end points were a biopsy-verified BKVN, BK viremia, peak viral loads and ciprofloxacin-induced side effects. A total of 130 adults received renal transplants during the study period. Thirty nine percent were pre-sensitized, 91% received anti-thymocyte globulin induction and 93% were immunosuppressed with prednisone, tacrolimus and mycophenolate mofetile. At a median follow-up of 23 months, a total of three patients developed viremia, one patient had a viral load of $>10^4$ copies/ml and no recipients had persistant viremia. A total of 62 biopsies were performed for 41 patients. None of the indicated or protocol biopsies showed BKVN. Ciprofloxacin was well tolerated with no side effects. Our study indicates that the use of ciprofloxacin for prevention of BKVN is safe and effective without immunosuppression reduction.

015 INFECTIONS

P74

EFFICACY OF NEW ANTIVIRALS IN LIVER TRANSPLANT RECIPIENTS WITH SEVERE RECURRENT HEPATITIS C IN A LARGE VOLUME TRANSPLANTATION CENTRE IN A LIMITED RESOURCE SETTING

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Background: In limited resource settings (LRS), using new direct-acting antivirals in combination with Peginterferon and Ribavirin still remain an option. Aim: To present our limited experience with boceprevir and sofosbuvir interferon-based regimens in patients with severe recurrent hepatitis C.
Method: Six patients with severe recurrent (F4 fibrosis stage) hepatitis C were treated with Boceprevir, Peginterferon alpha2b and Ribavirin for 48 weeks, and 3 patients received Sofosbuvir, Peginterferon alpha2a and Ribavirin for 24 weeks.
Results: In the Boceprevir group, on-therapy virologic response (VR) after lead-in phase and 12 weeks was 33.3% (2/6 patients) and 100% (6/6 patients), respectively; end-of-therapy VR in this group was 100% (6/6 patients), but SVR24 was 83.5% (5/6 patients). However, in 4 LT recipients treated with Boceprevir-based regimen, therapy was prematurely stopped due to severe adverse events after 4 (immune induced hepatitis), 6 (severe anorectal symptoms), 7 (autoimmune cholangitis) and 9 months (severe anemia requiring repeted transfusions and denutrition). Despite the premature discontinuation of therapy, only the last patient relapsed. Four out of six patients treated with Boceprevir developed severe anemia requiring eritropoetin (EPO) and blood transfusions. In the Sofosbuvir group, on-therapy VR was 100% at 4, 12 and 24 weeks, SVR4 100% (3/3 patients), while SVR12 is not yet available. One patient in this group, showing moderate renal impairment (creatinine clearance 55 ml/min) presented mild-to-moderate anemia during the therapy.
Conclusion: Although carefully monitoring and intervention during therapy allowed achieving a high SVR24 of 83.5%, Boceprevir-based therapy was associated with severe adverse events, expensive interventions and therapy discontinuation. Sofosbuvir based therapy in combination with Peginterferon and Ribavirin is not only highly curative but also well tolerated in patients with severe recurrent hepatitis C after LT.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P75

SINGLE NUCLEOTIDE POLYMORPHISMS OF CYP3A SUBFAMILY AND P-GLYCOPROTEIN INFLUENCE PHARMACOKINETICS OF ONCE-DAILY EXTENDED RELEASE TACROLIMUS IN LIVER TRANSPLANT RECIPIENTS

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Background: The oral bioavailability of tacrolimus (TAC) varies greatly between individuals and depends on the activity of both the cytochrome P450 3A (CYP3A) subfamily and P-glycoprotein (P-gp, MDR-1). Aim: To study the influence of single nucleotide polymorphisms (SNPs) of CYP3A subfamily and P-gp on pharmacokinetics of TAC in liver transplant recipients.
Methods: Kruskal-Wallis test and repeated analysis of variances were performed for global comparison of subgroups of patients with different genotypes of each analysed SNP. AUROC curves were constructed to define the best cut-off dose of TAC to distinguish between different genotypes.
Results: Advagraf dose differs significantly according to CYP3A5 genotypes at week 1 ($p = 0.02$), 2 ($p = 0.03$), month 1 ($p = 0.01$), month 3 ($p = 0.04$). Patients with homogyzous G/G SNP of the CYP3A5 require a significantly higher dose of Advagraf compared to G/A and A/A genotypes at all analysed time points. According to CYP3AP genotypes, there was a significant difference regarding the dose of Prograf at month 0 ($p = 0.03$) and Advagraf at week 1 ($p = 0.04$). Patients with homogyzous A/A SNP of the CYP3AP require a significantly higher dose of Advagraf compared to G/A and G/G genotypes at all analysed time points. MDR 26 genotype C/C patients require a higher dose of Advagraf at month 6 (4.7 ± 0.5 vs. 3.2 ± 0.2 mg, $p = 0.01$). There is also a significant difference regarding Advagraf dose requirements between groups with CYP3A5 genotype G/G + CYPAP A/A + MDR1 C/C versus the group with other genotypes ($p < 0.001$); the differences between measurements of TAC dose at different time points are statistically significant and depend on group membership ($p = 0.02$). For patients with both CYP3A5 GG and CYP3AP AA genotypes and also MDR 26 CC genotype the AUROC is 0.94 for defining the optimal cut-off for TAC dose (4.5 mg/day) at month 1 after conversion to Advagraf.
Conclusions: CYP3A5/AP and MDR1 genotypes influence dose requirements of both Prograf and Advagraf.

031 PEDIATRIC TRANSPLANTATION

P76

PEDIATRIC LIVER TRANSPLANTATION IN CITRULLINEMIA

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Citrullinemia or arginosuccinate synthetase (ASS) deficiency classically presents in the neonatal period with poor feeding, vomiting, hyperammonemia and encephalopathy. Acute management includes treatment of the hyperammonemia, while protein-restricted diet with ammonia-lowering agents are required lifelong. Despite medical management, long-term sequelae remain suboptimal.

A restrospective review of all patients with ASS deficiency referred to a tertiary pediatric liver center in the UK was conducted.

Eight children were identified (6 male, median age at referral 1.5 yrs). All presented in the neonatal period with hyperammonemia. All were treated with protein restriction, sodium benzoate and sodium phenylbutyrate. Six had developmental delay and required gastrostomy feedings. Indications for liver transplantation (LT) were frequent metabolic decompensations (5), ALF (1) and elective (2) for improved quality of life. Six children were transplanted while 2 are awaiting surgery. Median age at LT was 1.55 yrs. Five children received 6 left lateral segment grafts while one received a living-related left lateral segment as an auxiliary graft. Post-LT complications included aspiration pneumonia, lymphoproliferative disease (2), subclavian vein thrombosis (1) and hepatic artery thrombosis (HAT) (1). One graft was lost due to HAT, retransplanted within 2 weeks. Graft and patient survival was 93% and 100% respectively. Median follow up post-transplant is 1.6 years. All children are off ammonia-lowering agents and protein restricted diet. Tracrolimus and prednisolone in 5 and prednisolone alone in 1 are the mainstays of immunesuppression. Ammonia post transplant is $<$50 mmol/l in all and median citrulline is 242 micromol/l with normal range 8–57 μmol/l. Feeding, developmental skills and subjective quality of life have improved in all following transplant.

LT is an effective mode of management for early onset of ASS deficiency and should be considered.

023 KIDNEY

P77

IMPACT OF CHANGES IN SERUM VITAMIN D STATUS ON RENAL FUNCTION AND VASCULAR CALCIFICATION AFTER KIDNEY TRANSPLANTATION: KNOW-KT COHORT STUDY 1-YEAR FOLLOW UP DATA

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Background: Little is known about the effect of serum calcidiol status between pre- and post-kidney transplantation (KTx) on graft function and vascular calcification.
Methods: We analyzed 142 KTx recipients in prospective multicenter cohort study. The 25(OH) vitamin D levels were measured before and 1 year after KTx. We classified the patients into improved group ($n = 62$) and no improvement group ($n = 80$) according to the changes in 25(OH) vitamin D status. Vascular calcification was measured by Kauppila score on lateral lumbar spine X-ray image.
Results: Among 142 recipients, 19.0% had calcidiol deficiency (30 ng/ml) at 1 year after KTx. The estimated glomerular filtration rate (eGFR) at 1 year after KTx was 66.9 $\pm$ 20.0 ml/min in the improved group, and 60.1 $\pm$ 16.1 ml/min in no-improvement group ($p = 0.026$ by t-test). The improved group was significantly associated with better eGFR in multiple linear regression analysis adjusted with age and type of donor (beta = 0.182, $p = 0.032$). In deceased donor subgroup analysis adjusted with age, gender, 25(OH) vitamin D level at baseline, and kidney donor risk index, the improved group was also significantly associated with better eGFR (beta = 0.323, $p = 0.029$). The use of vitamin D supplement was more frequent, and persistent hyperparathyroidism was less common in the improved group (24.2% vs. 11.3% $p = 0.041$, and 35.5% vs. 53.8% $p = 0.030$, respectively). Although the Kauppila scores were increased in both groups, the changes of score were not different significantly (0.9 $\pm$ 1.5 vs. 0.5 $\pm$ 0.9, $p = 0.301$). The no improvement group had a tendency of higher cardiovascular events than improved groups (7.5% vs. 1.6%, $p = 0.108$)
Conclusions: Improvement of 25(OH) vitamin D level from pre- to post-KTx was associated with better allograft function at 1 year after KTx. It suggests that 25(OH) vitamin D may play an important immunologic role in maintaining graft function after KTx.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P78

CAPSULOTOMY DURING HYPOTHERMIC MACHINE PERFUSION OF ISCHEMICALLY DAMAGED PORCINE KIDNEYS IMPROVES MICROVASCULAR PERFUSION

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Background: Ischemic injury is inevitable in donation after circulatory death (DCD) kidneys. Endothelial injury and edema is caused by ischemic injury, leading to reduced tissue perfusion and additional ischemic injury to the organ. This phenomenon is well known in other tissues and described as compartment syndrome. For compartment syndrome in general, opening of the compartment and reducing intra-compartmental pressure is the treatment of choice. However, opening the renal compartment by capsulotomy is rarely performed. Therefore, we studied the effect of capsulotomy on the perfusion of ischemically damaged hypothermically machine perfused porcine kidneys.

Methods/Materials: Both kidneys of eight slaughterhouse pigs were retrieved and assigned into two groups: 20 and 45 min of warm ischemia. After initial flush and transport to our laboratory, they were simultaneously perfused using hypothermic machine perfusion (HMP) for 21 h, after which a capsulotomy was performed. Thereafter, HMP was continued for another 2 h. During HMP, flow, renal resistance, renovascular circulating volume, intraparenchymal pressure and weight were recorded. Parenchymal injury was examined after methylene blue infusion.

Results: Capsulotomy directly improved microvascular perfusion in all kidneys. Mean flow and renovascular circulating volume increased (percentage increase [95% confidence interval], Δflow = 32% [17.47], $p = 0.001$ and Δrenovascular circulating volume = 19% [3.35], $p = 0.023$). Renal resistance decreased (Δrenal resistance = -23% [-31, -15], $p < 0.001$). We did not find any different effect between warm ischemia groups. Parenchymal injury was not observed after methylene blue infusion.

Conclusion: Capsulotomy during HMP improves microvascular perfusion of ischemically damaged porcine kidneys, without damaging the renal parenchymal tissue. Further studies have to evaluate which kidneys are suitable for this intervention and benefit most.

025 LIVER

P79

SURGICAL TREATMENT OF COMPLICATIONS AFTER RELATED LIVER TRANSPLANTATION IN THE CITY CLINICAL HOSPITAL №7 (CORRECTION OF COMPLICATIONS)

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The Goal:
Reflect the possibility of surgical treatment of complications in postoperative period after orthotopic liver transplantation in city hospital of Almaty city.
Material and Methods: The liver transplantation is performed on the base of hepatopancreatobiliary surgery and liver transplantation in city clinical hospital №7 Almaty city from 16 December 2014 year. Under a memorandum of international cooperation in liver transplantation at the initial stage of its development was carried out in conjunction with leading transplants surgeons from Apollo Hospital, New-Delhi, having vast experience in the related orthotopic liver transplantation. Up to this day was performed 6 related orthotopic liver transplantation and 1 cadaver liver transplantation. The sixth liver transplantation in post-transplant period flowed with complicated course. Patient M., 51 years old operated about liver cirrhosis in the outcome of overlap defeat. PBC 3–4 stage and autoimmune hepatitis, Child-Pugh class C (10 points), MELD SCORE 16 (27%). Diabetes mellitus, 2 type. IAP, severe course, subcompensation. Operation 16.11.2014 "Laparatomy by Calne, hepatectomy, implantation of related donors liver, right lobe (Sg. V, VI, VII, VIII). Post operative period dynamic monitoring of arterial, portal, caval blood flow conducted continuously, 2 times per day on apparate Philips HD 11x. On the 4th day after transplantation on vascular doppler ultrasound of hepatic vessels, the arterial blood flow is absent. Thrombosis of hepatic arterial anastomosis was conformed at CTA.

023 KIDNEY

P80

GERIATRIC NUTRITIONAL RISK INDEX MAY BE A SIGNIFICANT NUTRITIONAL FACTOR IN RENAL TRANSPLANTATION PATIENTS ACCORDING TO THE PRESENCE OR ABSENCE OF CHRONIC KIDNEY DISEASE

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Background: Evaluation of nutritional status is essential clinical procedures for managing renal transplantation patients, especially in status of chronic kidney disease (CKD). However, no standard method for assessing the nutritional status in renal transplantation patients with CKD exists. The GNRI is a very simple and objective method to assess nutritional condition, using only three objective parameters: body weight, height and serum albumin values.

Methods: We examined the GNRI scores of 184 renal transplantation patients (50.2 $\pm$ 11.3 years; 115 men and 69 women). The GNRI is calculated based on the serum albumin level and total lymphocyte count and uses the following equation: GNRI = [14.89 $\times$ albumin (g/dl)] + [41.7 $\times$ (weight/ideal body weight)]. Logistic regression analysis was performed for predicting malnutrition in renal transplantation patients.

Results: The average GNRI value was 104.8 $\pm$ 10.6, and GNRI values were normally distributed. According to logistic regression for predicting malnutrition, serum albumin and CKD predicted malnutrition in renal transplantation patients.

Conclusions: These results suggest that GNRI may be a significant nutritional marker in renal transplantation patients. The simple GNRI method is a clinically useful marker for the assessment of nutritional status in renal transplantation patients.

Table 1. Clinical characteristics of 184 kidney transplantation patients according to GNRI

Variables	GNRI ≥ 100 (n=138)	GNRI < 100 (n=46)	P
Male/Female (n)	88/50	19/27	0.538
Diabetes (−/+)	123/21	32/8	0.378
Chronic Kidney Disease (−/+)	87/51	10/36	0.001
Tacrolimus/Cyclosporin	32/106	4/42	0.032
Age (years)	49.7 ± 11.1	51.9 ± 11.8	0.246
Duration after kidney transplantation (months)	112.9 ± 66.1	133.0 ± 67.4	0.076
GNRI	109.4 ± 7.4	91.8 ± 6.7	0.001
Body mass index	23.9 ± 3.4	20.0 ± 2.6	0.001
Body weight (kg)	64.5 ± 11.3	54.5 ± 8.3	0.001
Systolic blood pressure (mmHg)	122.7 ± 16.5	124.7 ± 22.6	0.527
Dystolic blood pressure (mmHg)	76.2 ± 9.3	76.3 ± 13.3	0.986
Hemoglobin (g/dL)	12.4 ± 1.6	11.2 ± 1.6	0.001
Iron (ug/dL)	95.8 ± 38.6	69.5 ± 32.2	0.001
TIBC (ug/dL)	322.3 ± 71.0	288.3 ± 105.6	0.062
TSAT (%)	33.4 ± 16.6	29.5 ± 13.0	0.361
Ferritin (ng/mL)	185.8 ± 329.0	348.9 ± 385.1	0.033
Blood urea nitrogen (mg/dL)	26.8 ± 21.8	36.3 ± 18.0	0.004
Creatinine (mg/dL)	2.5 ± 4.4	3.8 ± 3.6	0.043
eGFR (mL/min/1.73m^2)	61.4 ± 28.8	36.0 ± 27.2	0.001
Sodium (mEq/L)	139.7 ± 2.6	138.4 ± 3.4	0.022
Potassium (mEq/L)	4.4 ± 0.6	4.5 ± 0.6	0.571
Calcium (mg/dL)	9.5 ± 0.6	8.9 ± 0.8	0.001
Phosphorus (mg/dL)	3.6 ± 1.0	4.1 ± 1.2	0.005
Albumin (g/dL)	4.1 ± 0.3	3.5 ± 0.6	0.001
Total cholesterol (mg/dL)	180.2 ± 38.2	162.2 ± 42.8	0.016
HDL (mg/dL)	54.2 ± 15.1	49.5 ± 21.8	0.203
Low density Lipid (mg/dL)	91.5 ± 28.4	81.2 ± 29.0	0.070
Uric acid (mg/dL)	6.6 ± 1.6	6.9 ± 1.8	0.193
CRP (mg/dL)	0.1 ± 0.1	1.0 ± 1.4	0.001
Level of cyclosporine	95.6 ± 55.4	96.2 ± 57.7	0.965
Level of tacrolimus	5.9 ± 4.0	4.7 ± 1.3	0.248

P81 ONODERA'S PROGNOSTIC NUTRITIONAL INDEX MAY BE A SIGNIFICANT NUTRITIONAL FACTOR IN RENAL TRANSPLANTATION PATIENTS ACCORDING TO THE PRESENCE OR ABSENCE OF CHRONIC KIDNEY DISEASE

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Background: Evaluation of nutritional status is essential clinical procedures for managing renal transplantation patients, especially in status of chronic kidney disease (CKD). However, no standard method for assessing the nutritional status in renal transplantation patients exists. Onodera's Prognostic Nutritional Index (OPNI) is a method that considers serum albumin level and total lymphocyte count. This simple method may involve common measures and can be applied rapidly in a large number of patients. Validation of OPNI has been performed for patients with end-stage liver disease, active tuberculosis, and gastrointestinal malignancies.
Methods: We examined the OPNI scores of 184 renal transplantation patients (50.2 $\pm$ 11.3 years; 115 men and 69 women). The OPNI is calculated based on the serum albumin level and total lymphocyte count and uses the following equation: OPNI = 10 $\times$ serum albumin (g/dl) + 0.005 $\times$ total lymphocyte count (/ml). Logistic regression analysis was performed for predicting malnutrition in renal transplantation patients.
Results: The average OPNI value was 48.9 $\pm$ 7.1, and OPNI values were normally distributed. According to logistic regression for predicting malnutrition, male, total lymphocyte count and chronic kidney disease predicted malnutrition.
Conclusions: These results suggest that OPNI may be a significant nutritional marker in renal transplantation patients. The simple OPNI method is a clinically useful marker for the assessment of nutritional status in renal transplantation patients.

Table 1. Clinical characteristics of 184 kidney transplantation patients according to OPNI

Variables	OPNI ≥ 40 (n=164)	OPNI < 40 (n=20)	P
Male/Female (n)	102/63	13/7	0.807
Diabetes (−/+)	142/22	17/3	0.422
CKD (−/+)	94/70	3/17	0.001
Tacrolimus/Cyclosporin (n)	36/128	0/20	0.019
Age (years)	50.1 ± 11.2	51.0 ± 12.8	0.745
Duration after kidney transplantation (months)	118.3 ± 67.9	114.7 ± 58.0	0.797
OPNI	50.6 ± 5.0	34.9 ± 5.2	0.001
Body mass index	23.0 ± 3.6	21.8 ± 3.5	0.151
Body weight (kg)	62.4 ± 11.6	58.8 ± 10.1	0.183
Systolic blood pressure (mmHg)	122.4 ± 16.8	130.2 ± 26.3	0.069
Dystolic blood pressure (mmHg)	76.0 ± 10.2	78.1 ± 12.5	0.400
Hemoglobin (g/dL)	12.2 ± 1.6	11.3 ± 2.0	0.026
Total lymphocyte count (/mL)	1867 ± 779	828 ± 554	0.001
Iron (ug/dL)	93.7 ± 37.5	56.3 ± 32.0	0.002
TIBC (ug/dL)	321.7 ± 78.2	253.4 ± 83.7	0.018
TSAT (%)	33.5 ± 15.9	22.7 ± 13.2	0.147
Ferritin (ng/mL)	202.5 ± 321.5	402.4 ± 526.0	0.242
Blood urea nitrogen (mg/dL)	27.2 ± 20.5	44.8 ± 21.6	0.002
Creatinine (mg/dL)	2.6 ± 4.2	4.5 ± 4.0	0.063
eGFR (mL/min/1.73m^2)	58.0 ± 29.7	30.2 ± 25.5	0.001
Sodium (mEq/L)	139.4 ± 2.8	138.7 ± 3.5	0.267
Potassium (mEq/L)	4.4 ± 0.6	4.7 ± 0.8	0.066
Calcium (mg/dL)	9.4 ± 0.7	8.7 ± 0.9	0.003
Phosphorus (mg/dL)	3.7 ± 1.1	4.3 ± 1.2	0.035
Albumin (g/dL)	4.1 ± 0.3	3.0 ± 0.6	0.001
Total cholesterol (mg/dL)	178.0 ± 37.9	158.8 ± 53.2	0.068
HDL (mg/dL)	54.3 ± 15.7	41.5 ± 23.1	0.005
Low density Lipid (mg/dL)	90.3 ± 27.7	74.9 ± 38.3	0.087
Uric acid (mg/dL)	6.6 ± 1.6	7.2 ± 1.5	0.140
CRP (mg/dL)	0.1 ± 0.1	2.2 ± 1.7	0.010
Level of cyclosporine	92.0 ± 52.9	119.6 ± 68.2	0.140
Level of tacrolimus	5.7 ± 3.8	NA	NA

P82 THREE YEARS RESULTS OF RENAL TRANSPLANTATION IN SENSITIZED END-STAGE RENAL DISEASE PATIENTS

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Introduction and Aims: Preformed HLA-Antibody due to various reasons is major barrier for renal transplantation. Different combination and doses of immunoglobuline, plasma Exchange, rituximab were introduced to those patients for desensitization. Herein we report 3 years results of immunologically high risk 15 renal transplant patients desensitized by combination of immunoglobuline, plasma exchange and rituximab.
Methods: We performed desensitization for immunologically high risk living-related 15 renal transplant candidates whose flow cytometry cross match tests were positive and or donor specific antibodies were above 5000 MFI detected by luminex single antigen assay. Our desensitization protocol included 200 mg/kg i.v immunoglobulin for 5 days, 5–7 plasmapheresis and one dose i.v rituximab (375 mg/m^2) 1 month before the operation. All patients received combination of tacrolimus, mycophenolate mofetil and stereoid as a maintainence therapy. Blood transfusion history was positive in 10 patients and 2 patients had previous renal transplant history. Median age of patients was 41, 9 patients were female, the commenest cause of end-stage renal disease was glomerulonephritis (40%).
Results: The median follow up was 3.4 years. There were 8 (53%) antibody mediated rejection episodes and 5 (30%) acute cellular rejection episodes. Two graft were lost due to transplant glomerulopathy and recurrent urinary tract infection at that period. Hovewer, there was no patient loss. Graft survival was 100% at 1 year, 94% at 2 years and 87% at 3 years. Mean creatinine level was 1.9 $\pm$ 0.3 mg/dl in functioning graft at 3 years.
Conclusion: This study showed that desensitization in immunologically high risk RTX candidates provides favourable results at 3 years follow up despite the high rejection rates

P83 IMPACT OF PRE-TRANSPLANT BONE DENSITOMETRY FOR FRACTURE AND VITAMIN D

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Background: Bone and mineral disorder are common in kidney transplant recipients. Significant contributors are preexisting chronic kidney disease - mineral and bone disorder (CKD-MBD), immunosuppressant, and chronic inflammation. This study was undertaken to examine the effect of bone densitometry at the time of kidney transplantation on fracture and vitamin D level.
Methods: One-hundred sixty three kidney transplant recipients enrolled in multicenter observational cohort study (KNOW-KT) between July 2012 and February 2013.
Results: Fracture rate within 1 year after kidney transplantation was 1.6%. Pre-transplant T-score was not associated with pre-transplant dialysis duration. Patients with low T score before transplantation showed lesser phosphate decrease after transplantation. Changes of corrected calcium, parathyroid hormone, and vitamin D were not associated with pre-transplant T score.
Conclusion: Further long term follow-up will be needed to evaluate of the association between change of bone densitometry and post-transplant bone complications.

P84 SEQUENTIAL CHANGES OF VITAMIN D LEVEL AND PARATHYROID HORMONE AFTER KIDNEY TRANSPLANTATION

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Background: Numerous studies have shown that vitamin D deficiency is common in end stage renal disease patients. However, change of the vitamin D deficiency after kidney transplantation is not fully understood.
Methods: Thirty-one kidney transplant (KT) recipients with serum 25-hydroxyvitamin D (25D) level, 1,25-dihydroxyvitamin D (1,25D) level, parathyroid hormone (PTH) level at pre-transplant, 6 month, and 12 month after KT were reviewed.
Results: Serum PTH levels at 6 month decreased compare to levels at pre-transplant ($p < 0.001$), but did not show significant difference with levels at 12 month ($p = 0.638$). Serum levels of 25D and 1,25D at 12 month increased compare to levels at pre-transplant ($p = 0.011$). High PTH at 6 month was associated with high PTH at pre-transplant ($p = 0.008$). Low 25D at 12 month was associated with low 25D at pre-transplant ($p = 0.023$), but 1,25D level was not associated with levels at 6 or 12 month. Recipients with 25D deficiency (<10 ng/ml) was 58.1% and 41.9% at pre-transplant and 12 month, respectively.
Conclusion: 25D deficiency is persistent in almost kidney transplant recipients even at 12 month after transplantation, though serum PTH levels decrease and serum 25D levels increase after transplantation.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P85

HIGH-FAT DIET PROMOTES EARLY VASCULAR REMODELING IN A RENAL PORCINE AUTO-TRANSPLANTATION MODEL

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Background: Organ shortage promotes the use of organ from marginal donors with a higher prevalence of comorbidity factors such as dyslipidaemia which could influence the graft outcome. The transplant procedure induces vascular lesions limited by induction of regeneration processes in which cold storage is deemed to play a role. We hypothesized that hypercholesterolemia could inhibit some vascular repair processes. The goal of our study was to characterize kidney cortex vascular remodeling after a diet-induced increase in plasma oxidized LDL in a renal auto-transplantation model.
Methods: We used 3 months old pigs following a kidney auto transplantation procedure: left kidneys were removed and cold stored for 24 h at 4°C in University of Wisconsin solution and autotransplanted. A contralateral nephrectomy was performed to mimic renal mass in clinical situation. Two experimental groups were studied: Normal diet: transplanted kidneys removed 3 months after surgery from animals exposed to a standard diet ($n = 5$), High-fat diet: transplanted kidneys removed 3 months after surgery from animals fed a high-fat diet started, immediately after weaning ($n = 5$). We characterized the cortical micro vascularisation by high resolution micro-computed tomography analysis associated with media-to-lumen ratio evaluation and histological analysis.
Results: High-fat diet induced a microvascular rarefaction particularly for small vascular segments with diameter inferior to 40 μm. There is a decrease of vascular segment diameter average. Microvascular media-to-lumen ratio indicated microvascular remodeling in high-fat diet group compared to normal diet group associated with interstitial fibrosis and macrophages recruitment.
Conclusion: These results underline that high fat-diet induces a microvascular rarefaction which promotes the vascular remodeling due to ischemia-reperfusion and suggest to control cholesterolemia in recipient at the early stage of renal transplantation.

029 PANCREAS

P86

FIRST EXPERIENCE OF SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION FROM LIVING DONOR IN KAZAKHSTAN

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Introduction: In Kazakhstan, a growing number of patients with type 1 DM, which is complicated by diabetic nephropathy is on dialysis now. Introduction of simultaneous pancreas and kidney transplantation (SPK) in clinical practice of our medical institutions is extremely important and relevant. However, until recently, in Kazakhstan SPK was not carried out. The first SPK in our country was performed in September 2012.

Purpose: To explore and implement the method of simultaneous pancreas-kidney transplantation from living donor in Kazakhstan.
Results: The recipient was 31-year old male, suffering from diabetes mellitus type 1 from the age of 10, which was complicated by diabetic nephropathy. From 2012 he was on hemodialysis. The donor was 28-year old, healthy brother. The procurement was done by laparoscopic hand-assisted method. First left side nephrectomy was performed and then distal pancreatectomy together with spleen. The combined kidney and partial pancreas transplantation went uneventful. Both the donor and recipeint are doing well and they have normal renal function and blood glucose levels. No rejection of pancreatic or renal graft has been documented. Recipient maintained serum glucose levels at <130 mg/dlwithout insulin therapy. There were no major surgical complications after transplantation.
Conclusion: Living donor SPK can represent a successful treatment option for patients with DM 1 and end stage renal disease. Recipient maintains normal serum glucose levels without insulin therapy. The procedure can be performed safely in the donor and with low morbidity in the recipient.

025 LIVER

P87

SAFETY AND EFFICACY OF EARLY EVEROLIMUS IN *DE NOVO* ORTHOTOPIC LIVER TRANSPLANTATION

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Purpose: To study the safety and efficacy of immunosuppression with Everolimus (EVL) within the first month after orthotopic liver transplantation.
Patients and Methods: Recipients who had been treated with EVL within the first month after adult OLT were eligible to enter in a retrospective multicenter study. Patients were followed up for 12 months after OLT.
Results: From December 2006 to June 2014, 28 recipients entered in the study with a median age of 57.5 years (r 36–68). Primary disease leading to OLT was alcoholic cirrhosis in 12 patients, hepatitis C in 9 and both causes in 4. Median MELD score was 16 (r 7–40). Thirteen patients had hepatocellular carcinoma (HCC). Everolimus was initiated at a median of 14 days (r 4–24) after OLT. The reason for early EVL was neurotoxicity in 14 cases, renal dysfunction in 12 and acute cellular rejection in 2. In 23 patients, immunosuppression was EVL + MMF/mycophenolate sodium + steroids while EVL + Tacrolimus + steroids or mycophenolate sodium was used in 4 cases. Four patients (14.3%) developed acute cellular rejection. We observed 4 cases (14.3%) of incisional hernia, hematological complications in 6 patients (21.4%), proteinuria in 2 (7.1%), edema, ascites or pleural effusion in 8 (28.6%) and dyslipidemia in 12 patients (42.8%). Two patients suffered HCC recurrence. No arterial complications were observed. EVL was withdrawn in 4 patients during the first year after OLT due to proteinuria in 2 cases, wound dehiscence and medical decision in one case each. Two patients died during follow-up due to Hepatitis C and HCC recurrence in both cases. One year patient survival was 92.8%. Renal function evaluated using estimated glomerular filtration based on MDRD-4 formula in 12 patients with renal impairment improved from a median of 32 ml/min/1.73 m^2 at the moment of initiation of EVL to 62 ml/min/1.73 m^2 at 1 year.
Conclusion: Early use of EVL within the first month after OLT is effective and has an acceptable safety profile.

023 KIDNEY

P88 HYPOTHERMIC MACHINE PERFUSION OF KIDNEYS: CRITERIA, USE AND CASE HISTORY OF A SINGLE TRANSPLANTATION UNIT

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Background: Pulsatile Hypothermic Machine Perfusion (HMP) of kidney was already used for a local program of Donation after Cardiac Death (DCD). Recently, HMP has been introduced to kidneys retrieved from Extended Criteria Donors (ECD) including Standard Criteria Donors (SCD) with static cold ischemia time (CIT) longer than 18 h and non-standard donors (e.g. ECMO, ACC, etc.). Aim of this single center study was to analyze renal function and delayed graft function (DGF) comparing static cold storage versus HMP donations.
Methods: Fifty-four kidneys, 22 DCD, 17 ECD, 4 SCD with prolonged CIT (>4 h) and 11 ECD (serum creatinine >1.5 mg/dl) were studied. A kidney sample for microscopy was taken at time of harvesting. Vascular resistances (RR) and blood flow (F) were evaluated after 4 to 8 perfusion hours. Data are expressed as average and range; statistical significance was defined for $p < 0.05$. CIT donors aged 69.8 years, HMPs had 61.2 years (p = NS).
Results: Seventeen kidneys resulted not eligible for transplantation because of low F and microscopy changes: 11 non-standard donors, 5 DCDs, 1 ECD. At hospital discharge serum creatinine of 37 transplanted kidneys was statistically higher in recipients of static cold storage kidneys ($N = 35$; 2.44, 1.1–5.0 mg/dl) than HMPs ($N = 20$; 1.78, 0.8–3.4 mg/dl; $p < 0.01$). DGF was observed in 3 (8%) HMP recipients and 14 (38%) static cold storage kidneys respectively ($p = 0.053$).
Conclusions: Our data show that HMP is a reliable tool for graft storage, reconditioning and functional evaluation. HMP allows recruiting and improving recipients' functional outcome of DCD, ECD and CIT grafts.

P89 SURGICAL COMPLICATIONS IN ABO INCOMPATIBLE KIDNEY TRANSPLANTATION

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Background: ABOi kidney transplantation is an increasingly applied strategy to increase donor pools in living donation. However, data on perioperative surgical complications are rare and suggest an increased complication rate.
Methods: 19 consecutive ABOi kidney transplantations were performed between November 2009 and November 2014. 18 recipients were male and one female. Median age was 52 years (min 18 - max 71), median number of mismatches was 4 (min 0 - max 6). Immunosuppressive therapy consisted of preoperative immunadsorption and rituximab, basiliximab induction and mainainance with prednisolone, tacrolimus and mycophenolat-mofetil. Patients were analyzed for perioperative complications (according to the Dindo-Clavien classification), unplanned reoperations and reinterventions in a 30-day-period.
Results: Overall morbidity was 74% (14 of 19 patients). According to Dindo-Clavien, 10 (52%) patients developped minor complications (Grade 1 and 2) and 4 (21%) patients major complications (Grade 3: $n = 4$, Grade 4 and 5: none). There were four unplanned reoperations (postoperative haemorrhage $n = 2$, revison of an epidural haematoma $n = 1$, graft loss due to antibody rebound $n = 1$), including two percutaneous reinterventions (puncture of a seroma, percutaneous angioplasty) in a total of four (21%) patients. There were no revisions due to infection, lymphocele or wound complications.
Conclusion: The incidence of surgical complications following ABOi kidney transplantation does not seem to be remarkably elevated. Especially wound related complications are not increased in our series.

025 LIVER

P90

FRUSTRATIONS OF LIFE WITHIN US: A QUALITATIVE STUDY AFTER LIVER TRANSPLANTATION

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Background: Liver transplantation treats the complications associated with end-stage liver failure, it leaves the child with a new chronic condition- a transplanted organ. It is assumed that the new chronic condition allows the child/adolescent to optimize his/her quality of life; however, the child and family have to adapt to long-term health care needs and related stressors.
Objective: The study was performed to describe pediatric and adolescent liver transplant patients' and their parents' experiences during their transition to adulthood.
Method: The phenomenological design was used in this study, and data were collected from liver transplant recipients (n = 10) and their parents (n = 5). The study was conducted through in-depth interviews between September 2014 and January 2015. The qualitative interviews were analyzed by using the simple content analysis.
Findings: Experiences patients who underwent liver transplantation during childhood or adolescence have during the transition to adulthood are described under seven themes. The themes of the study are coping, personality development, adherence to treatment, body image, expectations (for the future and from health professionals), effects of school, work and social life on daily life and living donation. Patients stated that they experienced many difficulties in their school, work and social life during transition to adulthood. Another important result of this study is that it also reflects the parents' experiences as a living donor since they donated their organs to their children.
Conclusion: This study contributes to the literature by providing data on pediatric and adolescent liver transplant patients' experiences during their transition to adulthood, their coping methods, personality development and expectations from health professionals. The data of this present study will guide health professionals when they plan interventions to be performed to support patients and families during this critical period.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P91

MECHANISTIC ANALYSIS OF MACHINE PERFUSION BENEFITS ON WARM ISCHEMIC KIDNEY UNCOVERS IMPROVED ENOS PHOSPHORYLATION DURING PRESERVATION AND VASODILATION AFTER REOXYGENATION

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Background: Protection of endothelial cell function may explain the benefits of machine perfusion (MP) for marginal kidneys preservation. However, this hypothesis remains to be tested with a preclinical model. We postulated that MP protects the nitric oxide (NO) signaling pathway, altered by static cold storage (CS), and improves renal circulation recovery compared to CS. The endothelium releases the vasodilator NO in response to flow via either increased endothelial NO synthase (eNOS) expression (KLF2 dependent) or activation of eNOS by phosphorylation.
Methods: We analyzed porcine kidneys subjected to 1 h of warm ischemia and preserved 24 h by CS or MP. The pathway study was conducted by Western Blot, completed with a contractibility study of the vessels and a laser Doppler analysis of revascularization at reperfusion.
Results: We reported that MP did not affect cortical levels of KLF2 and eNOS compared to CS. However, MP significantly increased eNOS activating phosphorylation in the renal cortex and increased NO-dependent vasodilatation of renal arteries at the end of preservation. eNOS activating phosphorylation was AMPK-dependent rather than Akt- or PKA-dependent. *In vivo*, at reperfusion, laser Doppler showed that cortical microcirculation was improved in MP kidneys.
Conclusion: We demonstrate for the first time in a large animal preclinical model that MP benefits kidney grafts through protection of the NO signaling pathway, confirming the value of MP for marginal kidney preservation.

023 KIDNEY

P92

MANAGEMENT OF A RESISTANT HYPOTENSION DEVELOPING AFTER REPERFUSION OF A LIVING DONOR KIDNEY TRANSPLANTATION

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Objectives: We present a case of hypotension developing after reperfusion of a living donor kidney transplantation and performing graft nephrectomy and successful retransplantation 12 h later. This is the first published case report of this kind as far as we know.
Description of the Case: Kidney transplantation was performed to a 51 years old woman from her 55 years old husband as a living donor. Invasive arterial blood pressure (IABP) was stable and 130/70 mmHg and central venous pressure (CVP) was 12 cm H20 before reperfusion. After declamping, urinary output were observed. But just after declamping, IABP of the patient decreased to 70/40 mmHg abruptly. Dopamine and later noradrenaline infusions were started as positive inotropic support because of the resistant hypotension. Graft nephrectomy was performed 45 min after reperfusion because of continued hypotension and progression of ischemic changes on the kidney. The kidney was perfused by Custodiol (HTK) solution at back table and a biopsy specimen was taken. Clinical problems such as septic shock, anapylactic shock, pulmonary emboli, myocardial infarction, postperfusion syndrome, acute pulmonary congestion and aortic dissection all were ruled out by intensive clinical, laboratory and radiologic investigations. We thought that our case had vasoplegic syndrome, but we could not prove it. Histopathological examination did not show rejection. Blood pressure of the patient was stabilized around 110/70 mmHg, the patient was retransplanted with the same kidney 12 h after the first operation. Urinary output was observed after postoperative 24 h. The patient was well with a serum creatinine of 1.4 mg/dl after 9 months of the operation.
Conclusion: Resistant hypotension that ocurs after kidney transplantation may cause graft and patient loss. To prevent graft loss and to stabilize patient, graft nephrectomy and retransplantation of the graft under suitable circumstances may be considered.

025 LIVER

P94

HEPATIC ALLOGRAFT SALVAGE IN LDLT AFTER EARLY HAT BY COMBINED SURGICAL AND ANGIOGRAPHIC TECHNIQUES

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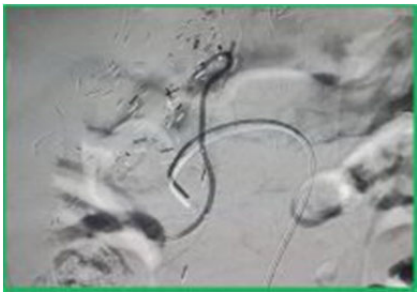
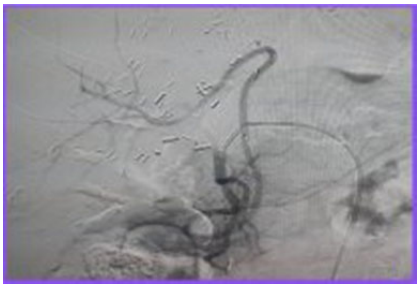
Aim: Salvage of partial liver allograft complicated by early Hepatic Artery Thrombosis by combined surgical thrombectomy and angiographic thrombolysis techniques.
Material and Methods: Living related liver transplantation was performed by the department of hepatopancreatobiliary surgery and liver transplantation in city clinical hospital №7 Almaty city on 16 December 2014. Over a period of 18 months 7 liver transplantations were performed. 6 were living related and one was deceased donor. The survival rate is 100%. However the sixth liver transplantation in post-transplant period was complicated by hepatic artery thrombosis (HAT) in the early post operative period. Patient was 51 years female with decompensated chronic liver disease secondary to overlap syndrome with CTP score of 10 and MELD score of 15. She also had hypothyroidism and diabetes mellitus. She underwent living donor liver transplantation with modified right lobe graft on 16 Dec 2014. The surgery was uneventful. On POD 4 routine Doppler revealed non-visualization of hepatic artery flow. Immediate CTA confirmed the diagnosis of HAT. Within 2 h of confirming the diagnosis the patient was taken to the operation room. Surgical thrombectomy was done and graft was revascularised with right gastroepiploic artery. Postoperatively the patient was heparinised. Twice on POD 7 and POD 9 patient had recurrent HAT which was successfully managed by angiographic thrombolysis. Patient had prolonged hospital stay and was forming high volume ascites. However ascites gradually reduced and finally she was discharged on POD 35. At 3 months followup patient is doing well with normal graft function.





031 PEDIATRIC TRANSPLANTATION

P95

PEDIATRIC LIVER TRANSPLANTATION IN SICKLE CELL ANEMIA: A CASE OF EXTRAHEPATIC BILIARY ATRESIA

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Very few cases of liver transplantation in pediatric patients with sickle cell disease have been reported in peer-reviewed literature. We reviewed the medical records of a female infant with sickle cell disease and underlying extrahepatic biliary atresia that received liver transplantation in our institution. The patient was diagnosed neonatally with screening test for sickle cell disease. In the first month of life the patient presented with marked cholestasis and the diagnosis of biliary atresia was confirmed. A Kasai portoenterostomy was peformed at 35 days of life but was unsuccessful. Subsequently, the patient had multiple episodes of cholangitis and had significant liver dysfunction. The patient received orthotopic liver transplant at 5 months of age, with an unremarkable postoperative course. In the post transplant period, the patient presented with persistent significant anemia, with Hb ranging between 6 and 7 g%, and increase in transaminases and bilirubin. Liver biopsies were performed suggesting lobular sinusoidal congestion with sickled red blood cells and fibrosis, and no evidence of rejection. The patient was started on a hypertransfusion regimen with the goal of maintaining her HgbS lower than 30%. This resulted in marked improvement of transaminases and the patient has tolerated this regimen well. Liver transplantation in the setting of sickle cell disease carries a high risk of vascular and ischemic problems that directly affect the graft and overall outcomes of these patients, and hypertransfusion can be a temporary beneficial measure for these patients.

033 TISSUE ENGINEERING

P96

TISSUE BANK AT HOSPITAL CLINICO SAN CARLOS (SPAIN). RESULTS OF THE LAST 13 YEARS

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Hospital Clinico San Carlos

Introduction: Our hospital has settled from 1989 in addition to brain death donors (BDD) and live donors (LD), an specific protocol to obtain donors from people who die in the street or at home from sudden or un expected death (uDCD). This type of donors is a good way of getting tissues.

Material and Methods: BDD and LD protocols are the same in every hospital. uDCD begins after 30 min of unsuccessful CPR maneuvers death is declared through cardiovascular criteria. The only preservation method until ECMO is cardiac massage and mechanical ventilation. In addition to general procedure we analyze: age, kind of cardiocompression, hemodinamical parameters, personal antecedents, warm and cold ischemia times and the type of tissue.
Results: We analyse all these donors from 2001 to 2014. 864 donors were included (178 BDD, 633 uDCD, 53 LD). More than the 50% were men. We are specialized in ocular and osteotendinoso tissues. Total bones 6098 (3077 fluffy, 3021 bone crushing and structurated), 1593 tendons, 1469 corneas, 2770 escleras, 48 others.
Conclusions: BDD, LD and UDCD programs are well stablished in our center. We are the hospital who contribute with more amount of tissue of our department uDCD program are the cornerstone of our tissue bank

025 LIVER

P97

ROLE OF SOME ADIPOCYTOKINES IN STEATOTIC LIVER TRANSPLANTATION

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Background and Aims: It has been suggested that the pathogenesis of fatty liver disease is associated with deregulated production and release of novel adipocytokines, including adiponectin and resistin. Controversial roles for this adipocytokines have been described in different liver pathologies, nevertheless it is unknown their possible implication in ischemia-reperfusion injury associated with liver transplantation. Our study aimed at characterizing the role of the adiponectin-derived molecular pathway in transplantation with steatotic liver grafts. In addition, compare the effects of pharmacological treatments that modulate these adipocytokines in liver transplantation to those obtained after applying ischemic preconditioning.
Methods: Steatotic liver transplantation was carried out and the hepatic levels of adiponectin and resistin were measured and modulated either pharmacologically or surgically.
Results: Steatotic livers are more predisposed to downregulate both adiponectin and resistin when subjected to transplantation. Adiponectin pretreatment increased resistin in steatotic liver grafts and protected them against damage, when compared with the non-treated group. Conversely, hepatic protection induced by adiponectin were abolished when resistin action was inhibited. Adiponectin-derived resistin accumulation activated the PI3K/Akt pathway, unravelling AMPK as an upstream mediator of adiponectin's actions in steatotic grafts. Strategies aimed at increasing adiponectin including either AMPK activators (AICAR administration) or the induction of ischemic preconditioning (which activates AMPK) increased resistin accumulation, prevented the downregulation of PI3K/Akt cell survival signaling pathway and protected steatotic liver grafts.
Conclusions: Our findings reveal a new protective pathway in steatotic liver transplantation, namely AMPK-adiponectin-resistin-PI3K/Akt. In terms of clinical applications, drugs able to regulate these adipocytokines, namely adipo

037 XENOTRANSPLANTATION

P98

A NOVEL SKIN GRAFT DEVELOPED FROM A XENOGRAFT SOURCE BY USING TISSUE-ENGINEERING TECHNOLOGY

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Purpose: The study was aimed to test skin grafts (scaffold), in laboratory animal models, prepared from xenogeneic source and monitor the wound healing and understand the mechanism involved. The skin scaffold prepared from various donor sources was investigated for their potential as an appropriate transplantation candidate for skin grafts for pathological conditions like deep and full-thickness skin wound.
Methods: The xenogeneic skin scaffolds (porcine and humans) were subjected to various chemical treatments to remove the cells, (de-cellularization, DC) and cell seeding/repopulation (re-cellularization, RC). A cocktail of chemicals treatment was adopted to prepare DC tissue matrixes. Subsequently, the matrix was monitored to check for the ability to home different types of cells like smooth and endothelial cells following biological treatments. Both the DC and RC matrix was then checked for the presence/absence of nuclei, extracellular matrix (ECM) integrity and mechanical properties. To check for the biological proof of concepts, we finally had tested the rejection/acceptance of the scaffolds as a suitable candidate for skin transplantation in laboratory animals (mice and rat).
Summary of Results: The study following the 3R recommendation of animal ethics, could establish the xenogeneic source of skin scaffold as an alternative to skin grafts. The DC scaffold showed no cells/nuclei, with a superior stimulation of skin growth response following engraftment of the RC matrix. There was also no rejection of the skin graft with superior restoration of histological architecture.
Conclusions: The observations from the present study highlights the potential use of xenogeneic source of skin grafts involving tissue engineering technology as a suitable candidate for skin transplantation. The study could pave the way for search of skin grafts for diabetic and burn injury in human.

021 ISLET/CELL TRANSPLANT

P99

JAPANESE KAMPO MEDICINE TJ-114 PREVENTS AUTOIMMUNE DIABETES ONSETS IN NOD MICE THROUGH CD4+ CD49B+REGULATORY T CELLS

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Background: Type 1 diabetes mellitus (T1DM) is the indication of islet transplantation, and mainly caused by the $CD8^+$ cytotoxic T cells infiltration into islets. Recently, the role of regulatory T cells (Treg) and Tr1 cells in prevention of the onset of autoimmune disease was reported. It is also reported that TJ-114, Japanese common herbal medicine, decreased Treg population and induced immunological tolerance in murine model, thus we investigated whether TJ-114 had an influence on T1DM onset using NOD mouse.

Materials and Method: We divided juvenile NOD mice into two groups such as control and TJ-144 administered group. Their blood sugar level, peripheral $Foxp3^+$ Treg populations, CD4/CD8 ratio and $CD4^+CD49b^+LAG\text{-}3^+$cells (Tr1 cells) populations were investigated. After sacrificed them, their pancreata were compered by immunohistochemistry.

Results: FBG of control group mice showed diabetic status of 70.0% at 18 weeks age. On the other hand, TJ-114 group mice showed diabetic status of 20.0% at 18 weeks age ($p = 0.038$). Lymphocyte infiltrations into islets were significantly decreased in TJ-114 group. $Foxp3^+$Tcells were not changed, however, Tr1 Tcells significantly increased in TJ-114 group ($p < 0.01$). Anti-Gulitamic Acid Decarboxylase (GAD) expressions were significantly decreased in TJ-114 group ($p < 0.01$).

Conclusions: TJ-114 inhibited lymphocyte infiltrations into islets which led to prevent the onset of T1DM in NOD mice. This result is very important for immunity of T1DM patients for the onset and recipient status.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P100

METABOLOMIC STUDY OF MOUSE KIDNEY AND URINE FOLLOWING RENAL ISCHEMIA/REPERFUSION

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Ischemia/reperfusion (I/R) is unavoidable in transplantation, and its severity conditions graft function and survival at both short and long terms. Several biochemical pathways have been implicated in I/R. However, the pathophysiology of I/R remains unclear, which confines its management to supportive maneuvers. Metabolomics is dedicated to identify the metabolites involved in physiological and pathological changes of integrated living systems. In kidney diseases, metabolomics demonstrated enormous potential in research on drug-induced nephrotoxicity and diabetic nephropathy, as well as acute kidney injury. In order to investigate the metabolic changes induced by renal I/R, we performed a 1H Nuclear Magnetic Resonance (NMR) metabolomic analysis of urine and kidney samples from a 12-week-old C57BL/6J mouse model of renal 30-min ischemia followed by 6, 24 or 48-h reperfusion. Sham-operated mice were used as controls. After classical statistical discriminant analyses (PCA and OPLS-DA) of urine spectra, a clear separation of I/R and sham groups was observed, with relevant changes in levels of taurine, creatine, lactate, valine and citrate. The same discrimination could be highlighted in kidney samples. Indeed, the renal metabolite composition (including lactate, lipids, amino acids, taurine) was significantly affected by I/R. Such metabolite changes were observed as early as 6 h after reperfusion and were still present at 48 h. Still, the major modifications in metabolite patterns occurred at 24 h post reperfusion. At this time-point, correlation coefficients between urine spectra and blood urea nitrogen and serum creatinine levels reached 0.95 and 0.94, respectively. Our study demonstrates that renal I/R causes early and sustained metabolic changes in urine and kidney composition. These data open new research avenues to better understand, diagnose and prevent renal I/R.

017 INTESTINE

P102

INTRAEPITHELIAL ILC1 AND ILC3 ARE INCREASED IN FUNCTIONAL HUMAN INTESTINAL ALLOGRAFTS

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Background: We previously described that $CD3^-$ intraepithelial lymphocytes (IEL) constitute the main IEL subset in small bowel grafts (SBG) since 3rd month post-transplant (posTx) differently from native intestines. We hypothesized that the increased $CD3^-$IEL population would correspond in part to the recently described innate lymphoid cells (ILC) which are mostly abundant in mucosa-associated lymphoid tissues. In this study we investigated the phenotype and function of CD3-IEL in SBG.

Methods: We analyzed 75 ileal biopsies taken more than 2 months posTx from 13 small bowel transplant adult recipients and 28 biopsies from normal native intestines. The following markers characteristic of ILC were analyzed by flow cytometry in $CD3^-$IEL: CD56, NKp44, CD127, RORC, Granzyme B, IL23R and CCR6. Intracellular cytokine assay was performed to evaluate IFNγ, IL17 and IL22 secretion. Cytotoxicity assay was performed with K562 cells labeled with CFSE and cell death was analyzed by flow cytometry with 7AAD.

Results: Since 3rd month posTx a higher proportion of SBG $CD3^-$IEL expressed CD56 (Patients = 55%, Controls = 37.1%; $p = 0.001$), NKp44 ($P = 46.8\%$, $C = 32.1\%$; $p = 0.035$), IL23R ($P = 40.5\%$, $C = 17.4\%$; $p < 0.001$), RORγt ($P = 10\%$, $C = 6.2\%$; $p = 0.002$) and CCR6 ($P = 34.4\%$, $C = 9.8\%$; $p < 0.001$). No difference was observed in Granzyme B, and $CD3^-CD127^+$ cells were more abundant in native intestines ($P = 14.2\%$, $C = 39\%$; $p < 0.001$). After activation, SBG $CD3^-$IEL produced significantly more IFNγ and IL22, and a double $IFN\gamma^+IL22^+$ population was observed. SBG IEL were also cytotoxic whereas this was not observed in controls.

Conclusions: Differently from native intestines, a $CD3^-$IEL subset predominates in SBG showing features of NK cells and ILC1 ($CD56^+$, $NKp44^+$, $CCR6^+$, $CD127^-$, cytotoxicity and IFNγ secretion), ILC3 ($CD56^+$, $NKp44^+$, $IL23R^+$, $CCR6^+$, $ROR\gamma t^+$ and IL22 secretion) and intermediate ILC1-ILC3 phenotype ($IFN\gamma^+IL22^+$). Viability of SBG may depend on the balance among pro-inflammatory and homeostatic roles of ILC subsets.

023 KIDNEY

P103

RISK FACTORS OF HYPERTENSION AFTER LIVING DONOR KIDNEY TRANSPLANTATION – A MULTIVARIATE ANALYSIS

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Asan Medical Center, University of Ulsan College of Medicine

Background: Hypertension is very common in kidney transplant recipients after transplantation. It is associated with cardiovascular complication and poor graft survival in transplanted patients. The aim of this study is to evaluate possible factors associated with hypertension following kidney transplantation.
Methods and Materials: The recipients who underwent living donor kidney transplantation at Asan Medical Center between January 2009 and April 2012 were enrolled. Patients were divided into two groups according to use of anti-hypertensive medication or not at 12 months after transplantation. Two groups of patients were compared in donor factors, recipient factors, characteristics at 12 months after transplantation.
Results: Total 524 patients were enrolled. 484 patients (92%) had hypertension before transplantation. 353 patients (67%) had hypertension 12 months after transplantation. On univariate analysis, several factors were associated with post-transplant hypertension. (Table 1). On multivariate analysis, male recipient (OR: 2.38; 95% CI: 1.32–4.29); pre-transplant hypertension (OR: 4.82; 95% CI: 1.82–12.73); recipient LVH (OR: 1.79; 95% CI: 1.07–2.99); Donor hypertension (OR: 4.67; 95% CI: 1.19–18.43); cyclosporine use at 12 months after transplantation (OR: 2.00; 95% CI: 1.18–3.41); BMI > 25 kg/m^2 at 12 months after transplantation (OR: 3.63; 95% CI: 1.96–6.73) were associated with hypertension (Table 2).
Conclusion: These data show that male recipient, hypertension before transplantation, recipient LVH, hypertensive donor, obesity, cyclosporine use were independent factors associated with hypertension. It would be useful to predict and prevention the hypertension after kidney transplantation.>

Table 1. Univariate analysis of predictive factors of post-transplant hypertension

	HTN (–) at 12 months	HTN (+) at 12 months	p-value
Number of patients (%)	171 (33)	353 (67)	
Donor factors			
Age, years	40.8 ± 11.1	42.3 ± 10.9	0.13
Sex, male (%)	102 (50.6)	163 (46.2)	0.004
Hypertension (%)	4 (2.3)	26 (7.4)	0.03
Location of donated kidney, right (%)	567 (32.7)	151 (42.8)	0.03
Recipient factors			
Age, years	43.4 ± 10.5	44.4 ± 11.4	0.36
Sex, male (%)	59 (34.5)	241 (68.3)	<0.001
Diabetic mellitus (%)	30 (17.5)	84 (23.8)	0.10
Left ventricular hypertrophy (%)	43 (25.1)	166 (47.0)	<0.001
Duration of dialysis, months	19.4 ± 30.2	22.4 ± 35.4	0.45
Acute rejection history before 12 months (%)	8 (4.7)	26 (7.4)	0.26
Nephrectomy of native kidney (%)	12 (7.0)	18 (5.1)	0.42
Number of Initial anti-hypertensive medication >2	40 (23.4)	113 (32.0)	0.05
Pretransplantation HTN (+) (%)	141 (83.5)	343 (97.2)	<0.001
Charateristics at 12 months			
Serum creatinine, mg/dl	1.04 ± 0.24	1.16 ± 0.28	<0.001
eGFR, ml/min (MDRD)	69.8 ± 20.2	60.7 ± 18.4	0.19

Table 2. Multivariate analysis of predictive factors of post-transplant hypertension

Variable	p-value	OR	95% CI
Pretransplant HTN	0.002	4.82	1.823–12.728
Donor hypertension	0.03	4.67	1.185–18.43
Recipient sex	0.004	2.38	1.321–4.286
Recipient LVH	0.03	1.79	1.068–2.989
BMI>25 kg/m^2	<0.001	3.630	1.958–6.729
Cyclosporine	0.01	2.003	1.177–3.410

011 HEART

P104

CARDIAC SARCOIDOSIS: THE INCREMENTAL BENEFIT OF SPECKLE TRACKING ECHOCARDIOGRAPHY IN A CASE UNDERWENT TO HEART TRANSPLANT

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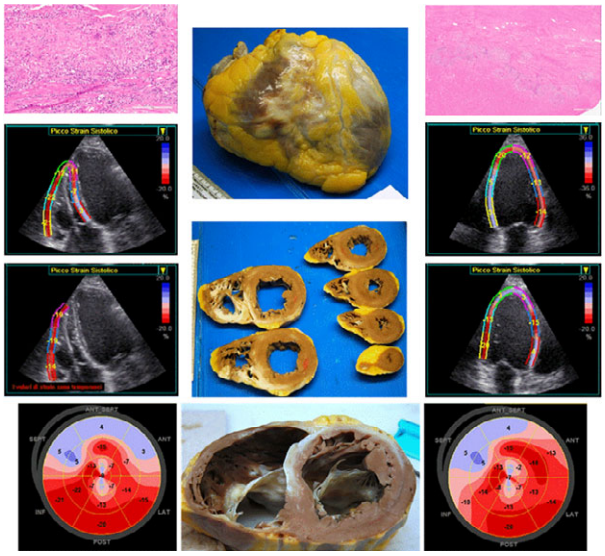
Cardiac sarcoidosis is present in 25% of all sarcoidosis, symptomatic in only 5% of them and it can be fatal. Recent evidences propose the use of Speckle Tracking Echography (STE) in early diagnosis: STE would seem to reveal significantly abnormal regional myocardial strains where two-dimensional echocardiography is unremarkable. We report a case of a man of 42 years with episodes of Sustained Ventricular Tachycardia in a context of dilated and hypokinetic cardiomyopathy known since 2008, initially framed as arrhythmogenic cardiomyopathy, for which he was subjected to ICD implantation. EKG during sinus rhythm showed right bundle branch block, negative T waves in right precordial, small incisions in the initial part of the ST segment and T wave. SVT had left bundle branch block morphology type, with normal electrical axis. The echocardiogram showed a slightly dilated left ventricle with moderately depressed left ventricular ejection fraction (38%) and a dilated right ventricle with normal function. The coronary angiography appeared unharmed and MRI showed a suggestive picture of pulmonary sarcoidosis with cardiac involvement without major criteria for dysplasia. In 2010 endomyocardial biopsy confirmed the diagnosis of sarcoidosis and the patient began immunosuppressive therapy. The patient was hospitalized several times for daily antitachycardia pacing and numerous DC shock so he underwent transcatheter ablation procedure of right TV three times, with only temporary benefit. The STE showed alteration of myocardial strain in anterior and intermediate septum and right ventricle. He underwent heart transplant in November 2014. The macroscopic analysis of the explanted heart indicated a whitish-grey areas involving the anterior and intermediate septum and right ventricle (precisely the same areas revealed by STE) in which we highlight, histologically, multiple granulomas in chain, non-necrotizing epithelioid type with giant cells.



023 KIDNEY

P105 EVEROLIMUS FOR KAPOSI'S SARCOMA TREATMENT AFTER KIDNEY TRANSPLANTATION

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The 42 y.o. man with ESRD had underwent kidney transplantation from cadaveric 31 y.o. nonbeating heart donor 02.04.2013. He has received standard immunosupression: MP + Tc + MMF and for 4 weeks was discharged from hospital with serum creatinine 0.25 mmol/l. On the fifth post transplant month the patient discovered on the face skin multiple tumors. The tumors had moderate growth during next month. Kaposi's sarcoma had been proven by biopsy, so we stopped tacrolimus therapy in the recipient and started everolimus treatment. During next month there was no new skin lesions and the previously registered tumors had no futher growth. From that time we have seen gradual regression of skin lesions. We support everolimus blood level 4–8 ng/ml. After 2 month of the everolimus therapy proteinuria was appeared in the patient approximately 0.5–0.7 g per day. The next month proteinuria increased till 1.8–2.4 g per day. The daily metilprednizolon dose was increased since 4 till 10 mg. The proteinuria decreased till 0.5–0.6 g per day. The kidney function during all period was stable with serum creatinine 0.22–0.26 mmol/l. Everolimus treatment with simultaneous calcineurin inhibitors withdrawn offers apromising approach to the management of Kaposi's sarcoma in kidney transplant recipients without an increased risk of acute rejection.

P106 RENAL TRANSPALNT RECIPIENTS WITH DIVERTICULUM OF COLON AND THEIR COMPLICATION

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Hokkaido University

Objective: Colonic diverticula (CD) do not need to be treated unless symptomatic; however, they can cause serious complications, such as diverticulitis, hemorrhage, and perforation, especially among renal transplant recipients (RTRs) under immunosuppression (IS). The aim of this study was to evaluate the prevalence, clinical characteristics, and management of CD among RTRs.
Methods: We reviewed the clinical records of RTRs with CD who required hospitalization. We assessed diagnosis, location of CD, post-transplant period, and treatment.
Results: There were 200 RTRs (>20 y/o at time of transplant) between 1994 and 2014. Three (1.5%) had symptomatic CD: 2 had diverticulitis of the ascending colon and 1 had perforation of the sigmoid diverticulum. Post-transplant periods of these 3 RTRs were 3, 12, and 18 years. The presence of these diverticula had not been recognized in advance and the symptoms, such as fever and elevated serum creatinine, were obscure and nonspecific for acute abdomen, which made it difficult to make a correct diagnosis. The case of diverticular perforation required temporal colostomy. However, all three RTRs were successfully treated and their allografts are functioning well. Among RTRs (>50 y/o) who underwent pre-transplant screening colonoscopy, 8 out of 26 (30%) had CD. One patient underwent subtotal colectomy prior to transplant due to repeated bleeding. Another highly sensitized patient had repeated diverticulitis when IS was initiated, resulting in cancellation of the kidney transplant.
Conclusion: RTRs with CD are at a higher risk of severe complications, even after a long period of time from transplant with minimal IS. Since IS can mask abdominal symptoms, complications due to CD should be considered in differential diagnosis after transplant with symptoms nonspecific for acute abdomen. Early recognition and prompt treatment are important for symptomatic CD in order to avoid life-threatening complications and kidney graft loss.

P107 COMPARISON OF THE EFFECTS OF BALANCED SALT SOLUTION VERSUS NORMAL SALINE ON THE ACID–BASE, ELECTROLYTE, AND RENAL FUNCTION AFTER KIDNEY TRANSPLANTATION

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Background: The purpose of this study was to evaluate the effects of different fluid therapies on the acid–base, electrolytes, and renal function after kidney transplantation (KT).
Methods: Medical records of 103 patients who underwent KT were retrospectively analyzed. Analyses were performed separately according to the donor type (living = 52, deceased = 51). In each group, acid–base and electrolyte status, urine volume, and renal function were compared between the patients receiving normal saline (NS) and those who receiving balanced salt solution (BS).
Results: In the LDKT group, 28 patients received NS and 24 received BS. No hyperkalemia occurred in either group. Base excess (BE) was bigger in the NS group than BS group (−4.11 vs. −2.22 mmol/l, $p = 0.014$). There was no difference in serum pH between NS and BS (7.37 vs. 7.38, $p = 0.168$). pCO_2 and HCO_3 were lower in NS than in BS (pCO2: 35.5 vs. 37.7, $p = 0.018$; HCO3: 20.8 vs. 22.1, $p = 0.008$). Chloride was higher in the NS subgroup than in the HS subgroup (108.9 vs. 105.1 mmol/l; $p = 0.020$). Positive changes in serum pH, HCO3, and BE were lower in NS than in BS (ΔpH: 0.02 vs. 0.05, $p = 0.030$; ΔHCO3: 3.49 vs. 1.68, $p = 0.009$; ΔBE: 0.14 vs. 2.40, $p = 0.005$). No difference in serum creatinine was found but urine volume was larger in NS than in BS (10 896 vs. 8811 ml, $p = 0.049$) on 7th posttransplant day. In the deceased donor KT group, 27 patients received NS and 24 received BS. No differences were observed in the BE and incidence of hyperkalemia. Serum pH was not different. Changes in serum pH, HCO_3, and BE were less in NS than in BS. Chloride was higher in NS than in BS. The eGFR was similar both fluid therapies, but urine volume on day 7 was larger in NS than in BS.
Conclusions: BS does not increase the incidence of hyperkalemia after KT. The use of BS resulted in less metabolic acidosis than the use of NS. Renal function was similar but polyuria was more severe in patients who received NS than in those who received BS.

007 DONATION/RETRIEVAL

P108

ANALYSIS OF DONATION AND RESULTS OF TRANSPLANTATION OF KIDNEYS HARVESTED FROM DONORS OVER THE AGE OF 60 YEARS

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Background: Aging of the society and constant shortage of organs for transplantation result in increasing number of kidneys retrieved from older donors. A doubt on impaired renal graft function causes that decision on the retrieval depends not only on donor's age, but also on comorbidities.

The aim of the study was to analyse the donation of kidneys from donors over the age of 60 years, comorbidities that affect decisions on the kidney retrieval and results of the kidney transplantation.

Material and Methods: 64 potential donors over the age of 60 years (>60) and 292 potential donors 40–60 years old (40–60) reported to transplant coordinator in Upper Silesia area from 2004 to 2013 were enrolled in the study.
Results: The groups of donors differed as regards the coexistence of arterial hypertension (59 vs. 34%), limb ischaemia (11 vs. 2%), and history of stroke (8 vs. 1%), but did not differ in the coexistence of coronary artery disease or diabetes. The rate of family objection was similar in both groups (8 and 10%, respectively). The kidneys were harvested from 48 out of 59 eligible donors >60 (81%), and from 244 out from 263 eligible donors 40–60 (93%, $p < 0.01$).

The groups of recipients who received kidneys from donors >60 ($n = 77$) and 40–60 years ($n = 458$) did not differ in terms of delayed graft function occurrence (27 vs. 31%) but tended to differ in primary graft non-function occurrence (8.0 vs. 3.5%, $p = 0.08$). 12 months after transplantation serum creatinine concentration was significantly higher in recipients who received organs from donors >60 as compared donors 40–60 (178 vs. 138 μmol/l, respectively, $p < 0.001$).
Conclusion: Higher rate of comorbidities in potential kidney donors >60 results in the lower retrieval rate in these donors. The results of transplantation of kidneys retrieved from donors >60 are worse as compared to kidneys harvested from donors 40–60, but still acceptable.

011 HEART

P110

EXTRACORPOREAL PHOTOPHERESIS IN THE TREATMENT OF COMPLICATED ACUTE REJECTION AFTER HEART TRANSPLANTATION

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Background: Extracorporeal photopheresis (ECP) is approved as immunotherapy for the treatment of a variety of T cell-mediated diseases. Although immunosuppressive therapy after heart transplantation (HTX) has improved over recent years, complicated rejection episodes still threaten the survival of patients. The aim of this analysis was to investigate ECP as treatment of recurrent acute rejection episodes.

Methods: All patients who developed recurrent rejection episodes, defined as bioptic diagnosed rejection episodes (≥2R ISHLT) detected after a successful treated rejection, were defined as complicated rejection. Hemodynamical stable patients were included in a ECP therapy protocol. All patients underwent serial biopsies as indicator for response to our treatment.

Results: Seven of 348 (2.1%) Patients were included between 1/2006 and 11/2014. The mean age at the time of onset of ECP therapy was 43.29 (range 24–69), 3 were male and 4 female. Median time post transplant was 6 months (range 3–72). All patients received more than 6 ECP cycles and the median number of ECP cycles was 37 (range 6–74). Two patients are still treated with ECP as permanent therapy. All patients have survived the whole follow-up period. Median follow-up is 24 months (range: 12–96). One patient needed re-transplantation due to graftvasculopathy 12 months post start of ECP. In all patients, biopsies showed a remission from Grade 2R to Grade 1R and 0 during treatment.

Conclusion: In our experience, ECP treatment appeared to be an effective and safe treatment option for recurrent rejection episodes. There is a strong need for bigger controlled studies.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P111

IS THE HEPATIC RESISTIN AND VISFATIN GENERATION DEPENDENTS OF THE TYPE OF LIVER, OBESITY AND SURGICAL PROCEDURE?

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Background: Hepatic steatosis is a major risk factor for liver surgery. Adipose tissue has appeared as a highly active endocrine gland secreting adipocytokines. However, resistin and visfatin are also expressed in liver under obesity conditions.

Aim: To investigate the generation of resistin and visfatin in steatotic and non-steatotic livers upon surgical procedure and whether modulating resistin and visfatin could protect steatotic and non-steatotic livers against damage and regenerative failure after hepatic surgery.

Methods: Male obese (Ob) and lean (Ln) Zucker rats and Wistar rats, fed with a choline-deficient or standard chow diet for 10 days, were used. Were employed experimental models of partial hepatectomy (PH) with or without 60 min of ischemia (I/R), as well as 60 min of I/R without PH. Pharmacological modulation of visfatin and resistin, and biochemical and molecular analyses were realized.

Results: We investigated whether resistin and visfatin formation upon PH + I/R is a general phenomenon of animals with steatotic livers and not a phenomenon restricted to Zucker rats. Resistin and visfatin levels in liver, plasma and adipose tissue of Ln and Ob Wistar showed a similar pattern of Ln and Ob Zucker, respectively. In PH and I/R groups, resistin and visfatin levels in liver, plasma and adipose tissue of Ob Zucker were similar to the found in the sham. Moreover, in Ob Zucker no effects on hepatic damage or liver regeneration were observed after resistin or visfatin pharmacological modulation.

Conclusion: The resistin and visfatin generation occurs in steatotic livers only submitted to PH in association with I/R and is an independent process of the type of steatosis.

023 KIDNEY

P112 USING SIMPLE PATIENT VARIABLES TO "PREDICT" KIDNEY WAITING LIST REGISTRATION AND TRANSPLANTATION

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Background: Our previously published prediction model for patients 90 days on renal replacement therapy (RRT, either dialysis or transplantation) was able to give an adequate prediction of 10 year survival. The parameters were: patient age, primary renal disease, treatment modality, and sex. Our hypothesis is that RRT patients with the lowest risk scores have best survival probabilities, due to both better health and being transplanted more often. To test this hypothesis we analyzed the relation between patient risk groups and waiting list registration and transplantation. We further analyzed waiting list dynamics.
Methods/Materials: We analyzed data from 9887 patients aged 18–70 years being on dialysis at baseline (period 1999–2009). Based on their survival prediction, we divided 9594 patients into 5 risk groups; 293 patients with missing data were excluded. Differences were analyzed with chi square test and ANOVA.
Results: Registration rates on the waiting list varied from 94% and 90% in the lowest risk groups till 58% and 32% in the highest risk groups ($p < 0.001$). After registration, the number of transplanted patients varied from 92% and 86% in the lowest risk groups till 65% and 55% in the highest risk groups ($p < 0.001$), mainly due to the higher rates of living donor transplants in the lowest risk groups. In the Netherlands the incident RRT population is deteriorating: the highest risk group has grown from 42% in 1995–1999 till 62% in 2011–2013 while the two lowest risk groups have declined from 23% till 11%.
Conclusion: The prediction model can be used to "predict" waitlisting and transplantation chances. Patients with high risk scores are less likely to be registered and transplanted. The highest risk group has grown remarkably in the last years in the Netherlands, which therefore influences the waiting list dynamics.

P114 HIGH INCIDENCE OF POST KIDNEY TRANSPLANT MALIGNANCIES IN RECIPIENTS OF ORGAN TOURISM

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Background: The aim of this study was to investigate the incidence and patterns of malignancy in a series of kidney transplantation (KT) recipients of organ tourism.
Methods/Materials: From March 1995 to November 2008, a total of 960 kidney transplant recipients who were actively followed up in our hospital were retrospectively reviewed. Among them, 568 recipients (Group 1) received KT in other countries, mainly from China, and 392 in our hospital (Group 2).
Results: Group 1 patients were older at transplantation (46.99 ± 12.61 vs. 36.68 ± 10.62 years, $p < 0.001$) and had shorter duration of pre-transplant dialysis (2.41 ± 2.69 vs. 3.14 ± 3.22 years, $p = 0.001$). The incidence of post KT malignancy was 25.2% in group 1 and 12.5% in group 2, respectively ($p < 0.001$). The major cancer types are urothelial carcinoma (UC), hepatocellular carcinoma (HCC), and renal cell carcinoma (RCC) in both groups.
Conclusion: The incidence of malignancy after KT is extremely higher than previous report, especially for organ tourists. Strict and complete pre-operative evaluation is mandatory for patients waiting for KT. Routine cancer screening should be included in the post KT follow up.

P115 PREDICTORS OF OUTCOME IN LIVE DONOR RENAL TRANSPLANT; THE SRI LANKAN EXPERIENCE

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Introduction: Renal transplantation in Sri Lanka consists primarily of Live Donor Renal Transplants (LDRT). Here we look at LDRT and possible predictors of graft outcome in the "limited-resource" setting.
Methods: A prospective analysis of all LDRT between March 2009 and March 2014 was done. Surgical technique, timing and immunosuppression were standardized. Recipient age, donor age, degree of HLA mismatch, duration of pre-transplant dialysis, incidence of early acute rejection and post-transplant CMV infection were studied in a multivariate logistic regression model.
Results: 312 consecutive LDRT were studied. Follow-up was complete in 296 (95%); mean follow-up 28 months. Overall patient survival was 264/296 (89%). In-hospital mortality (day 0–30) was 7/312 (2%); from sepsis (5), myocardial ischaemia (1) and pulmonary embolism (1). The commonest overall cause of death was sepsis (28/32). Among these, the focus of infection was graft pyelonephritis ($n = 14$), pneumonia ($n = 10$, bacterial 6, fungal 3, viral 1) and meningitis ($n = 4$, bacterial 3, viral 1). There were 26 (8.7%) Graft Failures (GF); 07 primary and 19 secondary (mean graft survival 10 months). The main cause for primary GF was humoral rejection (05) and renal vein therombosis (2). Acute rejection in the first month was a highly significant (p12 months ($p = 0.2$), HLA mismatch >50% ($p = 0.8$), donor age >40 years ($p = 0.9$), recipient age >50 years ($p = 0.5$) and CMV infection ($p = 0.6$) failed to show statistical significance.
Conclusion: In a "limited resource" setting, we have achieved acceptable results comparable to similar centers elsewhere. While post-transplant sepsis continues to be the commonest cause of mortality, early acute rejection proved to be a highly significant predictor of graft failure. A better balance between avoiding sepsis and rejection will help in improving both graft and patient outcomes.

P116 THE ROLE OF PRIMARY DISEASE FOR THE DEVELOPMENT OF *DE NOVO* DONOR SPECIFIC ANTIBODIES AFTER KIDNEY TRANSPLANTATION

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Background: To explore the role of primary disease in the development of *de novo* donor specific antibodies (DSA) after Kidney Transplantation (KTx), and their correlation with subsequent acute rejection (AR) and graft function in long term.
Methods: We studied patients who were transplanted between 2005 and 2011. Patients with unknown primary disease, a history of non-compliance, ABO incompatible KTx and a DSA prior to KTx were excluded. Patients were categorized by the primary disease as following: Group A included patients with primary glomerulonephritis or in the setting of a autoimmune disease, while group B included patients with hypertension, obstructive uropathy, polycystic kidney disease, or congenital hypo plastic kidneys. Graft biopsies were performed by clinical indication.
Results: Of 269 patients with known primary disease, 15 were excluded using the aforementioned criteria. Group A and group B were consisted of 92 and 142 patients respectively. The frequency of *de novo* DSA was 10.9% for group A and 11.8% for group B ($p = 0.835$). The mean time to detection was 20.9 months from KTx. Biopsy proven AR (BPAR) was recorded in 13.45% of the total cohort, during a mean follow up time of 56.5 months. In group B, detection of *de novo* DSA was associated with higher rates of BPAR (37.5% vs. 8.3%, $p = 0.002$, RR = 6.6), compared to the patients of the same group without *de novo* DSA, while in group A there was no difference in the incidence of BPAR between the patients with and without *de novo* DSA.
Conclusion: The incidence of *de novo* DSA was not different between patients with a primary disease of autoimmune origin, or not. However, detection of *de novo* DSA was associated with higher rates of BPAR among patients with a non-autoimmune primary disease, while in patients with an autoimmune primary disease the rate of BPAR was not influenced by the development of *de novo* DSA.

P117 VITAMIN D DEFICIENCY IS ASSOCIATED WITH INCREASED BACTERIAL INFECTIONS AFTER KIDNEY TRANSPLANTATION

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Background: Vitamin D status was known to be associated with allograft and patient survival in kidney transplant recipients (KTRs). However, there are few studies about the association between vitamin D levels and post-transplant infections. This study investigated the impact of vitamin D deficiency on the development of infections after kidney transplantation.
Methods: We enrolled KTRs who measured 25-(OH) vitamin D level prior to kidney transplantation between January 2011 and December 2013. Vitamin D deficiency was defined as the serum 25-(OH) vitamin D level <20 ng/ml. We examined the incidence of various posttransplant infections during follow up period. Factors that increased risk of infections were investigated with multiple logistic regression.
Results: A total of 164 KTRs were followed up for mean 24.8 ± 10.7 months. Among them, 135 (82.3%) patients had vitamin D deficiency. Patients with vitamin D deficiency showed significantly higher incidence of urinary tract infection ($p = 0.005$) and any bacterial infections ($p = 0.003$) compared to those without vitamin D deficiency. However, vitamin D deficiency was not

associated with viral and fungal infections. Multivariate regression analysis revealed that vitamin D deficiency (odd ratio [OR] 21.5, 95% confidence interval [CI] 2.40–191.60, p = 0.006) and desensitization prior to kidney transplantation (OR 5.58, 95% CI 1.69–18.45, p = 0.005) were independent risk factors for post-transplant bacterial infections.
Conclusion: Pre-transplant Vitamin D deficiency was significant risk factor for bacterial infections after kidney transplantation. Further studies will be needed to ascertain the preventive role of vitamin D supplementation.

P118 IMMUNOLOGIC MONITORING OF T-LYMPHOCYTE SUBSETS AND HLA-DR POSITIVE MONOCYTES IN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: The clinical significance of circulating T-lymphocyte subsets and HLA-DR positive monocytes in peripheral blood of kidney transplant recipients (KTRs) remains unclear. We examined the efficacy of measurement of these cells for immunologic monitoring in KTRs.
Methods: Blood samples were obtained before transplantation, 2 weeks after transplantation, at diagnosis and 2 weeks after treatment of biopsy-proven acute cellular rejection and cytomegalovirus (CMV) infection. A total of 220 (including 12 acute rejections and 5 cytomegalovirus infections) specimens from 123 patients were included for flow cytometry analysis of HLA-DR+, CD3+, CD4+, CD8+, and CD25+ T lymphocytes, and HLA-DR positive monocytes.
Results: The frequencies of CD4+CD25+/CD4+ T cells, CD8+CD25+/CD8+ T cells, and HLA-DR positive monocytes were significantly decreased at 2 weeks after transplantation, compared with those before transplantation (all $p < 0.01$). Clinical parameters were not correlated with the decrease of the frequencies after transplantation. In comparison of the frequency at 2 weeks after transplantation, the frequency of CD4+CD25+ T cells was significantly increased in KTRs with acute rejection (6.37 ± 5.85% vs. 9.80 ± 6.12%; $p = 0.024$). However, no significant differences were observed between stable KTRs and KTRs with CMV infection. Analysis using the receiver-operating-characteristic curve showed that acute rejection could be predicted with a sensitivity of 75.0% and a specificity of 43.0% using a cutoff value of 4.8% frequency of CD4+CD25+/CD4+ T cells.
Conclusions: circulating T lymphocyte and monocyte subsets showed significant and consistent changes in their frequencies after immunosuppression. Among the various immune cells, measurement of circulating CD4+CD25+ T cells might be a useful noninvasive immunologic monitoring tool for detection of acute rejection.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P119

MICRORNAS IN KIDNEY GRAFT PRESERVATION FLUID AS NOVEL BIOMARKERS FOR DELAYED GRAFT FUNCTION

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Background: Delayed graft function is a common complication after deceased donor kidney transplantation (KT), which affects both short and long-term outcome. Currently available biomarkers in perfusate lack sensitivity in predicting graft outcome. The aim of this study is to reveal microRNA profiles in preservation fluid of kidney grafts that correlate with graft outcome.
Methods: In this study, perfusate samples were collected during kidney transplantations from both living and deceased donors. The graft outcome was defined as immediate graft function (IF) and delayed graft function (DGF). As a discovery cohort 9 IF samples and 9 DGF samples were analysed for six known kidney miRNAs selected from the literature. As validation cohort, we analysed 10 living donor samples with IF, 10 deceased donor samples with IF and 10 deceased donor samples with DGF and tested two miRNAs that gave most promising results during the discovery stage.
Results: All baseline characteristics of the groups were comparable except for cold ischemia time, 152 min in the IF group vs. 798 min in DGF group, $p < 0.001$. Levels of miR-199, -194, -192 and -182 were mostly undetectable. However, levels of miR-21 and miR-155 were significantly different between the IF and DGF groups. Mean level of miR-21 was 52 in IF group versus 8 in DGF group, $p = 0.005$. Mean level miR-155 in the IF group was 16 and 1 in the DGF group, $p = 0.026$. In the validation cohort, the mean level of miR-21 for living donor samples with IF was 59, and 12 in the deceased donor group with IF and in the deceased donor group with DGF the miR-21 level was 0.2, $p < 0.001$. Mean level of miR-155 was not significantly different in de three groups.
Conclusion: MiRNAs in graft preservation fluids are promising novel biomarkers for predicting outcome prior to kidney transplantation. In the era of extended criteria donor organs, this may have great clinical impact for graft reconditioning strategies to improve transplant outcome.

031 PEDIATRIC TRANSPLANTATION

P120

VALIDATION OF A TOXICITY SCORE TO ASSESS SAFETY IN CELL-BASED IMMUNOMODULATORY THERAPY IN PAEDIATRIC LIVER TRANSPLANTATION

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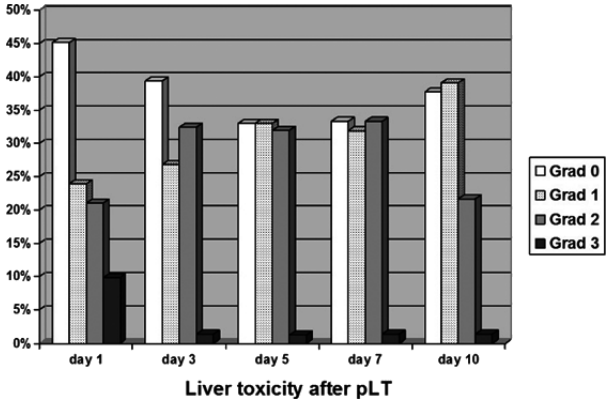
Background: In paediatric liver transplantation (pLT) calcineurin-based immunosuppression (IS) leads to significant morbidity and impairs quality of life for recipients. Alternative cell-based immunomoduating therapies are under investigation (e.g. mesenchymal stem cells [MSC]). However, their potential toxicity, especially in children, is not known. We developed a paediatric scoring system to detect treatment-emergent adverse events (TEAE) potentially associated with MSC therapy following pLT, adapting the MiSOT-I score (Dillmann et al., 2012).

Methods: The score focusses on three independent modalities reflecting injury of lungs and liver allograft, e.g. by thrombembolism, as well as systemic reactions, like anaphylaxis. For each of these three modalities, degrees of severity between 0 (no TEAE) and 3 (severe TEAE) were defined. Clinical data, blood analysis, x-ray and, doppler-ultrasound were obtained on days 1, 3, 5, 7 and 10 after LT (range of $\pm$1 day). The score was validated retrospectively in children (age 0–17 years) receiving LT and standard IS therapy without MSCs between 2004 and 2014 in our centre.

Results: The score was assessed in a total of $n = 78$ LT recipients. Patients received full-size ($n = 20$), split ($n = 27$) or living-related LT ($n = 31$). Altogether, we detected 11 events of severe liver TEAEs and 3 events of severe pulmonary TEAEs. No severe systemic-related adverse events were observed. In case of split liver transplantation, at least one event of severe liver impairment was detected in 1 out of 5 patients at any time point. After full-size and living related liver transplantation, severe liver TEAEs were detected in 1 out of 10 cases. Patient and graft survival was 100%.



Liver toxicity after pLT

Conclusion: The paediatric infusional toxicity score is suitable to assess cell therapy specific adverse events in pLT. In comparison to an adult cohort, liver dysfunction plays a dominant role after pLT and may be associated with higher proportion of modified liver grafts.

023 KIDNEY

P121 URETERAL LENGTH IN LIVING DONOR KIDNEY TRANSPLANTATION; DOES SIZE MATTER?

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Background: The aim of this study is to evaluate the role of ureteral length on major urological complications, like ureteral strictures or urinary leakage.
Methods: Data were retrospective collected from the INEX-trial database, a prospective randomized controlled trial performed between October 2010 until December 2012, in which 200 recipients of a living donor kidney transplant were included to compare the intra- to the extravesical ureteroneocystostomy. Ureteral length was measured in 198 patients and used to divide recipients into 3 categories based on interquartile ranges: 1) Short ureters ≤8.5 cm 2) Medium ureters 8.6–10.9 cm and 3) Long ureters ≥11 cm. Urological complications were defined as the number of percutaneous nephrostomy placements (PCN). A risk factor analysis for urological complications was performed.
Results: Fifty recipients fell into the short ureter category, 98 to the medium and 50 to the long ureter category. Median follow-up was 26 (range 2–45) months. There was no significant difference in number of PCN placements between the categories. Risk factor analysis for gender, arterial multiplicity and type of ureteroneocystostomy showed no differences in number PCNs for the whole group of 198 recipients. However, a subgroup analysis revealed that male recipients in the short ureter category had a significant higher risk for urological complications ($p = 0.038$) as well as recipients in the long ureter category who had arterial multiplicity of the graft ($p = 0.043$). In a logistic regression model neither the interaction between gender and ureteral length was significant ($p = 0.355$), nor the interaction between arterial multiplicity and ureteral length ($p = 0.152$).
Conclusion: Based on our data, we conclude that ureteral length in itself may not influence the number of urological complications. The statistical outcomes of male gender of the recipient in the short ureter category and arterial multiplicity in the long ureter category are contradictory.

P122 KIDNEY RETRANSPLANTATION IN THE IPSILATERAL ILIAC FOSSA; A SURGICAL CHALLENGE

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Background: The aim of this study is to review the surgical outcome of kidney retransplantation in the ipsilateral iliac fossa in comparison to first kidney transplants by performing a case-controlled study.
Methods: Our hospital database was screened for retransplantations between 1995 and 2013. Each patient that underwent a kidney retransplantation in the ipsilateral iliac fossa was matched with 3 patients with a first kidney transplantation. Matching was based on recipient gender and age, year of transplantation and type of donor. Demographic characteristics, surgical outcome and surgical re-interventions were compared. For graft and patient survival analyses we added an extra control group including all patients receiving a second transplantation in the contralateral iliac fossa between 1995 and 2013.
Results: We identified 99 patients that received a retransplantation in the ipsilateral iliac fossa. There was significantly more blood loss and longer operative time in the retransplantation group. The rate of vascular complications was higher in the study group. Surgical re-interventions did not differ significantly between the study and the control group. However, the rate of graft nephrectomies within 1 year was significantly higher in the study group: 16 patients (16%) vs. 14 patients (5%) with a first transplant. The graft survival rates at 1 year and 3, 5 and 10 years were 76%, 67%, 61% and 47% in the study group vs. 96%, 88%, 77% and 67% in the first control group vs. 90%, 85%, 78% and 57% in the second control group. Log rank test for graft survival between study and the first control group was $p < 0.001$, between cases and the second control group it was $p = 0.010$. Patient survival did not differ significantly between the groups.

Conclusion Kidney retransplantation in ipsilateral iliac fossa is surgically challenging and associated with more vascular complications and graft loss within the first year after transplantation.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P123

RENAL ISCHEMIA/REPERFUSION DECREASES THE EXPRESSION OF TYPE 4 DIPEPTIDYL-PEPTIDASE (DPP-4) AT BOTH MRNA AND PROTEIN LEVELS

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Type 4 dipeptidyl-peptidase (DPP-4) is a serine protease expressed at the surface of most epithelia, including renal proximal tubules (PT). Since DPP-4 participates to inflammation, recruitment of immune cells and apoptosis, we investigated its expression and distribution in case of renal ischemia/reperfusion (I/R). Transient I/R is indeed unavoidable at the time of kidney transplantation, and its severity conditions graft function and survival at both short and long terms. Renal ischemia was induced in Wistars rats by unilaterally clamping the left kidney for 60 min. The right kidney was simultaneously excised and used as a comparator. Renal reperfusion was allowed for 24 h ($n = 6$) or 48 h ($n = 6$) h. Kidneys were snap-frozen and lysed for mRNA and protein extraction. In parallel, the expression and distribution of DPP-4 was studied by immunohistochemistry on 10 biopsies of human kidneys with non-toxic acute tubular necrosis (ATN). In rat kidneys, mRNA abundance of DPP-4 was significantly decreased following I/R at both 24 h (12.5-fold) and 48 h (12.9-fold) in comparison to controls. Immunoblotting analyses also showed a 2.3-fold reduction of DPP-4 expression at 24 h and 48 h post reperfusion. In human kidneys with ATN, the abundance of DPP-4 appeared reduced in comparison to healthy controls. Still, we did not observe evidence of DPP-4 internalization into PT cells. In conclusion, renal I/R is associated with reduced expression of DPP-4 in rat and human kidneys, which may be caused by PT tubulorrhexis and/or DPP-4 shedding into the urine.

023 KIDNEY

P124

HIGHER 25-HYDROXYVITAMIN D LEVEL IS ASSOCIATED WITH LOWER PROTEINURIA AFTER KIDNEY TRANSPLANTATION

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Background: Proteinuria (PU) is a well established factor influencing native kidneys' and renal transplant survival. There is a growing body of evidence that vitamin D (VD) is associated with renal protection, suppression of the renin – angiotensin aldosterone system (RAAS) and other pleiotropic effects, apart from its influence on calcium-phosphorus metabolism. In addition, high prevalence of suboptimal VD levels in kidney transplant recipients (KTRs) was detected. The aim of our study was to assess the influence of the level of 25-hydroxyvitamin D (25VD) on the PU in KTRs.

Methods/Materials: 395 KTRs were tested for 25hydroxyvitamin D (25VD) during their regular visits in our transplant center, together with routine blood sampling and PU testing. Patients within 12 months of transplantation, performed parathyroidectomy, unstable kidney function, concomitant intake of calcineurin inhibitors (CNI) and mTOR inhibitors, advanced liver disease and VD supplementation were excluded from the study. Laboratory, clinical and therapeutic factors for PU were taken into consideration. Statistical analysis included descriptive statistics, univariate and multivariate loglinear regression (SPSS version 22.0). Level of significance adopted was $p < 0.05$. Determination of total 25VD was performed by a validated LC-MS/MS method.
Results: The study encompassed 275 KTRs (males 182, females 93). Positive correlation was established between PU and history for diabetes mellitus (DM), rejection episode 12 months within testing for 25VD, use of mTOR inhibitors and systolic blood pressure, $p < 0.05$. Significant negative relationship was detected for age of KTRs, eGFR and 25VD concentrations ($p < 0.05$).
Conclusion: Our study confirmed one of the pleiotropic effects of vitamin D after kidney transplantation, associating higher levels of 25VD with significantly lower PU in KTRs.

025 LIVER

P125

A CASE OF LIVING DONOR LIVER TRANSPLANTATION FOR LIVER FAILURE DUE TO HYPOPITUITARISM AFTER RESECTION OF CRANIOPHARYNGIOMA

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A 33 years old man was referred to our hospital for liver cirrhosis presenting with hepatopulmonary syndrome. His chief complaint was anorexia and abdominal distension. He had a history of resection of craniopharyngioma at 6 years old and gamma knife treatment to the recurrence of the suprasellar tumor at 17 years old. Because of postoperative diabetes insipidus and hypophyseal insufficiency the patient received desmopressin, hydrocortisonum, and recombinant growth hormone. After the gamma knife therapy, he was followed up only with desmopressin. He discontinued the therapy because of social withdrawal from the age of 24 yr. At the admission on our hospital, oxygen saturation was 85% while breathing 40% oxygen. He gained 13.5 kg (17%) with massive ascites for 3 weeks. He had pedal edema and no pubis. Child-Turcotte-Pugh score was 12 point and Model for End-Stage Liver Disease score was 22 point. Further evaluation demonstrated intrapulmonary arteriovenous shunting with a positive "bubble study". Viral infections (HBV, HCV, CMV) as well as metabolic diseases (Wilson disease and hemochromatosis) were excluded. He underwent blood type identical living donor liver transplantation using his mother's left lobe. Native liver showed decompensated cirrhosis but could not be diagnosed what is the cause for the cirrhosis. After the transplantation, he was weaned from respirator at 4POD and leave ICU at 16 POD. The post-transplantation period was complicated with hepatopulmonary syndrome. It took more than 6 months for rehabilitation. We could not confirm the cause of the cirrhosis from the histopathological point of view. Patients with hypopituitarism are reported to be developed a phenotype similar to metabolic syndrome with nonalcoholic steatohepatitis. We hypothesize that hypopituitalism after the treatment of craniopharyngioma cause nonalcoholic steatohepatitis and developed to the decompensated cirrhosis that needs liver transplantation.

023 KIDNEY

P126

SERUM UROMODULIN LEVEL AND EARLY KIDNEY GRAFT FUNCTION

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Background: Uromodulin is synthesized by cells of the thick ascending limb of Henle's loop and released into the urine or secreted in the renal interstitium, subsequently occurring in the blood. The quantification of this kidney specific glycoprotein in serum (sUMOD) by a new Elisa (EUROIMMUN AG) should clarify its post-transplant (post-Tx) dynamics.
Methods/Material: A total of 44 recipients of kidneys from deceased donors were included in this retrospective study and divided into 4 types of graft function: Immediately graft function [IGF, *n* = 19]), delayed graft function (DGF, *n* = 8), IGF complicated by rejections (R, *n* = 9) and DGF + R (*n* = 8).
Results: The interquartile range of sUMOD in healthy adults is between 149 and 275 ng/ml (median: 207). At the time of Tx the sUMOD level of the recipients were hardly measurable (table). Till day 5 the increases of the sUMOD levels were comparable in event-free IGF and DGF recipients and independent from the serum creatinine [crea; μmol/l]) level. Whilst in IGF recipients after day 5 the sUMOD levels increased, in DGF recipients the sUMOD level started to decrease, showing at day 21 a significant difference ($p = 0.003$). The last dialysis treatment in the DGF cohort was at day 11 ± 3.6. Accompanying rejections did additional influence the sUMOD levels. Whilst in IGF recipients the sUMOD levels in connection with ongoing rejections continuously declined after a peak of 50 ± 47 ng/ml at day 5, the sUMOD levels in the DGF cohort dropped down already after a peak at day 3 of 33 ± 33 ng/ml. According to the 21-day sUMOD values there is a clear ranking of post-Tx courses from IGF, IGF + R ≈ DGF to DGF + R. A worsening of graft function was always accompanied by a long-lasting reduced sUMOD level.
Conclusion: The measurement of the sUMOD levels in kidney graft recipients allows a reliable assessment of the graft function.

	Kidney		Graft		Function			
	Immediate, IGF		Delayed, DGF		IGF + rejection		DGF + rejection	
Day post-NTx	sUMOD ng/ml	Creatinine	sUMOD ng/ml	Creatinine	sUMOD ng/ml	Creatinine	sUMOD ng/ml	Creatinine
0	4.8 ± 3.9		2.3 ± 3.8		1.6 ± 2.2		1.8 ± 2.9	
5	52 ± 40	191 ± 159	45 ± 34	920 ± 336	50 ± 47	226 ± 92	31 ± 22	960 ± 217
13	76 ± 39	128 ± 43	38 ± 12	675 ± 199	47 ± 30	260 ± 155	19 ± 7	782 ± 181
21	77 ± 31	118 ± 30	40 ± 22	351 ± 200	40 ± 19	228 ± 179	14 ± 9	627 ± 271
Discharge	Day 26 ± 12	119 ± 34	Day 46 ± 13	152 ± 35	Day 39 ± 11	137 ± 19	Day 69 ± 25	211 ± 80

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P127

URINARY MICRORNA EXPRESSION PREDICTS DELAYED GRAFT FUNCTION IN KIDNEY TRANSPLANTATION

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Introduction: Predicting outcomes following kidney transplantation often involves performing invasive graft biopsies. Non-invasive biomarkers allowing accurate assessment of graft function are therefore needed. MicroRNAs (miRNAs) have recently emerged as potentially highly useful biomarkers of numerous disease processes, including kidney disease. The aims of this study were to determine miRNA expression profiles in urine samples from kidney transplant patients in the first week post-transplantation, and to assess the utility of these data to discriminate between patients with and without delayed graft function (DGF).

Methods: Consecutive kidney transplant patients were recruited into 3 groups: live donor kidney transplant without DGF ($n = 10$); cadaveric kidney transplant without DGF ($n = 10$); and cadaveric kidney transplant with DGF ($n = 13$). Following RNA extraction using miRNeasy Mini Kits (Qiagen), a Taqman Low Density Array (TLDA) analysis was performed to quantify expression of >750 miRNAs in urine samples collected on day 1 post-transplantation in 4 live donor kidneys without DGF and 4 cadaveric kidneys with DGF. Confirmatory RT-qPCR was performed for 8 identified target microRNAs.

Results: TLDA quantification identified a profile of miRs dysregulated in DGF. Subsequent individual quantification by RTqPCR validated 7 of 8 miRs evaluated. Expression of miR-9, -10a, -21, -29a, -221, -429, and -574-3p was significantly up-regulated with ≥20-fold change in the DGF group compared with both live donor without DGF and cadaveric without DGF groups.

Conclusion: MiRNAs are emerging as important biomarkers in the context of kidney injury and transplantation. This study shows that expression of miR-9, -10a, -21, -29a, -221, -429, and -574-3p in urine on day 1 post-transplantation was predictive of DGF. Refinement of these miRNA data is underway to identify a non-invasive biomarker panel to discriminate reliably between DGF and other pathologies, such as acute rejection.

023 KIDNEY

P128

THE INITIAL RESULTS OF THE DECEASED DONOR KIDNEY TRANSPLANTATION AFTER INDUCTION OF ANTI-THYMOCYTE GLOBULIN (ATG) VERSUS BASILIXIMAB FROM THE NEW KOREAN KIDNEY TRANSPLANTATION CENTER

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Konyang University Hospital, Konyang University School of Medicine

Background: The aim of this study is to evaluate initial outcome after anti-thymocyte globulin (ATG) versus basiliximab induction with deceased donor kidney transplantation (DDKT) of the new small center.
Methods/Materials: Between May 2006 and Feb. 2015, 40 patients underwent DDKT at Department of Surgery at Konyang University Hospital, Daejeon, Korea. 3 cases (7.5%) of them were lost in the following-up. We applied ATG induction criteria which were donor age >50 years old or donor Creatinine level >1.3 mg/dl except to HBV (+) and HCV (+) recipients. Recipients were divided into two groups; the ATG group: $n = 20$ and the basiliximab group: $n = 17$. The following characteristics and results were evaluated retrospectively through the medical records.
Results: The 1-year patient survival in the ATG group was 93.8% compared to 89.4% in the basiliximab group ($p = 0.989$). Graft survival at 1 year was 94.7% and 100% in the ATG and the basiliximab group ($p = 0.344$) respectively. Incidence of biopsy proven acute rejection (BPAR) episodes was more prevalent in the basiliximab group (15.0% vs. 29.4%, $p = 0.428$). Delayed graft function (DGF) was not significantly different in both groups. (15.0% vs. 11.8%, $p = 1.000$). Creatinine level by period of recipients was not different in both group (12th months: 1.31 ± 0.57 vs. 1.21 ± 0.33 mg/dl, $p = 0.562$). Overall complications during the follow periods were not significantly different in both groups (90.0% vs. 76.5%, $p = 0.383$).
Conclusion: The results show that patient survival and graft survival after induction of ATG versus basiliximab of the DDKT is not different. Infection rate was higher in ATG induction group but episodes of acute cellular rejection were more prevalent in basiliximab induction group. Statistical significance was not found in both groups. Therefore induction of ATG may be safe and preferable method for old age and relatively poor renal function of donor in kidney transplantation.

025 LIVER

P129

SIMPLIFIED UNIFICATION PATCH VENOPLASTY FOR ANOMALOUS PORTAL VEIN BRANCHING IN LIVING DONOR LIVER TRANSPLANTATION WITH RIGHT LOBE GRAFT

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Background: Living donor liver transplantation (LDLT) using donors with anomalous portal vein branching (APVB) has been considered a challenging procedure in terms of the donor's safety and the complexity of vascular reconstruction in the recipient. Especially, double portal vein (PV) orifices is one of the most common anatomic variation encountered in right lobe grafts. Herein, we describe our experience using unification patch venoplasty for reconstruction in right lobe graft with double portal vein orifices.
Methods: We analyzed the outcomes via retrospective review of 144 adult LDLT with right lobe grafts including 20 cases of adult LDLT using unification patch venoplasty for APVB (group I) from January 2010 to December 2013. The donor's anomalous portal vein branches were type II in 6 cases (30%), type III in 13 cases (65%), and type IV in 1 case (5%). Moreover, we compared clinical outcomes with 59 recipients who underwent adult LDLT using right lobe graft with normal PV anatomy in the same period (group II) through propensity score matching analysis.
Results: Intraoperative PV stenting was necessary in two patients (10%) in group I. During a mean follow-up of 32.6 $\pm$ 14.9 months, all PVs remained patent until patient's death or censoring. No significant difference to vascular complications was observed between two groups in postoperative period. Anomalous PV anatomy was associated with a high incidence (50%) of biliary variations: however, these variations did not result in increased biliary complication rate. In-hospital mortality and overall survival rates were not significantly different between two groups. No major complications requiring reoperation or endoscopic/radiologic intervention occurred in any of the donors in group I.
Conclusion: Our simplified unification patch venoplasty has a favorable outcome without increasing technical difficulty and could be safe and feasible procedure for reconstruction of double PV orifices in right lobe LDLT with complex PV.

P130

LOCALIZED SCLERODERMA IN LIVER TRANSPLANT RECIPIENT AS A RARA COMPLICATION OF LONG-TERM PERIOD

Ekaterina Yaroshenko[1], Yulia Matushevskaya[2], Maxim Kornilov[1], Olga Gichkun[1]
[1]Federal Research Center of Transplantology and Artificial Organs; [2]Chaika Clinics

In May of 2006 we performed orthotopic liver transplantation (OLT) to female recipient 42 years old with primary biliary cirrhosis. Immunosupressive regimen (IS) was with induction of basiliximab without steroids and has consisted of two components: tacrolimus (TAC) and mycophenolate mofetil (MMF) since 2006 till present time. All time of observation function of liver transplant has been stable. Within 8 years of observation patient has developed such adverse effects as: obesity, high blood pressure and high uric acid in serum, which have been successfully managed by beta-blockers and diet. On the 8 year after OLT during scheduled routine examination we observed skin lesions (which have not disturbed recipient) in lumbar and chest regions: 5 patches livid color without infiltration with atrophy in central part and red vascular circle in periphery part. For detection lesions etiology we have performed skin biopsy. Histology assessment described changes more common for idiopathic atrophodermia Pasini-Pierini. Signs of systemic scleroderma was excluded by rheumatologist. To the date patient have started external therapy with steroid ointments and now we are discussing how to modify IS for stabilization skin process, keep good graft function and prevent reoccurring of metabolic adverse events. To conclude: this clinical case shows that in long-term period we can find different skin manifestations and not always they will be skin cancers, but actually we must pay attention on it for future investigation and clinical experience.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P131

ACELLULAR NORMOTHERMIC MACHINE PRESERVATION OF LIVER GRAFTS WITH AQIX® RS-I SOLUTION

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Introduction: Normothermic machine preservation (NMP) has come into focus for optimal preservation of grafts, retrieved after cardiac arrest of the donor. Up to now, NMP is performed with blood, raising problems associated with limited availability and immunological activity of the perfusate. In our study an acellular preservation solution AQIX® RS-I (Aqix Ltd, UK) was therefore tested for NMP in an ex-vivo rat liver model.
Material/Methods: Rat livers were procured after a warm ischemia time of 30 min and put on a recirculating machine perfusion device with portal perfusion. Oxygenated (pO2 > 500 mmHg) NMP was carried out with ~3 ml/g/min at 37°C for 4 h using perfusates according to the following groups (all $n \geq 6$). (1) AQIX® RS-I solution alone; (2) AQIX® RS-I + Dextran 40 (30 g/l); (3) blood from inbred littermates, diluted to Hb = 6). Liver viability was tested thereafter for 120 min in an established reperfusion model *in vitro*.
Results: The addition of a colloid improved normothermic preservation with Aqix, significantly reducing hepatic enzyme loss (AST, ALT, GLDH), along with a twofold increased bile flow upon reperfusion, while vascular resistance was not affected neither during NMP nor upon reperfusion. NMP with diluted blood did not result in further improvement of graft recovery in our model. Histological scores for morphological injury did not differ among the three groups.
Conclusion: AQIX® RS-I appears to be an appropriate solution for short term oxygenated normothermic liver preservation; the addition of a colloid is recommended.

025 LIVER

P132 ENCOURAGING RESULTS OF 12 WEEK THERAPY WITH SOFOSBUVIR AND SIMEPREVIR IN LIVER TRANSPLANT RECIPIENT ON HEMODIALYSIS

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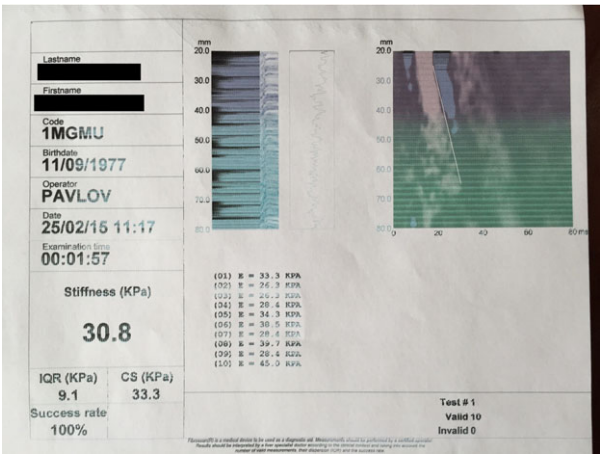
We are pleased to announce encouraging results of 12-week combination therapy with standard dose sofosbuvir and standard-dose simeprevir in a HCV genotype 1b-infected liver transplant recipient on hemodialysis. The patient was listed with HCV liver cirrhosis complicated with severe hepatorenal syndrome in combination with IgA nephropathy. In january 2012 patient undervent OLT; immunosupression with TAC and MMF. Within early post-transplant period patient recieved 17 haemodialysis due to kidney injury (probably mixed etiology) and was discharged with a stable liver graft function and glomerular filtration rate G2 CKD. On 25th month of posttransplant period elevation of serum levels of ALT 8N, AST 6N, in graft biopsy – A2 F were registrated. Since that time we noticed impairement of kidney function with decreasing of GFR to 30–44 ml/min/1.72 m^2. All the time of observation cryoglobulins in the serum were not detected and TAC serum levels were inrange from 3.5 to 5 ng/ml. In november 2014 was diagnosed CKD V stage, imposed AV fistula and started haemodialysis. Up to the moment patient receives monotherapy: TAC 0.5 mg BiD. Due to progressive kidney damage we decided to give up PEG IFN-based protocol and started with 12-week combination therapy with standard dose sofosbuvir and standard-dose simeprevir. No drug–drug interactions were noted with TAC-based immuno-suppression. Laboratory tests improved during therapy. Since 4th week of treatment patient is HCV RNA negative. To the date it has been 3 months since the end of therapy and we registrate 12 weeks SVR. We are noticing signs of improoving of kidney function and and will try to get away with hemodialysis and as a consequence avoid kidney transplantation. If we fail to achieve recovery of renal function, it is likely the patient will be performed kidney transplantation. In any case, the status of HCV RNA negative should significantly improove his prognosis.



P133 NEW ERA OF ANTIVIRAL TREATMENT OF HCV-INFECTION AFTER LIVER TRANSPLANTATION

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Federal Research Center of Transplantology and Artificial Organs

Background: From 12/2004 to 03/2015 at our center performed OLT to 61 hepatitis C liver cirrhosis recipients. Up to date we performed AVT to 22 recipients: all cases of AVT were on monotherapy with tacrolimus.

Methods/Materials: 4 recipients with genotype 1B got AVT by newest aprooved protocols:

- 1 patient, female, 59 years old, carried AVT with PEG IFN + simeprevir + ribavirin for 12 weeks and continued for 12 weeks with PEG IFN + ribavirin and developed RVR and EVR and achieved a SVR.
- 1 patient, female, 53 years old to the moment is on AVT with PEG IFN + simeprevir + ribavirin for 12 weeks and continued for 12 weeks withPEG IFN + ribavirin and developed RVR and EVR.
- 1 patient, male, 37 years old, carried AVT with sofosbuvir + simeprevir for 12 weeks and developed RVR and achieved a SVR. A feature of this observation is that the treatment was carried out on hemodialysis in a patient with IgA nephropathy and the outcome of treatment was the recovery of the liver transplant functions and to date, we are detecting regeneration of water excretory functions of the kidneys.
- 1 patient, male, 32 years old, to the moment is on AVT with sofosbuvir + simeprevir + ribavirin for 12 weeks and developed RVR.

In addition, adverse events during treatment were found only in patients receiving AVT with PEG IFN and ribavirin and were minimal and well-known: PEG IFN-associated (neutropenia, flu-like syndrome) and ribavirin-associated (anemia). The admission of new antiviral drugs (simeprevir and sofosbuvir) was well tolerated. We expect high frequency (100%) of SVR in this group of patients versus 72% in group of the 18 patient who carried AVT with PEG IFN + ribavirin in the absence of serious adverse events and well tolerability of treatment. In conclusion: We have entered a new era of AVT where actually achieving high frequency SVR is expected and absence of serious adverse events and well tolerability of treatment quite predictable.

P136 RESULTS OF 10-YEAR EXPERIENCE IN TREATMENT OF HEPATITIS C AFTER LIVER TRANSPLANTATION

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Background: From 12/2004 to 03/2015 at our center performed OLT to 61 hepatitis C liver cirrhosis recipients. 4 recipients underwent antiviral therapy before OLT and developed SVR which remains up to date. 5 recipients died in early posttransplant period and 30 patients still expect of start of antiviral therapy.
Methods/Materials: Up to date we performed AVT to 22 recipients: 7 patients had genotype 3a, 15-1b. All cases of AVT were on monotherapy with tacrolimus or cyclosporine A.
Results: Of the 18 patients who carried AVT with PEG IFN + ribavirin, 13 (72%) achieved a SVR. Of the 2 patients who carried AVT with PEG IFN + simeprevir + ribavirin both developed RVR and EVR, 1 patient achieved a SVR and an other continue AVT. Of the 2 patients who carried AVT with sofosbuvir + simeprevir +/–ribavirin both developed RVR and EVR, 1 patient achieved a SVR and an other continue AVT. We expect high frequency (100%) of SVR in theese two groups.

Among our observations we met 3 cases of fibrosing cholestatic hepatitis C (one of them was unsuccessfully treated with PEG IFN + ribavirin, in other case treatment was discontinued at week 6 in mind persistent increase in serum bilirubin despite negative HCV RNA at second week of treatment).

In one case we performed 12-week AVT with sofosbuvir + simeprevir to liver transplant recipient on hemodialysis due to IgA-nephropathy with achievment of SVR and the gradual recovery of renal function.

In one recipient the AVT lasted 72 weeks in the form of a slow virologic response. In the remaining patients treated consistent protocol regarding genotype of hepatitis C virus (24–48 weeks).

In other patient the AVT was stopped after EVR at 15 weeks, because of an abscess of the right lobe of the liver. After 3 months, the level of viremia was 2.8*10*7 IU/ml. Retry after 8 months had led to a EVR and SVR.
Conclusion: Actually achieving high frequency SVR is expected especially with new antiviral agents.

023 KIDNEY

P137 RESVERATROL ATTENUATES THE APOPTOSIS IN CYCLOSPORINE NEPHROPATHY MODEL

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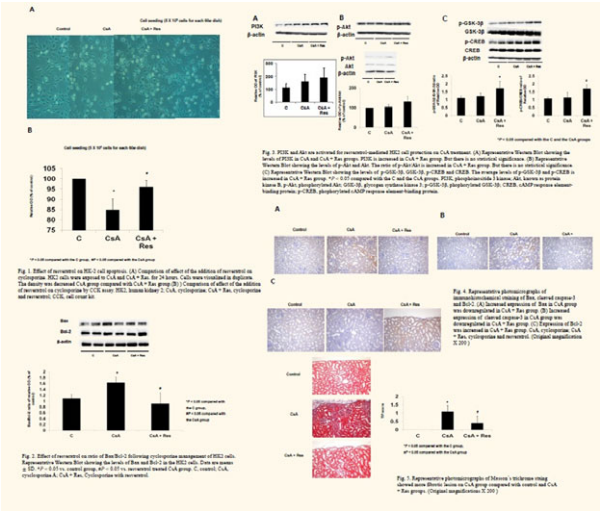
Background: The use of calcineurin inhibitors cyclosporine (CsA) has been restricted by its nephrotoxic effect mediated, in part, by renal tubular cell apoptosis and tubulointerstitial fibrosis. Accumulating evidences indicate that resveratrol potently protect against cell damage due to its antioxidant properties. We investigate the potential association between the protective effect of resveratrol and the apoptosis/survival signaling pathways, in particular GSK-3β and CREB through PI3K dependent pathway.
Methods: a) HK-2 cells were treated with CsA (2.0 μg/ml) for 24 h, another group were treated with CsA and resveratrol (200 umol/l) for 24 h. b) Three groups of each 6 male rats were included to evaluate the effect of resveratrol. The first group was control group. The second group was treated with CsA and the third group was treated with CsA and resveratrol.
Results: The protective effect of resveratrol on HK2 cells exposed to CsA was showed by CCK assay [Fig. 1]. Decrease of Bax/Bcl-2 ratio on HK2 cells following CsA co-management by resveratrol was observed [Fig. 2]. In HK2 cells and rat study, The average levels of Bax, caspase-3 was decreased following CsA with resveratrol group. And resveratrol CsA co-treatment increased the level of PI3K, phophorylation of Akt, GSK-3β and CREB on Western Blot examination [Fig. 3, 4]. Both GSK-3β and CREB therefore appear to play a critical role in tubular cell protection of resveratrol through the PI3K/Akt pathways. Taken together, the results suggest that resveratrol protects against apoptosis in tubular epithelium by maintaining the pro-survival states through activation of the PI3K/Akt, GSK-3β and CREB pathways in rats [Fig. 5]
Conclusion: These findings are important for the therapeutic exploitation of apoptosis thereby tubulo-interstitial fibrosis on CNI toxicity.



P139 KIDNEY EXCHANGE PROGRAM BETWEEN LATVIA AND ESTONIA – 5-YEAR OUTCOMES

Janis Jusinskis[1], Aleksander Lohmus[2], Vadim Suhorukov[3], Aleksandrs Malcevs[3], Ieva Ziedina[3], Rafail Rozental[3]

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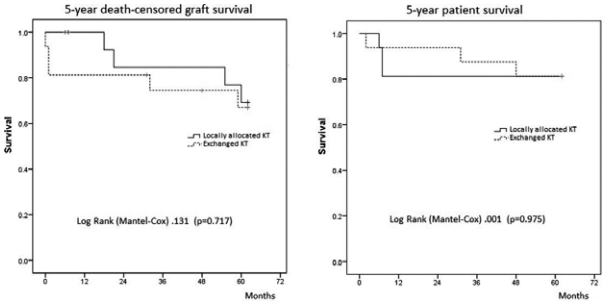
Background: Donor organ exchange is very important moment of collaboration between countries, however it may be associated with prolonged cold ischemia time (CIT) and worse posttransplant results. The aim of this study was to analyse long-term outcomes of kidney transplantations (KT) of exchanged kidneys.
Methods/Materials: Study included all cases of donor kidney exchanges performed between Latvian and Estonian transplant centres from January 1st, 2004 till December31st, 2009, when kidneys from the same donor were both transplanted, one locally and another abroad (32 KT: 16 in Latvia and 16 in Estonia; 16 deceased donors: 8 in Latvia and 8 in Estonia). We analysed demographical and clinical features of donors, CIT, rate of delayed graft function (DGF) and acute rejections (AR), 5-year posttransplant outcomes of locally allocated ($n = 16$) versus exchanged ($n = 16$) kidneys.
Results: Comparison of donor features showed no significant difference in donor age, gender, body mass index and serum creatinine level, with relatively higher percent of non-traumatic brain injury in Estonian donors (5/8 vs. 2/8 in Latvian, $p = 0.157$). In posttransplant period analysis revealed longer CIT in KT of exchanged kidneys (19.7 + 2.2 vs. 12.3 + 5.7 hrs in locally allocated, p0.05 for all). 5-year graft and patient survival was similar in cases of locally allocated and exported KT (Fig. 1). Analysis of graft losses revealed relative association with AR ($p = 0.108$); patient deaths were associated with use of donors with non-traumatic brain injury ($p = 0.043$).
Conclusions: Careful selection of donor kidneys for export ensures similar posttransplant results as in locally allocated kidneys.



025 LIVER

P140

RECONSTRUCTION OF SEGMENT 5 AND 8 VEINS IN RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION: AKDENIZ UNIVERSITY EXPERIENCE

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Introduction: Living Donor Liver Transplantation (LDLT) is widely performed in many centers due to insufficient amount of organ donation. Reconstruction of hepatic venous tributaries from segment 5 or segment 8 is a matter of debate in LDLT of the right lobe. LDLT has been more frequently performed in our center in recent years. The aim of this study is to compare the outcomes of the patients who underwent LDLT of the right lobe with segment 5 and 8 venous tributaries reconstruction, or without it.
Materials and Methods: The patients who underwent LDLT of the right lobe in our center between January 2013 and December 2014 was included in the study. The patients were divided into two groups according to whether the segment 5 and 8 veins were reconstructed or not. This reconstruction was performed if the veins were larger than 5 mm, or if the graft was small for receipent (<1%). Cadaveric or PTF vascular grafts were used for reconstruction. Patients age, gender, ethiology of the liver disease, graft receipent weight ratio (GRWR), preoperative CHILD and MELD scores, liver enzymes and bilirubin levels after transplantation on first, second and third weeks, morbidity and mortality was noted.
Results: A total of 57 LDLT of right lobe was perpormed during the study period. Forty-four (77.2%) of the patients were male and the mean age was 45.42 $\pm$ 16.2. HBV infection was the most common cause of liver disease (n = 20, 35.1%). The mean CHILD score was 7.55 $\pm$ 1.83 and the mean MELD score was 15.86 $\pm$ 6.15. The mean GRWR was 1.13 $\pm$ 0.33. In 17 (29.8%) patients, segment 5 and 8 veins were reconstructed. Cadaveric vascular graft was used in 6 patients, while PTF graft was used in 11 patients for reconstruction. Demographic data of the patients was similar in both group. Also, the mean AST, ALT and total bilirubin levels of the groups were similar on first, second and third week after transplantation ($p > 0.05$). There were no significant difference in the morbidity and mortality rates between the groups, too ($p > 0.005$). Besides, when comparing the outcomes of different vascular graft types (cadaveric or PTF), we found that the outcomes of the patients was similar regardless of the type of the vascular graft.
Conclusion: Reconstruction of segment 5 and 8 veins is necessary in LDLT of right lobe, particularly if the vein is larger than 5 mm or the graft is small for size of the receipent. Both cadaveric and PTF grafts can be used safely for vascular reconstuction.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P142

CYCLOSPORINE SPARING EFFECT OF ENTERIC-COATED MYCOPHENOLATE SODIUM IN *DE NOVO* KIDNEY TRANSPLANTATION

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Background: The increased tolerability of enteric-coated mycophenolate sodium (EC-MPS) in comparison with mycophenolate mofetil (MMF) for kidney transplant recipients has the potential to facilitate cyclosporine (CsA) minimization. A prospective trial about the optimum EC-MPS dose in CsA-based immunosuppression regimens would be necessary.
Methods: A comparative, parallel, randomized, open-label study has been performed in 140 patients from four transplant centers to compare the efficacy and tolerability of low dose CsA + standard dose EC-MPS (the investigational group) versus standard dose CsA + low dose EC-MPS (the control group) at 6 month in *de novo* kidney transplant recipients. Graft function, incidence of efficacy failure (biopsy-confirmed acute rejection, death, graft loss, or loss to follow-up), and adverse events were compared.
Results: Mean estimated glomerular filtration rate (eGFR) of the investigational group at 6 months post-transplantation was non-inferior to that of the control group (confidence interval between 57.3 and 67.4 ml/min/1.73 m^2, p = 0.05) in the incidence of discontinuations and serious adverse events (SAE) between the groups.
Conclusion: The CsA minimization by use of standard dose of EC-MPS keeps the incidences of acute rejection and additional risks as low as the conventional immunosuppression. It provides the therapeutic equivalencies in terms of renal graft function and safety issues.

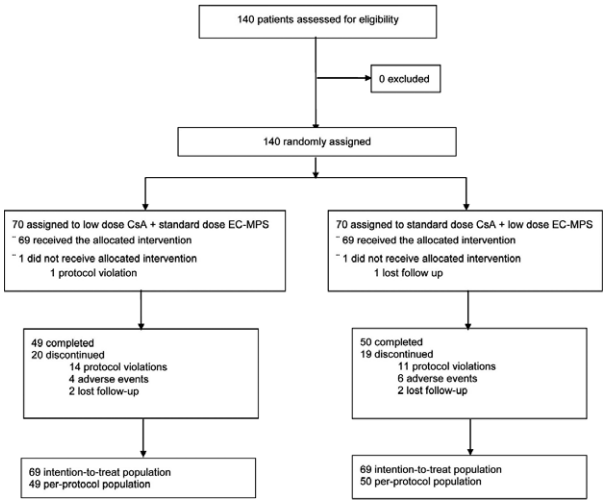

Figure 1. Enrollment and Outcomes

Group	Low dose CsA + Standard dose EC-MPS	Standard dose CsA + Low dose EC-MPS	p
Blood trough level, ng/ml			
Month 1	178.0 ± 69.3	221.2 ± 68.8	0.002
Month 2	146.0 ± 56.5	189.4 ± 78.4	0.002
Month 4	115.3 ± 46.7	144.9 ± 43.0	0.001
Month 6	103.5 ± 38.9	142.9 ± 44.8	<0.001
Dose, mg/day			
Month 1	248.5 ± 81.7	273.0 ± 71.8	0.116
Month 2	200.5 ± 64.4	228.0 ± 75.5	0.055
Month 4	167.2 ± 55.1	194.5 ± 63.1	0.024
Month 6	156.0 ± 46.2	195.5 ± 60.8	<0.001

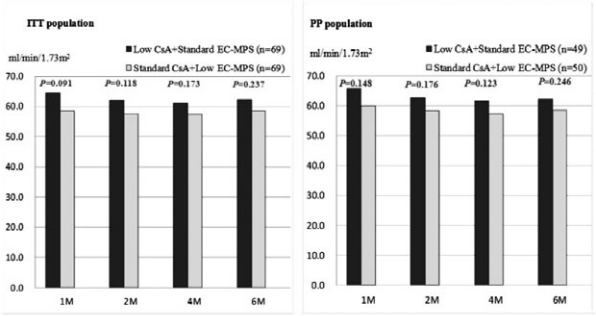

Figure 2. Graft renal function measured by eGFR (MDRD) (ITT and PP population)

023 KIDNEY

P143

EN-BLOC TRANSPLANTATION OF HORSESHOE KIDNEY IN KOREA

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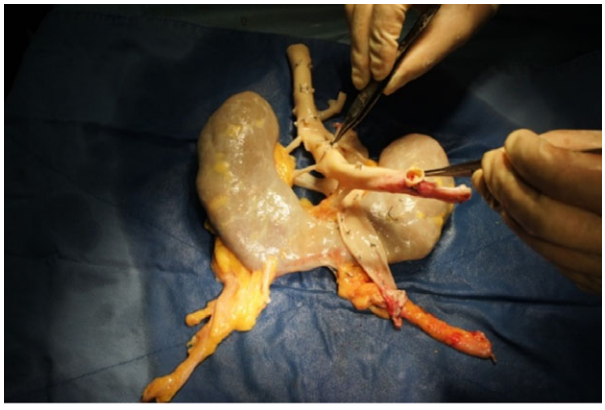
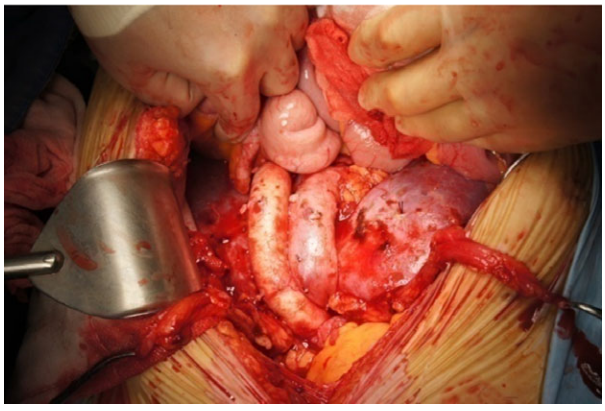
Because of the organ shortage, kidneys with atypical anatomies are frequently considered for transplantation. The horseshoe kidney, very common anatomical variation of kidney, is considered as an important option for kidney transplantation under this circumstance. The horseshoe kidney has a fusion anomaly of the lower poles with fibrous band or functional parenchyma called isthmus and a variable vascular anomaly. Therefore, transplantation of the horseshoe kidney can be performed in an en-bloc or splitting into two grafts according to a vascular anomaly and the existence of urinary collection system in isthmus. In this article, we retrospectively reviewed the medical records of two kidney transplant recipients from the horseshoe kidney donors using en-bloc method. We also described surgical technique used en-bloc transplantation to overcome a various vascular anomalies, difficulties in choosing cannulation site and post-operative complications. The transplantations were carried out successfully for both recipients and without complications. The horseshoe kidney is one of the valuable resources for kidney transplantation. It may be under-utilized unless there is careful evaluation for anatomical variation, a proper choice for surgery plan, meticulous procurement and implantation, and intensive accompanying pre-, and post-transplantation care. En-bloc transplantation of a horseshoe kidney is a useful strategy for patients with ESRD, and can provide favorable outcomes compared to the transplantation of a normal kidney.





027 LUNG

P144

SUCCESSFUL TREATMENT OF THE BRONCHIAL STENOSIS WITH DUMON STENT AFTER LUNG TRANSPLANTATION

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Background: We experienced the bronchial stenosis after lung transplantation (LTx) because of infection or ischemic reperfusion injury. When the bronchial stenosis occurs, we dilate the stenosis with ballooning or ablation of granulation. Stenosis is happens in bronchial anastomosis or the peripheral side of anastomosis. We experienced three cases of bronchial stenosis in peripheral side of bronchial anastomosis after LTx improved by indwelling of Dumon stent.

Material: We have performed 84 LTx including 42 single LTx, 30 double LTx and 12 living donor LTx since 2000. We performed Dumon stent insertion with rigid bronchoscope for 3 recipients.

Result: The primary diseases of the 3 recipients were interstitial pneumonia, Eisenmenger's syndrome and interstitial lung disease. One was male and 2 were female. The age of recipients was 41 $\pm$ 5 years old (average $\pm$ SD, respectively) and the period until stenting was 163 $\pm$ 29 days after LTx. The outer diameters of the Dumon stent were 9–10 mm and all stents were inserted into right bronchus intermedius. Ischemic time of right lungs at LTx operation was 604 $\pm$ 206 min. Aspergillus was detected at 2 of them, and MRSA and B. cepacia were detected at one of them in BAL culture. Forced expiratory volume 1 s (FEV1) increased to 2200 ml from 1630 ml on average ($p < 0.05$).

Conclusion: Bronchial stenosis is one of crucial troubles for the respiratory function after LTx. The cause of the bronchial stenosis would be reperfusion injury or long ischemic time. Moreover, immunosuppression may magnify the stenosis in terms of infection or delayed healing. We suspected that long ischemic time influenced to the right bronchus more than the left bronchus, thus we need strict monitoring against bronchial stenosis with bronchoscopy. The complication of stenting is difficulty of coughing-up of sputum, however Dumon stent can be removed when the stenosis is dissolved. Stenting with Dumon stent was effective for airway stenosis after LTx.

012 HISTOCOMPATIBILITY

P145

INTERFERENCE OF THERAPEUTIC ANTIBODIES USED IN DESENSITIZATION PROTOCOLS ON LYMPHOCYTOTOXICITY CROSSMATCH RESULTS

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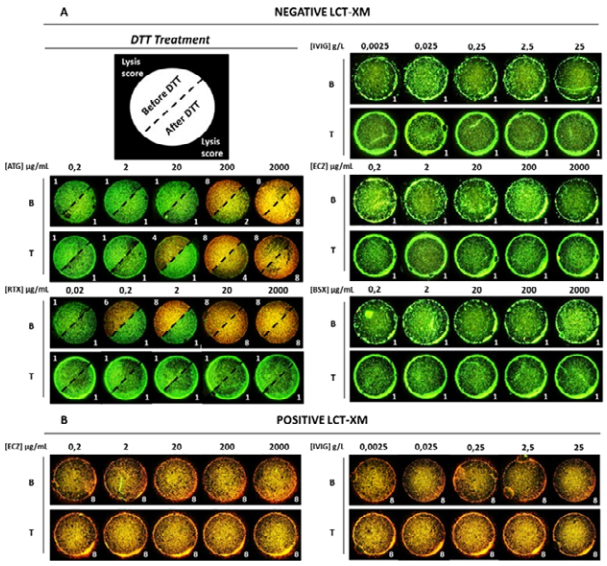
Background: Therapeutic antibodies used to desensitize patients awaiting a human leukocyte antigen (HLA) or ABO-mismatched graft are suspected to interfere with the lymphocytotoxicity crossmatch (LCT-XM) test when they are present in the tested sera because of their potential ability to activate or inhibit the complement.
Methods: The most frequent therapeutic antibodies (Abs) used in desensitization protocols (intravenous immunoglobulin, rituximab, basiliximab, eculizumab, antithymocyte globulin) were added to a negative- or a positive-control serum at various concentrations, and tested *in vitro* in a LCT-XM test.
Results: Rituximab turned the LCT-XM positive on B cells at 0.2 μg/ml and antithymocyte globulin turned the LCT-XM positive with T and B cells at 20 and 200 μg/ml, respectively. Treatment with dithiothreitol sera, supplemented with rituximab (0.2 and 2 μg/ml) and antithymocyte globulins (20 and 200 μg/ml), partially or totally reduced this positive interference. Intravenous immunoglobulin, eculizumab, and basiliximab did not trigger any interference with the negative control serum. In a positive LCT-XM, eculizumab did not annihilate activation of the rabbit complement, and intravenous immunoglobulin did not interfere with the HLA antibody-mediated cytotoxicity.
Conclusion: Because eculizumab within the serum did not annihilate rabbit complement activation and intravenous immunoglobulin, and basiliximab did not interfere with the crossmatch reaction, treatments based on rituximab and antithymocyte globulin need to be taken into account when interpreting a positive crossmatch test.



023 KIDNEY

P146

CIGARETTE SMOKING STRENGTHENS THE INFLUENCE OF AGE ON THE RISK OF DEATH IN RENAL TRANSPLANT RECIPIENTS IN 2 YEARS FOLLOW-UP

Oktawia Mazanowska[1], Marcelina Zabinska[2], Katarzyna Koscielska-Kasprzak[2], Dorota Kaminska[2], Miroslaw Banasik[2], Katarzyna Madziarska[2], Slawomir Zmonarski[2], Magdalena Krajewska[2], Maria Boratynska[2], Marian Klinger[2]

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Introduction: Smoking, although reprehensible behavior, is no contraindication for transplantation. Renal transplant recipients (RTR) are warned against smoking, therefore smoking is hidden by smokers, and the number of cigarettes smoked is understated.
The aim: The aim of the study was to assess the impact of smoking on grafts' and recipients' survival in respect of the proinflammatory cytokine IL-6 concentration and the MMPs/TIMPs system activity in prospective 2-years follow- in smoking renal transplant recipients (RTR).
Material and Methods: 150 RTR (male 66%, aged 49.2 $\pm$ 11.5 y.), at mean 73.4 $\pm$ 41.2 months (range 12–240) after kidney transplantation, were assessed for plasma and urine IL-6, MMP-2, MMP-9, TIMP-1, and TIMP-2. Investigated factors were assessed by ELISA, and urine concentrations were standardized to urine creatinine in the same spot urine. No one had increased CRP $>$ 5 mg/l. The Cox proportional-hazards regression analysis was applied, and differences with $p < 0.05$ were considered statistically significant.
Results: In 2-years follow-up 6 of 150 RTRs had died (4 of them with functioning graft). Only 18 RTRs (12%) confessed to cigarette smoking. Higher plasma MMP-2 (Exp(b) 1.03, $p = 0.01$) and urine IL-6 (Exp (b) 1.47, $p = 0.004$) increased the risk of death in smokers, but higher urine TIMP-1 concentrations (Exp (b) 0.19, $p = 0.02$) had protective properties. Smoking was not the independent risk factor of death in smokers ($p = 0.99$), but increased the impact of recipients age on risk of death from Exp (b) 1.09 ($p = 0.026$) in non-smokers to Exp (b) 1.13 ($p = 0.021$) in smokers.
Conclusion: Recipients age, increased plasma MMP-2 and urine IL-6 are the independent risk factors of death in renal transplant recipients. Smoking have not independent impact on patients survival but strengthens the influence of age on the risk of death.

007 DONATION/RETRIEVAL

P147 **THE INFLUENCE OF DONOR FACTORS TO KIDNEY GRAFT SURVIVAL**

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Background: The functional capacity of the transplanted kidney is dependent not only of immunological factors but also of donor factors. The need for more transplantable organs has prompted a reevaluation of used donors.
Methods/Materials: The retrospective study included 298 recipients of kidney grafts from 215 deceased donors (155 men, 60 women; mean age 42 years) from 2002 up to 2007 in a single transplant center. All patients received induction therapy with basiliximab on days 0 and 4 posttransplant or ATG for 5 days posttransplant. Initial maintenance immunosuppression consisted of calcineurin inhibitor (cyclosporine or tacrolimus), mycophenolic acid and corticosteroids.
Results: The 5–year graft survival was worse for recipients of kidney grafts from female versus male donors (64.6% vs. 75.9%, $p = 0.05$), from donors with non-traumatic versus traumatic brain injury (65.6% vs. 78.1%, $p = 0.019$); from donors older than 60 years versus younger that 50 years (64.3% vs. 91.3%, $p = 0.024$); and donors with serum creatinine >100 mkmol/l versus <100 mkmol/l (65.2% vs. 78.6%, $p = 0.02$). The 5-year graft survival was not affected by presence versus absence of donor arterial hypertension (73.8% vs. 71.2%, p = NS).
Conclusions: Kidney graft survival is worse in cases of transplantation from older and female donors, donors with non-traumatic brain injury (cerebrovascular accident), higer initial serum crearine level. Presence of arterial hypertension as a sign for expanded criteria donors showed no influence on graft survival.

023 KIDNEY

P148 THE INFLUENCE OF BODY MASS ON KIDNEY GRAFT FUNCTION IN PATIENTS AFTER KIDNEY TRANSPLANTATION

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Background: The increasing number of evidence show, that body mass may play a role in complication after kidney transplantation and graft and patient survival. The aim of the current study was to analyze the association between graft function and both the body mass and adipokines (leptin, visfatin, adiponectin) in kidney transplant recipients (KTR).
Methods: The group of 183 KTR from the Department of Nephrology, Transplantology and Internal Disease, Medical University of Gdansk was studied (mean age 51.7 ± 13.6; 83F, 100 M) including 42 patients in early post-transplant period. Anthropometry and body composition examination was performed using electronic scale, hand grip dynamometer and BCM (Fresenius SA). Obesity, overweight and underweight was defined according to BMI classification. The biochemical parameters as creatinine, BUN, blood morfology, lipidogram, albumin, CRP were measured. eGFR was calculated acc. MDRD 4p formula. Also, serum leptin, visfatin and adiponectin were measured by ELISA methods.
Results: Underweight was found in 16 (8.7%) of KTR, overweight and obesity were observed in 68 (37.1%) and 26 (14.2%) patient, respectively. No differences in BMI levels between men and women was noticed. No relation between BMI and eGFR in all population was noticed, but in early period after transplantation significant correlation between BMI and creatinine (R Spearman = 0.38) and eGFR (R Spearman = −0.51) was observed. In all studied patients (also patients in early post-transplant period) eGFR significantly correlated with leptin (R Spearman = −0.3) and visfatin (R Spearman = 0.3). Multiple regression analysis confirmed association between eGFR and leptin and also visfatin in all studied population (beta = 0.23; $p < 0.05$) and between eGFR and BMI (beta = −0.46, $p < 0.05$) in group for a short period after transplantation.
Conclusion: 1. Overweight and obesity prevail in KTR. In short but not long term period after transplantation worse graft function

P150 IS THE SOURCE OF KIDNEY A RISK FACTOR FOR DEVELOPING TRANSPLANT RENAL ARTERY STENOSIS?

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[1]Cardiff Transplant Unit; [2]Department of Transplant Surgery, St. James University Hospital, Leeds, UK

Introduction: Transplant Renal artery stenosis (RAS) is an uncommon cause of graft dysfunction in transplanted kidneys, often in association with worsening hypertension. A number of risk factors have been implicated including surgical technique, allograft type, immunological factors, cold ischemia time and viral infections. There has been a huge increase in renal transplants from live donors (LD) in UK and the proportion of DCD donors among deceased transplants has increased from 8% to 40% with a striking increase in the mean age of DCD by 10 years to 53 years. Most distinguishing factor of DCD kidneys from other type of allograft is warm ischemia.
Aim and Methods: The aim of this study was to determine if the source kidney is a determinant of RAS.
Results: We analysed 1251 renal transplants performed in our unit over the last 12 years. Patients with suspected transplant RAS had a Duplex ultrasound, and those with positive Duplex underwent a transplant renal artery angiogram. Those confirmed to have RAS on angiogram had an angioplasty/stent. Out of 1251 patients, 72 had positive duplex and 52 were found to have transplant RAS (4.16%) on angiogram. There were 326 patients from LD with 10 cases of RAS (3.06%), 694 from DBD with 32 cases of RAS (4.61%) and 231 from DCD donors with 10 cases of RAS (4.32%). The median time of presentation for recipients of LD, DBD and DCD donor kidneys was 3, 4 and 7 months respectively. The distribution of stricture site was similar in all three donor types. All patients had angioplasty with an overall radiological success of over 96% and 9.6% complication rate with equal distribution among 3 groups. There were 4 recurrent stenosis in three patients all in recipients from DBD kidneys.
Conclusions: Our data show a slightly lower incidence of transplant RAS in recipients of LD kidneys. The distribution of stenosis site, success to radiological intervention and post-angioplasty complications were similar in all 3 groups.

025 LIVER

P151

HEMODYNAMIC CHANGES ARE PREDICTIVE OF COAGULOPATHIC HEMORRHAGE AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background: Hemorrhage is one of the most common complications after liver transplantation (LT), especially during the first postoperative week. Our objective of this study is to evaluate the predictors of coagulopathic hemorrhage after living donor liver transplantation (LDLT).
Materials and Methods: We retrospectively enrolled 161 patients who underwent LDLT during the period from July 2005 to April 2014 at a single medical institution. Among them, 32 developed post-LDLT hemorrhage. Hemorrhage in those patients were defined as coagulopathy-related hemorrhage ($n = 15$) or non-coagulopathy-related hemorrhage ($n = 17$) based on the results of computed tomographic images. Predictors of post-LDLT hemorrhage evaluated in this study included pre-operative factor, post-transplantation factor, and hemodynamic status.
Results: We found that patients who developed coagulopathy-related hemorrhage had significantly lower pre-LDLT platelet counts ($p = 0.040$), a longer cold-ischemia time ($p = 0.045$), more blood loss ($p = 0.040$), and earlier onset of hemorrhage ($p = 0.048$) than patients who had non-coagulopathy-related hemorrhage after LDLT. Results of the generalized estimation equation analysis showed that heart rate (HR) and central venous pressure (CVP) differed significantly between the two groups of patients. HR level was increased significantly during hemorrhage ($p < 0.010$). CVP level was higher in the coagulopathic group ($p = 0.005$) than the other group.
Conclusions: Lower pre-LDLT platelet counts, longer cold-ischemia time, more blood loss, earlier onset of hemorrhage, and higher CVP level are indicators of coagulopathic hemorrhage after LDLT.

023 KIDNEY

P153

CLASSIFICATION OF CLINICAL COURSES OF CHRONIC ALLOGRAFT DYSFUNCTION IN KIDNEY TRANSPLANTATION

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[1]National Hospital Organization Okayama Medical Center; [2]Saiwaicho Memorial Hospital

Background: Chronic allograft dysfunction (CAD) is a major cause of graft failure in kidney transplantation.
Patients/Methods: We retrospectively analyzed 262 consecutive kidney transplant recipients who survived with a functioning graft for at least 2 years. CAD was defined as chronic deterioration of a renal graft, excluding other conditions such as acute rejection, recurrent or *de novo* renal diseases, or infectious diseases, pathologically. Mode of decline in estimated glomerular filtration rate (eGFR)/year, calculated using the MDRD equation, was: (1) the course plateaued when decline in eGFR/year was <2 ml/min/1.73 m^2/year. "Long plateau" was defined as maintaining the decline for more than 5 years; (2) "Rapid decline" was defined as >20 ml/min/1.73 m^2/year decrease in eGFR. Patients whose grafts failed due to CAD were categorized according to the occurrence of rapid decline and/or long plateau and analyzed. Group 1 comprised recipients without rapid decline or long plateau; Group 2 was recipients with only rapid decline; Group 3 was recipients with long plateau; and Group 4 was recipients with both rapid decline and long plateau.
Results: From a total of 71 graft losses, 46 (64.8%) grafts failed due to CAD. Mean time from transplantation until graft loss was 9.3 $\pm$ 5.1 years; the median was 8.2 years. Fourteen patients belonged to Group 1, 12 to Group 2, 11 to Group 3, and 9 to Group 4. Mean graft survival times in the four groups were 6.8 $\pm$ 3.8, 5.0 $\pm$ 2.1, 15.5 $\pm$ 2.3, and 10.8 $\pm$ 3.6 years, respectively ($p < 0.001$). There were significant differences among groups for year at transplantation, donor age, mean eGFR at baseline, and acute rejection rate within 12 months after transplantation.
Conclusion: The results indicate that this cohort of kidney transplant recipients who developed CAD comprised different subgroups, showing their respective clinical courses.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P154

FK506 INDUCED TUMOR NECROSIS FACTOR (TNF) RELATED APOPTOSIS IN JURKAT T CELLS

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Chonnam National University Hospital

Purpose: To elucidate the mechanism of Tacrolimus (FK506) induced TRAIL (TNF related apoptosis inducing ligand) –R1(DR4) and TRAIL-R2(DR5) in FK506-treated Jurkat T cells. And signal transduction pathway of TNF-related events was studied.
Methods: Viability of Jurkat T cells was measure by MTT assay. The catalytic activation of caspase-3 and caspase-9 proteases was determined by digestion of fluorogenic biosubstrates and western blot with anti-caspase-3 and anti-caspase-9 antibodies. The levels of mRNA and proteins for p53, Bax, PUMA, proline oxidase, TRAIL (TNF related apoptosis inducing ligand), TRAIL-R1 (DR4), TRAIL-R2(DR5), Fas, FasL, TNF-α, IL-6, and NKκB were measured by RT-PCR and western blot with specific antibodies. Also we further examined the localization of TRAIL family proteins using by fluorescent microscope with specific TRAIL family antibodies.
Results: FK506 decreased the viability of Jurkat T cells dose- and time-dependently along with catalytic activation of caspase-3 and caspase-9, p53 phosphorylation, and changes in expression levels of Bax, PUMA, and proline oxidase protein. It caused an increase in expression of TRAIL, TRAIL-R1 (DR4), TRAIL-R2(DR5), Fas, and FasL in the levels of mRNA and proteins of Jurkat T cells. Furthermore, FK506 increased extracellular release of TNF-α and IL-6 cytokines in Jurkat T cells. It also induced the transactivation of NKκB through the dephosphrylation of Ser486 residues in Jurkat t cells.
Conclusion: These results suggest that FK506 induces apoptotic death of Jurkat cells through activation of caspase family protease, Bcl-2 family protein-related mitochondrial dysfunction, and activation of death-receptor mediated signaling pathways.

023 KIDNEY

P155

IMPACT OF DIFFERENT IMMUNOSUPPRESSIVE REGIMENTS ON CYTOMEGALOVIRUS INFECTIONS AFTER KIDNEY TRANSPLANTATION

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Objective: Cytomegalovirus (CMV) is risk factor for allograft function as well as for patient and graft survival after kidney transplantation. Insufficient data exists concerning CMV infections in patients on different immunosuppressive regiments.
Methods: We retrospectively analyzed 335 patients who received a DBD kidney transplantation (n = 237) or living donation (n = 88) between January 2008 and May 2013. 295 were treated with standard immunosuppression (group 1) consisting of basiliximab induction, a calcineurin inhibitor and a) mycophenolate (MPA, n = 243) or b) everolimus (n = 52). 40 patients received more intense immunosuppression (group 2) with antithymocyte globulin (ATG, n = 40; of these 28 MPA, 12 everolimus). CMV donor/recipient status were similar in each group. Patients received CMV prophylaxis in dependence of CMV donor/recipient status. In group 1 most MPA and everolimus treated patients did not receive prophylaxis (61.3% and 71.1%). In the ATG group 2 90% received prophylaxis for 6 month.
Results: In the standard immunosuppression group 1b with everolimus only two patient had a CMV infection (3.8%). 38 (15.6%) patients in group 1a with MPA developed CMV infection (p = 0.025 compared to 1b). 12.5% of ATG treated patients developed CMV which is not higher compared to group one. Taken together groups 1 and 2 patients on everolimus (n = 64) in comparison to patients on MPA (n = 271) showed a tendency to less CMV with both regimens (p = 0.053).
Conclusion: Patients treated with everolimus developed less CMV compared to MPA in both a standard regimen with basiliximab but also with ATG induction.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P156

$COCL_2$ INDUCED ER STRESS PROPEIN MEDIATED CYTOTOXICITY IN FK506 TREATED HEPATOMA HEPG2 CELLS

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Background: The effects of FK506 on the endoplasmic reticulum (ER) mediated stress pathway accelerates CoCl2 - induced cytotoxicity in human hepatoma HepG2 cell line were investigated.
Methods: We examined the effects of FK506 on CoCl2 - induced cytotoxicity by western blottings of poly ADP-ribose polymerase (PARP), CHOP, GRP78, Nrf2, ATF4, ATF6, XBP-1, Bak, Bax, and Bcl-2. And the catalytic acitivity of caspase-3 and -12 caspase in HepG2 cells was also measured.
Results: FK506 and CoCl2 significantly induces the synergistic effect of HepG2 cytotoxicity in dose dependent manner. Increased active-PARP expression occurred at 24 h after FK506 treatment on cobalt chloride-induced HepG2 cytotoxicity and peak activation of cleaved caspasec-3 was also observed at 24 h. FK506 aggravates cobalt chloride-induced HepG2 cytotoxicity. GRP78 expression was increased 24 h after FK506 treatment on cobalt chloride-induced HepG2 cytotoxicity. CHOP and caspase-12 expressions were increased 24 h after FK506 treatment on cobalt chloride-induced HepG2 cytotoxicity. Expressions of ATF4 and ATF6 were same manners. Expression of XBP-1 was decreased beginning at 6 h. FK506 exasperate endoplasmic reticulum stress by cobalt chloride-induced cytotoxicity. Bcl-2 protein expression decreased, but FK506 induces expression of Bak and Bax by cobalt chloride-induced cytotoxicity. Nrf2 expression was also noted.
Conclusions: FK506 and CoCl2 significantly induces the synergistic effect of cytotoxicity in dose dependent manner. FK506 aggravates cobalt chloride-induced cytotoxicity. FK506 exasperate endoplasmic reticulum stress by cobalt chloride-induced cytotoxicity. FK506 accelerates expression of ER-stress related nuclear transcriptional factor.

P157

FK506 INDUCED APOPTOSIS IS MEDIATED BY ER DRIVED CALCIUM DEPENDENT CASPASE 12 IN JURKAT T CELLS

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Purpose: The effect of FK506 on endoplasmic reticulum (ER) drived calcium and caspase-12 mediated apoptosis in Jurkat human T-lymphocyte was investigated.
Method: Cell viability was measured by flow cytometry. Intracellular calcium generation was measured. Western blotting of procaspase-12 was performed. And the catalytic activity of caspase -3, -6, -8, and -9 proteases in Jurkat cells was also measured.
Results: FK506 dose-dependently decreased the viability in Jurkat cells. Increased intracellular accumulation of calcium in FK506 treated Jurkat cells from 24 h. FK506 continuously increased calcium concentration from 24 to 72 h. There was no evidence of calcium ionorpore (A23187) increased intracellular calcium changes with or without FK506 but calcium ATPase inhibitor (Thapsigargin) increased intracellular calcium accumulation and FK506 more and more increased calcium ATPase inhibitor (Thapsigargin) derived intracellular calcium accumulation. Procaspase-12 protease analyzed from 48 h. Treatment of cells with FK506 increased activation of caspase-12 protease. FK506 increased the catalytic activity of caspase-3 but there was no evidence of increased catalytic activation of caspase-6, -8 and -9 proteases in Jurkat cells.
Conclusion: These data indicate that understanding of ER drived calcium and caspase-12 mediated apoptosis in human Jurkat cell line.

025 LIVER

P158

BILE DUCT ANASTOMOSIS SUPPLIED WITH BIODEGRADABLE STENT IN LIVER TRANSPLANTATION – THE INITIAL EXPERIENCE

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IKEM

Background: Biliary stricture remains a significant cause of morbidity after liver transplantation. The incidence of biliary strictures in patients who have undergone liver transplantation with duct-to-duct biliary reconstruction ranges from 10% to 30%. Most of the initial experience on self-expandable biodegradable stents has been in urological applications. Encouraging experience in these medical fields led to the trial of these stents in experimental surgery also. In the past, some authors achieved encouraging results with the biodegradable stent in pancreatic and biliary applications.

Methods/Materials: On randomized group of the 12 patients we investigated the role of absorbable biliary stent with aim to proof patency of duct-to-duct biliary anastomosis and toxicity of a stent. As parameters for the assessment we decided to look at graft function, rate of the bile duct complications, cholestasis and possibly pancreatitis. The stents are made of machine-knitted polydioxanone monofilaments. Exclusion criteria were re-transplantation, pediatric liver transplantation, hepaticojejunostomy for bile duct reconstruction and acute or fulminant liver failure. Study has been reviewed by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in an appropriate version of the 1964 Declaration of Helsinki. All patients gave their informed consent prior to their inclusion in the study.

Results: All 12 patients had prompt live graft function, 2 underwent second-look surgery for postoperative bleeding. We did not observe any biliary complications at all. Our first results demonstrate that duct-to-duct biliary reconstruction using an absorbable internal stent had good patency in all four patients. The anastomoses were not accompanied with signs of biliary leakage in any of the cases, there was no stone formation or pancreatic irritation caused by stent degradation observed after liver transplantation.

027 LUNG

P160 **LUNG TRANSPLANTATION FOR SARCOIDOSIS: THE FRENCH EXPERIENCE**

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Background: Lung transplantation (LT) is a rare therapeutic option in sarcoidosis. A better knowledge of LT specificities in sarcoidosis is needed.
Methods/Materials: A retrospective analysis of cases of LT for sarcoidosis in 5 french centers between 1989 and 2013 is presented.
Results: Twenty one patients received a bilateral LT ($n = 12$), single LT ($n = 8$) or heart-lung transplantation ($n = 1$). Pre-operative disease was characterized by obstructive syndrome in 13 patients (62%) and pulmonary hypertension (PAPm > 25 mmHg) in 13 patients (62%) of which 9 (43%) had PAPm ≥35 mmHg. Three patients had culture isolation of Aspergillus species from a respiratory tract specimen before lung transplantation. Moderate to severe pleural adhesions were described in 13 patients (65%). Post operative course was marked by the high frequency of invasive pulmonary aspergillosis: 4 patients (19%). At long term follow up, sarcoidosis recurred in 7 cases (33%), and it led to death in one patient. Ten recipients were diagnosed with bronchiolitis obliterans syndrome at a median of 347.5 days (range 245 to 2114 days) post-transplant. Survival was 80.9% at 1 year, 61.1% at 2 years, 47.3% at 5 years, and 25.4% at 10 years.
Conclusion: When LT is required, obstructive syndrome and pulmonary hypertension were frequent, which confirms the poor prognosis associated with these features in sarcoidosis. Finally, LT may be considered in rare case of sarcoidosis despite the per-operative difficulties and the risk of reoccurrence and invasive pulmonary aspergillosis.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P161

DISTINCT ROLES OF CD137 AND CD137L BI-DIRECTIONAL SIGNALING IN *CANDIDA ALBICANS* INFECTION

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Invasive fungal infections by Candida albicans frequently cause mortality in immunocompromised patients, yet the cellular processes leading to this mortality remain ill-defined. Here, using genetic and immunological tools to probe functions of CD137 and its ligand (CD137L), we elucidate cellular and signaling mechanisms that are important in initiating inflammatory responses triggered by *C. albicans* infection and fungal clearance. While CD137 signaling is critical in fungal clearance by increasing the phagocytic activity of neutrophils, CD137L signaling is indispensable for monocyte/macrophage-mediated inflammatory responses leading to mortality. Furthermore, our results reveal that CD25hiCD4+ T cells stimulate macrophages to induce "cytokine storm" through CD137L signaling. Moreover, we demonstrate that CD137 agonism has dual beneficial effects on renal tissue protection during *C. albicans* infection by promoting both resistance (fungal clearance) and tolerance (anti-inflammatory cytokine responses). In sum, our results identify a novel mechanism of anti-fungal immunity that is regulated by distinct signaling pathways delivered bi-directionally via the costimulatory receptor and ligand pair, CD137 and CD137L.

P162

IL-33 ENHANCES HOST TOLERANCE TO *CANDIDA ALBICANS* KIDNEY INFECTIONS THROUGH INDUCTION OF IL-13 PRODUCTION BY CD4+ T CELLS

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Susceptibility to systemic Candida albicans infection is determined not only by immune resistance but also by the ability to control Candida-induced immunopathologies. We previously showed that exogenous IL-33 can increase resistance to peritoneal *C. albicans* infection by regulating multiple steps of the neutrophil anti-Candida response. Here, using a mouse model of systemic candidiasis, we observed that IL-33 administration limited fungal burden and inflammation and increased survival. In kidneys, IL-33 seemed to directly act on neutrophils and CD4+ T cells: IL-33 administration enhanced fungal clearance by increasing neutrophil phagocytic activity without which Candida proliferation was uncontrollable. On the other hand, IL-33 stimulated CD4+ T cells to produce IL-13, and it in turn drove the polarization of macrophages toward the M2 type. Furthermore, the absence of IL-13 abolished IL-33-mediated polarization of M2 macrophages and renal functional recovery. In addition, IL-33 and IL-13 acted synergistically to increase M2 macrophage polarization and its phagocytic activity. Overall, this study identifies IL-33 as a cytokine that is able to induce resistance and tolerance, and suggests that targeting resistance and tolerance simultaneously with therapeutic IL-33 may benefit patients with systemic candidiasis.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P164

SAFETY AND EFFICACY OF EVEROLIMUS ADMINISTRATION IN RENAL TRANSPLANT PATIENTS DURING THE MAINTENANCE PHASE: A SINGLE CENTER STUDY

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Background: Calcineurin inhibitors (CNIs) are used for immunosuppression in renal transplantation; however, they increase the risk of cardiovascular disease (CVD). Therefore, mammalian target of rapamycin (mTOR) inhibitors are increasingly used, especially in immunosuppressive minimization protocols that aim to reduce exposure to CNIs and the resulting nephrotoxic effects, and improve long-term renal graft function.
Objective: To study the effect of dose reduction of CNIs and other immunosuppressants, and safe administration of everolimus (EVL) during the maintenance phase in renal transplantation.
Methods: Immunosuppression regime was altered as follows: addition of 1.5 mg/day EVL, CNI dose reduction to 50%, and discontinuation/dose reduction of mycophenolate mofetil (MMF). Subjects were grouped according to change in renal function indicated by the estimated glomerular filtration rate (eGFR) (change = function post-eGFR − function pre-eGFR)/function pre-eGFR): dominant group, ≥10% change; and recessive group <10% change.
Results: Thirty-nine subjects (26 men, 13 women; mean age 51.5 years) with an average of 6.7 years post transplantation were enrolled; 19 were tacrolimus (TAC) and 20 were cyclosporine (CYA) patients. Reasons for inclusion were CNI dose reduction (n = 28), cytomegalovirus infection (n = 4), malignant neoplasm (n = 3), and cardiovascular disease (n = 5). Twelve TAC patients (66%) and 3 CYA patients (15%) required dose increase to control EVL Cmin. Twenty-one patients (53.8%) showed exacerbated proteinuria; 4 (30.8%) were started on oral administration and required dose increase. Fourteen patients (35.9%) had elevated total cholesterol and neutral lipid levels; 10 (25.6%) were started on oral administration and required dose increase. Improved renal function was observed in 9 patients; in 16 patients, renal function did not change with lowered MMF or CNI dose. Rejection was observed in 7 patients.

023 KIDNEY

P165 A UNIQUE CASE OF ACUTE EMBOLUS OF A RENAL TRANSPLANT WITH GRAFT SALVAGE BY INTRA-ARTERIAL CATHETER DIRECTED THROMBOLYSIS

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NHS GGC

Acute renal artery emboli in transplant patients can be disastrous and result in graft loss. It is very rare. In native kidneys the quoted incidence is 6.1 patients per million. We describe a case of acute emboli in a renal transplant patient with successful use of intra-arterial catheter directed thrombolysis to salvage the graft.

A 66 year old female underwent a right sided DBD renal transplant in 2011. She had excellent graft function but presented acutely 3.5 years later in 2014 with pain in the transplanted kidney, an associated acute rise in serum creatinine and new onset atrial fibrillation. Bedside ultrasound scan demonstrated absence of transplant perfusion. An emergency angiogram confirmed acute emboli in the transplant renal artery occluding over 70% of the kidneys arterial supply.

A Van Schee catheter was placed percutaneously in the origin of the transplant artery. Intra-arterial thrombolysis using tissue plasminogen activator (tPA) and anticoagulation with heparin was injected in small boluses into both the artery and clot. A tPA and heparin infusion was then commenced. Serial imaging at 24 and 36 h demonstrated significant improvement in transplant perfusion. Thrombolysis was withdrawn at 36 h. Following a period of supportive therapy her transplant function recovered well, although not to baseline levels.

Thrombolysis can help restore kidney perfusion by dissolving thrombus which occurs due to low flow. It can dissolve into small arteries which would otherwise remain "blocked" if solely embolectomy was performed. It creates less endothelial damage than balloon thrombectomy and restores patency in small inaccessible vessels.

Consider acute transplant renal artery embolus if a renal transplant patient presents with acute kidney injury, graft tenderness and cardiac arrhythmia. Early thrombolysis may salvage grafts with acute emboli and good graft function may be regained. Maximum benefit from thrombolysis is reached by 24–36 h.

P166 SUCCESSFUL ABO-BLOOD GROUP INCOMPATIBLE KIDNEY TRANSPLANTATION UNDER ECULIZUMAB INDUCTION

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A 29-year-old female, blood type O, Rh+, was scheduled ABO-blood type incompatible kidney transplantation from her father, blood type A, Rh+. Her baseline anti- A IgG and IgM antibody titer were 4096x and 512x, respectively and she was considered to be a high risk ABO-incompatible kidney transplantation. Our desensitization for this high risk patient consisted of tacrolimus, mycophenolate mofetil and methylprednisolone treatment starting from 45 days prior transplantation in combination with two times of anti-CD20 antibody injection (day -45 and -30). Despite of 3 sessions of double filtration plasmapheresis (DFPP), anti-type A antibody titer did not lower and IgG and IgM were still 1024x and 128x, respectively. Six sessions of IVIg (total 160 g/body) with 5 sessions of plasma-exchange (PEX) were added after DFPP. During desensitization her anti-blood type A antibody titer was fluctuated, but it was gradually decreased and lowered to 32x and 8x on the day of kidney transplantation (August, 2014). Because the patient was considered to be an immunologically high risk recipient with a high titer of the anti-blood group A antibody and the titer did not lower even after the rigorous treatment including many times of PEX and IVIg, eculizumab (weekly 5 times and biweekly 3 times) treatment was indicated for this patient.

The kidney transplantation was performed with standard immunosuppression with basiliximab induction, and a biopsy specimen obtained on postoperative day 14 showed no evidence of antibody-mediated rejection with good renal function (serum creatinine, 1.5 mg/dl). The patient showed no signs of rejection after 6 months of follow-up.

Eculizumab could be an effective treatment option for the ABO-incompatible kidney transplant patient with a high anti-blood group antibody titer and immunologically high risk condition.

P167 LONG-TERM RESULTS OF RENAL TRANSPLANTATION IN HIGH RISK PATIENTS

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Background: The maximum term of satisfactory function of the kidney transplanted at the Center in standard conditions to 44-year-old patient with chronic glomerulonephritis, is more than 25 years. Monitoring continues. For further evaluation of the potential of kidney transplantation we studied the maximum survival in high risk patients.
Materials and Methods: Among 686 kidney transplants performed at the Center from 1986 to 2014, we classified 94 as a high risk: 35 transplants performed for children, 27 – for patients with diabetic nephropathy, 11 – with systemic diseases, 6 – on arenal state, 5 - were elder, 2 - had complex cardiac surgery, 1 - had microcysts after a 13-year anuria, 9 transplantations were performed in the third or fourth time.
Results: One-year survival of high risk recipients was 95.7%. The maximum graft survival among children is 17 years. Despite a significant increase in weight and height during puberty, kidney transplants function is satisfactorily. The maximum duration of normal function of the kidney from a cadaveric donor among diabetics is 8 years. The most elderly patient within 8 years after transplantation is currently 75 years old. She has an active lifestyle, does sports (swimming). The maximum duration of satisfactory function of the transplanted kidney among patients with systemic diseases is 8 years. The patient with microcysts after 13-year anuria has satisfactory transplant function for 6 years, the function of the bladder has also recovered fully. Monitoring for all this cases continues. The maximum duration of satisfactory function of the transplanted kidney after bilateral nephrectomy was 13 years. The maximum duration of satisfactory function after repeated transplantation was 10 years after the fourth transplantation.
Conclusions: The results of renal transplantation in high risk patients indicate the possibility of long-term rehabilitation and allow to reduce the list of contraindications for this operation.

011 HEART

P168 **SURROGATE MARKERS FOR COMPLICATIONS IN THE CHRONIC STAGE AFTER HEART TRANSPLANTATION**

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Purpose: Much progress is needed to significantly reduce post-transplant complications such as cardiac allograft vasculopathy (CAV) and renal dysfunction, and increase graft and patient survival. Monitoring non-invasive marker will help and we evaluated high sensitive troponin T (hs-TnT) and NT-pro BNP in the chronic stage after heart transplantation (HTx) in this study.
Methods: Subjects consisted of 37 Japanese (12 women, mean 18.2 years old at HTx, mean 12.8 years post-HTx) who were followed at our center. Biomarkers such as hs-TnT and NT-pro BNP were retrospectively examined and the degree of CAV was determined by the findings of coronary angiogram (ISHLT CAV grading) and the Stanford criteria of IVUS findings (garding 0 to 4 by intimal hyperplasia).
Results: Subjects were divided into 3 groups according to the level of hs-TnT and NT-proBNP. Group 1 (11 patients, mean 11.7 years post-HTx), with hs-TnT $\leq$0.006 ng/ml (mean 0.004 ng/ml) and NT-proBNP $<$1000 pg/ml (mean 434 pg/ml), demonstrated mild CAV in 2, mild renal impairment in 2 patients and showed excellent quality of life. Group 2 (21 patients, mean 12.4 years post- HTx), with 0.006 ng/ml $<$hs-TnT $\leq$0.012 ng/ml (mean 0.010 ng/ml) or 1000 pg/ml $\leq$NT-proBNP $<$2000 pg/ml (mean 1252 pg/ml), revealed moderate to advanced CAV in 11, renal impairment in 6 patients. Group 3 (5 patients, mean 17.0 years post-HTx), with hs-TnT $>$ 0.012 ng/ml (mean 0.066 ng/ml) mean 17.0 years post-HTx), with hs-TnT $>$ 0.012 ng/ml (mean 0.066 ng/ml) and NT-proBNP $\geq$2000 pg/ml (mean 5579 pg/ml), demonstrated advanced CAV in all patients, cellular rejection in 3, and 4 hospitalizations due to heart failure and/or renal impairment.
Conclusion: In the chronic stage after HTx, non-invasive measurements of both hs-TnT and NT-pro BNP were useful for identification of high-risk individuals and patient survival.

023 KIDNEY

P169 SINGLE VERSUS MULTIPLE RENAL ARTERIES; DOES IT MATTER?

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Objective: Renal allografts with multiple arteries requiring complex reconstruction has long been considered to cause increased vascular/urological complications. With the increasing shortage of donors, exclusion of potential donors based on arterial anatomy has become prohibitive. We studied the potential short and medium term implications of multiple donor renal arteries on the graft and recipient outcome.
Methods: A prospective analysis of all live donor renal transplants between March 2009 and March 2014 ($n = 312$). There were three groups; Group 1: single artery single anastomosis ($n = 264$), Group 2: multiple arteries with single conjoined anastomosis ($n = 39$), Group 3: multiple arteries with two anastomoses ($n = 9$). Group 1 and 2, the anastomosis was to the recipient External Iliac Artery (EIA). In group 3, the anastomoses were to the EIA and inferior epigastric artery. Among the 48 with multiple arteries, 41 had two, 5 had three and 2 had four arteries. The immunosuppression was standardized. Incidence of Delayed Graft Function (DGF), arterial insufficiency and Major Urological Complications were analysed. The creatinine levels at 1, 3, 6 and 12 months was also studied.
Results: The incidence of DGF among the groups was 29/264 (11%), 4/39 (10.2%) and 1/9 (11%), which was statistically not significant. There were no instances of arterial insufficiency in the short term. There were two transplant renal artery stenosis during continued follow up (9 & 13 months), one each in group 1 and 2. There were 3 ureteric stenosis requiring stenting, all in group 1. There was no significant difference in the serum creatinine levels during follow up.
Conclusions: Multiple renal arteries should not be considered a decisive factor in selecting live donors for transplant. There was no observed difference in the short or medium term outcomes between single versus multiple renal artery grafts.

P170 HAEMODYNAMIC STATUS DURING RENAL TRANSPLANTATION AND DELAYED GRAFT FUNCTION: A PROSPECTIVE COHORT STUDY

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Background: Poor peri-transplant haemodynamics may result in delayed graft function (DGF) or nephron loss. Optimising cardiac output may therefore reduce risk of DGF. The aim of this study was to investigate the association between various recipient haemodynamic parameters and DGF.
Methods: A prospective observational cohort study of 20 patients undergoing deceased donor RTx was undertaken. A variety of haemodynamic parameters (including: mean arterial blood pressure (MABP), central venous pressure (CVP), cardiac index (CI), stroke volume index (SVI) and systemic vascular resistance index [SVRI]) were measured peri-operatively using a non-invasive cardiac output and beat-to-beat blood pressure monitor. Mixed venous blood gases and serum neutrophil gelatinase-associated lipocalin (NGAL) were measured. All parameters were assessed for association with DGF. Alpha was set at 0.05.
Results: 55% ($n = 11$) of donors were expanded criteria. 40% of patients ($n = 8$) had DGF. No central or derived haemodynamic parameter (CVP, CI, SVRI) was reliably associated with development of DGF. The only cardiovascular parameter that did predict DGF was blood pressure; patients who went onto develop DGF had significantly lower MABP. Duration and frequency of hypotensive episodes were also associated with DGF. No typical haemodynamic pattern associated with hypotension was observed with an even distribution of episodes attributable to either low cardiac output or vasodilation. Serum lactate and mixed venous saturation were not associated with DGF.
Conclusions: Non-invasive cardiac output monitoring provides interesting information in patients undergoing RTx, its utility in terms of predicting DGF is doubtful. The technique may be useful in differentiating hypotension associated with either low CI or low SVRI and thus guiding therapy. Beat-to-beat non-invasive blood pressure monitoring did provide useful information and avoids damaging arteries that may be required for future vascular access.

025 LIVER

P171

RELATIONSHIP BETWEEN NT-PROBNP PLASMATIC LEVELS AND CIRRHOSIS ETHIOLOGY IN CIRRHOTIC PATIENTS CANDIDATES TO A LIVER TRANSPLANTATION

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Background and Aims: To study a possible relationship between cirrhotic miocardiopathy detrmined by NT-proBNP plasmatic levels and cirrhosis etiology in peripheral blood samples of cirrhotic patients candidates to a liver transplantation.
Methods: 81 patients with a diagnose of hepatic cirrhosis and candidates to a liver transplantation were sGroup 1 ($n = 40$) patients wtih cirrhosis of enolic etiology, Group 2 ($n = 35$) patients of viral etiology, and Group 3 ($n = 6$) patients with primary biliary cirrhosis. Importance of hepatic cirrhosis was estimated in all patients participating in the study using Child-Pugh and MELD scores. Presence of clinical ascites was estimated, as well as Body Mass Index (BMI). A group of healthy volunteers ($n = 12$) was included as reference group. NT-proBNP values were determinated in plasma blood samples by an electrochemiluminiscence immunoassay.
Results: There was no significant differences among groups in sex, age, BMI, ascites and Child-Pugh or MELD scores. NT-proBNP values in male of groups 1 and 2 were significantly enhanced compared to reference group ($p < 0.005$), in this context, male NT-proBNP values in group 1 were significantly higher than in male of group 2 ($p < 0.0005$). There were no significant differences in female NT-proBNP values although these values were enhanced compared to reference group.
Conclusions: An enhancement of NT-proBNP plasmatic values in cirrhotic patients is an indication of yiocardiopathy, which is more severe in enolic than viral cirrhotic patients. NT-proBNP would be a predictive biomarker of cardiac dysfunction indicating a risk factor fro transplant surgery.

033 TISSUE ENGINEERING

P172

EVALUATION OF TISSUE ENGINEERED BIOLOGICAL MATRIX AS A SUITABLE CANDIDATE FOR LUNG/ AIRWAY TRANSPLANTATION

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Purpose: The study is aimed to characterize composite tissue engineered biological matrix (scaffold) prepared from various donor sources and test them as a potential candidate for experimental lung/airway transplantation. The observations are part of ongoing study to find suitable candidate for human donor lung and airway system devoid of host immunobiological responses.
Methods: In-house validated chemical methods was used to prepare decellularized (DC) tissue matrixes. Subsequently, the matrix was monitored to check for the ability to home different types of cells like smooth and endothelial cells. Both the de- and re-cellularized (RC) matrix was then checked for the presence/absence of nuclei, extracellular matrix (ECM) integrity and mechanical properties. To check for the biological proof of concepts, we finally had tested the rejection of the scaffold as a suitable candidate for lung transplantation in rodents.
Summary of Results: We found that a combination of a cock-tail of reagents consisting of various detergents was superior to the conventional treatment with one or two single detergents in terms of superior cell and nuclei removal, preservation of the architecture and tensile properties of the ECM. The matrix also showed superior cell seeding, a good indicator for RC and subsequent transplantation. There was also no host immune response following transplantation of recellularized xenogenic source of lungs/airway components, highlighting the lack of elicitation of immune response from the host.
Conclusions: The current study highlights the potential use of tissue engineering to meet the demands for the shortage of donor lungs/airway system by avoiding host immune response. The study also opens up the possibility to use autologous stem cells as well as organs from xenogenic source, showing promise for lung clinical studies in humans.

025 LIVER

P173 BILIARY COMPLICATIONS MANAGEMENT AFTER LIVER TRANSPLANTATION

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Objectives: We reviewed database of 105 patients who underwent deceased donor liver transplantation at Nemazee Hospital (Shiraz, Iran), 2000–2013.
Methods and Materials: All patients presented with abnormal results on liver function tests and a variety of clinical symptoms such as fever, icter and cholangitis. In addition, if the findings of a liver biopsy were not conclusive for rejection or for recurrent hepatitis C virus infection, sonography or MRCP was performed to rule out any biliary complication. If we suspect to any biliary problem, ERCP or PTC was performed for the patients. If the complication was not resolved by the mentioned procedures, exploration of common bile duct and Roux-en-Y choledochojejunostomy was done for the patients.
Results: The most prevalent indications for liver transplantation were as follows: cryptogenic (n = 29), hepatitis B liver cirrhosis (n = 15), primary sclerosing cholangitis (n = 13), autoimmunohepatits (n = 13), Wilson (n = 11). The biliary tract was reconstructed with choledochocholedochostomy (duct to duct anastomosis) in 87 (87%) and Roux-en-Y choledochojejunostomy (RYCJ) in 13 (13%) in liver transplant procedure. ERCP and PTC were performed in suspected patients with biliary complication in 73 (69.5%), 25 (23.8%) respectively. Secondary operation and biliary exploration was performed in 39 (37.1%) of patients. Among patients underwent ERCP 21 (28%), and PTC 12 (48%), need biliary exploration.
Conclusions: 70% of patients with billiary complications after liver transplantation, responded to interventional procedure (ERCP, PTC) completely and only 30% of them need exploration, so these procedures are effective management for biliary complications after liver transplantation.

P175 SALVAGE LIVER TRANSPLANTATION FOR RECURRENT HEPATOCELLULAR CARCINOMA AFTER PRIMARY LIVER RESECTION: EXPERIENCE OF SINGLE CENTER

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Background: Salvage liver transplantation (SLT) is considered a feasible option for the treatment of recurrent hepatocellular carcinoma (HCC). We summarize the experience with SLT in a single center.
Methods: During October 2010 to November 2013, there were 179 liver transplantation performed in our institution. Among them, 14 patients who had prior liver resection (LR) for HCC underwent SLT for HCC recurrence. The outcome and pathological characteristics of the 14 patients were analyzed retrospectively.
Results: The mean age of the patients at the time of initial LR was 46.4 years. Twelve of them were male and most patients (n = 12) had chronic hepatitis B. At initial LR, the mean size of tumor was 4.6 $\pm$ 0.94 cm (range 1–13 cm) and half patients had single HCC. Microscopic vascular invasion was presented in 5 cases. The recurrence was diagnosed at median of 19 months (range 7–65 months) after initial LR. Nine patients received bridging treatment, including re-resection, transcatheter arterial embolization and radiofrequency ablation. The median time interval from initial LR to SLT was 23.5 months (range 8–118 months). At liver transplantation, nine cases were beyond Milan criteria. Most patients (n = 11) underwent LDLT. The mean operative time was 7.5 $\pm$ 4.4 h and mean blood loss was 2350 $\pm$ 435.7 ml. The mean follow-up periods was 16.1 $\pm$ 4.1 months. One patient had HCC recurrence after SLT and only the patient died 12 months after SLT.
Conclusions: We extended the selection criteria for SLT. More than half of the patients in our study had HCC recurrence outside the Milan criteria. We considered that the longer interval of recurrence after initial LR seems to predict the better outcome of SLT.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P176

EFFECT OF TACROLIMUS AND CYCLOSPORINE ON THE CULTURED BRAIN CELL VIABILITY

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Objectives: After the organ transplantation, some patients suffer from mild neurological symptoms such as tremor to severe complications including seizures and encephalopathy. Neurological side effects can be caused by cyclosporine A (CsA) and tacrolimus. However, the mechanisms of encephalopathy by CsA and tacrolimus are not fully understood. We studied the cytotoxicity of CsA and tacrolimus, focused on the viability using the glioma cell line.

Methods: Varying concentrations of CsA or tacrolimus were added to glioma cells, and incubated for 24 h at 37°C. The cell viability was measured using 3-(4,5-dimethyl-thiazol-2-yl)-2,5-diphenyl-tetrazolin bromide (MTT).

Results: Substantial morphological changes were observed in glioma cells when they were treated with CsA or tacrolimus. Cells were detached and floated to the top of the culture dish, and a monolayer was not formed. Under the CsA, the cell viability were as follows: 100 $\pm$ 0.1% at the zero mM of CsA as a control, 64.3 $\pm$ 18.5% ($p < 0.05$ vs. control) at the 0.25 mM, 61.3 $\pm$ 12.0% ($p < 0.01$ vs. control) at the 0.50 mM, 68.1 $\pm$ 18.8% ($p < 0.05$ vs. control) at the 2.5 mM, 62.4 $\pm$ 24.5% ($p < 0.05$ vs. control) at the 5.0 mM, and 68.6 $\pm$ 19.5% ($p < 0.05$ vs. control) at the 10.0 mM. Under the tacrolimus, the cell viability were as follows: 100 $\pm$ 0.1% at the zero mM of tacrolimus as a control, 38.6 $\pm$ 29.4% ($p < 0.05$ vs. control) at the 0.25 mM, 40.8 $\pm$ 26.5% ($p < 0.05$ vs. control) at the 0.50 mM, 43.7 $\pm$ 21.7% ($p < 0.05$ vs. control) at the 2.5 mM, 37.8 $\pm$ 27.7% ($p < 0.01$ vs. control) at the 5.0 mM, and 43.0 $\pm$ 29.8% ($p < 0.05$ vs. control) at the 10.0 mM. And there was no significant difference between CsA and tacrolimus in the cell viability under the same concentration.

Conclusions: CsA or tacrolimus can cause the neurological side effect and encephalopathy after organ transplantation by their direct cytotoxic effect on brain cells.

025 LIVER

P178 MODIFIED BACK-WALL FIRST ARTERY ANASTOMOSIS TECHNIQUE IN LIVING DONOR LIVER TRANSPLANTION

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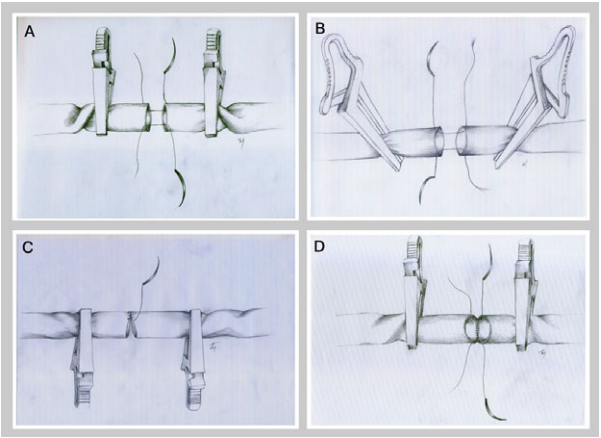
Aim: Back wall technique is usually used for hepatic artery anastomosis in living-donor-liver transplantation (LDLT). In this technique two stitches are placed to the two corners of the artery wall initially and the microclamp on artery is rotated to place the sutures to the back wall first. In some cases, microclamp cannot be rotated because of the insufficient length of graft or recipient artery. In this condition it may be difficult to rotate the artery to perform back wall artery anastomosis technique. In these cases the difficulty of doing the anastomosis can cause intimal tears. Thus, we prefer a modified technique for artery anastomosis in such situations.
Methods: In this modified technique two stitches are placed to the middle of the posterior wall and middle of the anterior wall initially. The artery is twisted 90 degree to the right side and to the left side respectively instead of 180 degree rotation once to place the back wall stitches.
Conclusion: In this modified technique reversing the microclamp is eliminated that can cause intimal damage thereof it may be superior to the conventional method in terms of reducing the difficulty to do the anastomosis and intimal damage to the vessels.



P179 A RARE UNSUSPECTED CONDITION TO ABANDON LIVER DONOR OPERATION, PELIOSIS HEPATIS: A CASE REPORT

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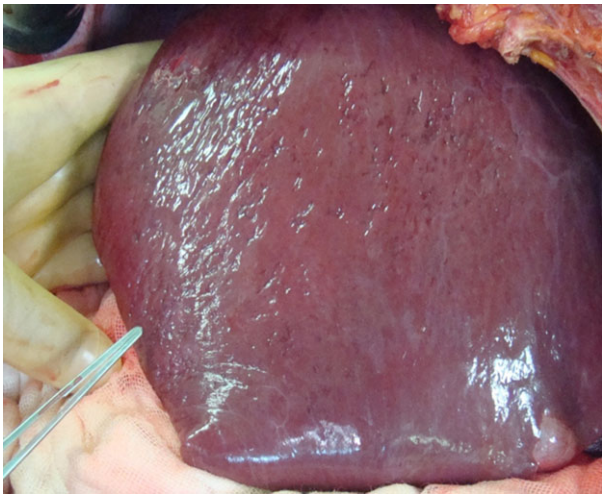
Donor safety is the primary concern of living liver donor operation. Meticulous donor evaluation is essential for minimizing donor complications. However, even with the careful donor evaluation sometimes there may be problems necessitating the abortion of the donor operation for the sake of donor safety. Peliosis hepatis is an unusual condition of the liver characterized by the presence of blood-filled cavities. It is often associated with the use of steroids, immunosuppressive drugs, and oral contraceptives or with underlying conditions, such as tuberculosis or tumor. In this paper we report a case which the donor operation was aborted due to macroscopic appearance of poor liver quality with normal liver enzymes and preoperative normal histological findings. Intraoperative tru-cut liver biopsy revealed intralobular cavities that are randomly distributed between areas of normal hepatic parenchyma compatible with the diagnosis of peliosis hepatis in contradistinction to the preoperative findings. We've got the information of two times testesteron gel usage in the donor evaluation period postoperatively that he did not tell us. Peliosis hepatis may cause development of progressive fibrosis, cirrhosis, and portal hypertension. So the possibility of the potentially life treating complication of donor hepatectomy should be considered for the patients prone to use drugs such as testesteron or anabolic steroids.



023 KIDNEY

P181

AFTER LIVE KIDNEY DONATION: A SYSTEMATIC REVIEW AND META-ANALYSIS: LONG-TERM FOLLOW-UP

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Background: Annually, over 20 000 living individuals donate their kidney and accept the risks associated with major surgery and living with one kidney. A systematic review and meta-analysis were performed to investigate the long-term outcomes of individuals after donation.
Methods: Comprehensive searches were performed in MEDLINE, Embase, CENTRAL, OVIDSP and Google Scholar. Articles that reported on long-term outcomes (e.g. kidney function, incidence of morbidity and mortality) with a median follow-up of 10 years or more after donation among adults were included.
Results: Out of 5 305 identified articles, 25 were included for analysis: 21 cohort follow up studies, and 10 studies comparing donors with non-donors; of which six were also included in the first segment. Reported outcomes were kidney function, hypertension and diabetes, gestational hypertension and pre-eclampsia, quality of life, and mortality. The cohort follow up studies included 10 305 donors, pooled into two groups (i.e., <20 years and over 20 years of follow-up). A meta-analysis revealed increasing donor morbidity with longer follow-up. The second segment of studies comparing donors with non-donors included 5713 donors. Similar long-term outcomes of different studies showed contradictory results, with variability in favor of donors or non-donors (Table 1). Overall quality of life was found to be better among donors.
Conclusions: The current literature is inconclusive concerning possible negative consequences of live kidney donation. The main limitation is caused by the heterogeneity of the different donor and non-donor cohorts and the design of studies. This lack of uniformity makes it hazardous to make a final statement on the long-term health status after living kidney donation. Therefore, new high quality studies addressing this important question are necessary to guarantee the safety of living kidney donors.

Table 1. Xxxxxxx.

	Hypertension	Systolic blood pressure	Diabetes	Creatinine	Creatinine clearance	eGFR	Proteinuria	BMI	ESRD	Mortality	Cardiovascular mortality	Gestational hypertension and pre-eclampsia	Quality of life
Najarian et al.													
Saran et al.													
Undurraga et al.													
Tavakol et al.													
Ibrahim et al.													
Mjoen et al.													
Garg et al.													
Mjoen et al.													
Garg et al.													

Red; outcome worse in donors.
Yellow; outcome similar.
Green; outcome better.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P182

LIVING-RELATED VERSUS LIVING-UNRELATED KIDNEY TRANSPLANTATION USING EVEROLIMUS PLUS REDUCED CALCINEURIN INHIBITOR IMMUNOSUPPRESSION: 2-YEAR RESULTS FROM THE A1202 STUDY

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Background: Living-related donors (LRD) and living-unrelated donors (LURD) extend the pool of donor organs. We present a comparison of LRD and LURD kidney transplant (KTx) outcomes in terms of composite efficacy failure event rates and renal function over 24 months post-KTx in everolimus (EVR) + reduced cyclosporine (rCsA) treated KTx recipients (R).

Methods: The A1202 study investigated the efficacy and safety of EVR (1.5 mg starting dose with target trough level 3–8 ng/ml) plus rCsA dose versus mycophenolate mofetil with standard CsA dose in *de novo* KTxR in Japan. The study population in the EVR-treatment arm consisted of 60 living-donors KTxR, out of which 36 recipients had living-related KTx whereas 24 recipients underwent living-unrelated KTx. Here, a retrospective post-hoc analysis of A1202 study results (12 months core and extension study until 24 months) was performed to assess the composite efficacy failure event rates and renal function (by MDRD formula) in LRD and LURD sub-groups of living donors in the EVR-treatment arm only.

Results: At Month 24, the composite efficacy failure event rates (incidence of treated BPAR, graft loss, death or loss to follow-up) was higher in the LURD group compared to the LRD group (LURD: 10.5% vs. LRD: 6.7% with −3.86% difference in rates; $p = 0.323$). tBPAR events, graded as Banff Type IA, were reported in 2 patients in the LURD group versus 1 patient in the LRD group. Antibody-mediated rejection events were not observed in either group at 24 months. The estimated GFR was numerically higher in LRD group than the LURD group (median values, LRD: 64.10 ml/min/1.73 m^2 vs. LURD: 50.40 ml/min/1.73 m^2; $p = 0.164$). Further, the proportion of KTxR with eGFR > 60 ml/min/1.73 m^2 was higher in the LRD group than the LURD group (LRD: 51.7% vs. LURD: 42.1%) at Month 24 post-KTx.

Conclusion: The outcomes in terms of the incidence of composite efficacy failure event rates and renal function were not significant between LRD and LURD groups.

025 LIVER

P183

TRIANGULATION OF VENOUS OUTFLOW IN RIGHT LIVING LIVER DONOR LIVER TRANSPLANTATION

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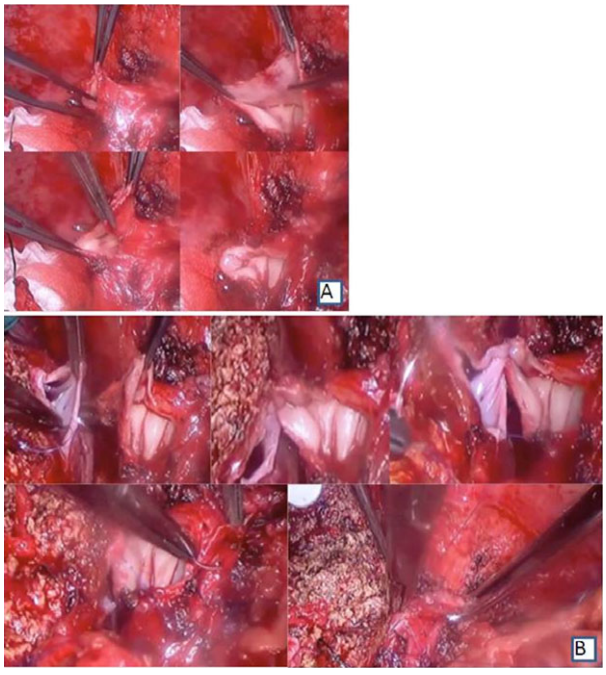
Baylor University Medical Center

Living donor liver transplantation (LDLT) is an alternative option to deceased transplantation in patients with lower MELD scores. To date our program has performed 21 LDLT with triangulation of the venous outflow.

All living donor liver transplantations performed at our program from 2012 to the present were reviewed. Living donor evaluation included liver biopsy and MRI with calculation of allograft volume. The right allografts were implanted using a triangulation technique of the donor right hepatic vein and IVC of the recipient (Figure A), followed by an end-to-side anastomosis with the donor right hepatic vein using 3 separate prolene running sutures (Figure B). Iliac vein grafts were used in 2 cases with large segment 5 and 8 hepatic veins. IVC, hepatic vein, and portal vein pressures were measured in the operating room. Doppler evaluation was performed on post operative day 1 and when clinically indicated.



The average MELD score in this series was 15. The average graft weight was 819.6 g, predicted graft volume of 927.8 ml, graft to recipient volume ratio of 1.27 and percent donor resection of 58.7%. Four recipients died, with no vascular complications, and no laboratory evidence of acute or chronic vascular outflow obstruction. The median laboratory values for the post operative day 7 for all patients were: T bili 4.1, AST 66, ALT 221.

The triangulation of the hepatic vein and IVC of the recipient, with an end-to-end anastomosis with donor hepatic vein has been effective in providing excellent venous outflow in LDLT.

023 KIDNEY

P184

EFFECT OF RENAL TRANSPLANTATION ON LEFT VENTRICULAR DYSFUNCTION IN PATIENTS WITH END STAGE RENAL DISEASE

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Nagoya Daini Red Cross Hospital

Background: Cardiovascular disease is the leading cause of death in end-stage renal disease (ESRD) patients. Although renal transplantation is known to improve left ventricular systolic dysfunction, it is not clear whom the improvement effects can be expected.
Objectives: We examined the effect of renal transplantation on left ventricular ejection fraction (LVEF) and left ventricular asynergy in ESRD patients with left ventricular dysfunction.
Methods: Between January 2010 and December 2014, 22 recipients with LVEF < 55% (17 uremic cardiomyopathy and 5 ischemic cardiomyopathy) were evaluated by echocardiography before and at 6 and 12 months after transplantation. Left ventricular asynergy was assessed by Wall Motion Score Index (WMSI).
Results: In patients with uremic cardiomyopathy ($n = 17$), mean LVEF% increased from 43.6 to 60.6 ($p < 0.001$) and mean WMSI improved from 1.67 to 1.09 ($p < 0.001$) 12 months after transplantation. There was no cardiovascular event in this group. After transplantation, 70.6% of patients achieved normal LVEF (≥55%). In patients with ischemic cardiomyopathy ($n = 5$), mean LVEF% increased from 36.0 to 53.0 ($p = 0.027$) and 60.0% of patients achieved normal LVEF but left ventricular asynergy was not significantly improved ($p = 0.136$) at 12 months after transplantation. One patient with old anteroseptal myocardial infarction developed delayed graft function and congestive heart failure on postoperative day 7.
Conclusions: Renal transplantation improved left ventricular systolic dysfunction measured by LVEF in ESRD patients with both uremic and ischemic cardiomyopathy. Although left ventricular asynergy caused by uremia looked reversible by renal transplantation, one caused by ischemia remained irreversible. Indication of renal transplantation for patients with history of large myocardial infarction must be strictly determined.

031 PEDIATRIC TRANSPLANTATION

P185

BASELINE CHARACTERISTICS OF CRADLE STUDY EVALUATING THE EFFECT OF EARLY EVEROLIMUS INITIATION TO REDUCE CALCINEURIN INHIBITOR EXPOSURE AND TO WITHDRAW STEROID IN PEDIATRIC RENAL TRANSPLANT RECIPIENTS

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[1]Universitätsklinikum Heidelberg; [2]UCLA Center for the Health Sciences; [3]Medizinische Hochschule Hannover; [4]Bambino Gesu Children's Hospital; [5]Novartis Pharma AG; [6]Novartis Pharmaceuticals Corporation

Background: Calcineurin inhibitors and steroid-based immunosuppressive regimens in pediatric renal transplant recipients (pRTxRs) are associated with nephrotoxicity, growth impairment, glucose intolerance and bone diseases. Current approach in pRTx is to minimise/avoid these drugs but the efficacy and safety of these strategies still needs to be established.

Methods: CRADLE (NCT01544491) is a 12 month (M), phase III, multi-centre, open-label study with an additional 24M safety follow-up in pRTxRs (≥1 and <18 years). After a run-in period of 4–6 weeks post-Tx, pRTxRs on standard tacrolimus (TAC) + mycophenolate mofetil and steroids with eGFR > 40 ml/min/1.73 m^2 are randomised (1:1) to either continue the same regimen or switch to everolimus (EVR) + reduced TAC and steroid withdrawal at M6. Co-primary objectives at M12 are: to estimate the rate of composite efficacy endpoint of biopsy-proven acute rejection, graft loss or death and to evaluate renal function. Key secondary objectives at M12 and M36 include evaluation of antibody-mediated rejection and donor-specific antibodies, proteinuria, progression of interstitial fibrosis/tubular atrophy, viral load for CMV, EBV and BKV, assessment of growth and development including sexual maturation and overall safety.

Baseline Information: The study recruitment is currently ongoing at 36 sites in 14 countries. The December 2014 Data Monitoring Committee (DMC) reviewed data of 74 randomised pRTxRs and no safety or efficacy concerns were raised. DMC agreed to continue the study as planned. Baseline characteristics of 69 patients included in safety analysis are presented in the Table.

Conclusions: The CRADLE study will determine whether early introduction of EVR to reduce TAC exposure and withdraw steroids at M6 is efficacious and safe in pRTxRs and will provide long-term data on growth and sexual maturation, and glucose intolerance.

Table: Baseline demographics and clinical characteristics

Variable	Total N=69
Female, n (%)	35 (50.7)
Age, years	
Mean	10.0
Median (range)	10.0 (1.0 – 17.0)
Age group (years), n (%)	
1 - <7	18 (26.1)
7 - <12	19 (27.5)
12 - <18	32 (46.4)
Caucasian, n (%)	59 (85.5)
Height, cm	
Mean	132.5
Median (range)	134.0 (76.0 – 181.5)
Weight, kg	
Mean	33.3
Median (range)	29.2 (10.0 – 86.2)
Body mass index, kg/m^2	
Mean	17.6
Median (range)	16.9 (10.2 – 29.2)
Randomisation eGFR*, mL/min/1.73 m^2	
Mean	84.1
Median (range)	81.5 (37.0 - 264.0)
Renal replacement therapy, n (%)	43 (62.3)
Induction therapy - basiliximab, n (%)	65 (94.2)
Type of allograft, n (%)	
Deceased heart beating	35 (50.7)
Deceased non-heart beating	4 (5.8)
Living related	28 (40.6)
Living unrelated	1 (1.4)

* Schwartz formula (abbreviated)
Patient with eGFR of 37 at randomization will be excluded from the final analysis
The study drug information for 5 patients was not available at the time of analysis

023 KIDNEY

P186 **JC VIRUS NEPHROPATHY: A MYTH IN THE PAST, AN EVIDENCE IN THE PRESENT**

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[1]Department of Nephrology, Médio Tejo Hospitalar Center, Torres Novas, Portugal; [2]Department of Nephrology, Santa Cruz Hospital, Carnaxide, Portugal; [3]Department of Pathology, Lisbon Ocidental Hospitalar Center, Lisbon, Portugal; [4]Department of Clinical Pathology, Lisbon Central Hospitalar Center, Lisbon, Portugal; [5]Nova Medical School, Lisbon, Portugal; [6]Clinical Microbiology and Public Health Laboratory, Public Health England, Addenbrooke's Hospital, Cambridge, UK

Our Transplantation Department regularly measures JC virus (JCV) and BK virus (BKV) viremia and viruria after kidney transplantation (KT).

A 61 year-old patient, who received a deceased donor kidney allograft with 5 HLA mismatches, developed JCV viruria (2.3×10^4 copies/ml) without JCV viremia 7 months after transplantation. BKV serologies were negative. Four years thereafter, an isolated increasing in JCV viruria (4.7×10^{14} copies/ml) was found, followed by JCV viremia 2 months later (1.1×10^3copies/ml). GFR decreased from 54 to 36 ml/min/1.73 m^2 within 3 months. The renal allograft biopsy revealed polyoma virus associated tubulointerstitial nephritis.

A confirmatory-in-house real-time polymerase chain reaction (PCR) assay, showed the presence of JCV and absence of BKV in the graft biopsy. Immunosupression was reduced and ciprofloxacin was started. At the fifth month, as viruria and viremia were still present at high levels, intravenous immunoglobulin (IVIg) was administered and tacrolimus was switched to everolimus. The serum creatinine decreased to the lowest level of 1.55 mg/dl (eGFR = 47 ml/min/1.73 m^2), since the diagnosis of JCV nephropathy, although JCV viruria and viremia remained high ($9.75x10^9$ copies/ml and $1.58x10^3$ copies/ml, respectively). At the 11 month after the diagnosis, the renal function remains stable (eGFR = 46 ml/min/1.73 m^2) but viremia and viruria maintain high levels.

In KT, JCV is usually considered a "benign" virus and only few cases of PVAN due to JCV were reported, most of them based in serological and histological data, without identification of JCV genome in the allograft.

Our report demonstrates the presence of JCV genome in the renal tissue, challenging the concept of JCV "benignity", highlighting the importance of monitoring both BKV and JCV viruria and viremia in kidney allograft recipients.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P187 SINGLE CELL TRACKING OF MESENCHYMAL STEM CELLS ADMINISTERED IN A KIDNEY INJURY MODEL

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[1]Erasmus MC; [2]BioInVision

Introduction: Mesenchymal stem cells (MSC) are under investigation as an immunomodulatory therapy in organ transplantation. The distribution, migration and persistence of MSC after administration continues to arouse questions. In the present study we analysed the localisation and retrieval of MSC after intravenous infusion in mice with ischemic kidney injury (IRI) using state of the art imaging techniques allowing the detection of single cells.
Materials and Methods: MSC were obtained from fat tissue of C57BL/6 mice and expanded in culture. One batch of MSC was labelled with Qtracker 605 fluorescent beads. As a control, a second batch was labelled with Qtracker 655 beads and heated to 50°C for 30 min, leaving the cells dead but intact. 150 000 living MSC and 150 000 dead MSC were injected in the tail vein of C57BL/6 mice with unilateral IRI and healthy controls. The CryoVizTM cryo-imaging system was used for 3D anatomical and molecular fluorescence video-imaging of whole mice after 2 h and 24 h.
Results: The CryoVizTM is capable of detecting single fluorescent cells. At 2 h 36 801 living MSC were detected in the animal with IRI, mainly in the lungs. At 24 h 3134 living MSC were recovered, nearly all in the lungs. Only 126 and 129 MSC were found in the injured and healthy kidneys, respectively. Interestingly, dead MSC showed the same distribution pattern (2 h 137 723 cells, mostly in the lungs; 24 h 11 320 cells), with neglectable numbers in the kidneys. In a healthy mouse 47 186 living MSC and 82 082 dead MSC were detected at 2 h, mostly in the lungs. At 24 h only 210 living and 959 dead MSC were detected.
Discussion: These results demonstrate that infused MSC are distributed via passive mechanisms and end up mainly in the lungs, form where they are largely cleared within 24 h. We found no evidence for recruitment of even small numbers of MSC to injured kidneys. This suggests that the widely reported immunomodulatory effects of MSC are mediated via systemic mechanisms.

P188 STEROID-FREE IMMUNOSUPPRESSION IS ASSOCIATED WITH ENHANCED TH1 TRANSCRIPTS

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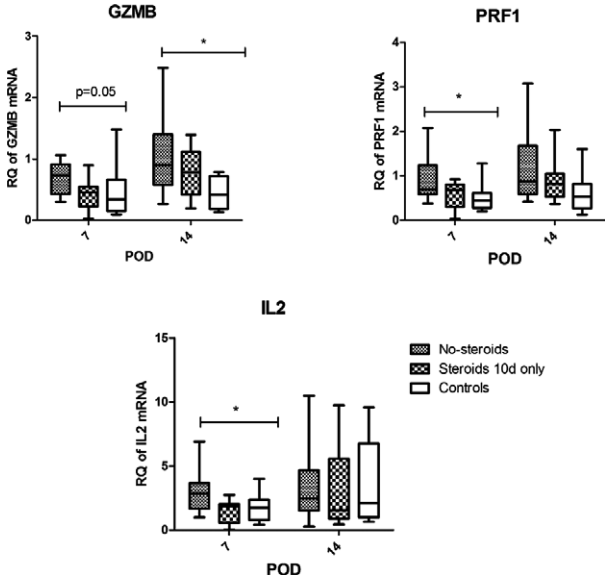
[1]Transplant Laboratory, Institute for Clinical and Experimental Medicine; [2]Department of Clinical and Transplant Immunology, Institute for Clinical and Experimental Medicine; [3]Department of Nephrology, Institute for Clinical and Experimental Medicine; [4]Department of Nephrology, Transplant Laboratory, Institute for Clinical and Experimental Medicine

Background: Steroid withdrawal from immunosuppressive regimen offers several metabolic advantages, it might, however, be associated with higher rejection incidence. The aim of this study was to evaluate transcripts associated with immune response in steroid-free and steroid-based regimens in kidney transplantation.
Methods: In this prospective study 33 low-risk (PRA < 20%), first deceased kidney transplant recipients received basiliximab induction and maintenance immunosuppression consisting of TAC/MMF. In steroid-free regimen group only perioperative bolus was used (n = 14), and in the second group after initial bolus tapered steroids were discontinued at 10 day (n = 9). Control group received initial steroid bolus and low dose steroid therapy for the whole follow-up (n = 10). The expression of 28 genes, associated with alloimmune response/tolerance, was measured in the peripheral blood by RT-qPCR at POD 0, 7, 14, 90 and 365 and lymphocyte subpopulations were monitored by flow cytometry.
Results: Both steroid-free regimens were associated with higher CTL and NK cells derived GZMB expression at POD14 and PRF1 at POD7. Higher proinflammatory cytokine IL-2 expression at POD7 was detected only in no-steroids group (Fig. 1). Steroids decreased the expression of tolerance associated B-cell related transcripts SH2D1B and TCL1A at POD14 and POD90, respectively. There were differences neither in analyzed peripheral lymphocytes subsets nor in the intrarenal expression of selected genes in 3-months protocol biopsies among groups.
Conclusions: Steroid-free immunosuppression early after kidney transplantation is associated with enhanced expression of Th1 associated transcripts in peripheral blood that suggest higher susceptibility to early acute rejection in those patients. This observation needs further clinical validation.

Supported by GACR No. P301/11/1568 and MZO 00023001.

Figure 1. RT-qPCR of GZMB, PRF1 and IL2 transcripts in kidney recipients with different steroids regimen.



031 PEDIATRIC TRANSPLANTATION

P189

COAGULATION MANAGEMENT IN PAEDIATRIC LIVER TRANSPLANTATION WITH ROTEM ANALYSIS: HYPERFIBRINOLYSIS OR INCREASED CLOTTING TIME OCCURRENCE AFTER GRAFT REPERFUSION

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[1]HFME-HCL; [2]HFME Lyon

Thromboelastometry (ROTEM)-guided coagulation management during liver transplantation is known to optimize blood products support. Hyperfibrinolysis can occur during liver transplantation, especially after liver graft reperfusion and can be disastrous.

Method: We studied 30 consecutive pediatrics patients during 3 years (11 girls and 19 boys). Their mean age was 7.2 years [1–15]. The initial pathology was: biliary atresia (12), metabolic disorders (9), others (9). All the patients benefited of ROTEM analysis during the procedure. After the graft reperfusion we performed at the same time Rotem analysis, biological and standard coagulation parameters measurement. A Student t-test was performed for statistical analysis.

Results: We did not find any patient with hyper fibrinolysis during the procedure. After graft reperfusion 21 patients had a prolonged clotting time in EXTEM assay (CText) however only 6 of them showed a corrected CText by Aprotinine adjonction (which were treated with Tranexamic acid). We found no difference in blood replacement.

Patients CText prolonged	CTAptem corrected (6)	CT Aptem non corrected (15)	Test t (p)
CTextem (s)	117 ± 26	89 ± 23	0.01
ionized Calcium Ca++(mmol/l)	1.11 ± 0.08	1.24 ± 0.11	0.008
Fibrinogen (g/l)	1.06 ± 0.2	1.43 ± 0.08	0.04

We observed that this abnormal clotting time was significantly higher when corrected by Aprotinine addition. Comparing both groups of patients we found a significant difference in blood level of ionized calcium and fibrinogen (Aprotinine CText corrected patients presented a lower level for both). As fibrinogen is the base of fibrin formation and ionized calcium is involved in the last step of fibrin stabilization; it is not surprising that both need to be restored in order to obtain an optimal coagulation.

Coagulation management should be linked to Rotem analysis during the transplantation procedure. Calcium and fibrinogen support associated with tranexamic acid will improve coagulopathy after the liver graft reperfusion.

023 KIDNEY

P190

HYPERLEPTINEMIA IS ASSOCIATED WITH AORTIC AUGMENTATION INDEX IN RENAL TRANSPLANT RECIPIENTS

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Objective: Leptin exert actions related to cardiovascular homeostasis that are potentially atherogenic, thrombotic, and angiogenic. The aim of this study was to evaluate the relationship between fasting serum leptin levels and aortic augmentation index in renal transplant recipients.
Patients and Methods: Fasting blood samples were obtained from 70 renal transplant recipients. Aortic augmentation index was measured by a validated tonometry system (SphygmoCor). Plasma leptin levels were measured using a commercial enzyme-linked immunosorbent assay kit.
Results: Using the univariate linear analysis of aortic augmentation index in renal transplant recipients is shown that body fat mass ($p = 0.002$), diastolic blood pressure ($p = 0.020$), and leptin ($p < 0.001$) was positively correlated, while height ($p = 0.004$), and glomerular filtration rate ($p = 0.022$) was negatively correlated with aortic augmentation index in renal transplant recipients. Multivariate forward stepwise linear regression analysis of the factors significantly associated with aortic augmentation index showed that leptin (β: 0.364; $R^2 = 0.181$, $p < 0.001$), diastolic blood pressure (β: 0.248; $R^2 = 0.072$, $p = 0.014$) and height (β: -0.228; $R^2 = 0.048$, $p = 0.036$) were the independent predictors of aortic augmentation index.
Conclusion: Serum fasting leptin level was associated with aortic augmentation index in renal transplant recipients.

Item	β	R^2	R^2 change	p-value
Leptin (ng/ml)	0.364	0.181	0.181	<0.001*
Diastolic blood pressure (mmHg)	0.248	0.253	0.072	0.014*
Height (cm)	−0.228	0.301	0.048	0.036*

025 LIVER

P191 **HYPERTENSION IN PATIENTS AFTER LIVER TRANSPLANTATION**

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Background: Cardiovascular diseases are frequent causes of death of patients after liver transplantation. The aims of the study were to estimate the prevalence of arterial hypertension among patients who underwent liver transplantation and the role of immunosuppressive drugs in the pathogenesis of hypertension in these patients.
Methods/Materials: 91 patients (age 47 ± 12 years; 33 women, 58 men) after liver transplantation who survived 12 months were analyzed retrospectively. 84 of them completed 24 months follow-up. The results are presented as means with standard deviation.
Results: 1, 12 and 24 months after liver transplantation the prevalence of hypertension were 46%, 56% and 63%, respectively (the difference between 1 and 24 months: $p = 0.02$). Systolic blood pressure (SBP) and eGFR in above mentioned months were 126 ± 18; 134 ± 20; 136 ± 18 mmHg and were 78 ± 34; 75 ± 31; 76 ± 29 ml/min., respectively. 24 months after transplantation 60 (78%) patients were treated with tacrolimus, 10 (13%) cyclosporine A, 10 (13%) everolimus and 70 (91%) prednisone. Hypertension was found significantly more frequently in patients treated with cyclosporine A than with tacrolimus ($p = 0.008$) and everolimus ($p = 0.02$) (100% vs. 56% vs. 60%, respectively). There were significant correlations between tacrolimus blood concentration and SBP after 24 months ($R = 0.29$; $p = 0.04$). Multiple regression analysis performed in the group of patients treated with tacrolimus, with SBP as the dependent variable and eGFR, tacrolimus blood concentration as independent 24 months after liver transplantation showed that SBP significantly depends both on eGFR ($p = 0.02$) and tacrolimus blood concentration ($p = 0.01$).
Conclusions: 1. Arterial hypertension occurs in more than 50% of patients after liver transplantation. 2. Calcineurin inhibitors may participate in the high incidence of arterial hypertension in these patients.

023 KIDNEY

P192

ENHANCED CYTOKINES AND CHEMOKINES AT INCREASING TIME INTERVALS AFTER BRAIN DEATH

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Background: Brain death is a donor associated risk factor that negatively affects the transplantation outcome. The inflammation associated with brain death is a factor which affects the transplantation outcome. It was shown that complements and pro-inflammatory cytokines and chemokines significantly increased during organ procurement. The aim of this study was to determine the effect of prolanged time interval after brain death on chemokine and cytokine responses.

Material and Methods: Thirteen healthy adult male Sprague Dawley rats were intubated and mechanically ventilated. Afterwards, a prolonged time interval (8 h) after brain death in the absence of hemodynamic stability was applied. A panel of immune responses including cytokines (IL-1a, IL-1b, IL-2, IL-4, IL-6, IL-10, IL-13, IL-18, IFN-g, TNF-a) growth factors (VEGF, GM-CSF) and chemokines (CXCL2, CXCL3, L-selectin, TIMP-1, ICAM-1) were measured at 1, 4 and 8 h after brain death by multiplex analyses.

Results: In the early phase after brain death induction, an increase in heart rate and a decrease in mean arterial pressure were recorded. Only limited fluctuations in Pa O2, O2 Sat. and HCO3 were noted. Almost all monocyte-/macrophage- and lymphocyte-derived cytokines and immune cell products increased from 1 to 4 h and were more so of 8 h after brain death (Table 1).

Conclusion: Chemokines, cytokines and particularly pro-inflammatory responses are significantly time-dependent. Because of such pro-inflammatory responses, organ harvesting more than 4 h after brain death can be significantly with increased risk of organ damages.

Parameters	0 H	1 H	4 H	8 H	χ^2	p
TIMP-1 (ng/ml)	9.8 ± 2.0	16 ± 2.0	58 ± 40	122 ± 47	28.62	<0.0001
ICAM-1 (ng/ml)	7.1 ± 16	54 ± 96	104 ± 125	152 ± 211	28.62	<0.0001
IL-6 (ng/ml)	1.0 ± 0.2	1.7 ± 0.8	13 ± 12	42 ± 56	28.39	<0.0001
IL-13 (pg/ml)	4.1 ± 13	8.3 ± 18	34.0 ± 22.0	73 ± 21	27.41	<0.0001
CXCL3 (pg/ml)	170 ± 40	230 ± 120	1980 ± 1850	4470 ± 3040	27.00	<0.0001
IL-10 (pg/ml)	89 ± 39	109 ± 63	123 ± 18	230 ± 66	20.15	<0.001
IL-2 (pg/ml)	0	0	0	106 ± 111	17.39	0.001
IL-1ß (pg/ml)	248 ± 118	443 ± 377	651 ± 452	1093 ± 559	14.10	0.003
IL-4 (pg/ml)	0	0	0	12 ± 18	9.86	0.020

025 LIVER

P193

SIMULTANEOUS MULTIPLE ORGAN TRANSPLANTATION INCLUDING LIVER GRAFTS

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Liver transplantation is frequently performed for end stage liver disease (ESLD) patients. But some of ESLD patient is suffered from other organ dysfunction which is a complication from liver cirrhosis or separate cause. these patients are not indicated for liver transplantation for high risk. Recently, simultaneous multiple organ transplantation (MOT) is performed for these multiple organ failure patients. The result of MOT is very wide according to transplanted organs. Here we would like to present our experiences of MOTFrom 1995 to 2013 we performed 3412 cases of adult to adult liver transplantations (LDLT 2839 cases, CDLT 573 cases). We experienced 14 cases of MOT including 11 cases of liver and kidney transplantation (LKT), 2 cases of liver and heart transplantation (LHT), 1 case of liver and lung transplantation (LLT) and 1 case of liver and heart and lung transplantation (LHLT) 9 cases of liver and kidney transplantation were performed from two different live donors. The other cases including 2 LKTs were performed from single cadaveric donors. In LKT group, all but one case, who experienced tumor recurrence on postoperative 10th month, are doing well without any complication. The mean survival is 98 months (30–180 months). In LH group, we lost one patient due to progressive brain edema after transplantation on postoperative 9th day, the other patient was recovered without complication and survived well 13 month, now. LH patient suffered from poor liver function just after transplantation and accompanied with several complications including minor leakage from esophagus and recurrent infections requiring readmission. He was expired on postoperative 105th day. LHLT patient shows tolerable heart and lung function and his liver function is slowly improving up to postoperative 32 days. In conclusion, LK can be performed safely, but liver transplantation with heart or lung or all together is still challenging procedure to further explore.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P194 **PROMOTING ORGAN DONATION IN GENERAL PUBLIC – RECENT ACTIVITIES AND RESULTS IN SLOVENIA**

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Promotion of organ donation is one of Slovenija-transplants (ST) main competencies and one of priorities of Action plan on organ donation and transplantation (2009–2015). Increasing social awareness of the public is a long-term and continuous process. ST as a national competent authority started developing structured approach to communication with professional and general public after establishment in 2000.

ST has taken several actions in previous years to increase public awareness on deceased organ donation among general public. In the year 2014 however we were in most cases responding to initiatives raised by interested parties and helped them in creating the program taking into the account correct medical facts. We would like to single out three major campaigns that had the most impact on public awareness regarding organ donation in 2014:

A heart in Hand – theatre performance on organ donation and transplantation. Original script was created in cooperation with experts from ST and UMC Ljubljana.

Purple love is eternal – campaign organised in cooperation with Slovene football league champion NK Maribor.

Give life a chance-Say it forward – national educational public awareness campaign initiated by Slovene national radio station and in cooperation with slovene Red Cross organisation.

We used the number of new registrations in Slovene donor registry following the campaigns as an indicator of success. The increase in number of registrations during and immediately after the campaigns show direct correlation between the two. Total number of registered donors in 2014 increased by significant 145% in comparison to year 2013. The shares in total number of registered donors in relation to the campaigns are 29% (2) and 32% (3) respectively.

We believe the increase in the number of registrations is related to successful campaigns carried out in 2014 but also a result of structured approach and continuous hard work in the field since ST was established.

023 KIDNEY

P195 GUIDANCE OF (POTENTIAL) KIDNEY DONORS

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Introduction: After kidney donation, several living donors missed the possibility to share their experiences. They expected prolonged contact by a social worker or specialised nurse as they had experienced before donation. In addition, an evaluation by the Dutch Kidney Patient Federation revealed that donors experienced significant attention prior to and missed attention after the donation procedure. We enrolled a surveillance programme for donors to accompanying them after the procedure.
Methods: Potential Donors will be accompanied by a social worker, who will contact them every 3 months from the start of the first appointment until the moment of donation. After the procedure, donors will be at first re-evaluated by the specialised nurse 2–4 weeks after donation, and the a second time 2–4 months after the procedure by the social worker. In the first re-visit, the aim will be the consequences of the operation and the physical recovery. The social worker will discuss the further physical recovery, reintegration of work and the relation to the recipient. They will also pay attention to unexpected negative outcome or regret.
Results: Currently, the work is in progress. We expect that donors feel more guided, now also after donation. In addition, we expect to receive a lot of information to improve our work-up programme for potentially new donors.
Discussion: More attention for living kidney donors is essential, especially after the donation procedure. We expect that the proposed guidance programme will improve the donors' feelings and will contribute to a positive image about living kidney donation. In addition, we expect to improve our work-up programme for upcoming donors.

P196 CHRONIC POSTSURGICAL PAIN AFTER LAPAROSCOPIC DONOR NEPHRECTOMY: PREVALENCE AND CHARACTERISTICS

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Background: The prevalence of chronic postsurgical pain (CPSP) after open donor nephrectomy is high (33%) and greater than after nephrectomy for renal disease. We investigated the prevalence of CPSP and its characteristics after laparoscopic donor nephrectomy.
Methods: After IRB approval, a questionnaire was mailed to all the patients who underwent laparoscopic donor nephrectomy from 2000 until December 2013 ($n = 43$). Recall of postoperative pain intensity, duration of postoperative pain, presence of persistent pain directly related to the surgical procedure were questioned. In case of CPSP, characteristics of pain and impact on quality of life and sleep were assessed. Data were compared using Kruskal-Wallis. $p < 0.05$ = statistically significant.
Results: Data of 36 patients (49 ± 9 yo, M/F: 8/28) were analyzed. 5 patients (14%) reported chronic pain 57 [39 - 89] months after surgery. Averaged and maximal intensities of CPSP (0–10 VAS) during the last 3 days were respectively: 5 [2–5] and 5 [2–9]. CPSP had a negative impact on the quality of life in all patients and on sleep in 2 patients. Two patients complained of visceral pain, 3 of parietal pain. To characterize their CPSP all patients used adjectives that apply to neuropathic pain. Patients with CPSP reported significantly more severe early postoperative pain 6 [5 - 7] than patients without CPSP (4 [2 – 5]; $p = 0.03$) and had a longer hospital stay (8 [6 – 12] vs. 6 [5 – 7], $p = 0.11$) than patients without CPSP.
Conclusion: This study reports a 14% incidence of CPSP after laparoscopic open nephrectomy. This incidence is less than that reported after open donor nephrectomy (33%). CPSP has neuropathic characteristics, can be severe, and is disabling. Patients with CPSP complained of more intense pain during the early postoperative period.

025 LIVER

P197

SERUM LEVELS OF CHEMOKINES CCL4 AND CCL5 IN CIRRHOTIC PATIENTS INDICATE THE PRESENCE OF HEPATOCELLULAR CARCINOMA

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Background: Most Hepatocellular carcinomas (HCC) are diagnosed at an advanced stage. The prognostic value of serum tumor markers alpha-fetoprotein (AFP) and des-gamma-carboxy prothrombin (DCP) is limited. The aim of our study is to evaluate the diagnostic value of serum growth factors, apoptotic and inflammatory mediators of cirrhotic patients with and without HCC.
Materials and Methods: Serum samples were collected from cirrhotic potential liver transplant patients (LTx) with ($n = 61$) and without HCC ($n = 78$) as well as from healthy controls (HCs; $n = 39$). Serum concentrations of CRP, neopterin and IL-6 as markers of inflammation and thrombopoietin (TPO), GCSF, FGF basic and VEGF, HMGB1, CK-18 (M65) and CK18-fragment (M30), and a panel of proinflammatory chemokines (CCL2, CCL3, CCL4, CCL5, CXCL5 and IL-8) were measured. Chi square, Fisher exact, Mann-Whitney-U tests, ROC curve analysis and forward stepwise logistic regression analyses were applied.
Results: Serum levels of TPO and chemokines were lower whereas M30 was significantly higher in cirrhotic patients than in HCs. Patients with HCC had higher serum TPO and chemokines ($p < 0.001$ for TPO, CCL4, CCL5 and CXCL5) and lower CCL2 ($p = 0.008$) levels than cirrhotic patients without HCC. Multivariate forward stepwise regression analysis for significant parameters showed that among studied parameters CCL4 and CCL5 ($p = 0.001$) are diagnostic markers of HCC.

Parameters (mean ± SD) (*n*)	HCs ($n = 39$)	HCC− ($n = 78$)	HCC+ ($n = 61$)	p
M30 (U/l)	185 ± 133	1179 ± 856	1181 ± 870	1.00
TPO (pg/ml)	501 ± 106	163 ± 247	226 ± 210	<0.001
CCL2 (pg/ml)	179 ± 71	245 ± 689	129 ± 192	0.008
CCL3 (pg/ml)	70 ± 199	51 ± 370	10 ± 54	0.13
CCL4 (pg/ml)	66 ± 32	101 ± 484	170 ± 378	<0.0001
CCL5 (ng/ml)	11 ± 11	2.0 ± 4.8	3.6 ± 5.5	<0.0001
CXCL5 (pg/ml)	766 ± 540	118 ± 159	230 ± 301	<0.001

Conclusion: High serum levels of inflammatory chemokines such as CCL4 and CCL5 in the serum of cirrhotic patients indicate the presence of hepatocellular carcinoma.

035 TOLERANCE

P199

GENERATION OF REGULATORY T CELLS BY DENDRITIC CELLS GENERATED IN THE ENVIRONMENT OF IMMUNOSUPPRESSIVE AGENTS

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Background: Dendritic cells (DCs) present antigen to T cells. The state of DCs maturation is crucial for induction of T cell response. It was noted that immature DCs play an important role in peripheral tolerance, whereas mature DCs induce a complete immune response. This is very important in transplantation, especially in allograft rejection. Immature DCs or DCs with tolerogenic properties may prolong allograft survival. It appears that this could be achieved using the immunosuppressive therapy with cyclosporine A and rapamycin.

We have studied the effect of dendritic cells generated in the environment of immunosuppressive agents: rapamycin and cyclosporine A on the generation of $CD4^+CD25^{high}Foxp3^+$ regulatory T cells and T cells anti-inflammatory cytokine production.

Methods: Human peripheral blood monocytes were induced by using cytokines: IL-4 and GM-CSF, in the direction of DCs in the presence of rapamycin (Rapa-DCs) and cyclosporine A (CsA-DCs) or without drugs (control). To evaluate induction of regulatory T cells by these DCs, mixed leukocyte reaction (MLR) was applied. At the end of MLR cultures regulatory T cells were identified by surface phenotype: $CD4^+CD127^{low/negative}CD25^{high}Foxp3^+$ and analyzed by flow cytometry. Additionally the supernatants have been collected and measurements of anti-inflammatory cytokine (IL-10, TGF-β) levels were performed by ELISA.

Results: We have not observed a significant effect of Rapa-DC and CsA-DC on the generation of $CD4^+CD25^{high}Foxp3^+$ regulatory T cells. We have also noted that DCs generated in the environment of rapamycin or cyclosporine A has not affected the T cells anti-inflammatory cytokine production: IL-10 and TGF-β.

Conclusion: We have shown that the immunosuppressive agents: rapamycin and cyclosporine A do not change the ability of dendritic cells to generate regulatory T cells and induction of T cells anti-inflammatory cytokine production.

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009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P200 **AGE AS A CRITERION IN LIVING ORGAN DONATION**

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Background: Organ donation, especially living organ donation, has a high societal relevance in Germany. Although the number of living organ transplants has increased between 1990 and 2011 from 40 to 795. In living organ donation the organ of a relative is applied for medical intervention. This gives rise to classic questions about the body and age in the face of new possibilities in modern medicine regarding urgency and rationing. In 1999 Eurotransplant started a Senior Program, which is also known as the "old for old"-program, in which donors of 65 years or older are allocated to recipients of the same age group, without taking into account the tissue characteristics. Organ transplantation changes the „traditional" boundaries between the inside and outside of human bodies and challenges affected persons to rethink the meaning of these possibilities and boundaries regarding the criterion of "age."
Methods: The socio-empirical study consists of 27 semi-structured interviews and six focus group discussions of German recipients and donors of living kidneys conducted in 2009–2010 ($N = 47$). The sample consists of a broad spectrum of kidney donors and recipients with different kinds of social and biological relationships. Aim: My investigation aims at the qualitative, cultural and ethical analysis of the conditions under which those affected by a living organ donation (donor and recipient) consider age as a criterion.
Results: Initially, those affected by living organ donation are motivated by the criterion of immediate, affectedness' (this includes relatives), rather than age. Empirical results show three main foci: Prognosis and prevention: those affected emphasize the significance of different age groups and the need for adapting information on a preventive life style to the respective age groups because of their different priorities (e.g., a healthy diet). Allocation of resources (contexts of allocation): for those affected, age is very important in the acceptance of or.

025 LIVER

P201

THE SIMCER STUDY: A RANDOMIZED 6-MONTH STUDY IN *DE NOVO* LIVER TRANSPLANT PATIENTS TO ASSESS THE SAFETY AND EFFICACY OF EVEROLIMUS WITH EC-MPS COMPARED TO STANDARD TREATMENT WITH TACROLIMUS AND EC-MPS

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Background: In recent years patient and graft short term survival have considerably improved after liver transplantation (LTx), however late complications, especially impaired renal function (RF) and its consequences, are still of concern. Here, we present a phase IIIb study, the SIMCER trial, designed to evaluate the efficacy and safety of a CNI free regimen that combined early introduction of everolimus (EVR) (1 month (M) post-LTx) to Enteric-coated mycophenolate sodium (EC-MPS) after progressive tacrolimus (TAC) withdrawal in comparison to a standard group receiving TAC and EC-MPS. The primary endpoint of the study is the evaluation of RF at M6 post-LTx.
Methods: This is a multicenter, open-label study, conducted in 15 French centers, that randomized at M1 post-LTx (1:1) 188 LTx recipients (LTxR), to receive either EVR (C0, 6–10 ng/ml) with EC-MPS (1440 mg/d) or TAC (C0, 6–10 ng/ml) with EC-MPS (1440 mg/d) plus basiliximab induction and with or without steroids. The primary endpoint is to evaluate whether EVR with EC-MPS leads to better RF at M6 [assessed by the estimated glomerular filtration rate (eGRF), abbreviated MDRD] than the standard treatment. The composite efficacy failure [treated biopsy proven acute rejection (tBPAR) (score > 3), graft loss or death] at M6 post-LTx is the key secondary endpoint. Randomized patients who completed the M6 visit were eligible to participate to a 4.5 years observational follow-up (the CERTITUDE study).
Study Status: Patient recruitment ended in October-2014 and the last patient follow-up is expected in March-2015. Preliminary data would be available for the meeting.
Conclusion: The SIMCER study will evaluate for the first time the efficacy and safety of the combination of EVL and EC-MPS after early progressive TAC withdrawal, compared to TAC + EC-MPS. If this strategy confers good efficacy against graft rejection and satisfying tolerance profile, it could be of great interest to avoid CNI related toxicities in LTxR.

031 PEDIATRIC TRANSPLANTATION

P202

THE EXCELLENT OUTCOMES IN LIVING DONOR LIVER TRANSPLANTATION FOR INFANTS WITH ACUTE LIVER FAILURE: A SINGLE CENTER EXPERIENCE

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National Center for Child Health and Development

Background: Acute liver failure (ALF) is a critical illness with high mortality rate especially in infants. Liver transplantation (LT) is considered the only treatment for patients who are unable to recover from ALF. However overall survival rates in LT for infants with ALF were still dismal, which range from 26.7% to 66.7%. We reviewed our experience of living donor liver transplantation (LDLT) for infants with ALF.

Methods/Materials: From November 2005 to December 2014, a total of 28 infants with ALF received LDLT. The mean age of recipients was 5.7 ± 3.8 month (mean ± SD). The etiology was unknown in 22 patients (78.6%) despite precise investigation.

Results: The median interval between hepatic encephalopathy development and LDLT was 6 days (range 4–87 days). In terms of graft type, left lateral segment grafts and reduced grafts were selected in 15 and 13 patients respectively, and the mean GRWR was 2.92 ± 0.61%. Surgical complications included the following: intra-abdominal hemorrhage or abscess (n = 6), biliary complications (n = 3), and hepatic vein stenosis (n = 1). Acute cellar rejection (ACR) developed in 17 patients (60.7%) during the first year following LDLT. Among of them, 15 patients necessitated additional immunosuppressant therapy due to severe ACR with centrilobular injuries. Tow infants required retransplantation due to refractory rejection. The cumulative patient survival rates at 1 and 5 years were 88.1% and 81.3%, and graft survival rates 79.5% and 73.4%, respectively.

Conclusion: We could achieve the excellent outcomes in infantile LDLT for ALF in comparison with previous reports by utilizing advantages of living donor, such as an appropriate timing of LT and suitable graft size. However, it is certain that infants with ALF were forced to receive over immunosuppression due to a high incidence of ACR. Although high rate of ACR was attributable to graft loss, we should also investigate etiology and cause of ACR, to obtain stable results.

025 LIVER

P203 COMPARISON OF THROMBOELASTOMETRY (ROTEM) WITH STANDARD PLASMATIC COAGULATION TESTING IN PAEDIATRIC LIVER TRANSPLANTATION

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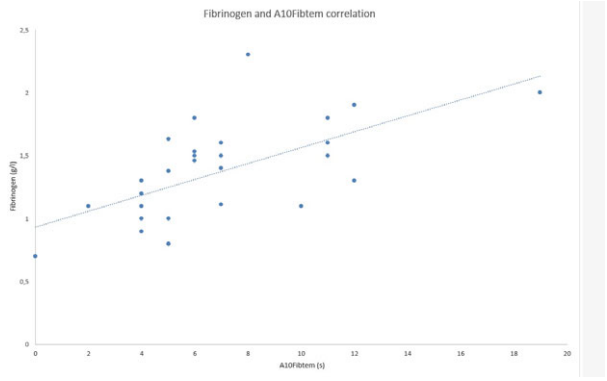
Liver graft reperfusion is most of the time associated with coagulopathy and bleeding. Severe hemmorrhage increases morbidity and mortality. Rotem analysis could provide a rapid assessment of haemostatic function and guide coagulation managment of these patients.

Materials/method: We retrospectively studied 30 consecutive paediatrics patients who underwent liver transplantation during the last 3 years. We had 11 females and 19 males, mean age was 7.3 years [1–15]. Initial diseases were: biliary atresia (12), metabolic disorders (9), others (9). Thirty minutes later the liver graft reperfusion, all the patients underwent at the same time: ROTEM analysis, biological and standard coagulation parameters measurement. We recorded simultaneously clinical parameters: temperature, arterial pressure, blood loss and blood products requirement. We performed a statistical analysis of the data with the Pearson test.

Results: We found no relation between clinical parameters, acidosis and Rotem analysis disorders. Fibrinogen blood level is found to be correlated to the maximum clot firmness (MCFfib) ($p = 0.004$) and strongly to the firmness amplitude at 10 min (A10fib) ($p = 0.0004$). MCF intem is correlated to activated partial thromboplastin time ($p = 0.02$). There is a good correlation between platelets count and both EXTEM clot formation time (CFText) ($p = 0.002$) and EXTEM a angle ($p = 0.0006$). These results showed that A10fib could be a sufficient evidence to provide fibrinogen. Prolonged CFT and reduced a angle in EXTEM assay could be indicators for platelets transfusions.

Pearson test	*R*	p
Fibrinogen (g/l)/A10Fibtem	0.61	0.0004
Platelets/CFT Extem	0.57	0.002
Platelets/αangle	0.61	0.0006



Conclusion: Rotem analysis provides a rapid evaluation of coagulation status during paediatric liver transplantation. ROTEM–guided treatment may improve blood management for those patients.

P204 IMMUNE TOLERANCE CAN BE ACHIEVED IN RECIPIENTS WITH *DE NOVO* HEPATITIS B VIRUS INFECTION AFTER LIVING DONOR LIVER TRANSPLANTATION USING HEPATITIS B CORE ANTIBODY-POSITIVE GRAFTS

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Background: There have been several measurements for its prevention of hepatitis B virus (HBV) infection of recipients using anti-HBc positive grafts in living donor liver transplantation (LDLT), however, the information on long-term results is incomplete.

Methods/Materials: We reviewed 26 HBsAg negative recipients who underwent LDLT using anti-HBc positive grafts between January 1999 and January 2005 (more than 10 years of follow-up). All recipients had intravenous 100 IU/kg of hepatitis B immunoglobulin (HBIG) during anhepatic phase, then once daily until postoperative 3 days. Posttransplant HBV vaccination (10 ug if age < 11, 20 ug if age ≥ 11) was performed in most recipients and additional vaccine or HBIG was given when the HBsAb titer fall below 100 IU/l.

Results: Mean follow-up period after LT was 153.2 (144–190) months. Without vaccination ($n = 4$), 50.0% of recipient ($n = 2$) had *de novo* HBV infection. In recipients who had vaccination ($n = 22$), 31.8% had *de novo* HBV infection ($n = 7$). Mean duration from LT to *de novo* HBV infection was 59.4 (11–152) months. Among the recipients who had *de novo* HBV infection ($n = 9$), 5 recipients had treatment based on entecavir ($n = 3$) or adefovir ($n = 2$) because of elevation of laboratory liver function test ($n = 4$) or biopsy proven abnormality, mild lobular activity ($n = 1$). All of recipients who had treatment had HBsAg negative seroconversion without any side effect. The other 4 recipients had no abnormality in spite of the high level of HBV titer, more than 10 million IU/ml and had no treatment. There was no graft loss or mortality because of *de novo* HBV infection.

Conclusion: This study made us doubt whether prophylaxis for *de novo* HBV infection using HBIG or antiviral treatment is necessary or not. And the new finding is that even after HBV infection, treatment results seem to be effective and some of recipients had no significant hepatitis under immunosuppression which might be related with immune tolerance.

027 LUNG

P205

IS "LUNG REPAIR CENTRE" A POSSIBLE ANSWER TO ORGAN SHORTAGE? TRANSPLANTATION OF LEFT AND RIGHT LUNG AT TWO DIFFERENT CENTRES AFTER EVLP EVALUATION AND REPAIR: CASE REPORT

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Ex vivo lung perfusion (EVLP) has become a reality as a technique to evaluate and recondition lungs from marginal donors. We report a case on the use of EVLP followed by separate transplantation in two different centres. The local organ procurement organization proposed the lungs of a 53 years old non-smoker donor who died for cerebral haemorrhage. The chest X-ray showed hilar reinforcement and basal dysventilation; secretions of moderate quantity were present; P/F ratio was 294 after lung recruitment manoeuvres. Oto score was 10. Two centres accepted the grafts for two single transplantations under the condition of EVLP evaluation. After usual retrieval, the bi-pulmonary block was transferred to Centre1 and EVLP was run as previously described. At the end of the procedure the two lungs were evaluated separately and both judged suitable for transplantation. After cooling and storage on ice, the block was separated on the back table. The left lung was transplanted in a patient with pulmonary fibrosis (LAS 35) at Centre1; surgery was complicated by cardiac arrhythmias that required several defibrillations. The right lung was transferred on ice to Centre2, 250 Km away from Centre1, and transplanted in a patient with idiopathic pulmonary fibrosis (LAS 50). The ischemic times from cross-clamping to revascularization were 18 h for the Patient1 and 15 h for the Patient2. None of the recipients suffered from PGD. Patient1, despite KPC infection, is alive after 6 months, in good condition (FEV1 56%). Patient2 had an uneventful post-operative period, and was discharged after 27 days. At 6 month follow-up he is alive, in good condition (FEV1 50%). This is the first report of the separate use of lungs after EVLP for non urgent recipients in two different centres. This experience opens the door to a new allocation model with great potentials on organ shortage. Actually, we demonstrated that the perspective of a "lung repair centre" is feasible and effective.

023 KIDNEY

P206 A COMPARISON OF THE PATHOLOGICAL CHARACTERISTICS BETWEEN SECONDARY AND TERTIARY HYPERPARATHYROIDISM

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Background: Secondary hyperparathyroidism (SHPT) in most end-stage renal disease patients improves after kidney transplantation, while tertiary hyperparathyroidism (THPT) due to persistent hyperparathyroidism is observed in some kidney transplant patients, and a parathyroidectomy (PTx) is performed despite the relatively small parathyroid gland size. Few studies have examined the precise pathology of this.
Objectives: The pathologies of the parathyroid glands removed from THPT and SHPT patients were compared retrospectively.
Patients and Methods: The study included 22 THPT and 39 SHPT patients. No patients were treated with cinacalcet. A total parathyroidectomy and partial parathyroid autotransplantation to the forearm were performed in all cases. The total gland weight, ratio of nodular to diffuse hyperplasia, cyst formation, old haemorrhage, hyalinisation, calcification, and oedematous change were compared between the two groups.
Results: In THPT/SHPT, the total gland weight was 1448 ± 180/2753 ± 232 mg ($p = 0.0002$), the ratio of nodular hyperplasia was 77%/90% ($p = 0.1872$), cyst formation was 82%/62% ($p = 0.1005$), old haemorrhage was 59%/31% ($p = 0.0308$), hyalinisation was 55%/26% ($p = 0.0240$), calcification was 32%/43% ($p = 0.3661$), and oedematous change was 27%/3% ($p = 0.0036$).
Discussion: Acute, subacute, and chronic lesions were more frequent in the THPT patients, suggesting autonomic growth and repeated active disappearance of the parathyroid glands in THPT patients. Therefore, PTx was considered necessary for THPT, compared with SHPT, despite the relatively small parathyroid gland size.
Conclusion: The THPT parathyroid glands weighed significantly less but had significantly greater old haemorrhage, hyalinisation, and oedematous change compared with SHPT parathyroid glands.

P207 FIRST REPORT OF RENAL FAILURE CAUSED BY UPSHAW-SCHULMAN SYNDROME SUCCESSFULLY TREATED WITH KIDNEY TRANSPLANTATION

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Introduction: Congenital thrombotic thrombocytopenic purpura (TTP), also known as Upshaw-Schulman syndrome (USS) is an extremely rare disease caused by congenital deficiency of ADMTS13 activity due to gene mutations. USS is characterized by thrombocytopenia, microangiopathic hemolytic anemia and wide spread microvascular thrombosis which are damaging to many different organs such as the kidndys, brain, and heart. Patients with USS usually require regular infusion of fresh frozen plasma (FFP).
Case report: The patient was diagnosed with USS at the age of 6 years. Although FFP infusions were started at 12 years old, kidney failure slowly progressed. Other organs besides kidneys have escaped from ischemic damage and the patient received a living-related donor kidney transplantation from his father at the age of 30 years. The initial immunosuppression regimen consisted of tacrolimus, mycophenolate mofetil, methylprednisolone and basiliximab. FFP was continuously infused during the 24-h period after starting the kidney transplantation surgery, while during the perioperative period, that was infused based on the laboratory findings including platelet, FDP, D-dimer and ADMTS13 activities. Renal graft biopsy performed at 12 months after transplantation revealed no evidence of rejection or ischemic damage and 20 months after kidney transplantation, the patient was doing well with a serum creatinine level of 1.0 mg/dl.
Discussion: This is the first report of renal failure caused by USS that was successfully treated with kidney transplantation. We consider that kidney transplantation may be a feasible option for ESRD with USS, except for seriously ill patients with multiple organ failure and repeated episodes of thrombocytopenia. Futhermore, sufficient FFP infusions based on the laboratory data are important for perioperative management.

P208 ELDERLY KIDNEY TRANSPLANTATION FROM SPOUSAL DONORS: SHOULD THE AMOUNT OF IMMUNOSUPPRESSANT BE REDUCED?

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Background: End-stage renal disease (ESRD) patients aged 60 years and older stand for the fastest increasing population worldwide, and the need for kidney transplantation among this population is rising. Because of the severe shortage of deceased donors in Japan, the living donor kidney transplantation is mainly performed. The number of spousal transplantation is currently increasing, accounting for about 40%. However, the outcomes of elderly kidney transplantation from spousal donors have not yet been well studied.
Patients and Methods: A total of 164 patients with ESRD underwent living donor kidney transplantation at Osaka City University Hospital, of whom 21 patients aged 60 years and older had spousal kidney transplantation. ABO-incompatible kidney transplantation was performed in 5 of the 21 cases, including high-titer (more than 1: 512) ABO-incompatible kidney transplantation. HLA mismatches were 4.5 ± 0.8 antigens. We analyzed these recipients, focusing on patient/graft survivals, the acute rejection rate and complications.
Results: Patient and graft survival rates were 100%. The incidence of acute rejection was 23.8% (5/21 patients), and one of which with steroid and deoxyspergulin-resistant acute cellular rejection required anti-human thymocyte immunoglobulin. Eight patients experienced cytomegalovirus reactivation by cytomegalovirus antigenemia, two patients experienced pneumocystis pneumonia, and one experienced bacterial pneumonia. One patient developed gastric cancer and one developed urothelial cancer, both underwent curative operation after transplantation.
Conclusion: Elderly kidney transplantation from spousal donors could be immunologically high risk due to the high rate of ABO-incompatibility and poor histocompatibility, therefore may not benefit from a less aggressive immunosuppression strategy. While, we should pay attention to the adverse effect of immunosuppression such as infections and malignancies.

P209 GOOD OUTCOME IN CHRONIC LYMPHOCYTIC LEUKEMIA AND KIDNEY TRANSPLANT

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The patient number on waiting list for kidney transplant (KT) is increasing. Chronic lymphocytic leukemia (CLL) is not rare in this population, whose mean survival time is over 10 years. The experience regarding the outcome of these patients who underwent KT is poor. Only 9 cases are reported in literature and the survival is extremely variable: renal biopsy was performed in 3 of them and it was always positive for lymphocytic infiltrate. 6 cases showed high incidence of infectious complications. We describe the case of a 65 years-old caucasian man affected by CLL stage 0, according to rai classification, who received KT by cadaceric donor after 4 years of hemodialysis. The immunosuppressive therapy was based on tacrolimus, steroids and micofenolate mofetil (stopped after 2 years because of persistent neutrophenia). Renal function remained stable, with glomerular filtration rate at the III–IV stage. Early complications after KT were: delayed graft function, steroid diabetes and ischemic cardiopathy; late complications were: peripheral arteriopathy and an acute pneumonia due to legionella pneumophila. 151 months after KT, the patient is doing well. All along the follow up period there was no progression of leukemic disease as also confirmed by a recent bone biopsy. Renal biopsy performed 11 years after KT didn't show any leukemia infiltrates. Compared to the data presented in the literature, 3 distinctive features emerge in our case report: – long patient survival- absence of leukemic infiltrates on renal histology – low incidence of infectious complications. Our case report and data from literature confirm that CLL doesn't represent an absolute contraindication for KT. At the moment, given the small amount of cases described, we can't identify the best therapeutic approach. However in our case the immunosuppressive scheme with tacrolimus and steroids permitted a long patient and graft survival.

007 DONATION/RETRIEVAL

P210

INCREASING ORGAN DONATION FROM THE NORTH WEST SOUTH ASIAN COMMUNITY THROUGH TARGETED EDUCATION (ENGLAND)

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Organ donation continues to be low among ethnic minorities especially within the South Asian (SA) community, with a disproportionate number of SA people waiting for transplants because suitable matches are often found between people of same ethnic group. This abstract is to explore, identify and overcome the barriers to increase the number of SA organ donor registrants (ODR's) and actual donors in the North West of England using and measuring the impact of different education approaches. A two phased, sequential explanatory mixed-methods approach was underpinned by health belief model theory. Phase 1: Questionnaire survey (n = 907) and in-depth interviews (n = 10) to understand SA beliefs, barriers and awareness of organ donation. Chi-squared tests and thematic analysis explored the existence of associations between outcomes, demographics and attitudes. Phase 2: Implementation of education approaches: (1) Education and training of Specialist Nurse for Organ Donation (SNOD) to develop skills/confidence to approach SA families for cadaver organ donation, measured by 12-month before/after audit of cadaver organs. (2) Education from the General Practioner's (GP's). (3) Peer education at SA community events, impact measured by number of new organ ODR's. Out of 907 SA people sampled, 55% did not know about organ donation, they lacked knowledge, mistrusted health professionals, and were misinformed regarding religious objections, despite 88% having higher education. Over 24 months, 2874 SA new ODR's were successfully recruited through peer education at 289 community events by a passionate, committed SA health professional. SNOD'S education positive and recruitment of ODR with GPs were poor as they reluctant and lacking confidence to discuss organ donation, due to lack of time and uncertainty of religious issues. The research provides a deeper understanding of the reasons for the scarcity of SA donors gathered from what is currently the largest UK dataset of SA prespective.

021 ISLET/CELL TRANSPLANT

P211

XENOTRANSPLANT IMMUNE RESPONSE IS REDUCED BY JAPANESE KAMPO MEDICINE TJ-114 THROUGH FOXP3+ REGULATORY T CELLS

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Background: It is reported that TJ-114, Japanese common Kampo medicine, induced immunological tolerance in murine heart allo-transplantation model through regulatory T (Treg) cells (Transplantation 2012). However, it is still unclear the effect of TJ-114 for xenotransplantation. Otherwise, we reported that Indoleamine 2,3-deoxgenase (IDO) induced donor-specific tolerance through Treg (Cellular Immunology 2013). Islet xenotransplant model has an impact for clinical islet transplantation, thus we investigated TJ-114 effect for islet xenotransplantation through IDO-Treg cellular immunity.
Materials and Method: We divided 8 weeks old STZ induced hyperglycemic Balb/c mice into two groups such as control and TJ-144 administered group (from –7 to 0 day of transplantation, TJ-114 1.2 mg/Kg/day, oral administration). These recipients were transplanted 1000 IE porcine freshly isolated islets via portal vein. Their blood sugar (BS) level were considered as hyperglycemia when one reading above 350 mg/dl or two continuous readings of above 250 mg/dl. After sacrificed them, their pancreata were compered by immunohistochemistry for transplanted islet morphology, Foxp3+ Treg and IDO positive cells.
Results: All control mice were dead within 72 h (3/3, 100%). Two of three mice (66.7%) survived in TJ-114 group, and their BS levels decreased to normal range. In the liver of the TJ-114 group's survived mice, islets were detected in portal vain. Due to immunohistochemistry, Foxp3+ Tregs around transplanted islets significantly increased compared to control group mice (5.3 ± 2.2/HPF vs. 1.2 ± 0.9/HPF, $p < 0.05$). Residual IDO + cells around transplanted islets tended to increase ($p = 0.06$).
Conclusions: Despite of the many unconfirmed elements, TJ-114 may reduce acute immunological response in xenotransplantation, and may help transplanted islets to survive though IDO-Treg axis.

025 LIVER

P212

FUNCTION OF HEPATIC STELLATE CELL ON AGING LIVER REGENERATION

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Background: Liver regeneration is considered as decreases with age by unknown mechanism, and it is important when donor age is marginal for split-liver transplantation or living-donor liver transplantation. Hepatic stellate cell (HSC) has been implicated to contribute in liver regeneration by producing different factors, including HGF, that modulate endothelial cell and hepatocyte proliferation and also by remodeling the extracellular matrix. Unfolding protein response was reported to be impaired in aging liver which may limit HSC function during liver regeneration. We therefore analysed the role of HSC on aging liver regeneration.
Materials and Methods: Male C57BL/6J mice were used as young (5 weeks, $n = 5$) and aging mice (>18 months, $n = 5$). All mice recieved 70% partial hepatectomy (PH). Liver regeneration were evaluated chronologically (24 h, 48 h, and 72 h) after PH. HSCs were isolated from young and aging mice respectively and compared gene expression. Conditioned medium collected from young and aging HSC were used for culturing primary young hepatocyte. Hepatocyte proliferation was confirmed by Ki67 staining. HGF concentration in conditioned medium was measured by ELISA. Unfolding protein response, induced by tunicamycin, was compared between young and old HSC using western blot.
Results: Post-PH liver regeneration was markedly impaired in aging mice as indicated by liver weight to body weight ratio ($p < 0.05$). The extent of hepatocyte proliferation in the regenerating liver was much higher at 48 h ($p < 0.05$) and cyclinD1 mRNA expression was higher in young mice at 24 h compared to aging mice ($p < 0.05$). Isolated aging HSC expresses higher p16 and lower SMP30, and expresses lower HGF at 24 h after isolation. Hepatocyte proliferation was relatively lower ($p = 0.15$) when cultured with conditioned medium collected from aging HSC, in which HGF concentration was lower compared to that from young HSC ($p < 0.01$). Unfolding protein response marker Bip shows weak mRNA expre

023 KIDNEY

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PREDICTION OF LONG-TERM PROGNOSIS OF THE KIDNEY TRANSPLANTATION USING COMORBIDITY SCORE

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Background: Comorbidity assessment is important to the informed interpretation of kidney allograft outcomes. Weights assigned to comorbidities to predict survival may vary based on the type of index disease and advances in the management of the comorbidities. We aimed to develop a modified Charlson comorbidity index (CCI) in renal allograft recipients (mCCI-KT), thereby improving risk stratification for mortality.

Methods: A total of 3765 recipients who received kidney transplantation surgery at Asan medical center between June 1990 and January 2012 ($N = 2773$) and at Seoul national university hospital between January 1997 and August 2012 ($N = 992$) were included to develop comorbidity score. The weights of comorbidities per the CCI were recalibrated using a Cox proportional hazards model. The modified score was validated in an independent nation-wide cohort ($n = 1538$).

Results: The Cox proportional hazards model revealed that peripheral vascular disease, mild liver disease, and diabtes with end-organ damage in the CCI significantly predicted mortality. Thus, the mCCI-KT included 3 comorbidities with recalibrated severity weights. In the validation cohort, both the CCI and the mCCI-KT were correlated with mortality. The mCCI-KT showed modest increases in c statistics compared with the CCI (0.565 vs. 0.534, $p = 0.002$).

Conclusions: The mCCI-KT stratifies the risk better for mortality in renal allograft recipients compared with the CCI, suggesting that it could be a preferred index for use in clinical practice.

015 INFECTIONS

P214 THE IMPACT OF TRIMETHOPRIM-SULFAMETHOXAZOLE AS PNEUMOCYSTIS PNEUMONIA PROPHYLAXIS ON THE INCIDENCE OF ASYMPTOMATIC BACTERIURIA AND URINARY TRACT INFECTIONS AMONG RENAL ALLOGRAFT RECIPIENTS

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Background: Renal allograft recipients receive trimethoprim-sulfamethoxazole (TMP-SMX) as Pneumocystis jiroveci pneumonia (PJP) prophylaxis, which is administered at a dose of 480 mg once a day. The aim of this study was to evaluate the influence of this prophylaxis on the prevalence of asymptomatic bacteriuria (ASB) and the incidence of urinary tract infection (UTI) after renal transplantation. Additionally, we also evaluated the impact of this prophylaxis on the antimicrobial resistance pattern.
Methods: Retrospective cohort study in adult renal allograft recipients with 1 year follow-up after transplantation. We compared the group that received TMP-SMX as PJP prophylaxis to the group that did not receive it. The outcome was ASB or UTI within 1 year after transplantation. ASB was defined as bacteriuria (at least 10^5 colony forming units (CFU)/ml) without any symptoms of urinary tract. UTI was defined as bacteriuria (at least 10^4 CFU/ml) with symptoms of the urinary tract and/or fever (>38.0°C).
Results: In total, 343 renal allograft recipients were analysed, of whom 212 (61.8%) received TMP-SMX as PJP prophylaxis. From all patients, 69 (20.1%) renal allograft recipients developed UTI, whereas 63 (18.4%) did only develop ASB without any UTI episodes. Multivariable Cox regression analysis showed that TMP-SMX as PJP prophylaxis was associated with the presence of ASB (Hazard ratio (HR) = 2.30, 95%CI = 1.18–4.50), p = 0.015). Moreover, PJP prophylaxis did not prevent UTI (HR = 1.49, 95%CI = 0.85–2.62, p = 0.166). Among the group receiving TMP-SMX as PJP prophylaxis there was an increase in both amoxicillin (70% vs. 90%) and TMP-SMX (50% vs. 92%) resistance which already appeared within the first 60 days after TMP-SMX exposure.
Conclusions: The administration of TMP-SMX intended as PJP prophylaxis does not prevent ASB nor UTI among renal allograft recipients, however it is associated with increased antimicrobial resistance of the causative microorganisms.

P215 SAFETY FIRST – PROBIOTICS AFTER LIVER TRANSPLANTATION (THE BENEFITS OR LOSSES)

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It has been reported in many studies that one of the main factors influencing morbidity and mortality in patients receiving transplants is infection after transplantation.
Patients and Methods: The study included 190 adult patients undergoing orthotopicliver transplantation (OLT) between September 2001 and December 2007. All the patients were followed prospectively for infections from the OLT date and during the first 4 weeks after surgery. Immunosuppression consisted of steroids and tacrolimus. Antimicrobialprophylaxis included piperacillin/tazobactam, fluconazole, and selective bowel decontamination (SBD) was performed. Samples of clinical materials were investigated for microbiologicalcultures. The micro-organisms were cultured and identified in accordance withstandard bacteriological procedures. Susceptibility testing was performed using Clinicaland Laboratory Standards Institute procedures. Since April 2004, in order to wide the spectrum of gastrointestinal tract decontamination, an additional 2 weeks after surgery were given metronidazole (250 mg every 8 h), and freeze-dried preparation of sticks lactic acid: one capsule containing 1.6 billion strains of *Lactobacillus acidophilus*, *Lactobacillus bulgaricus*, *Bifidobacterium bifidum* (Trilac ®, Pharmacia & Upjohn Allergon AB, Sweden), (3 × 1 capsule from 7 to 21 days after OLTX. In order to study changes in the composition of microorganisms in the first group OLTX1 compared with the incidence rates compared OLTX2. IR (Incidence Rate) occurrence/isolation of Gram-positive, Gram-negative bacteria and fungi in both periods of time to define a trend. IR values OLTX2 group of patients who received prophylaxis additional probiotics is greater than the first (84.3 vs. 71.6). IR particular increase is shown for Gram-negative (29.1 vs. 17.7), fungi (4.6 vs. 1.2) and *Clostridium difficile* (11.4 vs. 8.0) and decreasing IR was found for Gram - positive (50.7 vs. 52.8).

023 KIDNEY

P216 POST-TRANSPLANT MALIGNANCY AFTER RENAL TRANSPLANTATION

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Background: Renal transplantation is widely attributed to an increased incidence of malignancies in those patients as compared to the general population, with post-transplant malignancy a major reason for decreased long-term graft and patient survival. We studied the incidence and clinical characteristics of post-transplant malignancies after renal transplantation.
Methods: We enrolled 556 patients who underwent renal transplantation between 1973 and 2014. Incidence, site, prognosis, and risk factors related to malignancy were evaluated.
Results: Ninety-three malignancies developed in 84 of the 556 patients (15.1%). Mean age at the time of transplantation and diagnosis of malignancy was 37.6 years (7–65) and 51.2 (16–81), respectively. Survival rate of patients with and without malignancy was 86.0% and 87.9%, 57.5% and 83.1%, 43.8% and 76.7% at 10, 20, and 30 years, respectively, which was significantly lower for patients with malignancy ($p < 0.0001$). The overall incidence of malignancy was 7.6% 18.4%, 28.9% at 10, 20, and 30 years, respectively. Skin cancer, digestive system cancer, renal cell cancer, post-transplant proliferative disorder, and hepatocellular cancer were common and developed in 16 (17.1%), 13 (14.0), 12 (12.9), 12 (12.9), and 9 (9.7), respectively, of the 93 cases with malignancy. The follow-up period was significantly longer in patients with (183 months) as compared to without (121) malignancy ($p < 0.0001$). Prior to 2005, 25% of the patients were diagnosed by medical screening, while that rate was significantly increased to 55.6% in 2006 ($p = 0.006$).
Conclusion: Our results indicate that the cumulative risk of developing at least 1 malignancy is rapidly increased after 10 years have passed since renal transplantation. Early detection and treatment of malignancy by regular surveillance screening is important for long-term graft and patient survival.

P217 HISTOLOGICAL ASSESSMENT AFTER EVEROLIMUS RESCUE OF CHRONIC ALLOGRAFT DYSFUNCTION IN RENAL TRANSPLANT RECIPIENTS

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Background: We previously tested the strategy of mammalian target-of-rapamycin inhibitors with calcineurin inhibitor minimization in renal transplant recipients with known chronic allograft dysfunction. Improved slope of glomerular filtration rate over time was demonstrated.
Methods: From the same cohort of 17 patients with biopsy-confirmed chronic allograft dysfunction followed by conversion to everolimus (trough everolimus level 3–8 ng/ml) with cyclosporine minimization, we assessed the fibrosis score using Sirius Red stain by transplant biopsy at baseline and then 12 months. Tissue blocks from the renal biopsy of 10 patients were obtained for Sirius Red stain, which is specific for collagen type I and III when imaged under polarized light.
Results: The mean slope of the glomerular filtration rate over time was -4.31 ± 6.65 ml/min/1.73 m^2 per year in the year before everolimus, as compared with 1.29 ± 5.84 ml/min/1.73 m^2 per year in the 12 months of everolimus therapy, a difference of 5.61 ml/min/1.73 m^2 per year (95% confidence interval [CI], 0.40 to 10.8) favoring everolimus therapy ($p = 0.036$). Percentage of positive Sirius Red staining in the 10 patients were not different before and after everolimus conversion, $40.1 \pm 12.6\%$ vs. $39.2 \pm 13.4\%$ ($p = 0.86$).
Conclusion: In renal transplant recipients with biopsy-confirmed chronic allograft dysfunction, we found a significant beneficial effect of everolimus rescue therapy in terms of glomerular filtration decline rate, but no improvement of fibrosis as represented by Sirius Red stain of biopsy specimens.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P218

HUMAN ADIPOSE TISSUE DERIVED MESENCHYMAL STEM CELLS MODULATE CO-STIMULATORY MOLECULE EXPRESSION ON T AND B LYMPHOCYTES

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Erasmus MC

The immunomodulatory effect of mesenchymal stem cells (MSC) is under investigation for treatment of transplant patients to control alloreactivity. Here we investigate whether MSC can modulate the T-B cell interactions by affecting the expression of co-stimulatory molecules which are key for B cell activation and subsequent immunoglobulin (Ig) production.

B cells were obtained by CD43 negative selection of human splenocytes and T helper cells were obtained by CD4 positive selection by Magnetic Activated Cell Sorting. Adipose tissue MSC were co-cultured with polyclonally (anti-TLR8 + IL2) or T-cell-like stimulated B cells (α-IgM + α-CD40+ IL2) or with PMA/Iono activated CD4 T cells at a ratio 1:5. CD40L expression on T and B cells and CD40, PD-L1 and FAS expression was analyzed on B cells.

Stimulated B cells differentiate into $CD19^{+}CD27^{hi}CD38^{hi}$ plasmablasts and MSC reduced B cell differentiation (80% to 100% inhibition range), which was correlated with decreased IgG production. Moreover, MSCs induced a 5-fold increase in the percentage of $CD19^{+}CD27^{-}CD38^{hi}CD24^{hi}$ regulatory B cells and IL10 production.

Analysis of co-stimulatory molecules on B and T cells showed that MSC reduced CD40L expression on activated T cells from 51% to 30.3% after 24h co-culture and the expression of CD40 on B cells from 76% to 60.5% and of CD40L on B cells from 31.5% to 15.4% after 7 days co-culture. However the expression of the co-inhibitory molecule PD-L1 on activated B cells was not affected by the presence of MSC.

On the other hand, the expression of the apoptosis marker FAS on B cells was 4-fold up-regulated and soluble FAS secretion by B cells was 8-fold up-regulated in the presence of MSC.

MSC induce pro-apoptotic signalling and modify the immunological synapse between B and T cells by down-regulating co-stimulatory molecules which might open a therapeutic opportunity in regulating the humoral responses in transplant rejection.

031 PEDIATRIC TRANSPLANTATION

P219

NURSING SKILLS FOR MANAGEMENT OF FECAL MICROBIOTA TRANSPLANTATION IN PEDIATRIC PATIENT WITH *CLOSTRIDIUM DIFFICILE* INFECTION

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Background: Fecal Microbiota Trasplantation (FMT), is an infusion of a fecal suspension from a healthy individual into the gastro-intestinal tract of another person to cure specific disease. FMT can be used for patients with Clostridium difficile infection (CDI), ulcerous colitis, Crohn's disease, etc. Pediatric nurses have limited available information about providing adequate education and assessment. Aim of this article is to review the FMT procedure in pediatric patients affected by CDI and its implications for nursing practice.
Materials and Methods: The search for relevant articles was conducted across the following two electronic databases (Pubmed, CINAHL) with full text. In each database thesaurus terms were used to search relevant articles: fecal transplant, gut microbiota, pediatric patient, pediatric nurse. We evaluated transplant procedure, nursing care, nursing assessment and patient education.
Results: A literature review of 11 clinical trials and case reports between 2010 and 2014 shown a 92% success rate of FMT in patients with CDI. FMT has been shown to be safe, effective and inexpensive treatment with very few adverse events. Nurses have an essential role in working with children receiving FMT, like educating patients and families, performing nurse assessment, collecting data and specimen according to the study protocol. Preparation of FMT trough education given about pre-treatment prescriptions and bowel preparation is very important for the successful of the procedure. Adverse symptoms or events should be included in the nursing assessment.
Conclusions: FMT has shown that it is a good option treatment for children with recurrent CDI. The role of pediatric nursing for this treatment is to assist children/young adults and parents in the acceptance for FMT treatment with adequate information because they can try a natural antipathy for the procedure reducing their level of anxiety. Patients assessment should be include also vital signs and pain level.

023 KIDNEY

P220 SERUM ANTI-MÜLLERIAN HORMONE CONCENTRATION IN YOUNG WOMEN DURING THE EARLY PERIOD AFTER SUCCESFUL KIDNEY TRANSPLANTATION

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Background: In women with chronic kidney disease infertility frequently occured. Anti - Müllerian hormone (AMH) is produced by the granulosa cells of primary, preantral and small antral follicles and acts as a paracrine factor inhibiting the excessive recruitment of primordial follicles. Low AMH serum concentration suggests ovarian follicles depletion. Until now it has been not determined the serum AMH concentration in female renal transplant recipients. The aim of the study was to evaluate concentration of serum AMH concentration in young women during the early period after a successful kidney transplantation (KT).
Material/Methods: In 14 female patients undergoing a KT (aged 18 - 40 years) serum concentration of AMH (ELISA, Beckman Coulter Inc., USA) were determined four times: immediately before transplantation, in the 14th - and 30th - day and 6 months after KT. The control group (CG) consisted of 46 healthy women of similar age. The above mentioned hormonal assessment in CG were done only once. The results are presented as the mean and 95% CI.
Results: Serum AMH concentration were similar in 10 women after KT who completed the study measured before KT and in CG [4.28 (2.29 - 6.26) vs. 4.43 (3.49–5.36)ng/ml, respectively]. A significant decrease of serum AMH concentration from 4.28 (2.29 - 6.26) at baseline to 2.42 (1.44 - 3.40) at 30 days after transplantation and to 1.89 (1.31 - 2.47)ng/ml at 6 months after KT were found ($p = 0.007$ for trend).
Conclusions: 1. In young healthy women and women undergoing hemodialysis serum AMH concentration did not differ significantly. 2. Successful kidney transplantation leads to decreased serum concentration of AMH. 3. These results may suggest that in women with chronic kidney disease impairment of both secretion, and degradation of AMH took place.

P221 THE IMPACT OF ARTERIAL RECONSTRUCTION WITH RECIPIENT'S INTERNAL ILIAC ARTERY FOR GRAFT MULTIPLE ARTERIES ON LIVING DONOR KIDNEY TRANSPLANTATION

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Objective: To investigate into safety and efficacy of arterial reconstruction with recipient's internal iliac artery for multiple kidney graft arteries
Summary and Background Data: Safety and efficacy of various arterial reconstruction methods were well reported. Some case reports referring to the arterial reconstruction with recipient's internal iliac artery for multiple kidney graft arteries (interposition method) were identified. But safety and efficacy of this method has not yet been investigated.
Methods: Between January 2008 and April 2014, 521 living donor kidney transplantation for adult recipients were performed in one center. 394 kidney grafts had a single artery and did not need arterial reconstruction (Non arterial reconstruction group). In the bench surgery, interposition method with recipient's internal iliac artery was done in 19 kidney grafts for multiple arteries (Interposition group). Total ischemic time, time to initial urination, perioperative and postoperative estimated glomerular filtration rate (eGFR), and complication rates were investigated between recipients of interposition and non arterial reconstruction groups retrospectively.
Results: Warm ischemic time and total ischemic time of recipients of interposition method was significantly longer. But time to initial urination, perioperative and postoperative eGFR, and complication rates were similar between two groups.

The outcome of the operations

	Interposition group	Non arterial reconstruction group	P value
numbers	19	389	
Warm ischemic time (sec)	218.4	136.6	0.015
Total ischemic time (min)	185.8	93.8	<0.05
Initial urineation (min)	18.1	20.7	0.55
Complications			
Arterial thrombosis (%)	0	1.0	0.62
Urine leakage (%)	0	1.0	0.66
Ureteric stricture (%)	0	0.8	0.66
Delayed graft function (%)	0	0	–
Bleeding (%)	0	1.5	0.59
Lymphocele (%)	0	1.3	0.62
Acute cellular rejection (%)	0	0.5	0.76
Antibody mediated rejection (%)	0	1.8	0.56

Conclusions: Interposition method was performed safely and efficiently and can be standard method for multiple kidney graft arteries.

025 LIVER

P222 RITUXIMAB DESENTITIZATION FOR LIVING DONOR LIVER TRANSPLANTAITON WITH PREFORMED CLASS-II DONOR SPECIFIC ANTIBODIES

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Backgrounds: Recently, preformed donor-specific antibodies (DSA) are considered as a risk factor even after liver transplantation. Especially, high value of mean fluorescence intensity (MFI) of DSA is associated with high mortality and increased risk of rejection. Here, we report two successful cases of living donor liver transplantation (LDLT) with rituximab desensitization for positive DSA-class II donor-recipient combinations.
Case 1: The recipient was 51-year-old female, suffering from liver cirrhosis with hepatitis C, HCC, and hepatopulmonary syndrome. LDLT donor was her 32-year-old daughter. Preoperative identification of anti-HLA antibodies demonstrated that she had anti-HLA class I and class II antibodies, including class II DSA (anti-DR9) with MFI > 10 000. A total of 500 mg rituximab was administered the day before LDLT, but plasma exchange was not performed preoperatively. Postoperative course was uneventful, and she discharged from hospital on POD#31 without any episodes of rejection.
Case 2: The recipient was 52-year-old female, suffering from PBC. LDLT donor was her 24-year-old son. Class II DSA (anti-DR9) with a MFI > 5000 was identified, and 500 mg rituximab was administered 3 weeks prior to LDLT. SFSS and mild acute rejection were experienced 1st and 2nd week after LDLT, but otherwise, her postoperative course was uneventful. She discharged from hospital on POD#40.
Postoperative MFI Change: DSAs were checked at 2, 4 weeks and 3 months after each LDLT. However, MFI level showed fluctuating between 4281 and 23 342, despite of stable liver function, suggesting that class II DSAs did not induce antibody mediated rejection in this LDLT settings, and class II DSA were not absorbed by liver grafts.
Conclusions: Two LDLT cases with class II DSAs were successfully managed by the preoperative rituximab desensitization. Further studies are required if this approach is applied to DSA-class I, because expression of HLA class I is dominant in the liver graft.

P224 SCORING MAGNETIC RESONANCE CHOLANGIOGRAPHY FOR NON-ANASTOMOTIC BILIARY STRICTURES AFTER ORTHOTOPIC LIVER TRANSPLANTATION

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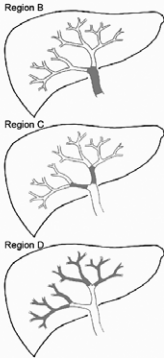
Background: Non-anastomotic biliary strictures (NAS) remain a frequent complication after orthotopic liver transplantation (OLT). The aim of this study was to evaluate whether Magnetic Resonance Cholangiography (MRCP) could be used to detect or exclude NAS and grade the severity of biliary strictures.
Methods: In total, 58 patients after OLT from two Dutch liver transplantation centres with endoscopic (ERCP) or percutaneous cholangiography (PTC) and MRCP < 6 months apart were included in the study. Of these 41 had NAS and 17 had no NAS based on ERCP or PTC and follow-up. Four radiologists – two in each center – used an adapted validated classification –termed Leiden Biliary Stricture Classification (LBSC)– to evaluate independently the MRCP and score NAS severity on a scale from 0 to 3 points in three hepatobiliary regions.(Fig 1) A maximum of 15 points could be obtained. Interobserver agreement of the severity score and intraobserver agreement between ERCP/PTC and MRCP for each region was calculated with the kappa (κ) statistic.
Results: Optimal cut-off value of the LBSC to detect the presence of NAS with MRCP was calculated at ≥3 points for all readers. Applying this cut-off, sensitivity for each reader was >90%, with a corresponding specificity of 50–82%, positive predicting value (PPV) of 86–91%, and negative predicting value (NPV) of 80–100%. When the cut-off value was applied to the radiologists' mean scores sensitivity was 98%, specificity 65%, PPV 87% and NPV 92%. MRCP performed better in the evaluation of the intrahepatic bile ducts as compared to the extrahepatic bile ducts. Additional value of MRCP for grading severity (κ = 0.2–0.7) and localizing NAS (κ = 0.2–0.9) was limited.
Conclusion: MRCP is a reliable tool to detect or exclude non-anastomotic biliary strictures after OLT, but cannot be used to reliably grade severity of these strictures.

Figure 1. The Leiden Biliary Stricture Classification and a schematic overview of the three hepatobiliary regions

Region	Score	Cholangiographic abnormalities
B Donor common bile duct and common hepatic ducts	0 1 2 3	No visible abnormalities Slight irregularity of duct contour without stenosis Segmental stenosis Stenosis of almost the entire length of the duct or multiple strictures
C_{Left} Left hepatic duct until 2 cm proximal from common duct	0 1 2 3	No visible abnormalities Slight irregularity of duct contour without stenosis Segmental stenosis Stenosis of almost the entire length of the duct or multiple strictures
C_{Right} Right hepatic duct until 2 cm proximal from common duct	0 1 2 3	No visible abnormalities Slight irregularity of duct contour without stenosis Segmental stenosis Stenosis of almost the entire length of the duct or multiple strictures
D_{Left} Peripheral	0 1 2 3	No visible abnormalities One or multiple strictures with normal caliber of bile ducts or minimal dilatation Multiple strictures with dilatation, sludge and/or decreased aborisation Severe pruning with only central branches seen
D_{Right} Peripheral	0 1 2 3	No visible abnormalities One or multiple strictures with normal caliber of bile ducts or minimal dilatation Multiple strictures with dilatation, sludge and/or decreased aborisation Severe pruning with only central branches seen



015 INFECTIONS

P225

CLINICAL CHARACTERISTICS AND OUTCOMES OF ADENOVIRUS INFECTION OF THE URINARY TRACT AFTER RENAL TRANSPLANTATION

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Background: Urinary tract infection caused by adenovirus after renal transplantation leads to graft loss due to a concomitant nephropathy and acute rejection. It may also cause death due to systemic dissemination.
Patients and Methods: In 170 renal transplant recipients, patients with a diagnosis of urinary tract infection by symptoms of macrohematuria and dysuria were examined. A definitive diagnosis of adenovirus infection of the urinary tract was performed by urine adenovirus DNA positive. We investigated the period of time between the renal transplantation and disease onset, the symptoms, treatment details, duration of disease, graft function, outcomes, and complications.
Results: Onset occurred in 8 out of 170 renal transplant recipients, and symptoms were macrohematuria in all 8 patients, dysuria in 7 patients, and fever in 5 patients. The median period from renal transplantation to onset was 367 (7–1763) days, and the median duration of disease was 15 (8–42) days. The mean serum creatinine (Cr) value prior to onset was 1.35 $\pm$ 0.48 mg/dl, and the mean maximum serum Cr value during of disease was 2.34 $\pm$ 1.95 mg/dl. These values increased by 25% or more in 5 patients. The mean serum Cr value at disappearance of symptoms was 1.54 $\pm$ 0.67 mg/dl, there was no significant difference between pre- and post-onset ($p = 0.10$). Adenovirus viremia occurred in 2 patients, and a diagnosis of acute tubulointerstitial nephritis was obtained by means of biopsy in 1 patient. As treatment, in addition to a reduction of immunosuppressant dosage, 2 patients received gammaglobulins and 5 patients received ganciclovir.
Conclusion: Cure was achieved in all patients, but there were also patients who developed nephritis or viremia. Hence, the possibility of exacerbation should always be considered. Adequate follow-up observation should be conducted and diligent and aggressive therapeutic intervention is required before the condition worsens.

023 KIDNEY

P226

INTIMA MEDIA THICKNESS (IMT) AND MAJOR ADVERSE CARDIAC EVENTS (MACE) IN PATIENTS AFTER KIDNEY TRANSPLANTATION

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UMCG

Background: The MECANO trial, a prospective, randomized, multicenter trial in the Netherlands, was aiming to optimize immunosuppression (IS) and to reduce side effects. IMT was measured as a cardiovascular (c.v.) marker after kidney transplantation. Seven years survival and MACE-free survival probability were calculated by the Cardiovascular Risk Calculator for Renal Transplant Recipients. This sub study aimed to investigate IMT and MACE as predictors of survival and/or c.v. events.
Methods: IMT of the arteria carotis communis was measured at week 2, month 6 and m. 24. Patients were treated with induction therapy (basiliximab) and triple IS (CsA(C), Myfortic (M), prednisolone [P]). At M6 patients were randomized to group 1 (C, P, $N = 81$), 2 (M, P, $N = 32$) and 3 (Everolimus, P, $N = 81$). MACE can be predicted using a 7-variable model including age, previous coronary heart disease (CHD), diabetes, low-density lipoprotein, creatinine, number of transplants, and smoking (pMACE). Mortality can be predicted by a 6-variable model, including age, CHD, diabetes, creatinine, total time on renal replacement therapy and smoking (pMort).
Results: Mean IMT at baseline, $N = 192$, for all patients was 0.64 ± 0.14 mm. At M6, $N = 175$, IMT was 0.65 ± 0.15 and at M24 ($N = 111$) IMT was 0.67 ± 0.16. IMT of group 2 was significantly lower than the IMT of group 1 and 3 (ANOVA $p = 0.023$ for baseline IMT, $p = 0.032$ for IMT at M24). pMACE and pMort did not show a group difference. Both pMACE and pMort increased significantly with IMT quartile (ANOVA $p < 0.001$). After correction for age, this increase was still present ($p \leq 0.005$). We predicted events and mortality after 7 years using pMACE, pMort, age and IMT. Best predictor is pMort with 79% classified correctly, including adding age in the regression, 81% is classified correctly (n.s.).
Conclusion: Higher IMT correlated with higher pMACE and pMort scores. However, prediction of events and mortality could not be improved by including IMT in the logistic regression model.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P227

THE NEW GATE TO THE DONATION IN HUNGARY: THE ATTITUDE AND KNOWLEDGE OF EMERGENCY ROOM' NURSES AS REGARDS NON-HEART-BEATING DONATION

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Background: The emergency room may be a gate to identify the potential donors. The aim of this cross-sectional study is to estimate the attitude and knowledge of ER nurses as regards donation.
Methods: The self-completed questionnaire with 41 items was completed in 5 ER. The nurses ($n = 101$) were asked about participating in organ donation course, attitude to donation and self-reported knowledge of legislation, donor management and transplantation. Data were analysed by SPSS 20.0.
Results: The average age of 25 men and 76 women were 39.6 ± 8.8 years. 88.1% were willing to donate their organs. Donation from a deceased family member would be supported by 73.3% who know more information about legislation of donation ($p = 0.048$) and no doubt to brain-death diagnosis ($p = 0.037$). The definition of brain death could be described by 85.1%. The nurses who participated education regarding donation ($p = 0.014$) and were well-informed about donor management ($p = 0.028$), legislation ($p = 0.001$) and non-heart-beating donation ($p = 0.000$) had less doubt about brain death diagnosis. 50.5% agreed fully with the brain-dead, 41.6% of them were uncertain and the rest refused this diagnosis. Nurses with higher donation activity and who participated organ donation course (19.8%) had more knowledge regarding the law and ethics ($p < 0.01$), donor management ($p < 0.01$), living and deceased donor transplantation ($p < 0.05$). Despite from the knowledge (79.2%) or the acceptance of legislation (74.3%), 80.2% of nurses agreed with hospital practice: "the requests adult donor's relatives to consent to organ recovery". This standpoint was depended knowledge about legislation ($p = 0.045$) although was independent on earlier participation in organ donation courses and donation activity.
Conclusions: Education about organ donation should be part of the training and periodical refresher courses of the nurses of ER. The training should include the knowledge regarding brain-death, donor management and communication with the family.

027 LUNG

P228 MONITORING THE CYTOMEGALOVIRUS-SPECIFIC CELLULAR IMMUNITY IN LUNG TRANSPLANT RECIPIENTS: A COMPARATIVE ANALYSIS OF TWO ASSAY SYSTEMS

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Objective: Monitoring the cellular immunity for Cytomegalovirus (CMV) in lung transplant recipients is a promising tool to support prevention strategies for posttransplant CMV infection or reactivation. Commercially available *in vitro* test systems differ substantially in their capacity to stimulate subpopulations of T-lymphocytes. We compared two assays for CMV immune monitoring in respect of their clinical practicability and significance.
Methods: Blood samples of 30 lung transplant recipients (LuTRs) were examined before transplantation and over a period of 6 months afterwards with [T-Track® CMV] (Lophius Biosciences GmbH, Regensburg) and [QuantiFERON®-CM] (Cellestis GmbH, Darmstadt). The T-Track® CMV is based on ELISpot-technology, allowing quantification of interferon-gamma (IFNγ) secreting CD4+ and CD8+ T-cells after specific stimulation. Contrarily, the [QuantiFERON®-CMV] assay is restricted to detection of IFNγ secreted by CD8+ T-lymphocytes with ELISA. The data are evaluated in the context of transplant outcome and determination of viral load in plasma by qPCR.
Results: Both approaches provide similar results while exhibiting certain advantages and limitations. Early during immune suppressive therapy, [QuantiFERON®-CMV] generates often indeterminate results as depletion of T-cells is not taken into account. Although a comparatively large volume of blood is required, [T-Track® CMV] circumvents this drawback. In addition, [T-Track® CMV] reaches a higher sensitivity prior to LuTx and shortly after onset of immunosuppression. Individual patient data suggest that CMV-specific cellular immunity may serve as indicator for save removal of antiviral prophylaxis or to determine the time-point of safe withdrawal of antiviral therapy in intermediate-risk patients.
Conclusion: Determination of CMV-specific cellular immunity may be valuable tool to gain important additional information helping to adjust antiviral therapy in lung transplant patient.

P229 PRECONDITIONING DURING EX-VIVO LUNG PERFUSION

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Background: We set to explore a possible role of EVLP on lung preconditioning.
Methods: Sprague Dawley rat lungs underwent EVLP for 3 h. The perfusate were assayed for cytochines and chemokines by Luminex (R&D Systems), and recovered cells were counted, characterized (cytospin, May-Grünwald Giemsa staining), and cultured *in vitro* to assess viability (Trypan blue). At the end of the procedure, lung homogenate gene expression was investigated using custom TaqMan low-density arrays (Life technologies) that included genes relevant to oxidative stress, inflammation, survival and apoptosis. Unsupervised hierarchical cluster analysis was performed using DNA-chip analyzer program (www.dChip.org). Differentially expressed genes were assessed using two-class unpaired analysis of Significance Analysis of Microarrays procedure (SAM, http://www-stat.stanford.edu), considering lungs before (Native) or after (Ischemia) procurement as controls. Western blot analysis (SDS-PAGE) was also performed with proteins recovered from tissue lysates to explore activation of signaling pathways.
Results: 15 animals were randomized to Native, Sham or EVLP ($n = 5$ each). There was no lung edema after EVLP (W/D 5.3 $\pm$ 0.5). Mediators in the perfusate with highest median value were: TIMP-1 (4644 pg/ml), MIP-2 (1801), MCP-1 (753), and IL-6 (512). A total of 11.03 $\pm$ 1.43x10^6 cells were recovered in the perfusate of EVLP: 91 $\pm$ 1% lymphocytes, 82% viability after 24 h standard culture. EVLP was associated to a specific transcriptional signature (unsupervised cluster analysis, $p = 0.003$). Pattern of genes up-regulated included inflammation, resolution of inflammation, anti-apoptosis/survival, heat-shock/redox, while neutrophil related genes were down-regulated ($q = 0$; false discovery rate = 0). Signaling pathways of STAT3 (STAT3), MAP kinase (ERK1/2, p38), and NFKB (IKBα) were activated.
Conclusions: EVLP is associated with molecular and cellular mechanisms compatible with lung preconditioning.

007 DONATION/RETRIEVAL

P230 **TRANSPLANTING A TRANSPLANTED KIDNEY – A NEW CHALLENGE IN TIMES OF DONOR ORGAN SHORTAGE**

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Renal transplants may be damaged by immunological and non-immunological mechanisms over time so that the outcome of an already transplanted kidney is difficult to predict. We report the case of a 67 year old patient with end-stage renal disease due to IgA nephropathy, who was succesfully transplanted in March 2014 (PRA max. 0%, 5 HLA-A/B/C/DR/DQ matches). The donor was a 67 year old woman with chronic glomerulonephritis, who received her first kidney transplant in January 2005 from an ideal donor (20 years old, polytrauma; only one HLA-A/B/C/DR/DQ mismatch). She died after cerebral infarction (potential graft damage by arterial hypertension, urinary tract infections and cyclosporine A). The last outpatient visit (11/2013) showed good graft function (serum creatinin (S-Cr) 1.0 mg/dl, proteinuria 90 mg/24 h). The kidney function was well preserved (S-Cr 0.79 mg/dl). After transplantation (two arteries, basiliximab induction, tacrolimus/MMF/steroids) with a short cold ischemia time (10h12 min), duplex ultrasound showed a moderately reduced perfusion, without renal artery stenosis (confirmed by MR scan). Graft function was delayed (one posttransplant dialysis) but reached satisfactory and stable values (S-Cr 2.6 mg/dl, 1-year posttransplant) without acute rejection episodes. The 4-month protocol biopsy showed a reactive focal segmental and focal global glomerulosclerosis (4/13 and 4/13 glomeruli) and a 20% chronic tubulo-interstitial damage without signs of rejection or cyclosporine toxicity. Our case report shows that chronic damage of a long-term transplanted kidney is difficult to predict without biopsy. Significant chronic damage was detected in the 4-month protocol biopsy, despite well preserved predonation graft function and an ideal young original donor with nearly full HLA match. Nevertheless, 1-year graft outcome is satisfactory and encourages evaluation of organ donors bearing a transplanted kidney for kidney retransplantation in times of organ shortage.

015 INFECTIONS

P231

AN OPTIMIZED ELISPOT ASSAY TO DETERMINE CMV PROTEIN-REACTIVE CELLS OF CELL-MEDIATED IMMUNITY

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Background: In healthy individuals, Cytomegalovirus (CMV) infections are efficiently controlled by CMV-specific cell-mediated immunity (CMI). However, functional impairment of the CMI in immunocompromized individuals can lead to uncontrolled CMV-replication and severe clinical complications. Thus a reliable, standardized monitoring of the CMV-specific CMI is highly relevant for the prognosis of CMV-associated clinical complications and individual therapeutic decisions. Objective of this study was the optimization and standardization of a robust IFN-y ELISpot assay protocol to determine CMV-specific effector cells both quantitatively and functionally.
Method: Optimized immunodominant CMV-proteins IE-1 and pp65 have been used as stimulatory antigens that allow the simultaneous detection of CMV-responsive T helper (Th) cells, cytotoxic T cells (CTL) as well as Natural Killer (NK) and Natural Killer-like T (NKT) cells. All basic assay parameters and reagents were tested and optimized to establish a user-friendly protocol and maximize the signal-to-noise ratio of the ELISpot-assay.
Results: Applying the optimized CMV ELISpot protocol, 100% of the CMV-seropositive healthy individuals tested showed a positive test result irrespective of their HLA composition. The assay performance is highly reproducible with coefficients of variation of $<22\%$. Spot forming colonies are direct proportional to deployed PBMC counts in the range of 6×104 and 2×105 PBMC per well. In addition, a linear correlation between the amount of CMV protein-reactive cells and total PBMC counts was observed (R2 for stimulation with pp65 and IE-1 was 0.99 and 0.97, respectively).
Conclusion: The optimized ELISpot assay represents a highly standardized, valuable tool to monitor the functionality of CMV-specific CMI in immunocompromized patients.

011 HEART

P232

DE NOVO USE OF EVEROLIMUS IN HEART TRANSPLANT RECIPIENTS: CORRELATION BETWEEN LIPID LEVELS AND CARDIOVASCULAR EVENTS BASED ON THE 24 MONTH RESULTS OF A2310 STUDY

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Background: Cardiac allograft vasculopathy (CAV) is a major cause of long-term morbidity and mortality following heart transplantation (HTx). Previous data from A2310 study indicated that everolimus (EVR) treatment has the potential to decrease the long-term risk of cardiovascular events (CVE) by preventing CAV independent of lipid levels in HTx recipients (R). Here, we assessed retrospectively the relationship between increased lipid levels and the reported cardiovascular events (CVE) in HTxR from the A2310 study.
Methods: A2310 study (NCT00300274) was a 24-month, open-label, multi-centre study with 721 HTxR randomised to either EVR 1.5 mg ($N = 282$) or EVR 3.0 mg ($N = 168$), each dose with reduced CsA or MMF 3.0 g ($N = 271$) + standard CsA; with steroids ± induction. Complete lipid panel (HDL, LDL, total cholesterol [TC], triglycerides and TC to HDL ratio) was assessed at all visits and CVE assessment included adverse events related to cerebrovascular disorders, ischaemic heart disease, and arterial embolic/thrombotic events.
Results: EVR 3.0 mg treatment arm was terminated prematurely due to higher mortality; therefore, only comparison between EVR 1.5 mg and MMF groups is presented here. At M24, similar proportion of patients in both EVR and MMF groups (EVR: 25.8% vs. MMF: 25.4%) experienced CVE. The MMF group recipients with CVE had higher mean lipid levels (except for HDL) than those without CVE, while the opposite was true for the recipients in EVR group. Interestingly, the rate of statins usage in recipients with CVE was lower in the EVR group (88.8%) compared to the MMF group (98.5%) despite higher average total cholesterol level in the EVR group (Table).
Conclusion: The present findings did not show any correlation between elevated lipid levels and incidence of CVE in EVR + rCsA treated HTxR, reassuring about the potential risks associated with EVE-induced hypercholesterolemia during the first 2 years post-HTx.

Table: Lipids levels (mmol/L) in heart transplant recipients (with and without CVE) at Month 24

	EVR (1.5mg) N=72	MMF N=68	*P-value EVR 1.5 mg vs. MMF	EVR (1.5mg) N=207	MMF N=200	*P-value EVR 1.5mg vs. MMF
Lipids (mean ± SD)	**With CVE**	**With CVE**		**Without CVE**	**Without CVE**	
HDL	1.43 ± 0.446	1.2 ± 0.422	0.107	1.31 ± 0.415	1.30 ± 0.451	0.735
LDL	2.54 ± 0.519	2.66 ± 0.845	0.940	2.86 ± 0.812	2.57 ± 0.773	0.064
TC	4.67 ± 0.757	4.7 ± 0.914	0.562	5.13 ± 1.067	4.61 ± 1.019	0.024
TC/HDL ratio	3.52 ± 1.054	4.35 ± 1.822	0.135	4.2 ± 1.396	3.85 ± 1.332	0.181
TG	1.82 ± 0.882	2.04 ± 1.397	0.890	2.42 ± 1.755	1.88 ± 1.387	0.032
Concomitant use of LLA (statins) at Month 24, n (%)	88.8	98.5	-	93.2	89.5	-

HDL: high density lipoprotein; LDL: low density lipoprotein; TC: total cholesterol; TG: triglycerides; LLA: lipid lowering agents; CVE: cardiovascular events; EVR: everolimus; MMF: mycophenolate Mofetil; * Wilcoxon Rank-Sum test

023 KIDNEY

P233 A NOVEL MITOCHONDRIA-TARGETED ANTIOXIDANT COMPOUND ATTENUATES ISCHEMIA REPERFUSION RENAL INJURY

Dae Eun Choi[1], Kang Wook Lee[1], Jin Young Jeong[1], Hyun-Su Choi[2], Yoon Kyung Chang[3], Sarah Chung[1], Ki Ryang Na[1]
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Introduction: Recently mitochondrial damage has been known to major role in various renal injury including ischemia reperfusion (IR) renal injury. Mitochondrial injury and reactive oxygen species (ROS) generation play a role in IR renal injury. NecroX-7 is recently developed compounds which are concentrated in mitochondria, reduce mitochondrial reactive oxygen species and improve cell survival. We therefore used NecroX-7, one of these compounds, and assessed its effects on renal damage.
Methods: *In vitro*, IR was simulated by mineral oil in HK-2 cells. Mitochondrial respiratory complex, membrane potential, and reactive oxygen generation were evaluated in control and IR HK-2 cell with or without NecroX-7. Cell survival also evaluated. *In vivo* 10 weeks C57BL/6 mice were divided into 4 groups; vehicle ($n = 5$) and NecroX-7 (10 mg/kg intraperitoneal injection) treated sham group ($n = 5$), vehicle ($n = 7$)d NecroX-7 ($n = 7$) with IR (reperfusion 27 min after clamping of both renal artery and vein) renal injury. Kidneys and blood were harvested 24 hr after IR injury. We performed real time RT-PCR, western blot and immunohistochemistry for molecular study and H&E stain and PAS stain for histologic examination.
Results: NecroX-7 treatment significantly increase survival of IR HK-2 cell. NecroX-7 treatment increase mitochondrial complex IV and oxygen consumption rate. Also it decrease the 3NT and 8-OH deoxyguanosine generation. *in vivo*, The levels of BUN and serum creatinine in IR renal injury with NecroX7 treated mice were significantly lower than that of vehicle with IR injured mice ($p < 0.05$). In microscopy, NecroX7 significantly reduced renal tubular epithelial cell necrosis and detachment. NecroX7 significantly reduced 8-OH deoxyguanosine positive and TUNEL positive cells in IR kidney. Also it significantly decreased the level of Bax/Bcl-2 ratio and phosphorylated caspase -3.
Conclusion: In conclusion, NecroX-7 enhance mitochondrial respiratory complex IV and reduce mitoch.

P234 SGLT2 INHIBITOR ATTENUATES ISCHEMIA REPERFUSION RENAL INJURY

Kang Wook Lee[1], Hyun-Su Choi[2], Yoon Kyung Chang[3], Jin Young Jeong[1], Sarah Chung[1], Young Rok Ham[1], Ki Ryang Na[1], Dae Eun Choi[1], Jae Woong Jeon[1]
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Introduction: SGLT2 inhibitor, dapagliflozin were developed for diabetes control. it wastes the glucose to urine. Although SGLT2 KO mice study showed no reduction of inflammation markers in type 1 DM mice model, some studies showed SGLT2 inhibition have renal protection (reduce hyperfiltration and tubular oxidative stress) in Type1 DM. We evaluate whether SGLT2 inhibitor reduces the renal damage via ischemia reperfusion (IR). Also, we investigate the associating molecular pathway.
Methods: *In vitro*, IR was simulated by mineral oil in HK-2 cells. Cell survival, apoptosis signal pathway, reactive oxygen species (ROS) generation, HIF1, ERK, AMPK, PGC1 alpha were evaluated in control and IR HK-2 cell with or without SGLT2 inhibitor. *In vivo* 10 weeks C57BL/6 mice were divided into 4 groups; vehicle ($n = 5$) and dapagliflozin (10 mg/kg PO 4 hr and 1 hr before operation) treated sham group ($n = 5$), vehicle $n = 7$) and dapagliflozin ($n = 7$) with IR (reperfusion 27 min after clamping of both renal artery and vein) renal injury. Kidneys and blood were harvested 24 hr after IR injury. We performed real time RT-PCR, western blot and immunohistochemistry for molecular study and H&E stain and PAS stain for histologic examination.
Results: Dapagliflozin treatment significantly increase survival of IR HK-2 cells. Dapagliflozin treatment increase the level of HIF1 in IR HK-2 cells. Also it decrease the Bax/Bcl2 ratio and 8-OH deoxyguanosine generation. *in vivo*, The levels of BUN and serum creatinine in IR renal injury with dapagliflozin treated mice were significantly lower than that of vehicle with IR renal injured mice ($p < 0.05$). In microscopy, dapagliflozin significantly reduced renal tubular epithelial cell necrosis and detachment. Dapagliflozin significantly increased the expression of HIF1 in IR kidney. Dapagliflozin significantly reduced 8-OH deoxyguanosine positive and TUNEL positive cells in IR kidney. Also it significantly decreased the level of Bax/Bcl-2 ratio and phosph

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P236

SEX DIMORPHISM IN INTESTINAL FUNCTION AFTER INTESTINAL ISCHEMIA/REPERFUSION INJURY

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Background: Organ transplantation has evolved as the treatment of choice for many patients with end-stage disease. However, clinical studies show differences in the prognosis of short and long-term transplants due to donor sex. Ischemia-reperfusion (IR) injury is inevitable during intestinal transplantation and can negatively affect the transplant outcome. The aim of this study was to investigate the sex differences on the intestinal function and inflammatory status after intestinal IR (i-IR).
Materials and Methods: Male and female Wistar rats were subjected to occlusion of the superior mesenteric artery (SMA) (45 min), followed by reperfusion period (2 h). As controls were used non-manipulated rats. Intestinal vascular permeability was assessed by the Evans blue dye (EBD) extravasation method and neutrophil recruitment was measured by a myeloperoxidase (MPO) activity method. Generation of IL-10 was analyzed by ELISA in samples of intestinal fluid. Intestinal motility was evaluated by transit of activated coal (1 ml, 2%) method and contractions were evaluated by *in vitro* technique with crescent doses of methacholine.
Results: MPO in the intestine after i-IR showed that female had less activity ($M = 0.11 \pm 0.02$, $F = 0.06 \pm 0.006$; $p = 0.0002$) and EBD extravasation ($M = 166.9 \pm 24.5$, $F = 103.5 \pm 10.2$; $p < 0.0001$) than male. Levels of IL-10 was higher in male after i-IR in comparison to female ($M = 1303 \pm 288$, $F = 297.5 \pm 65.8$ pg/ml; $p = 0.0012$). The motility after i-IR was reduced in male and increased in female ($M = 20.2 \pm 2.5$, $F = 47.9 \pm 2.8$; $p < 0.0001$). In contrast, the contractility *in vitro* after i-IR was reduced in female compared to male ($M = 12.17 \pm 2.36$, $F = 3.4 \pm 0.52$ AUC; $p = 0.028$).
Conclusion: Overall our data suggest that male rats are more susceptible to deleterious effects i-IR whereas female seems to be more protected. Thus, we infer that sex hormones deserve attention as a potential factor influencing the organ status during transplant events.
Financial Support: CNPq and Fapesp (2013/15291-0).

007 DONATION/RETRIEVAL

P237 **NURSING KNOWLEDGE AND SKILLS ABOUT LIVING RELATED DONOR LIVER TRANSPLANTATION, FROM ADULT TO CHILD**

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Background: Living related donor liver transplantation (LDLT), due to scarcity of post-mortal donor organs, from adult to child is performed at our center from 2004 on with good results. The screening of the potential donor is arranged at our adult patient ward according to a protocol. The knowledge of nurses to give proper nursing care and support to the potential donor and his/her relatives is limited.
Objective: The objective was to assess the knowledge deficit of the nurses with the aim to develop a training module to teach the nurses adequate knowledge and skills about LDLT. A second aim was that the patient and his/her relatives receive adequate information and support by nurses during the admittance.
Methods: A semi-structured self-designed questionnaire was constructed and distributed among the nurses at our ward. The questionnaire contained items, amongst others, to assess knowledge deficit (e.g. differences between junior and senior nurses), self-perceived LDLT skills and information needs. Next to this, the primary investigator followed the procedure of one donor in total from screening, donor operation and after care.
Results: The questionnaire was completed by 26 of 27 nurses of the adult gastroenterology ward. Senior nurses expressed more knowledge and self-perceived skills about LDLT compared with junior nurses.
Conclusions: Nurses, especially junior nurses, have a knowledge deficit concerning LDLT. The results of this project will be used to develop a manual for nurses about LDLT and also to develop the necessary information for the donor and his/her relatives.

027 LUNG

P238

IMPROVED PHARMACOKINETICS WITH THE NEW TABLET FORMULATION OF POSACONAZOLE IN LUNG TRANSPLANT RECIPIENTS: A SINGLE CENTRE EXPERIENCE

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Lung transplant recipients (LTx) are at high risk of fungal infections including Aspergillus spp. Posaconazole (POSA) is one drug in the armoury against such infections. Until recently POSA was available solely as an oral suspension which must be taken with fatty food to ensure absorption, a major limiting factor. A new tablet formulation was launched in June 2014, it's absorption is independent of food. A correlation between clinical outcomes and POSA levels has been shown with a lack of response to POSA levels <0.7 mg/l.

Pharmacy records were used to identify adult LTx patients who had received POSA tablets between 26th June 2014 (when tablets were first available) and 28th February 2015. POSA tablets were commenced with an initial loading dose of 300 mg twice daily orally for 24 h followed by 300 mg once daily orally thereafter. POSA levels were monitored, a therapeutic level was defined as >0.7 mg/l.

Fifteen LTx recipients were included in the study (9 cystic fibrosis (CF), 53% male, 11 for Aspergillus infection treatment), POSA was commenced at a median of 96.5 (8.7–256) months after LTx. Ten patients were initiated on tablets; five patients were converted from suspension. The first level in those initiated on tablets was at a median of 7 (range 1–13) days. All 10 patients (100%) achieved therapeutic levels on a maintenance dose of 300 mg daily with a mean of 2.2 $\pm$ 0.85 mg/l. All 5 patients converted from suspension achieved therapeutic levels with the tablets with a mean of 1.28 $\pm$ 0.4 mg/l. Four patients had therapeutic levels before conversion and maintained this following the switch. One patient (CF) who was sub-therapeutic struggled to ingest sufficient fat to achieve adequate absorption.

Initial experience with POSA tablets demonstrated favourable pharmacokinetics in LTx patients, reliably achieving therapeutic levels.

Figure 1a: Posaconazole levels achieved with the tablet formulation

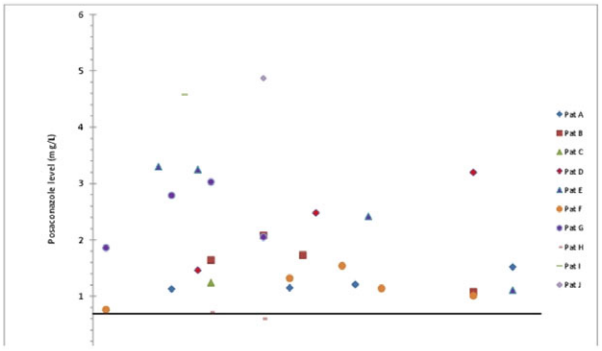
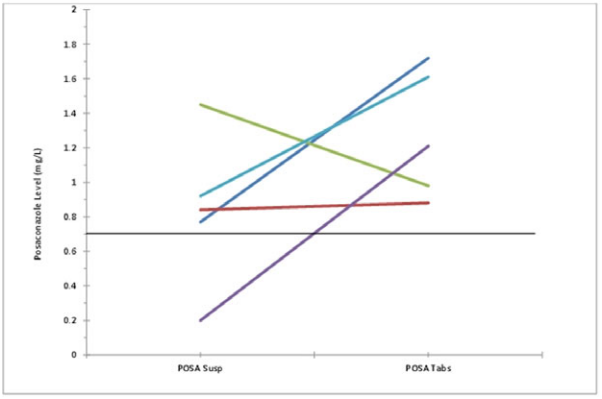


Figure 1b: Conversion from posaconazole suspension to tablets



023 KIDNEY

P239 EARLY GROUP-EDUCATION OF FAMILIES AND FRIENDS OF CKD PATIENTS; THE IMPACT ON LIVING KIDNEY DONATION

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Maasstad Ziekenhuis

Introduction: Despite evidence that pre-emptive renal transplantation offers the best treatment for patients with ESRD, many patients start with dialysis. They find it difficult to talk with relatives and friends about their illness and treatment options. Living-kidney-donation is frequently overlooked and carried out after a period of dialysis. We hypothesized that timely education of family and friends of patients improves understanding, prevent misconceptions about future health status and stimulates discussion about LKD.
Methods: In 2008 the hospital social workers started to offer CKD patients a timely education of family and friends. They inform the patient about the possibilities of this education. When the patient agrees they organize a gathering of all relatives and friends of the patient, preferably at his home. The informative gathering involves in an intimate discussion about current and future health status of the patient and treatment modalities. Data of patient survival on dialysis, after LKD and deceased donor transplantation are given. Risks and benefits of LKD for recipient and donor are presented.
Results: Participating patients, relatives and families welcomed the approach of family counseling. All felt improved mutual understanding and bonding within the family. All patients were relieved after the hospital social worker initiated discussion about LKD. Until august 2014 group education was given to 61 families of CKD patients. Potential kidney donors showed up in 51 cases.
Conclusion: Early group-education of families and friends of patients with CKD leads to a better informed and understanding family and to an improved family bonding. Relatives consider living kidney donation and makes pre-emptive transplantation possible. We recommend this education to all patients with CKD stage 3–4. Nierkompas study February 2011- February 2013 E. Massey et al, confirms our experiences with this kind of family education.

P240 A RETROSPECTIVE STUDY OF THE IMPACT OF ABDOMINAL SURGICAL HISTORIES ON HAND ASSISTED LAPAROSCOPIC DONOR NEPHRECTOMY

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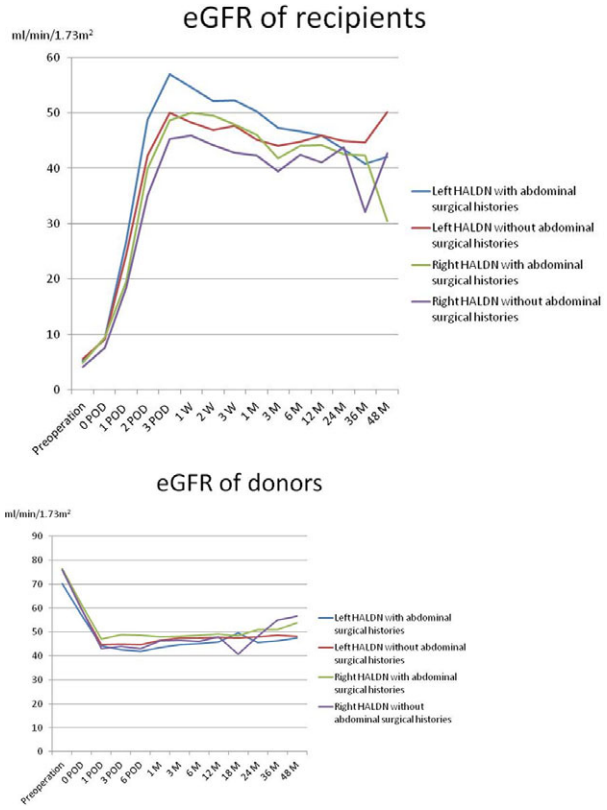
Objective: To investigate safety and efficacy of hand assisted laparoscopic donor nephrectomy (HALDN) for living donors with abdominal surgical histories.
Summary and Background Data: Safety and efficacy of HALDN for living donor kidney transplantation were well reported. But adhesions due to previous abdominal surgeries are considered to make laparoscopic operations difficult. But the safety and efficacy of the HALDN for living kidney donors with abdominal surgical histories have not been investigated closely.
Methods: Between January 2009 and March 2014, 443 living kidney donors underwent donor nephrectomies. Left HALDN and right HALDN were done in 411 donors and 20 donors respectively. 12 donors were selected open donor nephrectomy initially. 45/411 donors in left HALDN group and 11/20 donors in right HALDN group had abdominal surgical histories. In each group, donors with and without abdominal surgical histories were compared. For operation quality, operative duration, blood loss, warm ischemic time, donors' complications and donors' estimated glomerular filtration rate (eGFR) were investigated. For graft quality, arterial length, venous length, ureteric length, time to initial urination, delayed graft function, recipients' complications and recipients' eGFR were investigated.
Results: There was no significant difference in donors' and recipients' characteristics in both groups. Left HALDN group: there was no significant difference in operation and graft quality. Right HALDN group: there was a significant difference only in blood loss, but other factors were similar.



Conclusions: Left and right HALDN were performed safely and efficiently even in the donors with abdominal surgical histories.

P241 STUDY OF THE RISK FACTORS OF ACUTE REJECTION AFTER LIVE DONOR RENAL TRANSPLANTATION: A SINGLE EGYPTIAN CENTER EXPERIENCE WITH 2227 PATIENTS

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Objectives and Aim: Acute rejection is a complex process of injury to the allograft caused by Infiltrating cells of host immune system, it lead to multiple responses within graft and is major risk factor for chronic rejection and loss of graft, Acute rejection episodes are a major determinant of renal allograft survival and still a major challenge for contemporary transplantation. So we perform this work aimed to evaluate the risk factors of acute rejection among renal allograft recipients, and its impact on both graft and patient survival.
Methods: This retrospective single Center study included 2227 kidney transplant recipients who were transplanted at Mansoura urology & nephrology Centre between 1976 & 2013, the patients divided into three groups according to number of acute rejection episodes no rejection, one rejection and more than one.
Results: We found that donor age was statistically significant in both univariate and multivariate analyses with (p-value 0.002). As regard induction therapy, a highly statistical significance was found between there groups regarding presence& type of induction therapy (p-value < 0.001). As regard maintenance immunosuppression, High statistically significant results were found regarding rapamycin between three groups (p value < 0.001) in both univariate and multivariate analyses. Acute tubular necrosis post-transplantation was statistically significant in both univariate and multivariate analyses with (p-value < 0.001).
Conclusion: We can conclude that Old donors, presence of acute tubular necrosis post-transplantation, renal transplant recipients who not received immunosuppression induction and recipients who not received rapamycin as primary maintenance immunosuppression are at high risk for occurrence of acute rejection episodes post-transplantation.

P242

TRANSFORM: A NOVEL STUDY TO EVALUATE THE EFFECT OF EVEROLIMUS WITH REDUCED CALCINEURIN INHIBITORS IN *DE NOVO* KIDNEY TRANSPLANT RECIPIENTS: BASELINE DATA

Julio Pascual, on behalf of the TRANSFORM Investigators
Xxxxxxxx

Purpose: The long-term graft and patient survival in kidney transplantation (KTx) remains an unmet need. The ability of everolimus (EVR) to allow substantial reduction of calcineurin inhibitor (CNI) exposure along with its antiproliferative properties may address many of the current limitations to long-term outcomes post-KTx. The TRANSFORM study is designed to evaluate the efficacy and safety of EVR + reduced (r) CNI versus mycophenolic acid (MPA) + standard (s) CNI in *de novo* KTx recipients (KTxR). Here, we present the baseline data of the patients who have been randomised up to 17 February 2015.

Methods: TRANSFORM (NCT01950819) is an ongoing 24-month (M), multicentre, open-label study in which KTxR are randomised (1:1) to receive either EVR + rCNI or MPA + sCNI; all with induction and steroids. After completion, patients may enter into a further 3-year observational follow up. The primary objective is to evaluate the impact of these immunosuppressive regimens on a novel combined endpoint: a composite of treated biopsy-proven acute rejection (tBPAR) or estimated glomerular filtration rate (eGFR <50 ml/min/1.73 m^2; MDRD4 formula) at M12 post-KTx. This novel endpoint represents a clinically meaningful approach to discriminate between immunosuppressive regimens in KTx. Key secondary objective is to evaluate the composite efficacy failure (tBPAR, graft loss or death) at M12 and M24 post-KTx.

Results: TRANSFORM is recruiting across 215 centres worldwide and 921 KTxR have been randomised to date. At baseline, the recipients' age (mean ± SD) is 50.56 ± 14.38 years and BMI (mean ± SD) is 25.58 ± 4.42 kg/m^2. Most recipients are Caucasian (76.2%). For the CNIs, 12.4% of patients are receiving cyclosporine and 87.6% patients are on tacrolimus (Table).

Conclusion: TRANSFORM is the largest prospective clinical study in KTx that captures the key surrogate markers of long-term outcomes. The study has been designed to evaluate the short- and long-term outcomes of EVR + rCNI in *de novo* KTxR versus MPA + sCNI.

Table: Patient demographics and baseline characteristics

Parameters	Total
Recipient characteristics	**N=929**
Age, mean±SD	50.56±14.38
Race, n (%)	
Caucasian	708 (76.2)
Asian	122 (13.1)
Others*	99 (10.7)
BMI (kg/m^2), mean±SD	25.58±4.42
End stage disease leading to transplantation#, n (%)	
Glomerular disease	138 (15.9)
Polycystic disease	123 (14.2)
Hypertension/nephrosclerosis	118 (13.6)
Diabetes mellitus	108 (12.4)
Unknown	115 (13.2)
Others†	266 (30.6)
PRA# (most recent evaluation), mean±SD	2.2±8.56
Cold ischemia time#, mean±SD	9.7±7.71

*Include Native American, Black, Chinese, Pacific Islander, and unknown; #N=868; †Include pyelonephritis, drug induced toxicity, interstitial nephritis, vasculitis, obstructive disorder/reflux, renal hypoplasia/dysplasia, Iga nephropathy, and missing.
BMI, body mass index; PRA, panel reactive antibodies; SD, standard deviation

007 DONATION/RETRIEVAL

P243

PRACTICAL ATTITUDE BASED ON THE EXPERIENCE OF POTENTIAL BRAIN DEATH DONORS' DOCTOR DURING THE ORGAN DONATION PROCESS

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Background: The purpose of this study was to identify the attitude based on their experience of potential brain death donors' doctor during the organ donation process.
Methods: The grounded theory methodology was used for this study. The data were collected through in-depth interview from 6 doctors who experienced management of potential brain death donors. Theoretical sampling was used until the data reached saturation.
Results: As a result of the analysis, "Dilemma of organ donation solicitation" was identified as the core category. And 12 subcategories were identified and they were integrated to the core category. The causal conditions that influence core category were "Responsibility to open conversation regarding organ donation," "Difficulty to declaration of brain death," "Heavy burden in cumbersome organ donation process," "Difficulties of family counseling," and the contextual condition was "Doctor's knowledge on organ donation," the intervening conditions were "Disrespectful treatment of donors and their family members," "Organ transportation team's attitude," "Compensation for doctor and care organization." The action/interactional strategies were "Awareness of organ donation program," "Establishing rapport with the family of organ donors," "Timely initiation of organ donation conversation." "Obtaining organ donation counseling skills" was identified as the consequence.
Conclusion: The results of the study will provide a frame for understanding the attitude based on their experience of potential deceased donors' doctor and helping the development of effective intervention strategies for increasing organ donation.

023 KIDNEY

P244 HEALTH-RELATED QUALITY OF LIFE AND EMOTIONAL PROBLEMS IN KOREAN KIDNEY TRANSPLNT RECIPIENTS

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Background: Little is known about the extent to which transplant recipients face emotional problems with the receipt of a transplanted organ. The purpose of this study is to investigate health-related quality of life (HRQoL) and emotional problems that appear in 105 adults who had undergone kidney transplantation (KT).
Methods: This study is a cross-sectionally designed. Patients with a history of kidney transplantation were recruited ($n = 105$). HRQoL was measured by using the Korean version of Medical Outcome Study Short Form-36 version 2 (SF-36 ver 2.0), and emotional problems by using the transplant effects questionnaire (TxEQ). Clinical and demographic data were collected from questionnaires. The data were collected from August 2014 to November 2014 at two medical centers in Korea.
Results: Of the 105 patients, 53.3% were male, and 49.5% received hemodialysis and 21.9% received peritoneal dialysis before KT. The mean age was 46.99 (SD = 11.81) and the mean months after transplantation was 35.47 (SD = 43.84). The mean score of each of the TxEQ subscales ranged from 11.44 to 22.56. The mean score of each of the HRQOL subscales ranged from 44.55 to 54.48. The mean scores on the bodily pain subscale were the highest and, on the role emotional subscale, the lowest. Mental component summary was negatively correlated with worry ($p < 0.001$) and positively correlated with adherence ($p = 0.010$) and responsibility ($p = 0.007$) in the TxEQ subscales, whereas no significant correlation between physical component summary and the TxEQ subscales.
Conclusion: The study indicates that mental HRQoL is correlated with emotional distress. Therefore, in order to increase the HRQoL, a continuous attention is needed in kidney transplant recipients who experience emotional distress and adherence problem. In addition, further empirical studies should be conducted to explain the mechanisms underlying this relationship.

P245 A KILLER-LESION NEXT TO THE HEART OF A RENAL TRANSPLANT RECIPIENT

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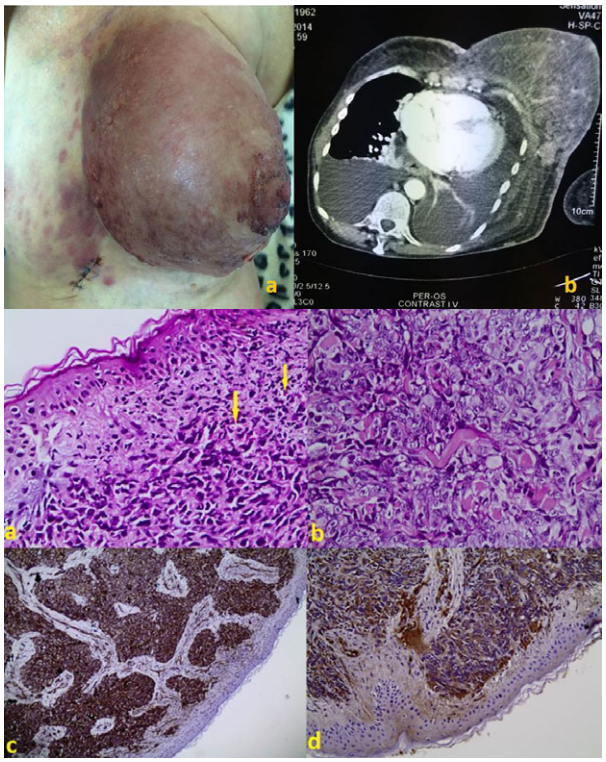
Laiko General Hospital

Primary breast angiosarcoma is an extremely rare breast malignancy, accounting for 0.04% of all malignant breast tumours. A 53-year-old Caucasian female underwent a deceased-donor renal transplantation 5 years ago for end-stage-renal-disease due to hypertension. She presented with a 12-month history of a lesion on her left breast complaining of weight loss and anorexia. Biopsy of the overlying skin revealed dilated vascular spaces lined and surrounded by clusters of spindle and epithelioid cells, suggestive of low grade primary angiosarcoma. The case has been discussed in a multidisciplinary setting. The decision was to use anthracycline-based chemotherapy as upfront treatment to assess tumor response and gain a local benefit for a subsequent surgical resection. Primary angiosarcoma is a rare malignancy occurring in the third to fourth decade. Three grades exist, low (I), intermediate (II) and high grade (III). Total mastectomy appears to be the only treatment conferring benefit, chemotherapy and radiation therapy being of little value. The 5-year disease-free survival for grade I tumors can be as high as 76%, for grade II up to 70% whereas in grade III is about 15%. Primary angiosarcoma has a poor prognosis, even after complete resection. Surgery is the mainstay of treatment with a limited role for chemotherapy and radiotherapy.



033 TISSUE ENGINEERING

P246

DETERGENT-SONICATION METHOD FOR A WHOLE LARYNGEAL DECELLULARIZATION

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Background: Each year, about 136 000 individuals worldwide are diagnosed with larynx carcinoma. Tissue engineered organs shows promising alternative to a conventional transplantation in both preclinical models and in clinical set up to address the issues of donor scarcity and graft rejection. Here we attempted to create a less immune, whole pig larynx scaffold comprising complete acellular and integrated muscle and cartilage of the larynx.
Methods: Pig larynxes ($n = 5$) were decellularized with combination of perfusion-agitation and ultrasonication method, where ultrasonic energy used for mechanically loosen the collagenous matrix of laryngeal tissue and detergents. Decellularized larynxes were characterized by histology, immunohistochemistry, DNA quantification and growth factor analysis (Luminex technology). Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) were used to investigate the ultrastructural changes to the arrangement of ECM fibers in acellular larynxes after decellularization.
Results: Complete acellular laryngeal matrix preparation took 25 decellularization cycles; with well preserving muscles, cartilage, and blood vessels. Histological findings showed that the non cartilaginous part of decellularised pig larynges were devoid of cells. However very few cell debris was observed in the thyroid and cricoid cartilage. The DNA quantification analysis showed 99% reduction in DNA content in the decellularised larynges compared to the normal larynx. Luminex analysis showed presence of angiogenic growth factors in the acellular larynxes after decellularization method. SEM and TEM analysis confirmed the structural arrangements of ECM fibers in larynxes were well preserved after decellularization.
Conclusion: Our findings sugges porcine larynxes can be decellularized with detergent-ultrasonication method. This method preserves ECM proteins and angiogenic growth factors which can help in building the new tissue engineered larynx.

007 DONATION/RETRIEVAL

P247

"GUT FEELING" AS A PREDICTOR FOR SUCCESS OF LIVING KIDNEY DONATION?

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The current study evaluated the "gut feeling" of health care professionals who assessed the donor and recipient before transplantation.
Methods: All donor/recipient pairs planned for a living kidney donation at the University Hospital Basel are assessed by the same psychologist, a staff nephrologist, and a transplant coordinator on the same day. Immediately after the assessment, the three investigators prospectively marked their gut feeling of success on a scale from 1 (transplantation fails) to 10 (transplantation without any problems). The prediction of success was compared between the three investigators. The estimation of success was subsequently compared with the recipient and donor outcome (days of hospital stay, graft function) 6 months after transplantation.
Results: Between 03.05.12 and 29.01.15, a total of 63 donor/recipient pairs were evaluated for living kidney transplantation. Full data sets were available from 62 pairs. The estimation of success did not significantly differ between the evaluating health care professionals, i.e. physicians, psychologists, and transplant coordinators ($p = 0.13$; Kruskal Wallys): physician's estimation: median 8.85 (IQR 7.45–9.5), psychologist's estimation 9.05 (IQR 7.4–9.5), transplant coordinator's estimation 8.55 (IQR 6.87–9.72). One recipient died, one graft was lost (1.62%) and donor survival was 100% after 6 months. No significant correlation was found between the estimation of success and: donor hospital days (median 6 (IQR 5–8); r^2 0.005), recipient hospital days (median 13 (IQR 10–19.25); r^2 0.003), and recipient serum creatinine level at 6 months ($n = 60$; median 127 μmol/l (IQR 97.5–153); r^2 0.01).
Conclusion: The evaluated data show that "gut feeling" of health care professionals regarding the outcome of living donor kidney transplantations cannot reliably predict the short term success of the transplantation. These results did not differ between physicians, psychologists, and transplant coordinators

013 IMMUNOBIOLOGY/BASIC SCIENCE

P248

SULODEXIDE POTENTIATES THE INIBITORY EFFECTS OF EVEROLIMUS ON HYPOXIC-MEDIATED EPHITELIAL TO MESENCHYMAL TRANSITION IN HUMAN RENAL PROXIMAL TUBULAR EPITHELIAL CELLS

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Background: Prolonged cold ischemia time, the period from the start of perfusion with cold preservation fluid after cessation of circulation due to arterial clamping, could induce epithelial to mesenchymal transition (EMT) in renal tubular cells, a process associated with chronic graft damage. In this context, Everolimus (EVE) and Sulodexide (SUL) could represent potential agents useful to slow-down this process.
Methods: To assess whether SUL (50 microg/ml), EVE (at 5, 10, 100 nM) or their combination were able to inhibit EMT in human renal epithelial proximal tubular cells (HK-2) re-oxygenated after 24 h under hypoxic conditions, we used several biomolecular strategies.
Results: Hypoxia causes up-regulation of alpha-SMA, Fibronectin (FN) and Vimentin (VIM) at gene-expression and alpha-SMA and FN at protein levels. However, re-oxygenation and addition of Sulodexide plus 5 nM of EVE to the cells' culture induced a down-regulation of EMT genes after 6 h and a reduction of FN and VIM protein levels after 24 h. Similarly, Sulodexide was able to reverse the hyper-expression of EMT markers induced by high EVE dosage (100 nM) in cells cultured in both normoxic and hypoxic conditions.
Conclusions: Our data revealed that Sulodexide, alone or combined to low doses of Everolimus, may hinder EMT in renal cells following hypoxia or minimize fibrotic complications due to high dosage of mTOR-inibitors.

023 KIDNEY

P249

PRIMARY HYPEROXALURIA. EARLY LOSS OF KIDNEY GRAFT

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Context: Primary Hyperoxaluria is a very rare autosomal recessive disorder characterized by the overproduction and accumulation of calcium oxalate crystals in organs and tissues (oxalosis). The oxalate excess can precipitate in the urine, causing the appearance of stones and nephrocalcinosis, evolving to Chronic Kidney Disease Terminal (ESRD) in 90% of patients.

Objective: To report a case of a renal transplanted patient with primary hyperoxaluria without pre-operative diagnosis, which evolved with early graft loss.

Method: 41 years old man, white, on hemodialysis for 12 months. History of kidney stones since childhood and surgical removal of ureteral calculus. Abdominal ultrasound shows bilateral kidney stones (one frame each kidney) and left hydronephrosis. No vascular access for hemodialysis, was nominated urgent kidney transplant.

Results: Kidney transplantation, deceased donor, 45 years old, great, cause of death TEC. The patient developed oliguria. Doppler graft with good perfusion and without swelling or collections. DGF, biopsy of the graft was made in 32 days (nephritis tubulointesticial lymphomononuclear multifocal (2009 Banff borderline), necrotic tubular degenerative changes, with intense Oxalosis). Restored diuresis (average 1400 ml/day), but without recovery of renal function and returns dialysis (CAPD).

Conclusion: Patients with primary hyperoxaluria, without previous diagnosis (Type I or Type II), had as intense Oxalosis outcome in the graft and early loss.

025 LIVER

P250

FIRST EXPERIENCE WITH THE IMPLANTATION OF A PERITONEAL DIALYSIS CATHETER IN LIVER TRANSPLANT RECIPIENTS

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Introduction: The renal dysfunction is a common problem after liver transplantation. In 2013, 1562 liver transplantations were performed in Germany. Due to perioperative acute or chronic renal failure, a high percentage of the patients have to be treated with dialysis. Acute renal failure often occurs within the peri- or postoperative period, the indication for dialysis ranges between 6% and 50%. The 5-year-risk to develop chronic renal failure is 6–41.5%. There are two methods to perform a dialysis, extracorporal dialysis and intracorporal dialysis (20:1).

Aims: Demonstration the peritoneal dialysis as a treatment option of the chronic renal failure after liver transplantation based on a case report.

Case Reports: In May 2013, a 52-year old male patient received a liver transplantation due to decompensated liver cirrhosis Child C (labMELD 38) with therapy-resistant ascites and hepatorenal syndrome. Preoperatively, the patient was treated with MARS and CVVHD. Postoperatively, the hemodialysis was continued due to persisting renal failure. Initially, the renal function could be stabilised, during the clinical course however, the patient presented with recurrent retention (eGFR 11 ml/min) requiring dialysis, therapy-resistant ascites and hypotension. Therefore, the implantation of a peritoneal dialysis catheter for peritoneal dialysis was performed in September 2013. During the course of peritoneal dialysis a stabilisation of the renal function as well as a sufficient ascites treatment was achieved. After unproblematic implantation the patient was discharged.

Conclusions: In our opinion, the peritoneal dialysis is a valuable treatment option for chronic renal failure after liver transplantation. The advantage over the commonly performed hemodialysis is the possibility to treat patients with circulatory hypotension or heart failure, the simultaneous treatment of ascites, the possibility of home-based dialysis and the simple catheter implantation technique.

023 KIDNEY

P251 12-MONTH ATHENA STUDY: EVEROLIMUS VERSUS STANDARD REGIMEN IN *DE NOVO* RENAL TRANSPLANT RECIPIENTS

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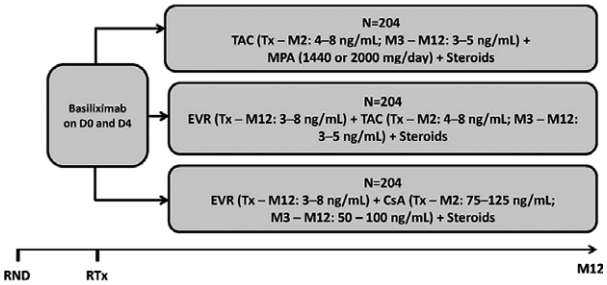
Background: Post-kidney transplant (KTx) long-term and standard calcineurin inhibitor (CNI) use is associated with anincreased risk for malignancies, cardiovascular disease, and renal failure. Previous studies have shown everolimus (EVR) to allow CNI reduction and thereby preserve renal function without affectingefficacy. ATHENA study is designed to evaluate the renal function comparingEVR with reduced CNI exposure (tacrolimus [TAC] or cyclosporine A [CsA]) versus a standard treatment protocol with mycophenolicacid (MPA) and TAC in *de novo* KTx (day 0) recipients (KTxR).
Methods: This is a 12-month (M), multi-center, open-label, prospective, randomized, parallel group study in KTxR (≥18 years) receiving renal allografts from deceased or living donors. Eligible patientswere randomized prior to Tx to one of the three treatment arms (1:1:1): TAC + MPA + steroids (n = 204) or EVR + TAC + steroids (n = 204) or EVR + CsA + steroids (n = 204) all with basiliximab induction. The primaryobjective is to demonstrate non-inferiority in renal function (eGFR by Nankivell formula) in one of the EVR arms vsTAC + MPA + steroids arm at M12 post-KTx. The key secondary objective is to assess theincidence of treatment failure (BPAR, graft loss or death) at M12 post-KTx. Other objectives are to evaluate the following: GFR (different formulae), incidence of efficacy endpoints (BPAR, graft loss and death), the incidence and severity of viral infections (CMV, BKV), the incidence and duration of delayed graft function, left ventricularhypertrophy (by LV mass index), and HLA- and non-HLA-antibody evolution.
Study status: The study recruitment is currently ongoing and 612 patients were enrolled in Germany and in France. Thepreliminary results of this ongoing trial are expected in 2016.
Conclusion: ATHENA is the largest European renal transplant study and the first study evaluating the non-inferiority of renal function as a primary objective in a *de novo* EVR-based immunosuppressive protocol.

Figure: Study design



CsA, cyclosporine A; D, day; EVR, everolimus; M, month; MPA, mycophenolic acid; RND, randomization; KTxR, renal transplant recipients; TAC, tacrolimus

Table: Preliminary Baseline data (available at submission)

CRAD001ADE44 - Patients with Tx and available data - 10-03-2015					
	Gender	Mean Height, cm	Mean Weight, kg	Mean BMI, kg/m^2	Mean Age, year
Female	127	163.62	70.44	26.34	56.86
Male	269	176.82	83.73	26.92	53.00
Total	396	172.52	79.53	26.73	54.23

BMI, body mass index; Tx, transplantation

P252 STUDY TO MEASURE THE EFFECT OF AN ADVANCED NURSING PRACTICE PROGRAM ON WEIGHT GAIN, PHYSICAL ACTIVITY AND MEDICATION INTAKE IN PATIENTS IN THE FIRST YEAR AFTER KIDNEY TRANSPLANTATION

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Kidney transplant patients are required to integrate medical recommendations into their daily routines. Routinely taking medication as prescribed plays a critical role in this process. Due to the sharp increase in the risk of cardiovascular disease and diabetes, and the high incidence of weight gain in the first year after kidney transplantation, preventing weight gain assumes greater importance. In light of this, we developed a nurse-led program that supports patients in adapting or changing behaviors. This study examines the effect of the program on weight management, physical activity, medication adherence, psychosocial situations and perception of provision of care in patients in their first year post-renal transplantation. To this end, a randomized controlled design was chosen. From May 2012 to 2018, up to 122 participants are randomized to either intervention or control groups. Until March 2015, 57 patients have been included. Participants in the intervention group receive nine counseling sessions during postoperative months 2–8. Those in the control group receive routine care, consisting of a counseling session in postoperative month 2. As primary outcome we evaluate the Body Mass Index between the control group and the intervention group during the intervention period, i.e., from weeks 4–6 to month 8. A further measurement is taken at month 12. Height, weight, hip and waist circumference as well as body composition using bioelectric impedance analysis (BCM FreseniusTM) are measured. Data regarding medication adherence, physical activity, emotional well-being, quality of life, assessment of care, and satisfaction with clinic consultation hours will be collected through validated questionnaires or by means of interview guidelines. Physical activity will be measured in months 8 and 12 using accelerometer-based step counting (StepwatchTM). Clinical data is gathered from the medical history. Creatinine excretion will be measured in a 24-h urine collection.

P254 EXPERIENCES AND ATTITUDE OF TRANSPLANT RECIPIENTS TOWARDS TRANSPLANT TOURISM

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Background: Renal transplantation is the optimal treatment for patients with end-stage renal disease. However, due to the shortage of organs supply and the increasing time on waiting lists some patients opted for commercial transplantation. In addition to its associated ethical concerns, commercial kidney transplantation is associated with higher morbidity and mortality, compared to non-commercial transplantation. The aim of this study was to assess the experience and attitudes of patients who underwent commercial kidney transplantation abroad.
Methods and Materials: All adult recipients of vendor kideny transplants who are followed at nephrology transplant clinic at King Khalid university hospital were eligibible for participation in the study. Those who provided consent were interviewed and completed self-administered questionnaire.
Results: A total of 85 patients were approached for paticipation in the study. All have consented and completed the survey (questionnaire or interview). The mean age of the study participants was (44 ± 14). 59 (69.4%) were males. 18 (22%) of prticipants reported having immidiate complications (22%). The majority of participants demonstrated a positive opinion towards their experience (74.1%), and most of them (80%) would chose to go through it again if they had to. 84% would recommend it for a family member or a loved one. Only 2 (2.4%) regreted having a commercial kidney transplant.
Conclusion: Recipients of commercial kidney transplantation have a positive attitude towards it, despite the the ethical concerns and its inferior clinical outcomes. Furthermore, 80% favor legalizing it. These findings hilight the importance of education and awareness needed by healthcare community in this regard

017 INTESTINE

P255

EFFICACY OF HYDROGEN-RICH PRESERVATION METHOD FOR ISCHEMIA-REPERFUSION INJURY IN PORCINE HETEROTOPIC SMALL BOWEL TRANSPLANTATION

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Introduction: Patient survival and graft survival of intestinal transplantation are still low compared with other organ transplants because of high frequency of acute cellular rejection. Hydrogen is noted as an antioxidant material, which reduces ischemic reperfusion injury. Thus we investigate the efficacy of a novel preservation method with hydrogen rich perfusate.
Materials and Methods: Female domestic swine, weighing 15 kg, were used for this study. Small bowel grafts are resected into 100 cm length, 100 cm from terminal ileum. Experimental protocols are divided into 2 groups; control and hydrogen group (H_2 group). In H_2 group, grafts were perfused using hydrogen rich Euro Collins (EC) solution. The grafts were stored in plastic bags containing EC solution. Packaged grafts were put into hydrogen-rich bath equipped with an electrolyzer to saturate the water with hydrogen. In control group, grafts were perfused by EC solution and immersed into EC at 4°C. Mean cold ischemic time in control and H_2 group was 21 h 30 min and 21 h 31 min, respectively. The small bowel grafts were heterotopically engrafted into domestic swine recipients. Tissue samples were obtained after preservation, 0 min, 1 h, 3 h and 6 h after reperfusion.
Results: Macroscopically, the grafts partially dilated after preservation in control group. Moreover, the grafts became necrotic partially in control group. No necrotic finding was revealed in H_2 group at any point. Malondialdehyde and 8-OHdG were significantly suppressed in H_2 group at 6 h after reperfusion. After preservation, gene expression of proinflammatory cytokines such as IL-1b, IL-6, TNFα and iNOS were suppressed in H_2 group. After reperfusion, IL-6 was significantly suppressed 3 h after reperfusion.
Conclusion: In conclusion, hydrogen rich solution reduces oxidative stress, which result in decreasing intestinal ischemic reperfusion injury in animal models. Hydrogen-rich solution could be a next-generation preservation solution.

025 LIVER

P256 **LIVER SPECIFIC MRI AS THE SINGULAR PREOPERATIVE IMAGING TOOL IN POTENTIAL LIVING LIVER DONORS**

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Delineation of donor anatomy is essential in preoperative planning of living liver transplantation. Liver biopsy, and combination CT/MRCP are currently being used as the standard in diagnosis of hepatic steatosis and illustration of donor anatomy. The aim of this study was to assess the role of MRI only as the initial imaging tool to screen donors, and our center's change in approach from combination imaging (CT/MRCP) to single modality to liver specific MRI.

Over 2 years, 28 potential liver donors had a liver specific MRI as the only imaging modality and a percutaneous liver biopsy. The MRI findings in all 28 patients were analyzed to assess donor suitability and correlation accuracy between MRI and operative findings. MRI protocol consists of 2 point Dixon technique for hepatic fat quantification, estimated liver volumes, 3-D MRCP, administration of hepatobiliary agent with dynamic and delayed high resolution T1 imaging for hepatic, portal venous, and biliary anatomy, and post contrast MR angiography of arterial anatomy.

Seven donors were found to be unsuitable based on MRI findings: steatosis ($n = 4$), inadequate volume or anatomy ($n = 3$). Of 21 donors, 20 pts underwent a right hepatectomy and 1 pt underwent a left hepatectomy. All donors and potential donors had MRI as the only preoperative imaging modality once the protocol was validated. Only one patient was found to have unsuitable biliary duct anatomy intraoperatively, that would not have been discovered by any other diagnostic test than an ERCP. The correlation between the MRI findings and the operative anatomic findings was otherwise 100%. Mean discrepancy between MRI calculated volume and actual volume was 15%. MRI fat quantification between 4% and 7% was consistent with 10% was consistent with >20% steatosis on biopsy.

Advancements in MRI imaging technology may provide first line donor evaluation technique, reduces evaluation costs, and utility of preoperative invasive procedures.

015 INFECTIONS

P257

RISK FACTORS OF CYTOMEGALOVIRUS DISEASE IN KIDNEY TRANSPLANT RECIPIENTS: A SINGLE-CENTER STUDY IN THAILAND

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Background: Cytomegalovirus (CMV) infection significantly causes morbidity in kidney transplant (KT) recipients. This study aims to investigate the incidence, timing, and risk factors of CMV infection in KT recipients.
Methods: This is a single-center retrospective study at a tertiary referral hospital. Patients who underwent KT from January 2012-September 2014 were included. CMV infection was defined as the presence of CMV measured by PCR. Logistic regression analysis was performed to assess independent risk factors of CMV infection after KT.
Results: Of 121 KT enrolled, 120 patients had CMV D+/R+ serostatus, and 1 had D−/R+. CMV infection occurred in 33 (27.2%) patients with a median follow-up time of 16 (IQR 4–25) months. Of those, 25 had CMV viremia and 8 had CMV disease mainly involving gastrointestinal system. 86% of CMV cases occurred within 3 months. All recipients received anti-IL2 receptor antibody (IL-2 RA), low dose rabbit anti-thymocyte globulin (rATG; total of 1.5 mg/kg), or standard dose rATG (1.5 mg/kg/day for 3–5 days) for induction. Of those, the incidences of CMV infection were 19.6%, 50%, and 67% respectively. Independent risk factors of CMV infection were older recipient age (OR 1.5 [per 10-y increase]; 95% CI 1.07–2.16), and induction with standard (OR 8.19; 95%CI 2.29–34) and low dose rATG (OR 3.87; 95%CI 1.06–12.23).
Conclusion: More than one fourth of KT recipients developed CMV infection within 6 months after KT. The risk is increased in older recipients and induction with rATG. The level of CMV risk in low dose rATG is 52% lower than in standard dose rATG. In a limited-resource setting, deferred or preemptive strategy may be acceptable in patients who received IL-2 RA and low dose rATG, while prophylactic therapy should be given to patients who received standard dose rATG.

	Univariate analysis		Multivariate analysis	
Factor	Odd Ratio (95%CI)	p-Value	Odd ratio (95% CI)	p-Value
Recipient age (per 10-year increase)	1.50 (1.07–2.16)	0.02	1.50 (1.04–2.23)	0.03
Cadaveric donor	4.03 (1.74–9.86)	0.001		
Donor age (per 10-year increase)	1.31 (0.91–1.91)	0.15		
Mismatch (per 1-mismatch increase)	1.12 (0.87–1.45)	0.40		
PRA level >0	2.66 (1.16–6.16)	0.02		
ABO incompatibility	1.66 (0.32–7.19)	0.51		
Induction regimen				
IL-2 antagonist	Ref		Ref	
Low-dose rATG	4.11 (1.17–14.55)	0.03	3.87 (1.06–12.23)	0.04
Standard dose rATG	8.21 (2.34–33.51)	0.001	8.19 (2.29–34.00)	0.001

025 LIVER

P260

WHAT IS THE PERFERRED METHOD FOR BILIARY RECOUNSTRACTION IN LIVER TRANSPLANT PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS?

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Shiraz Transplant Center

Traditionally Roux-en-Y hepaticojujenostomy was the method of choice for biliary reconstruction in primary sclerosing chollangitis (PSC) patients undergoing orthotopic liver transplantation. In this study, we compared the result of duct to duct anastomosis versus Roux-en-Y hepaticojujenostomy as biliary reconstruction in patients with primary sclerosing chollangitis who underwent liver transplant in Shiraz organ transplant center.

Methods and Materials: There were 69 patients with primary sclerosing chollangitis who underwent liver transplant. Mean follow up period was 40.5 months (range, 22–59 months). We performed duct to duct reconstruction in those patients who had grossly normal bile duct during hepatectomy. In 29 cases duct to duct reconstruction was done and Roux-en-Y hepaticojujenostomy reconstruction in 40 cases. Data collecting form contained biliary complications (leak, stricture,, and cancer in the remnant bile duct), documented episodes of rejection, and morbidity.

Results: In duct to duct group, two patients presented with anastomotic site stricture and one patient developed chollangiocarcinoma in distal bile duct which underwent pancreaticoduodenectomy (3/29). In Roux-en-Y group, five patients developed anastomotic stricture in the follow up (5/40). This difference was not significant (fisher exact test. p value = 0.999). Also documented episodes of rejection were similar between two groups (Chi. Square test, p value = 0.66) and there was no significant difference.

Discussion: We concluded that duct to duct reconstruction is safe and maybe the choice method for biliary reconstruction in some patients with PSC. In addition, due to innovations in ERCP, management of strictures in duct to duct group was more easy and feasible in comparison to revision of Roux-en-Y hepaticojujenostomy

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P263

ECULIZUMAB – SUCCESSFUL RESCUE THERAPY OF AN IGG ANTI-HLA DQ7 MEDIATED ACUTE ANTIBODY-MEDIATED REJECTION AND NEED FOR LIFE-LONG THERAPY

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Background: The anti-C5 monoclonal antibody eculizumab has the potential to effectively prevent and treat acute antibody-mediated rejection (AMR). Treatment failure has recently been attributed to C4d- or C1q-negative AMR.
Case Report: We present the case of a 52y old man with suspected chronic glomerulonephritis who received a living-donor renal transplant from his mother in 1987. After graft failure 14 years later and a waiting time of 11 years, he was retransplanted in October 2012 (deceased-donor graft from a 34y old woman; 3 HLA-DR/DQ matches; PRA max. 2%; T/B cell crossmatch negative). Despite rATG induction, Tacr/MMF/steroid maintenance and prophylactic immunoadsorption (IA), the pretransplant detected IgG donor-specific antibody (DSA) against HLA DQ7 (repeat mismatch; single antigen assay (SAA): MFI 4169) rose steadily (MFI 12977, day 14; complement binding proven by C1q SAA) and low-grade transplant glomerulitis occurred on day 18 (C4d-negative) which was successfully treated with steroid pulses, intensified IA, IVIG and rituximab. As no DSA decline was achieved (MFI $>$ 15 000 despite 1:3 dilution), one cycle of bortezomib and rituximab were administered. However, acute rATG-resistant AMR occurred on day 44 (C4d negative) and eculizumab was initiated with prompt response. A recurrent acute AMR (day 80) was caused by insufficient inhibition of the alternative complement pathway and could be resolved by dose adjustment of eculizumab resulting in long-term stable graft function (February 2015: S-Cr 1.7 mg/dl). After a second cycle of bortezomib, the DSA nearly disappeared but completely recurred 1 year later. Genetic complement disorders were largely ruled out.
Conclusion: Eculizumab may successfully be used for rescue therapy even in C4d-negative AMR. Failure may just be a consequence of underdosing resulting in incomplete complement inhibition. DSA recurrence after bortezomib therapy did not allow termination of eculizumab treatment.

025 LIVER

P264 **IMPACT OF PORTAL THROMBOSIS IN LIVER TRANSPLANTATION**

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Hospital Universitario Virgen del Rocio

Objective: The objective of the present study was to analyze the incidence of portal vein thrombosis (PVT) in liver transplantation candidates, comparing morbidity and mortality rates among those affected with and those free of this complication. In the PVT group, we also analyzed mortality related to partial (PPVT) and total (TPVT) thrombosis.
Methods: We undertook a prospective study of orthotopic liver transplantations from deceased donors in 360 recipients from June 2007 until December 2013. Recipients were classified according to whether they had PVT. In all cases, we considered age, sex, Model for End-stage Liver Disease score, indication for transplantation, type of thrombosis, imaging study, surgical technique, blood product transfusion, GPT peak, portal flow revascularization and survival rate.
Results: There were 50 patients with PVT (13.9%) among 360 transplantations. Concerning the type of thrombosis, 39 (78%) were partial and 11 (22%) total with complete occlusion of the portal vein lumen. The sensitivity and specificity of TC for portal vein thrombosis approach 56% and 97%, respectively. Surgical techniques used in 76.1% recipients with PVT was thrombectomy. Significant differences were observed in the consumption of blood products between the group with versus without PVT ($p < 0.005$), however we cannot consider portal flow revascularization o GPT peak as predisposing factors. There are not significant difference between the type of thrombosis and survival.
Conclusion: PVT in liver transplant candidates is a uncommon event (13.9%) that entails greater difficulty in the procedure, expressed as a longer operative time, greater consumption of blood products, and complex surgical techniques. In our series the prognosis for these patients don't depend on the type of thrombosis showed a higher mortality in both cases.

023 KIDNEY

P265 TUBERCULOUS ENTERITIS: A SURGICAL "JANUS" MASQUERADING AS INTESTINAL OBSTRUCTION

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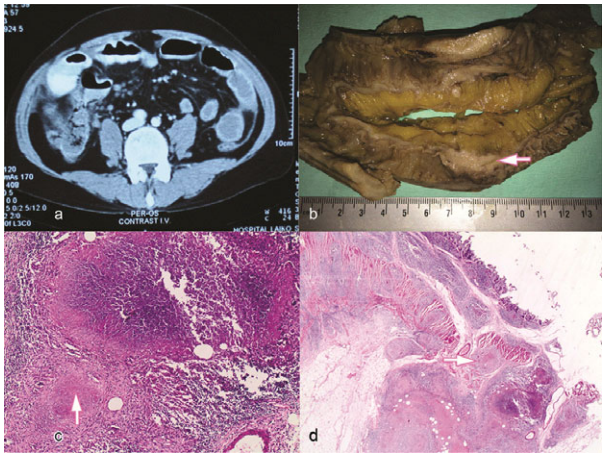
Tuberculosis (TB) is still a major cause of morbidity and mortality during the post-transplant period among transplant recipients. Lungs are commonly involved. Intestinal involvement is extremely rare among extrapulmonary manifestations of TB, with a reported prevalence regarding renal transplant recipients between 0.2% and 0.6%. A 46-year-old man underwent deceased donor renal transplantation (01/08) for IgA-nephropathy end-stage-renal-disease. Six years following renal transplantation he presented with acute abdominal pain and fever. Clinical examination revealed diffuse abdominal tenderness. Abdominal CT-scan showed distal ileal obstruction, thickening of the wall of the terminal ileum, multiple enlarged mesenteric lymph nodes along with omental nodularity. Exploratory laparotomy revealed large quantities of purulent fluid due to distal ileal perforation. Two palpable masses, occluding the lumen partially were detected. Segmental ileal resection was performed. Pathological investigation suggested the diagnosis of TB-ileitis. Mycobacterium Tuberculosis is a well-known opportunistic agent following renal transplantation. Gastro-intestinal manifestation is infrequent, but potentially lethal. It appears frequently during the early post-transplant period. Mortality associated with gastrointestinal tuberculosis varies between 20% and 30%, and must always be taken into account when treating renal transplant patients.



P266 OUTCOMES FOLLOWING RENAL TRANSPLANTATION IN OLDER RENAL TRANSPLANT RECIPIENTS: A SINGLE CENTER EXPERIENCE AND "CROATIAN SENIOR PROGRAM"

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Background: The aims of this study were to analyze the number of new end-stage renal disease (ESRD) patients ≥65 years of age that were managed with kidney transplantation and their survival through the study period. In addition, we have analyzed post-transplantation outcomes in younger and older renal transplant recipients (RTRs).
Methods/Materials: We have been analyzed 505 RTRs transplanted between January 1990 and December 2013. Older people were defined as aging 65 years or older. Of 505 RTRs, there were 73 (14.5%) patients that were ≥65 years of age. Therefore, in further analysis patients were divided into two subgroups: younger recipients (younger than 65 years) and older recipients (aging 65 years or older).
Results: Since 2002, the number of patients older than 65 years undergoing renal transplantation in Croatia has been increasing. The older recipients were more likely to receive organs from older donors (52.6 ± 16.8 vs. 45.8 ± 13.2; $p = 0.0001$). There were no significant differences due to HLA mismatch and the incidence of delayed-graft function between two groups of analyzed patients. Older recipients were less likely than younger recipients to have acute rejection crisis during the first-year after transplantation (16.4% vs. 34.7%; $p = 0.03$). There were no significant differences due to readmission rates in the first-year posttransplantation between the two groups. There was no significant difference due to graft function, one-year graft and patients' survival between young and older recipients. Creatinine values at 1 year were higher in older recipients who received kidneys from elderly donor.
Conclusion: Our experience supports the use of kidney transplantation in the population of older ESRD patients. We can increase patients and graft survivals in elderly individuals with careful pre-transplant evaluation and HLA matching. "Croatian senior program" that includes HLA matching represents a good approach for kidney transplantation in older ESRD patients

037 XENOTRANSPLANTATION

P267

GENERATION OF TRANSGENIC PIG USING CARDIAC MUSCLE-SPECIFIC PROMOTER

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Identification of heart-specific genes and use of their promoters that can drive expression of genes in heart of transgenic animals are of particular interest in providing new animal models for biomedical and agricultural sciences. The study was performed to investigate whether newly identified heart-specific promoters can drive heart-specific expression of a reporter gene *in vitro* and *in vivo*. By comparatively analyzing two sources of microarray DataSets (GDS3142 and GDS596), TNNI3, MYBPC3, and MYH6 were selected as heart-specific genes in mouse and human, which were further confirmed in pigs by RT-PCR analysis. Analysis of the promoters of three genes in pigs by Matinspector software revealed potential binding sites for transcription factors that are important for heart. The promoters were cloned into a pGlow vector containing GFP. The resulting vectors were co-transfected with a positive control vector pLKO.1-puro-CMV-TagRFP in primary cells originated from fat, muscle, heart, liver, lung, kidney, and spleen of 28-day-old Landrace. The expression of GFP was observed only in the heart primary cells, while the RFP was observed in all primary cells. Among the three promoters, the strength of the promoters in descending order was MYH6, MYBPC3, and TNNI3 promoters. The MYH6-pGlow vector was transfected into ear fibroblast cells from Korean Native Pig. The transgenic cells confirmed by PCR were used as donor cells for nuclear transfer into embryos. Seven of 10 surrogates transferred with cloned embryos were pregnant and 2 of 7 were delivered. The 2 of 3 piglets including 1 mummy were confirmed as transgenic cloned piglets. With the future confirmation in transgenic pigs, our findings will lead to the establishment of heart-specific expression cassettes which can be utilized for expression of target genes in the pig heart for xenotranplantation and functional genomics studies.

025 LIVER

P268

EVEROLIMUS WITH REDUCED TACROLIMUS VERSUS STANDARD TACROLIMUS IN LIVING-DONOR LIVER TRANSPLANT RECIPIENTS: BASELINE DATA FROM THE H2307 STUDY

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Background: Living-donor liver transplant (LDLT) is a valuable option to bridge the gap for organ shortage. The CRAD001H2307 (NCT01888432) is an ongoing study that will evaluate for the first time the efficacy and safety of everolimus (EVR) + reduced tacrolimus (rTAC) versus standard TAC (TAC-C) in LDLT recipients. Here, we present the baseline demographic characteristics of randomised patients evaluated by the Data Monitoring Committee (DMC) members on 10 December 2014.

Methods: H2307 is a 24-month (M), multicentre, controlled study aiming to randomise 280 LDLT recipients (1:1) into EVR (C0 3–8 ng/ml) + rTAC (C0 3–5 ng/ml) or TAC-C (6–10 ng/ml) after a 30-day run-in period with TAC (5–15 ng/ml) ± mycophenolate mofetil ± basiliximab and steroids as per study protocol. Primary objective is to compare the efficacy of EVR + rTAC versus TAC-C as measured by composite efficacy failure (treated biopsy-proven acute rejection, graft loss or death) at M12 post-LT. Secondary objectives are to compare changes in renal function assessed by estimated glomerular filtration rate (eGFR) from randomisation to M12, rate and time of hepatocellular carcinoma (HCC) recurrence, incidence of adverse events at M12 and M24 post-LT, among others.

Results: Patients are being recruited from 32 study centres across 10 countries. The DMC reviewed data from 43 randomised patients who are receiving study treatment for at least 3M after randomisation, did not find any safety or efficacy concerns. The baseline data presented here includes age, eGFR, model end-stage liver disease score of LDLT recipients and end-stage diseases leading to LT (Table). Further update will be available after the next DMC meeting on 09 April 2015.

Conclusion: H2307 study results will provide information on efficacy and overall safety as well as insights on HCC recurrence, and hepatitis viral replications in LDLT recipients treated with EVR + rTAC in comparison with those on TAC-C. Results are expected in 4th quarter of 2017.

Table: Demographics and Baseline characteristics

Demographic Variable	Overall N=43
Age in year, mean (SD)	53.1 (10.5)
Baseline Age, n (%)	
<60	30 (69.8)
≥60	13 (30.2)
Sex	
Female	14 (32.6)
Male	29 (67.4)
Race	
Asian	33 (76.7)
Caucasian	9 (20.9)
Other	1 (2.3)
End stage leading to transplantation	
Hepatocellular carcinoma	15 (34.9)
Hepatitis B	12 (27.9)
Hepatitis C	3 (7.0)
Alcoholic cirrhosis	3 (7.0)
Non-alcoholic steato-hepatitis (NASH)	2 (4.7)
Primary biliary cirrhosis	2 (4.7)
Amyloidosis	1 (2.3)
Budd-Chiari syndrome	1 (2.3)
Cryptogenic cirrhosis	1 (2.3)
Other	3 (7.0)
MELD overall score, mean (SD)	13.3 (5.0)
Baseline eGFR (mL/min/1.73m²), mean (SD)	112.2 (36.6)

MELD=model end-stage liver disease, eGFR= estimated glomerular filtration rate

023 KIDNEY

P269

TREATMENT OF ACUTE ANTIBODY MEDIATED REJECTION USING BORTEZOMIB IN KIDNEY TRANSPLANTATION

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Here we report the successful treatment of acute antibody-mediated rejection (AMR) with bortezomib. Bortezomib rescue treatment was administered after a 42-year-old woman failed to respond to steroid pulse and plasmapheresis with intravenous immunoglobulin (IVIG). The patient underwent a second renal transplantation with a deceased donor kidney. She was treated pre-operatively with rituximab (200 mg/body) and underwent plasmapherese twice (day -1 and operation day) because ELISA screening revealed that her pre-operative peak panel reactive antibody (PRA) composition was 100% class I and 100% class II and 15 times of cross-match positive history during the waiting period for transplantation. The patients received induction therapy with Simulect (an IL-2-blocking agent). A 1-h protocol biopsy revealed C4d-positivity and mild peritubular capillary inflammation. This was suggestive of early AMR-associated changes. After transplantation, the patient underwent plasmaphereses (nine times) with low-dose IVIG (2 mg/kg). Despite this treatment regimen, serum creatinine levels increased to 3.4 mg/dl on post-transplant day 15. A second graft biopsy was performed, which showed overt AMR with glomerulitis, peritubular capillary inflammation and no C4d deposition. On post-operative day (POD) 22, treatment with four doses of bortezomib (1.3 mg/m^2) was initiated. On POD 55, renal function had recovered and serum creatinine was 1.5 mg/dl. In summary, bortezomib was administered as a rescue treatment for a patient who developed AMR that was refractory to a combination of plasmaphereses and low-dose IVIG.

025 LIVER

P272 TRANSFUSION NEEDS DURING LIVER TRANSPLANTATION AT THE CHU OF LIEGE (BELGIUM): CHARACTERISTICS AND PREOPERATIVE PREDICTIVE FACTORS

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Introduction: Liver transplantation (LT) can result in significant bleeding requiring transfusion of allogenic blood products, which potentially leads to postoperative morbidity and mortality (1). This study aimed to determine transfusion needs during LT in our institution and its preoperative predictive factors.
Material and Methods: Two hundred LT performed at the CHU Liege between 2006 and 2012 were respectively reviewed (age = 55 ± 11 yo, BMI = 25.5 ± 4.4 kg/m^2, F/M = 45/155, MELD score = 19 ± 10). Transfusion needs of the different blood products during POD 0, and POD 0–7 were recorded. Parameters associated with the transfusion of more than 2 units of RBC ($p \leq 0.1$) were identified using the Kruskal Wallis and chi square tests (table 1). These parameters were then placed into a backward stepwise logistic regression model for the transfusion of more than two units of RBC at POD 0. A p value threshold ≥0.1 was used for leaving the model.
Results: Transfusion needs were: RBC = 2[0–4], FFP = 4[2–7], PLT = 1[0–1] during POD 0; and RBC = 3[0–6], FFP = 6[3–10], PLT = 1[0–2] during POD 0–7. Preoperative factors independently associated with the transfusion of more than two units of RBC were preop Hb (0.6 [0.46–0.79], $p < 0.001$) and MELD score (1.13 [1.06–1.20], $p < 0.001$).
Discussion: These results suggest that preop Hb and MELD score are associated with blood requirements during LT.
References: 1. J Am Coll Surg 2013; 216:902–7.

Table 1 Data are median [IQR].

	>2 RBCs	≤2 RBCs	p value
Female gender, %	73	78	0.5
BMI, kg/m^2	24.8 [5.3]	25 [4]	0.6
NHBD donor, %	18	42	0.001
Portal hypertension, %	53	49	0.6
Cold ischemia time, min	321 [23]	286 [294]	0.38
Warm ischemia time, min	41 [14]	44 [15]	0.2
MELD score	27 [8]	14 [10]	<0.001
Preop Hb, g/dl	10 [3]	12.5 [3]	<0.001
Preop fibrinogen, g/l	1.9 [2.1]	2.8 [1.5]	<0.001
Preop platelets, ×1003/μl	79 [52]	95 [76]	0.03

NHBD, Non-heart-beating donor; MELD, Model for End-Stage Liver Disease score.

P273 SHORT TERM SAFETY AND FEASIBILITY OF MTORI FROM THE FIRST LIVER TRANSPLANT DAY

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Introduction: We designed a retrospective observational study to evaluate everolimus usage ab initio after liver transplantation.
Materials and Methods: Fifty five non consecutive adult patients (47M/8F, mean age 52 ± 10.5 years) who received liver transplantation between 2009 and 2014 were included in the study. All recipients received everolimus from the first transplant day either in association with CNI's or antimetabolites. The primary goal was to assess the safety and feasibility of everolimus after liver transplantation; the remaining objectives were to evaluate liver function and the incidence of rejection and side effects. Results: The 1 year patient and graft survival was 85%. Liver function was stable during the follow-up of 1 year. No rejections were observed. Only five patients (12%) required therapy for onset dyslipidaemia. Conclusion: Low-dose regimen of everolimus immediately after liver transplantation is safe and feasible whenì associated with low doses of calcineurin-inhibitor or antimetabolite, permitting to avoid all the side effects of standard regimens with higher doses.

P274 LIVING DONOR LIVER TRANSPLANTATION FOR CLASSICAL MAPLE SYRUP URINE DISEASE: CASE REPORT

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Objectives: Despite progress in medical management, classical maple syrup urine disease (MSUD) poses a risk of serious neurologic disability and untimely death. Acute metabolic intoxication causes cerebral edema that can culminate in brain herniation and cardiorespiratory arrest. We represent early post transplant period of two pediatric MSUD patients whose Branched-chain ketoacid dehydrogenase (BCKDH) enzyme activity was 0%.
Cases: 28 and 11 months old male patients developed neurologic symptoms such as nausea, vomiting and drowsiness after birth. Branched-chain amino asid (BCAA) levels were found high after metabolic evaluation. Patients were fed with special MSUD formulas because of entire body BCKDH activity was 0%. Thus especially the brain was preserved from acute and chronic metabolic intoxication. Physical development of patients became appropriate for liver transplantation. In case 1 living donor liver transplantation (LDLT) was performed from his father in December 2013. In case 2 LDLT was performed from his mother in December 2014. Both patients post operative period was uneventfull. In follow up after transplantation BCAA levels and liver function tests were normalized in both patients. Three weeks after transplantation patients were fed entirely normally. Irregularities observed in neurocognitive functions prior to transplant have disappeared completely at the post transplant period.

Conclusions: Diatery regulation is mandotary for MSUD. Particularly in developing countries, the availability of medical foods, convenience and speed of amino acid monitoring, and access to emergency metabolic care is still a major problem. Therefore, Liver transplantation is an effective alternative to dietary treatment in patients with MSUD. Liver transplantation provides sufficient BCKDH enzyme activity so it can be effective and permanent method for treatment of this disease. And also liver transplantation may prevent possible brain damage in these patients.

023 KIDNEY

P275

VITAMIN D RECEPTOR ACTIVATION WITH CALCITRIOL REDUCE URINARY ANGIOTENSINOGEN A MARKER OF INTRARENAL RENIN ANGIOTENSIN SYSTEM CORRELATES WITH ALBUMINURIA IN PATIENTS WITH HYPERTENSIVE CHRONIC RENAL ALLOGRAFT NEPHROPATHY

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Aims: Despite treatment with RAS inhibitors, hypertensive chronic allograft nephropathy (CAN) patients have increased risk of progressive renal failure that correlates with albuminuria. Several studies suggested that activators of the vitamin D receptor could decrease albuminuria. However, the mechanism of this action is not well known. Recently, it has been reported that urinary angiotensinogen levels of the intrarenal RAS status was significantly correlated with Ualb/cre ratio in hypertensive patients. The aim of the present study was to assess the effect of activation of the vitamin D receptor with calcitriol on albuminuria and urinary angiontensinojen in patients with hypertensive CAN.
Methods: 48 patients with hypertensive CAN and albuminuria who were treated RAS inhibition (ACE-i or ARB) participated in this study. Patients were randomized to receive either placebo ($n = 24$, mean age 52 ± 13, 13 F, 11 M) or 0.25 μg/day calcitriol ($n = 24$, mean age 54 ± 14, 12 F, 12 M). We have examined Ualb/cre ratio and urinary angiotensinogen:creatinin (UAGT/cre) ratio before and 24 weeks later treatment in the both group.
Results: The mean Ualb/cre ratio and UAGT/cre ratio were significantly higher in patients with hypertensive CAN than in normal controls ($p < 0.001$). UAGT/cre ratio was significantly positiviely correlates with Ualb/cre ratio in both group (in placebo group; $p = 0.01$, $r = 0.4236$, in calcitriol group; $p = 0.01$, $r = 0.4564$).
Conclusions: These data indicated that administration of calcitriol in combination with RAS inhibitors had additional benefit on albuminuria in patients with hypertensive chronic allograft nephropathy. More pronounced reduction of Ualb/cre ratio that positively correlates with UAGT/cre ratio in calcitriol group suggested that vitamin D receptor activation might blunt albuminuria by reducing urinary angiotensinogen levels reflects of the intrarenal RAS status.

007 DONATION/RETRIEVAL

P276

STUDENTS FOR ORGAN DONATION; STUDENTS TAKING THE MESSAGE TO STUDENTS

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The increasing shortfall of donors to patients on the waiting list continues to be the main focus of the transplant community. A targeted approach is required to raise awareness and recruit potential donors. Our research revealed that the well represented student population at the University of Manchester (UoM) are ill informed about organ donation. A new society was born to target this group with aims to: educate and raise awareness of the need for donors and empower individuals to be proactive.

Two students were inspired by a placement at the Renal Transplant Unit at the Manchester Royal Infirmary (MRI). Through collaboration with transplant surgeons and funding from the UoM, it has enabled the launch of "Students For Organ Donation" (SFOD) Society, started in 2014, recognised and supported by NHSBT. Publicity for the society was achieved through the UoM portal system and social networking. The 14 member committee created a unique brand and training was carried out by transplant surgeons and regional specialist nurses for organ donation.

In September 2014 a stand at the fresher's fair, with merchandise from NHSBT, increased recruitment, introducing SFOD to the 600 attendees. UoM funding helped to hold an educational and emotional evening with talks from surgeons, donor families and a transplantee. The society also collaborated with the UoM "Scalpel" to hold a lecture on kidney and pancreas donation and transplantation. SFOD is currently working on an open student debate and a "going into schools" initiative.

This student led society has achieved significant steps in raising awareness in a short time and through much support, have great aspirations for the future.

025 LIVER

P277

CURRENT CHARACTERISTICS OF LIVER TRANSPLANTATION IN ARGENTINA: REPORT OF A MULTICENTER REGISTRY

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Reliable information regarding liver transplantation (LT) characteristics and outcomes in Argentina, is lacking.
Objectives: To describe baseline characteristics and clinical outcomes of liver transplant patients in Argentina.
Methods: All consecutive adult patients transplanted with a deceased donor from 01/May/2010 in the 6 main centers of Argentina, were included. Pre and post LT data were collected. The results of the first 100 patients with a 2-year follow up are presented.
Results: Mean age at LT was 53 $\pm$ 12. Ninety one patients were transplanted for cirrhosis (29 HCV, 20 alcohol, 15 NASH, 9 autoimmune hepatitis, 18 other); 9% for acute liver failure (ALF). Nineteen patients had hepatocellular carcinoma; 5 were HIV+. In patients with cirrhosis, median MELD at LT was 24.4 (12–40). 33% of the patients had a creatinine >1.5 mg/dl at LT. Pre-LT diabetes was diagnosed in 15% of the patients. Basiliximab induction was indicated in 28 patients. Tacrolimus or cyclosporine were the initial backbone immunosuppressor in 76 patients and 19 patients, respectively. Mycophenolate mofetil was prescribed in 39 patients and mycophenolate sodium in 36. Sirolimus or everolimus were indicated in 2 and 5 patients, respectively (reasons were renal failure, hepatocellular carcinoma and neurotoxicity. The overall incidence of acute rejection was 26%. Biliary and vascular complications were reported in 16 and 2 patients, respectively. Two patients were retransplanted. One-year patient and graft survival were 84% and 80%, respectively. The following independent predictors of survival were found: LT for ALF, recipient age, MELD at LT and hospitalization at LT.
Conclusions: The preliminary results of this study show that a significant proportion of patients in Argentina undergo LT with unfavorable outcome predictors (high MELD, renal failure, diabetes). These patients require tailored surgical and clinical strategies to obtain acceptable results after LT.

023 KIDNEY

P278

SUCCESSFUL KIDNEY TRANSPLANTATION IN HIGHLY SENSITIZED PATIENTS WITH ONCE DAILY TACROLIMUS BASED IMMUNOSUPPRESSION

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Background: The once-daily (QD) formulation of tacrolimus (Tac) showed similar efficacy than twice-daily (BD) Tac and seems to improve adherence in kidney transplant (KT) recipients. The aim of our study was to define the efficacy and the safety of "de novo" QD Tac administration in KT recipients who showed pre KT high panel reactive antibodies (PRA).
Methods: Twentyeight patients with a median PRA of 88.3%(range 64–100) who underwent KT were enrolled in the study. Patients were transplanted with a negative crossmatch performed using both cytotoxic and flow-cytometric methods. All patients received following immunosuppression: basiliximab, steroids, QD-Tac based at 0.2 mg/kg to reach a trough levels of 7–10 ng/mL; 27 patients received mycophenolate and one everolimus also. All patients were analyzed for donor specific HLA-antibodies (HLA-DSA) by solid phase Luminex Single Antigen bead assay, at 1 and 6 months from KT and then yearly.
Results: Median follow-up was 26.4 months (range 2–57). The 3 years patients and graft survival were 100%. The median creatinine at last follow-up was 1.5 mg/dl (range 0.9–3.1); no patients showed proteinuria. One patient experienced acute rejection (category 4 IIA Banff '07) at POD 9; after steroids bolus he was switched to BD Tac because the difficulties to achieve a therapeutic Tac level. No patient developed HLA-DSA throughout the follow up.
Conclusion: QD formulation of Tac showed excellent graft and patient survival also in highly sensitized patients. A careful care is mandatory in early KT to achieve a therapeutic trough Tac levels.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P280

INHIBITION OF ALLO-IMMUNE RESPONSE IN HUMANS AFTER EXPOSURE OF T LYMPHOCYTES TO ALLOGENEIC APOPTOTIC CELLS

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The apoptotic bodies emanate particularly in early stages of apoptosis have immunomodulatory properties and may modulate the alloimmune response. This effect has been demonstrated in various murine models of transplantation but few studies have examined the effect of apoptotic cells (Apo-cells) on the human allogeneic response and the mechanisms involved are not fully demonstrated. Here we present the characteristics of human Apo-cells and their immunomodulatory properties analysis *in vitro*.

The Apo-cells were obtained by UV-A treatment after 8-MOP sensitization of human PBMC and characterized. Apo-cells were also incubated with PBMC from an allogeneic donor (mixed lymphocyte reaction, MLR). Proliferative capacity, activation marker and cytokine synthesis of responders PBMC were analysed. In a secondary MLR stimulation the capacity of T cells firstly primed with Apo-cells to respond to the nominal alloantigen was tested.

Apo-cells presented higher rate of Caspase-3 and TGFb mRNA and an increased expression of Fas. Stimulation of allogeneic lymphocytes by Apo-cells causes a low proliferation (1.76%, divided cells) compared to a conventional MLR (27%). T-cell activation markers CD25, CD45RO, OX40, and ICOS are weakly expressed on cells stimulated by Apo-cells. The cytokines IL-6, TNFα and IFNγ obtained by standard MLR is absent upon stimulation with Apo-cells. The neutralisation of TGFb restored partially the alloresponse. A second stimulation by the initial antigen does not induce any proliferative response. In a indirect presentation, the culture of Apo-cells with allogeneic APCs shows a weak activation of the latter (lower expression of HLA-DR, CD86, IL-6 and TNFα). Stimulation by these APC leads to a very low proliferation of autologous lymphocytes.

Apoptotic cells induce a weak allogeneic response of lymphocytes *in vitro* whether in direct or indirect presentation showing for the first time the immunomodulatory capacities of Apo-cells in human allogeneic condition.

023 KIDNEY

P281

INFLUENCE OF PRETRANSPLANT FACTORS ON POST TRANSPLANT ANEMIA RECOVERY RATE IN DECEASED DONOR KIDNEY TRANSPLANT RECIPIENTS

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Background: Post-transplant anaemia (PTA) is a common complication in kidney transplant recipients. The aim of this study was to evaluate influence of pretransplant risk factors on PTA recovery rate.
Methods/Materials: We conducted a single-center study of 80 kidney transplant recipients who received renal alograft from 62 brain death donors, from january 2010 till december 2012. PTA was defined as hemoglobine (Hb) <11.0 g/dl. Donor, recipient and transplant characteristics were collected. Posttransplant Hb was measured monthly until concentration of 11 g/dl was reached. Immunosuppression included steroids, mycophenolate mofetil, antithymocyte globulin and tacrolimus. Nobody received epoetin (EPO) treatment post transplant. Results were statitically analyzed by Cox regression model and Kaplan-Meier curve.
Results: Donors were 50 $\pm$ 15.1 years old, 33 (53.2%) male and trauma was a cause of. death in 20 (32.3%). Recipients were 47.0 $\pm$ 10.6 years old, 52 (65%) male, with pretransplant Hb 11.4 $\pm$ 1.5 g/dl and median PTH serum levels 180 pg/ml. Mean CIT was 19.8 $\pm$ 4.0 h. Incidence of DGF was 60%, while AR episodes were registered in 31.3%. Hb initially decreased until third month (10.6 $\pm$ 1.6 g/dl) and then increased continuously to month 12 (12.6 $\pm$ 2.0 g/dl). Univariate Cox regression model showed that donor age (Hazard ratio (HR) 0.985; Confidence interval (CI) 95% 0.970–0.998) and pre transplant PTH (HR 0.998; CI 95% 0.996–0.999) were significant predictors of PTA during follow-up period. Kaplan-Meier curve for percent of patients reaching Hgb 11.0 g/dl showed that recipients of deceased donors <60 years reached Hb 11.0 g/dl earlier than recipients of deceased donors ≥60 years (Log Rank test, $p < 0.05$). Regarding to multivariate Cox regression model, the independent predictor for PTA remained PTH (HR 0.998; CI 95% 0.996–0.999).
Conclusion: Deceased donor age and lower pretransplant PTH serum levels are significant predictors of PTA recovery rate in kidney transplant recipients.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P282

GENOMIC PROFILING OF IL-17RPOS B CELLS INFILTRATING CARDIAC ALLOGRAFTS

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Crosstalk between IL-17A and B-cells in alloimmune responses remains unclear. IL-17RAposIL-17RCposCD19posCD11bpos B-cells specifically accumulate in chronically rejecting heart but not in spleen. In allograft, activation marker (CD86hi) is only seen in B cells co-expressing IL-17RA/RC but not in IL-17RAposRCneg B cells, implying that IL-17RC is involved in IL-17A signaling. This study aims to characterize the role of IL-17RA/RC in B-cells by comparison of genomic profiles of IL-17RAposRCpos B-cells and IL-17RAposRCneg B-cells.

Using the B6-H-2bm12 to C57BL/6 mouse model of chronic heart allograft vasculopathy, we confirmed by preparative cell sorting (FACSAria Fusion) and Affymetrix GeneChip (Mouse Genome 430_2.0 Array) of B-cell sub-populations, that IL-17RApos/RCpos B-cells accumulate in cardiac allografts, and that IL-17RC expression is lower than IL-17RA expression. It has been suggested that IL-17RC does not pre-associate with IL-17RA on the cell surface, IL-17RA can induce the formation of an IL-17RA/RC heteromeric complex. IL-17RC expression correlates to Il10, Ccl12, Ccl8, C1qb and Cxcl1 expression, all of them are highly expressed in allografts but low in spleens. This implies that IL-17A-signaling through the IL-17RA/RC complex enhances the migration of B cells. Baffr (TNFRSF13C) expression is not correlated with Il17r expression. Another experiment with human primary B cells confirmed the finding, i.e. no synergistic role of Baff (Tnfsf13b) and Il17a in promoting B cell proliferation. The 5 top genes significantly upregulated in IL-17RApos/RCpos B-cells from heart allografts are Lyve1, Igkv15-103, Enpp1, Dcn and Gas6; The genes upregulated in spleen are Hpgd, S1pr5, Rfx2, Klrb1f and Tgm3.

These data suggest that IL17RC is selectively recruited and activated in some B cells infiltrating the allograft and contributes to IL-17A signaling. To our knowledge, this is the first indication of a role of IL-17R complex on B-cells in murine chronic vasculopathy.

021 ISLET/CELL TRANSPLANT

P283

A RANDOMIZED, PROSPECTIVE, MEDICO-ECONOMIC NATIONWIDE FRENCH STUDY OF ISLET TRANSPLANTATION IN PATIENTS WITH TYPE 1 BRITTLE DIABETES: THE STABILOT STUDY PROTOCOL

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Background: Islet transplantation may be proposed to patients with type 1 brittle diabetes experiencing major glucose variability with hypoglycemia unawareness, despite intensive insulin therapy. Few data are available on islet transplantation costs in relationship with its benefits. The STABILOT study proposes to assess the cost-utility of islet transplantation in comparison with the current best medical treatment defined as sensor-augmented pump therapy.
Methods: The trial will adopt an open-label, randomized, multicentric design. The study will include 30 patients without life-threatening hypoglycemia. Eligible type 1 diabetic participants will be 18–65 years old, with diabetes duration over 5 years, a negative C-peptide and brittleness defined by persistent, recurrent and invalidant severe hypoglycemia, despite optimized medical treatment. Participants will be randomized in two groups: a group with immediate registration for islet transplantation and a group with delayed registration for 1 year while patients will benefit from optimized BMT. The primary endpoint will be the incremental cost-utility ratio at 1 year between islet transplantation and sensor-augmented pump therapy. It is the ratio between the difference in costs and the difference in benefits of two interventions. In cost-utility analysis, the benefit criterion is the QALY (quality-adjusted life years). The QALY is a criterion combining quality of life and survival, and means then 1 year in "perfect" health. The number of QALYs gained is estimated using the generic EQ5D instrument. The incremental cost-utility ratio indicates the extra cost we are willing to pay for a QALY gained. Both perspectives of the Health Insurance and hospital will be retained.
Ethics and Dissemination: Ethical approval has been obtained at all sites. All participants will sign a free and informed consent form before randomization.
Trial Registration Number: Trial is in the process of registration to ClinicalTrials.gov.

023 KIDNEY

P284

PRE-EMPTIVE RENAL RETRANSPLANTATION FROM LIVING DONOR: IMMUNOLOGICAL ADVANTAGES

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The increasing number of individuals requiring retransplants highlights the importance of dealing with the risk for allosensitization. In the preemptive phase of chronic kidney disease after a renal transplant, the ongoing immunosuppressive therapy may minimize the presence of HLA antibodies (Ab). Assuming that pre-emptive kidney transplantation from living donors is promising option for candidates to a second/third transplant, the results of retransplantations from living donors were analyzed at our Center.Materials and Methods: From December 2008 to February 2015, 17 retransplants (15 s, 1 third, 1 fourth) were performed at a single Center. 7 pts received a pre-emptive transplant (PEtx) and 10 pts were on dialysis (Dtx) and were used as control. Degree of donor-specific sensitization was defined by CDC cross-match and Luminex, and the outcome of the two groups were compared.Results: Among 7 PEtx, 2 pts showed DSA on Luminex (MFI ranging from 1010 to 4500) and all were CDC negative, whereas among 10 Dtx, 5 showed DSA (MFI ranging from 2250 to 19300), with 2 cases CDC positive for B lymphocytes and 1 case CDC positive for B and T lymphocytes. All patients with DSA received rituximab, plasmapheresis and immunoglobulins pre-tx; the only B and T CDC positive recipient received eculizumab prophylactically. No cases of acute rejection and graft loss occurred in PEtx, whereas 4 Dtx showed acute antibody-mediated rejection: 2 pts had a single episode, in 1 pt a severe AMR resulted in graft loss despite multiple attempts of salvage therapies, 1 pt experienced 3 episodes of AMR and one cellular rejection. Serum creatinine at last follow up was 101 ± 32 μmol/l in the PEtx and 140 ± 71 μmol/l in the Dtx. Conclusions: The observational results of preemptive living donor retransplantation suggest that ongoing immunosuppression may help to prevent anti HLA Ab development, allowing better results compared to retransplantation in dialyzed patients.

025 LIVER

P285

IMPACT OF HEPATIC ARTERY THROMBOSIS ON PATIENT AND ALLOGRAFT SURVIVAL: INDICATION FOR RE-TRANSPLANTATION

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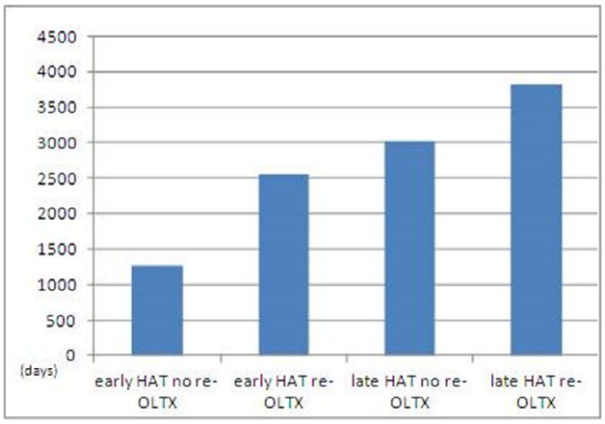
Hepatic artery thrombosis (HAT) is a severe complication in liver transplantation (OLTX) that can result in immediate allograft loss, biliary complications, and hepatic abscesses. Re-OLTX for HAT has been met with controversy in the face of organ shortage and uncertain long- term outcomes.

An institutional review of the database between 1985–2015 was conducted, with a total of 3890 LTX during that time. 218 pts were identified with HAT post OLTX. Risk factors, early (28 days), intraoperative hepatic artery flow, post operative day 1 Doppler US RI, need for subsequent re-OLTX, and graft/pt survival were reviewed. Biliary and infectious complications were examined. 61 pts underwent re-OLTX due to HAT diagnosis. Overall pt and last allograft survival were greater in the late HAT group than early HAT. The highest median patient survival was reported in patients with late HAT who underwent a re-OLTX. Biliary complications and abscess formation were greater in the late HAT groups than early HAT groups.



Late HAT pts experience an overall improved allograft and pt survival time as compared to early HAT, and can reach matched mortality rates as those pts without HAT. Early and late HAT pt survival can be extended further with re-OLTX. The data suggests that serious consideration must be given to indications and pt selection for re-OLTX in pts with early and late HAT in order to improve their overall survival, and decrease biliary/infectious complications.

Table 1. Xxxxxxx.

	Donor age	Pt age at transplant	Pt survival (days)	Allograft survival (days)	Hepatic artery flow (ml/min)	Post op RI	Time to diagnosis (days)
Early HAT no re-OLTX	24	50	1276	1276	445	0.98	7
Early HAT re-OLTX	22	46	2564	1967	360	0.71	5
Late HAT no re-OLTX	36	50	3017	3017	430	0.82	370
Late HAT re-OLTX	45	45	3825	2575	445	0.75	212

Table 2. Xxxx.

	Biliary complication requiring PTC (%)	Hepatic abscess (%)	Antibiotic resistance (%)
Early HAT no re-OLTX	30	24	26
Early HAT re-OLTX	20	12	5
Late HAT no re-OLTX	50	38.7	20.7
Late HAT re-OLTX	83	64	22

023 KIDNEY

P286 PSEUDOANEURYSM OF INTERLOBARY ARTERY OF TRANSPLANTED KIDNEY AS A COMPLICATION OF NEPHROSCOPY FOR NEPHROLITHIASIS – A CASE REPORT

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Introduction: Transplanted kidney stones are rare complications after kidney transplantation with incidence at 0.3–1.8%. Risk factors represent recurent infections, hypercalciuria, hyperparatyreoidism and hypocitraturia. Early diagnosis and stone removal are necessary for maintaining the function of the graft and preventing complications caused by lithiasis. The gold standard of treatment is percutaneous stone removal. Rare complication is AV malformation at the site of nephroscope introduction.
Case: 50 year old patient after primary transplantation of cadaveric kidney in 3/2012. Endoprothesis in transplanted ureter removed after 21 days. Sonographically without hydronephrosis and stone formation. In the next period recurrent urinary tract infections caused by multidrug-resistant *Proteus mirabilis* and *Ent. faecalis*. In 8/2013 recurence of UTI, by USG suspicion of calculus in the transplanted kidney, confirmed by CT. Nephroscopy of transplanted kidney was realized with finding papilar crust, its grinding and removal of fragments. The postoperative course was complicated by massive hematuria. Sonographically supicion for AV malformation at the site of nephroscope introduction, verified by CT angiography. Realized endovascular embolisation of pseudoaneurysm of interlobar artery of the graft. Transitional hemodialysis because of oligoanuria on the basis of tamponade of renal pelvis was necessary. Since the operation one episode of pyelonephritis of transplanted kidney caused by *E. coli* sensitive to common antibiotics. Actual level of serum creatinin is 74 μmol/l.
Conclusion: Standart treatment of nephrolithiasis is percutaneous stones removal. Even in routine implementation of this procedure, it is necessary to consider the complications in the form of AV malformations. Their early detection and adequate treatment with miniinvasive techniques is the optimal way to save the graft by the co-operation between the urologist and radiologist.

P287 SECONDARY HYPERPARATHYROIDISM PREVALENCE AND TREATMENT WITH CINACALCET AFTER KIDNEY TRANSPLANTATION IN BULGARIA – A SINGLE CENTER EXPERIENCE

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Background: The prevalence of secondary hyperparathyroidism (sHPTH) after kidney transplantation (kTx) reaches up to 50% at the first year after the operation. It is associated with rapid mineral bone loss after kTx and increased fracture risk. The aim of our study was to assess the prevalence of secondary HPTH in the population of Bulgarian kidney transplant recipients (KTRs) after the first year of transplantation and the therapeutic effect of Cinacalcet in these patients.
Methods/Materials: The KTRs were tested for parathyroid hormone (PTH) during their regular visits in our transplant center between May 2012 and March 2014. Patients with kTx duration less than 12 months were not included in the study. Cases with PTH higher than twice the normal values were regarded as persistent sHPTH. 11 patients with hypercalcemia were selected randomly for treatment with Cinacalcet 30 mg daily and were tested for calcium (Ca), PTH and phosphorus (P) prior to and after treatment with the medication for 1 month. Intact PTH level was evaluated by using ECLIA method with upper normal value of 7 pmol/l. Serum Ca was assessed by AAS method. Direct UV method was used for P level assessment. Statistical analysis included paired samples T-test (SPSS 22.0), level of significance adopted was $p < 0.05$.
Results: 463 KTRs were tested. Of these, 156 (33.69%) were with persistent sHPTH, 66 were with hypophosphatemia (14.25%) and 88 were with hypercalcemia (19%). In the treatment group ($n = 11$, males 6, females 5). The mean PTH level dropped from 38.49 ± 18.67 to 28.34 ± 21.19 pmol/l ($p = 0.001$), mean serum Ca lowered insignificantly from 2.80 ± 0.064 to 2.66 ± 0.27 mmol/l ($p = 0.067$), serum P increased from 0.86 ± 0.18 to 0.88 ± 0.23 mmol/l ($p = 0.719$).
Conclusion: HPTH is highly prevalent in Bulgarian KTRs. Short term treatment with Cinacalcet significantly reduced PTH, had less influence on Ca and P levels. Further studies are needed to establish the best treatment option for this posttransplant complication.

015 INFECTIONS

P288

PULMONARY ASPERGILLOMA- INCIDENTAL FINDING IN A RENAL TRANSPLANT RECIPIENT AFTER SUCCESSFUL CHEMOTHERAPY FOR POSTTRANSPLANT LYMPHOPROLIFERATIVE DISEASE (PTLD)

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We report the case of a 52-year old man with adult polycystic kidney disease, who preemptively received a living-donor renal transplant on July 14, 2010 (PRA max. 0%; basiliximab induction; tacrolimus/mycophenolic acid/prednisolone), with ongoing excellent graft function. A secondary highly malignant gastric MALT lymphoma was diagnosed in February 2014. Chemotherapy (4× CHOP, 6× Rituximab 375 mg/m²) and local radiotherapy (36 Gy) induced complete remission since August 2014. Immunosuppressive therapy was switched to everolimus (ERL) and steroids. Late onset neutropenia, low CD4 cell counts <200/µl and hypogammaglobulinemia - as side effects of chemotherapy - evolved as potential risk factors for infections.During in-hospital treatment for urosepsis, an X-ray and the following CT scan of the lung (Nov. 7, 2014) were highly suspective of an aspergilloma of the right upper lobe (4.5 × 3.5 × 4.0 cm, central cavernoma formation;potential second lesion in the lingula, diameter 1.5 cm). Bronchoscopy, BAL and the CT scan of the paranasal sinuses did not show pathological findings. Antifungal therapy comprised anidulafungin iv, amphothericin B per inhalation and voriconazol 2 × 4 mg/kg iv (then 2 × 300 mg po). Because of problems with drug monitoring, the necessary increase to the doubled dosage of oral voriconazol was delayed in time. Due to strong interactions with voriconazol, ERL treatment had to be reduced to 16% of the original dosage. As the suspected aspergilloma decreased in size only gradually, a video-assisted thoracoscopy with complete wedge excision of the histologically confirmed aspergilloma in the right upper lobe was performed on 07/01/2015.

Conclusion: Our case report shows that a 1:6 dose reduction of ERL is feasible and enables safe long-term voriconazol treatment for aspergilloma. As the initial subtherapeutic voriconazol trough levels may have compromised the success of antifungal therapy, monitoring of voriconazol trough levels is strongly recommended.

025 LIVER

P289

EARLY HEPATIC ARTERY COMPLICATIONS FOLLOWING LIVER TRANSPLANTATION IN PATIENTS UNDERGOING PREOPERATIVE DOXORUBICIN-ELUTING BEAD TRANSARTERIAL CHEMOEMBILIZATION

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Hospital Infanta Cristina (Badajoz-Spain)

Background: Hepatocellular carcinoma (HCC) is one of the main indications in liver transplant which varies between 15–25%. Doxorubicin-eluting bead Transarterial chemoembolization (DEB-TACE) is used as interventional bridging therapy before liver transplantation trying to avoid the growth of the tumor and to decrease drop outs in waiting list. DEB-TACE may cause damage to the hepatic artery and impact postoperative course of the liver transplantation.
Material/Methods: A retrospective single center study was performed from February 2007 to December 2013 in patients underwent orthotopic liver transplantation. Patients were divided into two groups: Group 1: DEB-TACE previously to liver transplant; Group 2: No DEB-TACE. The main outcome was analyse early arterial complications defined as anyone complication which occur in the 7 days after liver transplant.
Results: 145 patients were included in the study; Group 1 (DEB-TACE) 30 patients (20.7%) and Group 2 (No DEB-TACE) 115 patients (79.3%). The demographics and the baseline clinical characteristics of patients and management of arterial complications are shown below:

	Group 1: DEB-TACE (n=30)	Group 2: No DEB-TACE (n=115)	p
Age (yr)	58 ± 7	53 ± 10	<0.01
Sex (male)	86 %	75 %	0.22
BMI (Kg/m²)	27 ± 3	27 ± 4	0.74
Diabetes Mellitus (%)	10.3 %	17.4 %	0.56
Renal failure (%)	3.4 %	17.4 %	0.07
VHC (%)	30 %	21.7 %	0.35
VHB (%)	23.3 %	16.5 %	0.49
MELD	12 ± 4	16 ± 5	<0.01
Total ischemia time (min)	360 ± 93	380 ± 110	0.36
Donor age (yr)	62 ± 14	55 ± 16	0.02
Arterial complication (%)	10 %	0.9 %	0.028

Demographics and the baseline clinical characteristics of patients. All values expressed as mean with standard deviation and percentage. Abreviations: VHC: Hepatitis C; VHB: Hepatitis B; MELD: Model for end-stage liver disease; yr: Year; min: Minutes; kg: Kilogram; m: meter.

	DEB-TACE	Arterial complication	Nº DEB-TACE	Management	Results
Case 1	No	Thrombosis	---------	End to end Re-anastomosis	Good
Case 2	Yes	Thrombosis	1	Fibrinolisis	Good
Case 3	Yes	Thrombosis	1	End to end Re-anastomosis	Good
Case 4	Yes	Thrombosis	1	End to end Re-anastomosis	Death

Characteristics, management and results in patients with arterial complications.

Donor age (62 vs 55; $p = 0.02$) and recipient age (58 vs 53; $p < 0.01$) are higher in DEB-TAC group. Early arterial complications are increased in the group 1 DEB-TACE 10% vs Group 2 No DEB-TACE 0.9% ($p = 0.028$). All arterial complications were thrombosis.
Conclusion: In our study we have found an increase rate of early hepatic artery complications in patients who underwent DEB-TACE, these differences were statistically significant ($p = 0.028$). We found in DEB-TACE group older recipients and donor which could aggravate the quality of the artery. Despite these results we should take carefully it because of the small size of the sample, is a retrospective study and not randomized. Future studies must confirm our results. Arterial complications continue to be a source of mortality and graft loss so that we should encourage for minimizing any risk factors.

029 PANCREAS

P290 **LAPAROSCOPY ASSISTED PANCREAS TRANSPLANTATION**

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Background: Minimally invasive surgical techniques have improved patient outcomes in surgery. There has been less momentum in Transplant surgery to incorporate this advance.
Methods: Information was gathered from a prospectively maintained database. The initial part of the operation was laparoscopy directed and included mobilisation of the bowel and dissection of the vessels. The organs were placed intraperitoneally through a standard kidney transplant incision in the right iliac fossa. The pancreas had a portocaval anastomosis with enteric drainage. The renal allograft was anastomosed to the right external iliac vessels.
Results: 3 recipients received either a Simultaneous kidney transplant (SPK) or a pancreas transplant alone (PTA). All patients had Type 1 diabetes mellitus. The mean age of the recipients was 38 years (23–54 years) and 2 were female. All donors were deceased brain dead with a mean age was 42.6 y and 67% were female. The mean operating time for the SPK was 302 min, while that for the PTA was 208 min. All grafts functioned primarily. The mean hospital stay was 9 days (8–11 days). The PTA patient lost graft function after 5 months due to rejection. The 2 SPK patients are insulin & dialysis independent (1-65 months).
Discussion: The standard SPK is performed through a long midline laparotomy. This has the obvious consequences on post–op recovery, hospital stay and return to work. Minimally invasive surgery has the potential to reduce the surgical insult. Robotic surgery may have the added advantage of shortening the learning curve and allow the entire operation to be performed laproscopically. There are challenges around organ delivery, maintaining temperature, availability and cost.
Conclusion: Laparoscopic assisted transplants appear safe and could in the future become part of a transplant surgeon's armamentarium.

015 INFECTIONS

P291

OCCURRENCE AND RISK FACTORS OF INVASIVE FUNGAL INFECTION IN LIVER TRANSPLANTATION RECIPIENTS (ORIGIN A MULTICENTER STUDY IN KOREA)

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Background: Invasive fungal infections (IFI) remain a major cause of morbidity and mortality in liver transplant (LT) recipients. However, incidence and risk factors of IFIs differ between countries and centers, further multicenter data are limited in Korea. This study aimed to evaluate epidemiology, risk factors, and outcomes of IFI among LT recipients.

Methods: A total of 482 LT recipients aged 18 and older were recruited between Jan 2009 and Feb 2012 who admitted at three tertiary hospitals.

Results: IFIs were found in 23 patients (4.77%) with 24 episodes; 20 proven cases, 4 probable cases with EORTC/MSG criteria. About fifty percent ($n = 11$) of episodes occurred within 1 month after transplantation. The most prevalent isolates were *Candida* species ($n = 12$, 52.2%), followed by *Aspergillus* species ($n = 7$, 30.4%). Median time to first IFI after transplant was 38 days (range 2.0 – 339.0 days). Prior use of antifungal agents (OR 28.47, 95% CI 3.33–243.68, $p = 0.002$), retransplantation (OR 15.69, 95% CI 2.08–118.52, $p = 0.007$), pre-transplant fungal colonization (OR 14.89, 95% CI 4.07–54.42, $p < 0.0001$), and intravenous hyperalimentation (OR 6.09, 95% CI 2.10–17.70, $p = 0.0009$) were significantly associated with IFI. The 1-year overall mortality rate was 9.17%. The patients with IFI showed significant higher 1-year mortality than those without IFI (47.83% vs. 7.22%, $p < 0.0001$). According to a multivariate analysis, factors associated with mortality included presence of IFI (HR 6.72, 95% CI 2.62–17.22, $p < 0.0001$), intravenous hyperalimentation (HR 3.45, 95% CI 1.51–7.85, $p = 0.003$) and bacterial infection (HR 2.83, 95% CI 1.10–7.26, $p = 0.03$).

Conclusion: IFIs after LT were significantly associated with higher mortality than non-IFI group. Patients with pre- and post-transplant fungal infection need appropriate antifungal therapy to improve survival. Pre-transplant fungal colonizers, re-transplant cases and patients who need hyperalimentation should be monitored more precisely for IFI.

023 KIDNEY

P293 EARLY SURGICAL COMPLICATIONS OF RENAL TRANSPLANTATIONS UTILIZING GRAFTS WITH COMPLICATED VASCULAR SUPPLY

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In the last decades, kidney transplantation has become the gold standard in the treatment of patients with end-stage renal disease (ESRD). The need for transplantations is increasing continuously and the lack of organs is partially compensated by extended donor criteria and utilization of marginal grafts. One of these potentially utilizable organs are kidney grafts with complicated vascular supply – multiple vessels and/or injured vessels during procurement procedure, with occurrence up to 30%, described in the literature. In general, these transplantations are considered more prone to higher occurrence of surgical complications making great demands to the transplant surgeons, despite the results of kidney transplantations have significantly improved.In our study, we retrospectively analyzed occurrence of early surgical complications of renal transplantations from deceased donors, living/relative donors including pediatric, preemptive and cross-paired transplantations, performed in our center in the period of years 2009 – 2015, comparing our results of transplantations utilizing grafts with and without complicated vascular supply to results of larger studies in the literature.

P294 IS MINIMAL SKIN INCISION TECHNIQUE IN LIVING KIDNEY TRANSPLANTATION (MIKT) APPROPRIATE METHOD COMPARED WITH CONVENTIONAL KT ?

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Objective: The purpose of this study was to demonstrate whether there is difference in transplant patients group using minimal skin incision technique (MIKT, minimal incision KT) with conventional kidney transplant patients group.Patients and Methods: Between June 2006 and March 2013, Total 452 kidney transplant patients were enrolled this study. There were 17 patients in group using minimal skin incision technique. The other conventional kidney transplant patients group was 435 patients including 63 patients of iABO (ABO incompatible transplantation). MIKT operation technique was performed previously described method (Transplantation Proceedings, 40, 2347–2348 [2008]). For proper comparison, PSM (propensity score matching) was implemented according to patient age, gender, BMI, kidney weight, renal artery number, total ischemic time and donor age.Results: The Baseline Clinical Characteristics of two groups were summarized in table. There was no difference in graft survival, patient survival, complication rate. 5-year graft survival was 92.3% vs 85.7% in MIKT and conventional KT, respectively (Log rank test, p value < 0.786) (figure). Conclusion

Our results indicate that MIKT showed more favorable cosmetic results and there was no difference in various postoperative factors, including renal function and complications compared with conventional KT. So Minimal Skin Incision technique in Living Kidney Transplantation (MIKT) is appropriate method for selected patients.

P295 ASSOCIATION INTERLEUKIN-4 AND INTERLEUKIN-4 RECEPTOR GENE POLYMORPHISM AND ACUTE REJECTION AND GRAFT FAILURE AFTER KIDNEY TRANSPLANTATION

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Allograft outcome resulting from alloimmune responses is mainly caused by T-cell immune responses activated by cytokines, including interleukin-4 (IL-4), which has biological effects through binding to the IL-4 receptor (IL-4R) complex on target cells. In this study, we investigated whether single nucleotide polymorphisms (SNPs) of the IL-4 and IL-4R gene were associated with susceptibility to acute rejection (AR) and graft dysfunction in kidney transplantation.

We analyzed 2 SNPs of IL-4 (rs2243250, rs2070874) and 3 SNPs of IL-4R (rs1801275, rs2107356 and rs1805010) among 344 renal recipients, including 62 of whom had developed an AR and 223 of whom had 108 graft dysfunction patients in 1 year after kidney transplantation.

The AR group included 62 patients, 45 male and 17 female. The follow-up duration was longer in AR than non-AR patients. The two groups were statistically distinguishable in the male ratio and use of tacrolimus. The graft dysfunction group included 108 patients. The patients who had graft dysfunction were significantly older and had more patients whose causes of end stage renal disease were unknown as compared to the patients who didn't have graft dysfunction. There were SNPs examined, one (rs1801275) of IL-4R gene showed a statistical association with AR ($p = 0.051$, codominant model; $p = 0.016$, dominant model and $p = 0.025$, log-addictive model). And one (rs2107356) of IL-4R SNP was statistically associated with graft dysfunction ($p = 0.034$ in dominant model). Otherwise, no significant difference in genotype of IL-4 was observed between AR/graft dysfunction and non-AR/non-graft dysfunction subjects.

This study showed the association of SNP of IL-4R gene with AR and graft dysfunction after kidney transplantation. Additional studies of larger cases and other populations could be needed to confirm the observed associations.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P297

IMMUNE MODULATORY EFFECT OF THALIDOMIDE AND DEXAMETHASONE CO-TREATMENT ON T CELL SUBSETS

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Background: Thalidomide (TM) is known to have anti-cancer and anti-inflammatory properties; however, its mechanism on T cells is still unclear. Previously we showed immune modulatory effect of TM on T cells, and corticosteroid potentiates therapeutic effect of TM on lupus nephritis model. Here we examined whether TM/corticosteroid co-treatment has synergistic immune modulatory role on T cells.

Methods: Splenic naive T cells (Tnaives) from C57BL/6 mice were sort-purified and cultured for $CD4^+$ T cell proliferation and regulatory T cells (Tregs) conversion with TM and/or dexamethasone (DX) treatment. Also T cell suppression assay was performed to evaluate the function of converted Tregs. All samples were analyzed by flow cytometry after stained with anti-mouse CD4, Foxp3, OX40 (CD134), or glucocorticoid-induced TNFR-related protein (GITR; CD357).

Results: TM significantly decreased the proliferation of $CD4^+$ T cells in dose-dependent manner ($p < 0.01$) and low dose DX co-treatment further decreased the proliferation synergistically ($p < 0.03$). In contrast, TM/DX co-treatment ameliorated the inhibitory effect of isolated DX on Treg conversion ($p < 0.04$). Furthermore DX treatment impaired the suppressive activity of converted Treg, which was recovered by TM/DX co-treatment. Also, reduced GITR and OX40 expressions on Tregs by DX treatment were ameliorated by TM/DX co-treatment (GITR; $p < 0.01$, OX40; $p < 0.04$).

Conclusion: Considering the selective effect of TM on different T cell subsets, TM may have an immune modulatory role and DX co-treatment could further enhance the effect partially by the change of GITR and OX40 expression on Tregs. Further study is required to elucidate the underlying link between corticosteroid and thalidomide effect on T cells.

023 KIDNEY

P298

NATIVE KIDNEYS CANCER IN PATIENTS WITH CHRONIC KIDNEY DISEASE AND RENAL TRANSPLANT RECIPIENTS

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Chronic kidney disease (CKD) and replacement therapies (dialysis or transplantation) increase the risk of native kidneys cancer. Acquired multicystic kidney disease and immunosuppressive therapy might be relevant factors for the development of renal cancer. International guidelines do not clearly recommend specific screening protocols for these categories of patients, although an early diagnosis could lead to an excellent prognosis.The cases of renal neoplasms of the native kidneys in CKD patients and transplant (tx) recipients that underwent nephrectomy at our Center were retrospectively analyzed.

Materials and Methods: From April 2007 to June 2013, 18 pts with CKD on waiting list and/or kidney tx recipients underwent nephrectomy because of renal tumor. Were analyzed: cause of CKD, type of replacement therapy, timing of kidney tx, immunosuppressive therapy, histological type of tumor, Fuhrman grade, and pt outcomes.

Results: The average age of the pts at the time of nephrectomy was 53.4 $\pm$ 11.2 years. Six pts were on dialysis (2 hemodialysis and 4 peritoneal dialysis), 12 pts had a kidney tx and 1 had previously pancreas and kidney tx. 1 pt developed 2 bilateral metacronous neoplasia and 1 benign tumor. Histological examination showed 17 cases of malignancy (9 clear cell carcinomas and 8 papillary carcinomas) and 3 benign tumors (2 papillary adenoma and a renal oncocytoma). The stage at diagnosis was: T1 in 16 cases, T2 in 1 case. All patients were asymptomatic at diagnosis, which took place during ultrasound performed for other reasons. After a mean follow-up of 22 $\pm$ 20 months, 2 pts died of causes unrelated to renal cancer and there were no local or distant recurrence of the tumor.

Conclusions: The diagnosis of kidney cancer carried out within the program of follow-up in kidney transplant patients and screening in uremic patients allows to detect cancer in its early stages, improving outcomes and reducing the need for adjuvant therapies.

037 XENOTRANSPLANTATION

P299

ESTABLISHMENT OF MULTIPLE GENE KNOCK-IN PIG CELL LINES TO REPRESS IMMUNE REJECTION FOR XENOTRANSPLANTATION

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Background: Due to the shortage of human organs for transplantation, pig-to-human xenotransplantation has been arisen. Despite of the physiological and anatomical similarities in pig to human, the immune-rejection is still remained as a major huddle. Up to date, many researchers are trying to overcome the immune-rejection with genetically modified pigs, but the problems are not entirely eliminated yet.

Methods/Materials: Cas9-GTKO and LNDT-2A4 Vector designFor hyperacute rejection, we designed four specific single-guide RNAs (sgRNAs) which target exon 4 of porcine α-1,3-galactosyl-transferase (α-gal), and constructed Cas9 vector system. Multiple genes were linked by four 2A peptide sequences: hCD55, hCD39, hTFPI, and hC1 inhibitor for immune modulators. Each of the genes was transcripted from endothelial cell lineage-specific promoter, ICAM-2
Transfection and Cell Culture: Porcine ear fibroblast (PEF) cells were cultured in DMEM containing 20% FBS and grown at 37°C in the humidified air containing 5% CO_2. 1×10^6 cells were transfected with 2 μg of LNDT-2A4 and Cas9-GT plasmid DNA using Amaxa™ Basic Nucleofector Kit for Primary Mammalian Fibroblasts following the manufacturer's instructions.
Results: We isolated two cell lines that inserted the two vectors using selection marker, neomycin. By PCR and western blot analysis, we verified establishment of the transgenic cell lines.
Conclusion: Using the cell lines, we will produce GTKO and multiple gene KI pigs by SCNT in next. Also, we expect that the current obstacles in xenotransplantation could be overcame by the pigs.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P301

COMPARATIVE PROTEOMIC ANALYSIS OF RAPAMYCIN VERSUS CYCLOSPORINE COMBINATION TREATMENT IN MOUSE PODOCYTE

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Background: The mechanism of proteinuria observed with rapamycin (RPM) use remains unclear. The conversion from calcineurin inhibitors (CNIs) to RPM in kidney transplant recipients has been associated with a higher incidence of proteinuria. In this study, we performed proteomic analysis to investigate the alteration of protein expression in mouse podocyte treated with RPM in comparison with RPM/CNI combination.

Methods: Immotalized mouse podocytes were treated with 20 nM RPM or 20 nM RPM + 1 μg/ml cyclosporine. Podocyte proteins were separated by two dimensional-polyacrylamide gel electrophoresis (PAGE) and identified by matrix-assisted laser desorption time-of-flight (MALDI-TOF) mass spectrometry and peptide fingerprinting. Selected proteins were analyzed by western blot assay.

Results: We identified 36 differentially expressed proteins after isolated RPM or RPM/CNI combination treatment in cultured mouse podocytes. There are three distinct patterns of protein expression: 1. Potentiated down-regulation of proteins by RPM/CNI treatment compared with isolated RPM treatment ($n = 4$); 2. Partial offset of down-regulation by RPM/CNI in comparison with RPM ($n = 25$); 3. No difference in down-regulation between RPM and RPM/CNI ($n = 7$)

Conclusion: We found a significant interplay between RPM and CNI on the proteins expression in mouse podocyte. This might explain the higher incidence of proteinuria by RPM/CNI combination in clinical settings. Further study is required to elucidate the target protein associated with RPM induced proteinuria.

015 INFECTIONS

P302

INCREASING INFLUENZA VACCINATION RATES IN SOLID ORGAN TRANSPLANT RECIPIENTS IN AN OUTPATIENT TRANSPLANT CENTRE

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Introduction: Influenza can lead to significant morbidity and mortality in solid organ transplant recipients (SOTR) as such it is recommended that SOTR receive annual influenza vaccination 6 months after transplantation. The reported rate of influenza vaccination among SOTR was 52% in previous studies.
Methods: A prospective study on influenza vaccination among SOTR followed up at Singapore General Hospital was performed from December 2014 to February 2015. The primary objective was to evaluate the rate of influenza vaccination among SOTR. Secondary objective was to identify potential barriers to receiving annual influenza vaccination. A survey regarding influenza vaccination was administered to SOTR. Pharmacists and nurses educated SOTR on the importance of annual influenza vaccination and addressed their concerns regarding vaccination if they had not received influenza vaccination in the previous year. SOTR were screened for the need for influenza vaccination, and the vaccine was administered if physicians and patients were agreeable.
Results: A total of 165 SOTR were recruited into the study. Only 41 (24.8%) SOTR received influenza vaccination in the previous year. The barriers to vaccination reported by the SOTR ($n = 124$) include "not informed to receive the vaccination" (71.8%), "vaccination is not necessary" (29.8%), "afraid of the side effects from vaccination" (11.3%), "cost of vaccination too expensive" (5.6%), "troublesome to get vaccination" (4.0%). After education, 65.3% of SOTR who had not received vaccination last year were vaccinated.
Conclusion: The rate of influenza vaccination among SOTR at our institution in the previous year was 25%. The main barrier identified from the survey was the lack of knowledge for the need for influenza vaccination. This allowed for tailoring of education for SOTR to improve their knowledge on the importance of influenza vaccination and also increase the rate of influenza vaccination among SOTR.

025 LIVER

P304 EARLY EXPERIENCE OF ABO INCOMPATIBLE LIVER TRANSPLANTATION USING PLASMA EXCHANGE AND ANTI-CD20 MONOCLONAL ANTIBODY

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Background: ABO incompatible liver transplantation (ABOi LT) has been recommended only for emergency case because of the risk of antibody-mediated rejection (AMR). However, various managements for prevention of AMR have improved the complication rate and survival outcomes. Herein, we introduce our first ABOi LT case although the patient has been into nadir.
Methods: At June 2013, first ABOi LDLT was performed in our center and more two case was done. Our institution protocol for ABOi LDLT was planned using rituximab at preoperative 2 weeks, several plasma exchanges (PE, target level: isoagglutinin titer ≤1:8), basiliximab during operation and postoperative 4 day, and routine intravenous immunoglobulin (IVIG) at postoperative 1–5 days with splenectomy.
Results: The 53-years old and 30- & 43- year old male patients were admitted due to liver cirrhosis with viral hepatitis B (HBV). ABO blood type of the recipient was Rh+ O (O+). All patients received the right lobe of liver from a related young male donor with Rh+ B (B+) and Rh+ A (A+) blood type. One patient initial isoagglutinin titier were 1:32 and two patient initial isoagglutinin titier were 1:128. Recipient received rituximab at 2 weeks before LDLT, followed by total 6 times of PE. The recipient received the modified Rt lobe (MRL) transplantation with the splenectomy. First ABOi LDLT patient was a postoperative hemorrhage with coagulopathy and a re-exploration for hemostasis of it and other patients were no other complication.
Conclusions: The new ABOi-LDLT protocol using rituximab, PE, basiliximab, and IVIG is the pivotal and safe strategies. However, the frequent PE for predetermined low ABO titer level is considered to result in the peri- and postoperative hemorrhage following the coagulopathy in our first case.

P305 SIMULTANEOUS LIVER AND KIDNEY TRANSPLANTATION

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Background: Simultaneous liver kidney transplantation (SLKT) is rare. About SRTR the rate of multi-organ transplants (MOT) in total transplantation was reported as approximately 2%. We will know that kidney-liver transplant types are most common in MOT as rating about 70%. In korea, 2012 total MOT cases are 80, in the middle of that, the simultaneous LKT are only three cases. KONOS says MOT is very rare in this contury, its rate is about from 0.17% to 0.09%.
Methods: Simultaneous LKT in aspect of surgery like procedure. In this case, donor was cadaveric donor. There had been no living donor like daughter and relatives having properly tolerable size of liver after liver graft hepatectomy. So we needed orthotopic liver allograft, and registered patient's status on KONOS as 2A, next day fortunately we found cadaveric donor being matched to our patient in terms of HLA and ABO typing. We got to go other hospital to retrieve kidney and liver graft.
Results: This Patient recovered well and was not postoperative complication. This is about comparison of renal allograft outcomes of SLKT versus LT followed by subsequent KT. It was documented that SLKT has immunogenic tolerance and results in better graft, patient survival rate than KALT group. Overall patient and graft survival were similar in KALT and CLKT groups. However, among patients rejection-free graft survival and high risk HLA mismatched and sensitized recipients, graft survival was higher in the CLKT group with a concomitant overall significant increase in graft half-life.
Conclusions: SLKT compared with LTA improves survival only for those liver candidates on dialysis at transplant. Candidates for LTA with HRS on HD (>8 weeks) should be considered for SLK.

023 KIDNEY

P306

RISK FACTORS FOR BK VIRUS INFECTION AND NEPHROPATHY AFTER KIDNEY TRANSPLANTATION

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Objective: BK virus infection and BK nephropathy are risk factors for allograft function and survival. Insufficient data exists concerning the incidence of BK virus infections in kidney transplant recipients.
Methods: We retrospectively analyzed 375 patients who received a DBD kidney transplantation ($n = 258$) or living donation ($n = 117$) between January 2008 and May 2013. Screening for BK viremia was performed routinely 8 times during the first year. 295 patients were treated with standard immunosuppression (group 1) consisting of basiliximab induction, a calcineurin inhibitor and a) mycophenolate (MPA, $n = 243$) or b) everolimus ($n = 52$). 80 patients received more intense immunosuppression (group 2) with antithymocyte globulin (a) ATG, $n = 40$) and/or b) B- or T-cell depletion and plasmapheresis/immunoabsorption (PP/IA, $n = 40$).
Results: In group 1 BK infection occurred in 7.8% of everolimus and 9.0% of mycophenolate treated patients during the first year after transplantation compared to 12.5% in group 2a and 12.5% in group 2b. The incidence of BK viremia did not differ between group 1 a and b and was not different between groups 1 and 2 ($p = 0.371$). Donor and recipient age, recipient BMI, diabetes, previous transplantation, surgical complications, rejections and dosage of prednisolone were not risk factors ($p > 0.05$). Patients with BK viremia had an elevated serum creatinine (1.96 ± 0.9 mg/dl) compared to BK negative patients (1.66 ± 0.6 mg/dl) 1 year after transplantation ($p < 0.001$). Biopsy proven BK nephropathy was rare in our patients. Only three patients (0.8%) developed BK nephropathy in the first year.
Conclusion: Incidence of BK viremia does not differ from the immunosuppressive regiments. We found serum creatinine to be elevated in BK positive patients 1 year after transplantation. Since BK nephropathy was rare in our patients longer follow up is needed to evaluate the clinical relevance of BK viremia in the different groups.

007 DONATION/RETRIEVAL

P307

POSTMORTEM KIDNEY DONATION AND TRANSPLANTATION IN DONORS AGED >65 YEARS IN BAVARIA

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Introduction: The serious lack of organs has led to an increasing acceptance of older donors. Besides the higher rate of hypoxemia as the cause of brain death, these donors often present several comorbidities, such as reduced creatinine clearance, cardiovascular diseases and diabetes.In this study we investigate the incidence of comorbidities in kidney donors in Bavaria aged ≥65 years, and their acceptance rate for transplantation.
Methods: All donors from 2009 until 2013 in Bavaria aged ≥65 years (n = 242) were evaluated. Donor records were examined for the presence of the following comorbidities: arterial hypertension, diabetes mellitus, elevated creatinine levels (≥ 1.5 mg/dl) and cardio-pulmonary resuscitation. We analysed the acceptance of kidneys from these donors in relation to the number of comorbidities.

Results: Between January 2009 and December 2013 850 donors were realized in Bavaria. 242 (28.5%) of these donors were aged ≥65 years. The average age in this group was 72.5 years; the oldest donor was 86 years.

Number of comorbidities	n	%	Number (%) of transpl.	Kidneys	
			2	1	0
0	42	17.4	39 (92.8)	1 (2.4)	2 (4.8)
1	119	49.1	108 (90.8)	10 (8.4)	1 (0.8)
2	65	26.9	45 (69.2)	4 (6.2)	16 (24.6)
3	10	4.1	4 (40)	1 (10)	5 (50)
4	6	2.5	1 (16.7)	1 (16.7)	4 (66.6)

In 88.4% (n = 214) of all these donors at least one kidney was transplanted.
Summary: A high proportion of donors aged ≥65 years have multiple comorbidities. Nevertheless, kidneys from these donors are usually accepted for transplantation.Retrospective analysis of the long term results of these kidneys for the aforementioned period is planned.

023 KIDNEY

P308

IMPACT OF PRE-TRANSPLANT PANEL REACTIVE ANTIBODY LEVELS ON RENAL GRAFT SURVIVAL IN PATIENTS WITH NEGATIVE CROSS-MATCH AND NO DONOR SPECIFIC ANTIBODY

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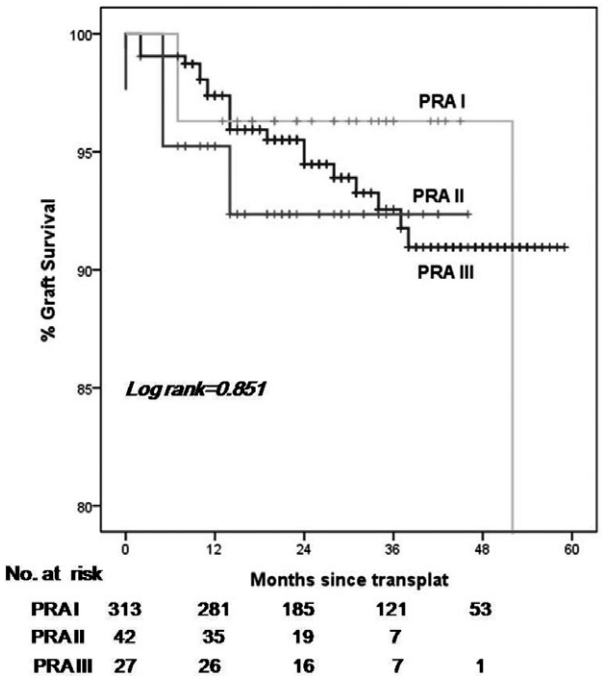
Purposes: This study was conducted to investigate the impact of pre-transplant PRA level on rejection and graft survival after kidney transplantation in patients with negative cross-match and no donor specific antibody (DSA).
Methods and Materials: This is retrospectively 513 kidney recipients transplanted at our center from January 2009 to April 2013. And among them, those who identified positive test on cross-match, those who had donor specific antibodies, ABO incompatible, and those who had no information of PRA were excluded (n = 130). The clinical characteristic was analyzed. Peak PRA was stratified into 3 groups according to their PRA levels group I, PRA=0; group II, PRA50%.
Results: Among 433 study population, 347 (80.1%) group I; 55 (12.7%) group II; 31 (7.2%) group III. The rejection rate was 20.1% (group I 18.5% vs. group II 23.8% vs. group III 33.3% [p = 0.053]). The graft failure rate was 21.7%(group I 6.4% vs. group II 7.1% vs. group III 7.4% [p = 0.792]). Univariate analysis by log-rank test, donor source and rejection were significantly associated with graft survival (p = 0.000 and 0.000, respectively). On multivariate Cox regression analysis, donor source and rejection were also significantly associated with graft survival (p < 0.05 and p < 0.05, respectively), however including subcatergories of PRA (p = .552).
Conclusions: The rate of rejection showed strong trend to significant, as PRA group increases (p = p.053). Pre-transplant PRA value was not significantly associated with graft survival, in patients with CXM(-) and DSA(-). However, donor source and presence of rejection were significantly associated with graft failure.



No. at risk					
PRAI	313	281	185	121	53
PRAII	42	35	19	7	
PRAIII	27	26	16	7	1

029 PANCREAS

P309

POSTOPERATIVE COMPLICATIONS AFTER PANCREAS TRANSPLANTATION - A SINGLE CENTRE EXPERIENCE

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Pancreas transplantation is characterized by its relatively high rate and variability of postoperative complications, which could be a limitation of this treatment.The aim of this study was to evaluate the prevalence and types of postoperative complications in patients after pancreas transplantation.

We performed 132 pancreas transplantations (117 SPK, 14 PTA 1PAK) in the Department of Gastrointestinal Surgery and Transplantation in Central Clinical Hospital Ministry of the Interior in Warsaw between 2004-03.2015. Postoperative complications after transplantation were analyzed. The period of 30 days after transplantation is the most important in the perspective of the proper functioning of the graft and patient survival. At that time there is the largest number of surgical complications and the highest rate of graft losses.In our study, 58% of patients required reoperation during the first 30 days after operation and 9% of this group required graftectomy. The most severe postoperative complications were due to intestinal fistula, bleeding, graft pancreastitis, infection and abscess. The most frequent reason for pancreas graftectomy was vascular thrombosis.

Conclusion: Pancreas transplantation is currently considered a reliable therapeutic option for diabetic patients. However, despite constantly improved results since first pancreas transplantation in 1966, pancreas grafts are still very susceptible to surgical complications and graft removal remains a relatively frequent option

023 KIDNEY

P311 EXPRESSION OF NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN IN RENAL TISSUES AS A PREDICTOR OF CLINICAL OUTCOME IN KIDNEY TRANSPLANT

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Purpose: In the era of donor shortage, using kidneys from marginal donors has significantly increased. However, there has been concerns about using marginal graft due to the high incidence of delayed graft function (DGF) and acute rejection (AR), negatively affect graft survival. Neutrophil gelatinase-associated lipocalin (NGAL) appears to be one of a promising biomarker for detecting of kidney injury and subsequently predicting clinical outcome after kidney transplant. NGAL has been mostly measured from urine or serum samples. In this study, the expression of NGAL in renal tissues was measured and compared with clinical outcomes after kidney transplant.
Methods: A total of eighty two cases of deceased donor kidney transplant were performed between Mar 2009 and December 2013 in our center. A time-zero renal biopsy was performed for sixteen patients. The quantitative expression of NGAL was assessed by measuring the intensity of immunohistochemical staining for NGAL with an image analyzer. The correlations of NGAL expression and clinical outcomes were analyzed.
Results: The staining intensity was correlated with 1 month serum creatinine ($p = 0.023$) and body mass index (BMI, $p = 0.047$). The renal functional status of recipients at 3, 6, and 12 months after kidney transplant were not significantly correlated with NGAL expression. However, there was a trend of correlation between NGAL expression and incidences of delayed graft function (DGF) and slow graft function (SGF) ($p = 0.093$).
Conclusion: The expression of NGAL in renal tissue is closely related to short term outcomes after kidney transplant. Therefore, NGAL staining of time-zero renal biopsy could be used as a meaningful predictive biomarker of kidney function after transplant.

P312 EFFECT OF EARLY CONVERSION TO EVEROLIMUS VERSUS CONTINUED CNI THERAPY ON LEFT VENTRICULAR HYPERTROPHY IN DE NOVO KIDNEY TRANSPLANT RECIPIENTS

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Background: Left ventricular hypertrophy (LVH) is a risk factor for death and heart failure after kidney transplantation (KTx). In the ELEVATE study, we evaluated the effect of everolimus (EVR) on LVH in *de novo* KTx recipients (R) versus standard calcineurin inhibitor (CNI).
Methods: ELEVATE (NCT01114529) is a 24-month (M), multicentre, open-label study in which *de novo* KTxR were randomised (RND) after 10–14 weeks to EVR (C0 6–10 ng/mL) or continued standard CNI (C0 tacrolimus: 5–10 ng/ml, cyclosporine: 100–250 ng/ml). All patients received enteric-coated mycophenolate sodium and steroids. Left ventricular mass index (LVMi) was calculated using LVM [assessed using echocardiography (ECHO)] and indexed by height (sensitivity analysis by BSA indexation). LVH was considered if LVMi >49.2 g/m$^{2.7}$ for male and >46.7 g/m$^{2.7}$ for female patients. Patients with data for ECHO variables at both RND and M12 visits were included in the analyses.
Results: 527 patients (EVR, 245 and CNI, 282) were included in the analysis. LVH was detected in 133 EVR- (36.8% concentric, 63.2% eccentric) and 151 CNI-treated patients (44.4% concentric, 55.6% eccentric) at RND and 126 EVR- (38.1% concentric, 61.9% eccentric) and 137 CNI-treated patients (48.9% concentric, 51.1% eccentric) at M12. The LS mean difference for LVMi in patients with LVH was not statistically significant between the two groups at M12 [5.94 g/m$^{2.7}$ (95% CI –1.35, 13.23); $p = 0.11$]. For concentric LVH, mean change in LVMi was –5.74 and –4.25 g/m$^{2.7}$ (mean difference: –1.49 g/m$^{2.7}$; $p = 0.58$) for EVR and CNI, respectively. The change in LVMi for eccentric LVH was 5.10 and –4.48 g/m$^{2.7}$ (mean difference: 9.58 g/m$^{2.7}$, $p = 0.11$) for EVR and CNI, respectively. Similar results were obtained using BSA indexation. Currently, M24 data are awaited.
Conclusion: Conversion to EVR after 10–14 weeks of KTx or continued CNI therapy had different effects on LVMi at M12, with EVR being more favourable for concentric LVH and CNI for eccentric LVH patients.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P313

A COMPARATIVE STUDY OF EARLY GRAFT FUNCTION AND OUTCOME DIFFERENCES BETWEEN THREE LIVER PRESERVATION SOLUTIONS: CELSIOR, IGL-1 AND UW

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Purpose: Minimization of damage from cold ischemia and reperfusion is critical to the success of liver transplantation (LT). A variety of solutions for graft preservation and reperfusion are today used worldwide.
Methods: The aim of this study was to compare the liver function of transplanted grafts stored in IGL-1, Celsior (CEL) or University of Wisconsin (UW). After exclusion of partial grafts, living and domino LT, we analyzed data of 679 consecutive cadaveric full-size LTs (representing 252 CEL, 280 IGL-1 and 147 UW) performed between June 2007 and November 2014. Primary non-function (PNF) and primary dysfunction (PDF), perioperative transfusion, kinetic of liver function, reperfusion biopsy, vascular and biliary complications, acute rejection and infection, length of hospital stay, graft survival, and cause of graft loss were compared for the 3 groups.
Results: The 3 groups were similar in terms of donor variables, recipient variables, and surgical techniques. In post-LT main results were: (1) the peak of INR was lower with UW (3.6 ± 2.8) than with CEL (4.2 ± 2.7, $p < 0.05$) or IGL-1 (4.4 ± 2.6, $p < 0.01$); (2) reperfusion biopsy lesions with IGL-1 (6%) were lower than with CEL (11%, $p < 0.05$) or UW (16%, $p < 0.05$); (3) rate of PNF-PDF with IGL-1 (29%) was lower than with UW (45%) or CEL (46%), but this difference was not statistically significant; (4) perioperative transfusion, vascular and biliary complications, acute rejection and infection were not statistically different; (5) UW, CEL and IGL-1 graft survivals were respectively 91%, 93% and 95% at 3 months and 84%, 86% and 90% at 1-year; (6) Cause of graft loss was similar in the 3 groups.
Conclusion: The liver function recovery is better with UW and ischemia-reperfusion lesions are reduced with IGL-1. However, this potential benefit did not translate onto the incidence of PNF or PDF, nor on the rate of graft survival.

023 KIDNEY

P314 IMMEDIATE POSTOPERATIVE GRAFT FUNCTION USING KIDNEYS FROM DONORS WITH TERMINAL ACUTE KIDNEY INJURY

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Background: Kidney transplantation from donors with terminal acute kidney injury (AKI) is not widely accepted.
Method: Retrospective review of 33 kidney transplantations performed between Sep. 1st 2012 and Feb. 28th 2015 in single small volume center was performed. AKI donor were defined by a doubling of the donor's admission serum creatinine (SCr) level and a terminal SCr level >2.0 mg/dL before organ procurement. Immediate postoperative graft function was evaluated by the incidence of delayed graft function (DGF), slow graft function (SGF) and creatinine reduction ratio (CRR).
Result: We transplantated 33 kidneys including 12 from standard criteria donors (SCD), 13 from expanded criteria donors (ECD). Among them, 5 kidney was from AKI donors. Terminal donor SCr were 1.2 ± 0.5 mg/dl in non-AKI donors group and 3.9 ± 1.9 mg/dl in AKI donors group. The incidence of DGF was 11% (3/28) in non-AKI donors group and 20% (2/5) in AKI donors group. The incidence of SGF was 21% (6/28) and 20% (2/5) in non-AKI donors group and AKI donors group, respectively. There wasn't any case of primary non-function and all patients were independent on dialysis at postoperative day 30. The mean CRR at postoperative day 30 were 82.9 ± 8.0% in non-AKI donors group and 74.5 ± 14.7% in AKI donors group. SCr at postoperative day 30 were 1.4 ± 0.4 mg/dl and 2.0 ± 0.9 mg/dl in non-AKI donors group and AKI donors group, respectively.
Conclusion: Kidney transplantations from donors with terminal AKI have excellent immediate postoperative outcomes and represent a method to safely expand the donor pool.

P315 HIGHER DONOR AGE IS A SIGNIFICANT PREDICTOR FOR TAC-INDUCED NEPHROTOXICITY IN KIDNEY ALLOGRAFTS IN A LONG TERM AFTER TRANSPLANT

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Backgrounds: Excellent kidney graft outcome can be achieved with tacrolimus (TAC)-based immunosuppression (IS), however, allograft damage due to chronic exposure to TAC is still one of the limiting factors affecting long-term allograft survival. It is desirable to establish the best management of TAC dosage long term after kidney transplant achieving balance between efficacy and toxicity. In the current study, we aimed to determine the predicting factors of TAC nephrotoxicity such as clinical characteristics and detailed TAC administration profiles.
Methods: Clinical records of adult kidney transplant recipients (2004 to 2010 at transplant) who had been maintained on TAC-based IS protocol were reviewed. TAC nephrotoxicity was defined as arteriolar hyalinosis, a featured pathological finding due to chronic TAC exposure (aah score >0 in Banff 2007 criteria). Patients' characteristics (gender, recipient and donor age at transplant), and TAC administration profiles (mg/day, mg/kg/day, TAC C_0, and $AUC_{0\text{-}24}$), were evaluated and risk factors for TAC toxicity was evaluated in a multivariate analysis.
Results: Thirty-four cases were enrolled into the study, consisting of TAC toxicity group (n = 14) and control group (n = 20). Cumulative incidence of TAC toxicity was 16.4% at 5 years and 28.1% at 7 years after transplant, respectively. Donor age was significantly higher in toxicity group than in control (61 vs. 50 y.o., p = 0.021). TAC administration profiles were similar between these groups, TAC dosage per day (2.5 vs. 3.0 mg/day), TAC dosage per body weight (0.043 vs 0.050 mg/kg/day), and $AUC_{0\text{-}24}$ (80.9 vs 101.0 ng/dl x hr), except for TAC C_0 (1.7 vs 2.5 ng/dl, p = 0.021). In a multivariate analysis, donor age over 55 y.o. was the only significant predicting factor for TAC nephrotoxicity.
Conclusions: Higher donor age but not TAC administration profile could predict TAC nephrotoxicity in a long term after kidney transplant.

P316 SUCCESSFUL RENAL TRANSPLANTATION IN WISKOTT-ALDRICH SYNDROME

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Results: 8 months after hemodialysis in Nov 2004 our 27 years old patient underwent Tx from deceased donor. There was only one mismatch in B locus, very good compatibility, donor 23 year old man. No induction therapy. Immunosuppression (IS) regimen before Tx: standard dose mycophenolate mofetil 1 g and cyclosporin A 10 mg/kg p.o. within 6 h pretransplant. Than cyclosporine A target level C2 1300 ng/ml ±20% for 1–3 month after transplant, 1100 ng/ml ±20% for 4–6 month, 900 ng/ml ±20% for 6–7 month. Thereafter switch to tacrolimus because of cyclosporin gingive hyperplasia. Tacrolimus target level 4–6 μg/ml. Mycophenolate mofetil 2 × 0.5 g first month after transplant, than 2 × 0 × 25 g p.o. continuously. Methylprednisolon dose 500, 250, 125, 40 mg iv. day 1–4. Prednisolon p.o. 30 mg -25 mg- day 5–6, 20 mg day 7–10, 15 mg till the end of first month, 10 mg second month, than 5 mg daily. After 18 months prednisolon was discontinued. Postoperative course was uncomplicated, good graft function. Patient was discharged from hospital on day 28 with serum creatinine 148 μmol/l, GFR 0.940 ml/s. Renal function was stable, after 1 year was serum creatinine 114 μmol/l, GFR 1.450 ml/s, therefore corticosteroids were stopped. 4 years after Tx autoimmune hemolytic anemia was diagnosed, cured and methylprednisolon p.o. therapy started (dose 32 mg, 24 mg, 12 mg and 6 mg continuously). Rapid decrease of graft function in three months due to relaps of bioptically proven IgA nephropathy resulted in return to HD therapy 6 years and a half after successful transplantation.
Conclusion: To our knowledge, we describe the first case of successful renal Tx without serious complications over 6.5 years of good kidney graft function in a patient with a WAS and biopsy-proven IgAN. Renal Tx in WAS patients is possible and can be successful, especially in those with a milder clinical form of the disease, regardless of possible complications. IS with avoidance of massive and oncogenic regimens is sine qua non.

P317 THE EFFECT OF POLICY ACCEPTING EXPANDED CRITERIA DONORS (ECD) ON WAITING TIME IN SMALL VOLUME CENTER

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Background: Most of transplantation centers accept the kidneys from expanded criteria donors (ECD). But its effects on the waiting time in the waiting list are unknown.
Method: Our institute adopted the policy accepting organs from ECD since 2012. The medical records of consecutive deceased donor kidney transplantation and the data of waiting list between 2005 and 2015 were investigated.
Result: Among 178 registered patients in waiting list, 83 patients received kidney from deceased donors between 2005 and 2015. Among the 114 patients registered for more than 3 years in the waiting list, the annual possibility of receiving kidney from deceased donors was 6% before 2012, and 17% after 2012. Before 2012, the mean waiting time were 34.0 ± 25.7 month in transplanted group and 40.1 ± 25.9 month in waiting list group. Before 2015, the mean waiting time were 35.7 ± 27.8 month in transplanted group and 42.2 ± 36.5 month in waiting list group.
Conclusion: By accepting kidneys from ECD donors, annual possibility for receiving kidney in the waiting list was slightly increased, but the change of waiting time was not observed yet.

007 DONATION/RETRIEVAL

P318

THE DIFFERENCE BETWEEN POTENTIAL OF ORGAN DONATION AND ACTUAL ORGAN DONATION: RESULTS OF MEDICAL RECORD REVIEW IN INTENSIVE CARE UNIT

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Background: Unlike western country, organ donation is not widespread in asian country. We aimed to investigate the real condition of progress from potential donor to actual donor in single center of Oriental country.
Method: Medical records of 360 mortalities in surgical intensive care unit (SICU) between Jan. 1st 2012 and Dec. 31th 2014 were reviewed retrospectively.
Result: Among the total 360 cases of mortality, 71% (255 cases) were medically suitable for organ donation excluding the absolute contraindications of organ donation. Among them, 64% (163 cases) were regarded as potential donor fulfilling these criteria: the organic brain injury, on ventilator and Glascow coma scale (GCS) <4. Among them, only 55% (90 cases) were identified by transplantation coordinator or transplantation team. Among identified cases, the relatives of 68% (61 cases) were approached, and 41% (25 cases) of the approached relatives consented to organ donation. All of the cases with relative's consent proceeded successfully to actual organ donation.
Conclusion: The compact ICU screening system and efforts to increase the consent rate for donation are the key requisites to improve organ donation rate.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P319

CFZ533: SAFETY, TOLERABILITY, PHARMACOKINETICS (PK) AND PHARMACODYNAMICS (PD) OF A NOVEL ANTI-CD40 ANTIBODY IN HEALTHY VOLUNTEERS

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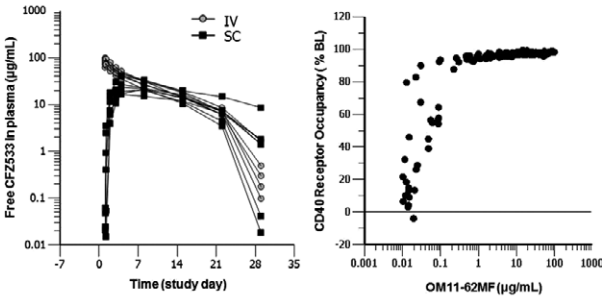
Blocking the CD40-CD154 co-stimulation pathway has been shown to effectively prolong renal allograft survival in non-human primates. CFZ533 is a novel, fully human anti-CD40 monoclonal antibody devoid of antibody-dependent cellular cytotoxicity or complement-dependent cytotoxicity activities (i.e., Fc-silent) being developed for use in transplantation. To assess the human safety, tolerability, PK and PD activity of CFZ533, single doses were administered to healthy male and female volunteers in a Phase 1 trial.

Methods: A double-blind, placebo controlled, time-lagged, ascending, single-dose study using intravenous infusions of 0.03, 0.1, 0.3, 1.0 and 3.0 mg/kg CFZ533 or 3.0 mg/kg CFZ533 subcutaneously was conducted. PK and CD40 receptor occupancy (RO) samples were collected during all treatment periods up to 180 days post dose.

Results: A total of 48 subjects were enrolled. All doses were well tolerated. There were no serious adverse events (SAEs) or discontinuations due to AEs. A total of 50 adverse events were reported by 64% (23/36) of CFZ533 treated subjects. The most frequent adverse events on CFZ533 were headache (12%) and injection site pain (8%). There were no clinically significant changes in laboratory results including coagulation parameters, thromboelastography or multiplex cytokine analysis. There was no effect on leukocyte subsets via FACS or B-cell depletion. CFZ533 PK concentrations were quantifiable at all dose levels tested. CFZ533 demonstrates classical target mediated elimination with accelerated clearance below 100% CD40 RO. The concentration-PD response results shown below, demonstrate sustained CD40 target suppression on peripheral B-cells through 28 days with the highest dose tested.

Figure 1: Pharmacokinetics (A) and Pharmacodynamics (B; CD40 receptor occupancy) of CFZ533 in Healthy Volunteers



Panel A: time-concentration relationship for 3.0 mg/kg IV (*open circles*) and 3.0 mg/kg SC (*filled squares*) CFZ533 in healthy volunteers

Panel B: CFZ533 concentration-CD40 receptor occupancy relationship in healthy volunteers

Conclusion: The favorable safety and tolerability profi le of both intravenous and subcutaneous CFZ533 coupled with a predictable concentration-CD40 receptor occupancy relationship support future clinical trials of CFZ533 in transplantation.

027 LUNG

P320 THE *EX VIVO* RECONDITIONING EXPERIENCE IN BRAZIL

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The pulmonary reconditioning technique followed by transplant has been successfully applied by various transplanting groups. Studies report that primary graft dysfunction (PGD) rates 72 h after transplantation are comparable with those from ideal lung receptors, showing no EVLP related adverse events. In Brazil, after some experimental studies, this research was intended to assess the clinical use of EVLP. From February 2013 to February 2014, a prospective clinical trial was made with reconditioning injured donor lungs in an EVLP system as a protocol described by the Toronto lung transplant group. Injured donor lungs were defined according to specific criteria that included those with a pO2/FiO2 < 300 mmHg ratio. The most frequent cause of death was cranioencephalic traumatism (CET) followed by subarachnoid hemorrhage (SAH); the reason for refusing a conventionaltransplant was low blood gas results, but in three cases it was associated with radiological changes. The average pO2 of captured lungs was 262.9 mmHg ±119.7 and theaverage observed after the third perfusion hour was 357.0 mmHg ±108.5. The oxygenation capacity (ΔPO2) of the lungs showed slight improvement during the 3 h of EVLP, respectively 246.1 mmHg ± 35.1 (hour 1), 257.9 mmHg ± 48.9 (hour 2), 288.8 mmHg ± 120.5 (hour 3), without statistical difference between those moments p = 0.508). The average pulmonary complacency observed was 63.0 ± 18.7 (hour 1), 75.6 mmHg ± 25.4 (hour 2) and 70.4 mmHg ± 28.0 (hour 3), with significant improvement in the second hour of perfusion (p = 0.029), but it was reduced again during the third hour (p = 0.059). Pulmonary vascular resistance remained stable during the EVLP and showed no different between the moments (p = 0.284). The study lungs remained in physiological conditions of preservation; the protocol, however, was not effective to promote improvement of the pulmonary function, thus rendering the transplant unfeasible.

025 LIVER

P321 CELLULAR PLATFORMS FOR FAMILIAL AMYLOID POLYNEUROPATHY USING STEM CELL TECHNOLOGY

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Familial amyloid polyneuropathy (FAP) is a neurodegenerative disease caused by mutations of the transthyretin (TTR) gene that is mostly (>95%) expressed by liver. More than 100 TTR mutations are known. FAP is characterized by misfolded TTR and extracellular tissue deposition, followed by various symptoms affecting heart and the peripheral nervous system. Unfortunately, primary cells of FAP patients are not available for evaluation of novel drugs due to ethical constraints. Stem cell based technology may allow modelling FAP disease on cellular level. Cells that shed from the renal epithelial system into the urine seem to be ideal targets for reprogramming into induced pluripotent stem cells (iPSCs) due to their noninvasive origin. In addition, antisense oligonucleotides (ASOs) and small interfering RNAs (siRNA) directed to TTR are currently explored in clinical studies for improved therapy. Our aim was to generate iPSCs from urine cells of FAP patients for establishment of a cellular platform that allows evaluation of novel therapeutic compounds. Renal epithelial cells were isolated from urine of FAP patients ($n = 9$). Reprogramming of cells by integration-free episomal vectors yielded iPSCs with characteristic features of pluripotency, including high OCT4 and NANOG expression. Hepatic differentiation of iPSCs was accomplished with specific growth factors (activin A, Wnt3a, FGF2, HGF) within 14 days. HLCs were characterized by analysis of typical hepatic markers, e.g. albumin and TTR, via RT-PCR and immunocytochemistry. For assessing TTR gene silencing, ASOs or siRNAs were introduced into cells. Characterization of HLCs showed high TTR mRNA expression. Taken together our results indicate that iPSCs derived from urine cells of FAP patients can be reprogrammed and differentiated into HLCs. Thus, this technology seems excellently suited for disease modelling and will allow assessment of novel drugs for improved therapy of FAP.

P322 UNCOMMON VARIATIONS OF CELIAC TRUNK AND HEPATIC ARTERY IN 420 LIVER GRAFTS

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Different anatomical variations of superior mesenteric and celiac trunk and hepatic artery can be found in articles. The purpose of this investigation was to identify rare and important anatomical variations of celiac trunk and hepatic arteries in liver grafts. Materials and methods: in this study, surgical anatomy of celiac trunk and hepatic artery was investigated in 420 livers from deceased donors during back table procedure during 11 months (march 2013 to february 2014).common variations (left. Accessory Hepatic a. from left gastric artery and right accessory hepatic artery from superior mesenteric artery) excluded. Results: we found 18 cases of rare variations in surgical anatomy of celiac trunk and hepatic artery in 420 liver grafts which were divided into six categories. A. common hepatic artery originated from superior mesenteric artery trunk in 5 cases. B. common hepatic a. Originated directly from aorta in 2 cases.C. celiac trunk and superior mesenteric originated from aorta as a common trunk in 2 cases. D. early bifurcation of hepatic artery (left and right branch) in 4 cases. E. early trifurcation of hepatic artery (two branches for right lobe and one branch for left lobe) in 1 case. F. left hepatic artery originated directly from celiac trunk and right hepatic artery from superior mesenteric trunk in 3 cases. Conclusion: This data is useful for safe dissection and also perfect anastomosis of hepatic artery during liver transplant and also important for interventional radiology investigations. (Figures of these types are in full text article).

015 INFECTIONS

P323

TREATMENT WITH TACROLIMUS VERSUS CYCLOSPORINE IN RENAL TRANSPLANT RECIPIENTS: DELICATE BALANCE BETWEEN REJECTION AND BK VIRUS?

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Triple immunosuppressive therapy with prednisolone, mycophenolic acid and tacrolimus is associated with a low incidence of allograft rejection, but is associated with a higher incidence of BK nephropathy (BKVAN). We studied the frequency of BK virus complications in renal transplant recipients treated with mycophenolic acid (MPS) and either cyclosporine A (CsA) or tacrolimus (T).

Retrospectively consecutive 364 patients who received a renal transplant between 2010 and 2012 and treated with MPS/CsA or MPS/T and mostly prednisolone, were studied during a follow up of 24 months. BKV DNA was measured in urine and plasma samples. Renal biopsies were performed at 12 months and upon clinical indication. The incidence of BKVAN and course of BKV infection during this period was analysed. Other variables studied were estimated glomerular filtration rate (eGFR), occurrence of allograft rejection, loss of allograft and death.

Incidence of BKV viremia was not significantly different between the MPS/CsA (n = 38/193) (19.7%) and the MPS/T (n = 27/171) (15.8%) group. However, biopsy proven BKVAN occurred more often in the MPS/T group (6.4%) versus the MPS/CsA group (2.1%) ($p = 0.04$). Longitudinal data analysis showed a significant earlier decline of viral load in urine and plasma in the MPS/CsA group (t = 3 months) compared to the MPS/T group (t = 6 months) (viruria $p = 0.006$, viremia $p = 0.007$).Graft loss, eGFR and mortality rate were comparable in both treatment groups and BKV positive vs. BKV negative group. Whereas the occurrence of rejection in the two treatment groups and also in BKV positive recipients within these groups, was higher in the MPS/CsA (19.7%/28%) compared to the MPS/T (11.7%) ($p = 0.04$) and (7.3%) ($p = 0.005$) respectively.

Immunosuppressive treatment with MPS/T was associated with an increased risk of BKVAN, however, incidence of allograft rejection was lower compared to MPS/CsA. For patients at high risk of developing BKVAN a cyclosporin based regimen could be considerd.

011 HEART

P324 **THREE DECADES OF HEART TRANSPLANTATION IN THE SHUMAKOV CENTER**

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Background: The Shumakov Federal Center of Transplantology and Artificial Organs is the leader of 10 Russian Institutions where heart transplantations (HTx) are performed.
Methods: 500 patients underwent HTx from October 1986 to February 2015 at our center, 20 pts. of this cohort had retransplantation. A retrospective analysis was performed examining survival and major adverse events predictors.
Results: A number of HTx performed in our Center dramatically increased from 5.6 $\pm$ 3.9/year in 1986–2005 and 11.0 $\pm$ 3.6 in 2006–2008 to 35.0 $\pm$ 6.1 in 2009–2011 and 85.7 $\pm$ 20.3 in 2012–2014. Analysis revealed a significant trend in the early 3 weeks post of survival improvement (0.78 $\pm$ 0.06 vs 0.80 $\pm$ 0.06 vs 0.87 $\pm$ 0.03 vs 0.92 $\pm$ 0.05 in the 1986–2005, 2006–2008, 2009–2011 and 2012–2014, resp., p for trend 60 years (1.0% in 1986–2008 to 7.8% and 14.8% in 2009–2011 and 2012–2014, $p < 0.05$) and inclusion of pts. with relative contraindications like diabetes or stroke. Aggressive use of ECMO and recent advances in life support therapy expanded critically condition recipient inclusion criteria. Shift to bicaval operation technique decreased rate transplant remodeling and arrhythmogenic complications. When compared early decade (1986–2005) and the last 3 years (2012–2014), cell mediated rejection rate remained the same, whereas antibody mediated rejection relative risk fell by factor 1.7 (95% CI 1.03–2.92) and allograft vasculopathy by 8.9 (95% CI 4.3–18.8) which could be attributed to the changes in immunosuppressive protocols and statin use in transplanted pts.
Conclusion: Overall, HTx outcomes have improved significantly in the resent years, as a result of clinical and scientific advances.

023 KIDNEY

P325 IMPACT OF CYP3A4*22, CYP3A5*1 AND POR*28 POLYMORPHISMS ON TACROLIMUS DOSE OPTIMIZATION AND THE OUTCOME OF KIDNEY TRANSPLANTATION

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Due to the large between-subject pharmacokinetic/pharmacodynamic (PK/PD) variability of tacrolimus, clinical outcomes in transplantation exhibit inter-patient variability. Unraveling the impact of single-nucleotide polymorphisms (SNPs) on tacrolimus PK/PD may help to refine therapy.
Objectives: Confirm the effect of SNPs in drug-metabolizing enzymes of renal transplant recipients on tacrolimus PK/PD. Predictive value of donor genotype was assessed to explain the observed variabilities.
Methods: Recipients ($N = 332$) and donors ($N = 180$) were genotyped for CYP3A5*3, CYP3A4*22 and POR*28. PK variables evaluated: dose-adjusted predose concentrations (C0) (ng/ml per mg/Kg/d) and daily doses (mg/kg) at 1, 3, 6, and 12 months post-transplantation. Clinical outcomes evaluated: incidence of delayed graft function (DGF) and graft loss.
Results: CYP3A4*22 carriers (month 1 to 6) and CYP3A5*3/*3 homozygotes (month 1 to 12) had higher dose-adjusted-C0 and received lower daily doses ($p < 0.05$). Clustering patients (combined CYP3A4*22 and CYP3A5*3): extensive-metabolizers (CYP3A4*1/*1 homozygotes+minimum one CYP3A5*1 allele) had lower dose-adjusted C0 compared with poor (CYP3A4*22 carriers+CYP3A5*3/*3) and intermediate-metabolizers (CYP3A4*22 non-carriers+CYP3A5*3/*3 or CYP3A4*22 carriers+CYP3A5*1/*1) ($p < 0.05$). CYP3A5 expressors: POR*28 carriers had 28% increased dose-adjusted-C0 compared to POR*1/*1 ($p = 0.014$). Patients receiving a kidney from a donor CYP3A4*22 allele and POR*28/*28 had increased risk of DGF (OR=3.8, CI95%=[1.5–9.9], $p = 0.010$;OR=4.7, CI95%=[2.2–11.4], $p < 0.001$;respectively). Donor carriers of CYP3A4*22 were identified as risk factor for graft loss (OR=5.27, CI95%=1.6–16.9, $p = 0.011$).
Conclusions: CYP3A5*3, CYP3A4*22 and POR*28 SNPs have a major influence on tacrolimus PK. Kidney donor CYP3A4*22 and POR*28 SNP was correlated with more DGF and CYP3A4*22 with graft loss. These results support the importance of CYP SNPs in tacrolimus dose adjustment and kidney transplantation outcome.

P326 THE EARLY OUTCOMES IN PATIENTS WITH CHRONIC ANTIBODY MEDIATED REJECTION TREATED WITH INTRAVENOUS IMMUNOGLOBULIN IN RENAL TRANSPLANTATION

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Background: The treatment for chronic antibody-mediated rejection (CAMR) has been known to be one of the cause of poor graft outcomes in renal transplant. However, it remains controversial about the treatment modality. We treated the with and without intravenous immunoglobulin (IVIg) and analyzed that the IVIg treatment is effective in treating recipients with CAMR or not.
Methods: Between March 2014 and December 2014, 98 cases CAMR were diagnosed by renal graft biopsy based on 13'th Banff classification. Among them, we compared the recipients treated with IVIg (G1, $n = 28$) and without IVIg (G2, $n = 27$). The efficacy of the treatment was assessed on the basis of the improvement in allograft function (serum creatinine level, estimated glomerular filtration rate (eGFR) with MDRD and CKD-EPI).
Results: here were no significant difference between two treatment groups in sCr and eGFR at 1, 2, and 3 months after treatment.However, at 3 month after treatment, the eGFR was improved significantly in group 1 compared to the eGFR in group 2.(MDRD: 5.17 ± 17.52 mg/dl vs. -5.42 ± 15.01 mg/dl, $p = 0.021$, CKD-EPI: 7.23 ± 21.46 vs. -10.29 ± 21.67, $p = 0.017$). The graft survival was not different between two groups significantly. We divided the recipients into responder and nonresponder group based on improvement in ΔeGFR at 3 months after treatment and tried to find out the factor affecting the treatment response. The pathologic score (such as g, ptc, c4d, etc) didn't affect the response .However calculated PRA (class I, HR=1.046 CI1.001–1.093 $p = 0.044$, class2, HR1.048, CI1.003–1.096, p-0.038), and IVIG treatment (HR=0.008, CI, 0.000–0.302, $p = 0.009$) effect on response after treatment.
Conclusions: Although this study analyzed short-term follow-up period, we can identify that the use of IVIg as treatment in recipients diagnosed CAMR can improve the renal function in early periods. If the follow-up study is performed for the long-term periods, IVIg treatment can be recommended for the treatment of CAMR.

027 LUNG

P327 **RECONDITIONING IN LUNG ISCHEMIA - INFUSION FOR SEVERE SYSTEMIC BLOOD HYPOTENSION**

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One of the main reasons for discharge lung donors is pulmonary edema, it is associated to hemodynamic shock frequently present among organ donors. The shock activates the inflammatory cascade and induces acute lung injury. The pulmonary reconditioning technique followed by transplant has been successfully applied by various transplanting groups. Studies report that primary graft dysfunction (PGD) rates 72 h after transplantation are comparable with those from ideal lung receptors, showing no EVLP related adverse events. To evaluate the impact of pulmonary reconditioning in the lungs of animals submitted to donors hemorrhagic shock. Twenty animals were anesthetized, tracheotomies and they were ventilated using a rodent ventilator model. The femoral artery and vein were dissected and cannulated,. to register the mean artery pressure (MAP) and to retrieval of blood and infusion. The hypovolemic shock was induced with blood retrieval of small samples until reduction of MAP to 30 mmHg and maintained with this level for 60 min. After that, the lungs were perfused with Perfadex (20 ml/Kg), the cardiopulmonary block were removed followed by 6 h of ischemia. Ten cardiopulmonary blocks were forwarded to the Havard Apparatus IL-Isolated Perfused *ex vivo* perfusion system and were evaluated for 20 min, the other ten blocks were evaluated immediately after ischemic period. All blocks were subjected to pathological analysis. No statistically significant difference between the groups, for analyzes of congestion, alveolar edema, alveolar hemorrhage, interstitial hemorrhage, eosinophilic infiltration, inflammatory infiltrate, interstitial infiltrate and pneumonic foci. The protocol of EVLP was not effective to promote reduces the inflammatory levels lung tissue.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P328

NK CELL ACTIVATION AS A POSSIBLE SIGNATURE OF THE ALARMIN IL-33 RELEASED DURING KIDNEY TRANSPLANTATION

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Background: Ischemia reperfusion injury (IRI) during renal transplantation induces necrosis of renal cells and the release of "alarmins" that can activate the innate immune system, thereby triggering an inflammatory response. Interleukin 33 (IL- 33) is a member of the IL-1 family and a newly identified alarmin. Previous studies have shown that murine Natural Killer (NK) cells, which are involved in renal IRI, are targeted by IL-33. In addition, we have recently reported that IL-33 is released as early as 30 min after reperfusion during kidney transplantation in humans.

Methods: To assess whether the IL-33 released during IRI could actually target NK cells in this clinical setting, we analyzed the early activation marker CD69. Peripheral blood NK cells were promptly activated after reperfusion, with regard to CD69 surface expression, which was upregulated 3 h after transplantation. In the same line of evidence, we addressed the question of whether IL-33 contributed directly to NK cell activation during IR, by exposing PBMCs from healthy donors *in vitro* to the alarmin.

Results: Exogenous IL-33 increased CD69 expression within only 3–6 h, similarly to the kinetics obtained during IR, and this phenomenon appeared more pronounced when IL-12 was added. Moreover, IL-33 and IL-18 potentiated both antigen-independent cytotoxic activity and IFN-g production of healthy human NK cells in response to IL-12 by targeting preferentially the CD161(+) and KIR(+) subpopulations of NK cells, respectively.

Conclusion: These results suggest that the NK cells targeted by IL-33 and IL-18 differ in terms of education/differentiation stages. Further studies designed to determine the NK cell subpopulation(s) preferentially activated immediately after reperfusion during kidney transplantation should help to confirm (or not) the implication of IL-33 as a key activator of NK cells in this clinical setting.

007 DONATION/RETRIEVAL

P329 **REGIONAL TRANSPLANT CENTER OF LAZIO: A REAL (TIME) SHARING**

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Background: Regional Transplant Center of Lazio (CRTL) has always tried to reach a modern model of efficiency.
Methods/Materials: In Lazio, since 2000 there is a software called LURTO (Lista Unica Regionale Trapianti d'Organo) used actually by all the Transplant Centers for managing the patients on the waiting list. In this way we can monitor on real time every clinical change of a single patient inserted on this system. Following the indications of CRTL, LURTO calculates even an allocative algorithm for liver and kidney.

In Lazio, up to 2004, donor management was made by phone and fax. In 2004 CRTL started to use a software program called Gedon (GEstione DONatori, donor management), that replaced paper forms. Now, when there is a brain death process, Hospital Coordination inserts all the clinical data regarding the POD on Gedon and CRTL, in real time, let them accessible to the Transplant Centers.
Results: CRTL created a transplant network in which are used two modern tools which consent to every part to interact each other on real time. Lurto software represents both a database of over 10.000 patients passed through regional waiting list of transplant and an allocation system of liver and kidney. At the same time Gedon system allowed the management of over 1.000 Organ Donors in the last 10 years and now it is widely utilized in Central and Southern Italy. Gedon software has even different functions: Brain-damaged Register (since 2006); Tissue Donors management on-line, connected to Eye Bank of Lazio (since 2007) and to the Muscoloskeletal Tissue Bank of Lazio (since 2010); ER admittances consulting on-line (since 2009); Liver transplant program for patients with Meld value >30 (since 2011); organ tracking system (experimental, since 2013).
Conclusion: One of the main purposes of the CRTL is to create a regional transplant network, in which every part plays an active role in the whole process, from donation to transplantation with a common denominator: real time.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P330 PROFILING THE ALTERATIONS IN MICRORNA GENE EXPRESSIONS IN LIVER TRANSPLANT PATIENTS

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Background: MicroRNAs (miRNAs) are 21–23 nucleotide(nt) non-coding RNA moleculesthat post-transcriptionally repress geneexpressionin animals, this is mediatedby interaction with partially complementarytarget sites in the 3' untranslatedregion (UTR) of target mRNAs.It became apparent that these RNA molecules are present in diverse eukaryotic systems. Each miRNA has multiple target mRNAs, and an individual mRNA may be targeted by multiple miRNAs. MiRNA binding results in repression of protein synthesis and in mRNA degradation with both effects observed to different extents in different experimental systems.Using LNA-microarray and after that real-time PCR, in this study we tried to find the most important panel of up- or down-regulated microRNAs in liver transplant rejected patients and checked the microarray results in more patients.
Materials/Methods: 371 miRNAs checked in biopsies from 13 (5 female and 8 male) liver transplanted patients which were divided into 2 groups of rejected and non-rejected (8 and 5 patients, respectively) were analyzed by LNA-array analysis. The result of array tested in 20 more biopsies of liver transplanted patients for confirmation of the data by SYBR Green Real-Time PCR. Four up-regulated (has-miR-122-3p, –4284, -548as-3p and 194–5p) and Four down-regulated miRNAs (has-miR-4511, –3158-5p, –4633-5p and –4449) chose for checking in more patients which were composed of 20 patients which underwent liver transplantation.
Results: The result of microarray showed that in 7 miRNAs the absolute value of the log fold changes were larger than 1. All the checked miRNAs confirmed the previously mentioned results in LNA-array.
Conclusion: The results showed that although more studies are needed for choosing miRNAs as markers for rejection but they have an outstanding potential to announce the rejection very earlier than any method in liver transplanted patients.

P331 INVESTIGATING THE RELATIONSHIP BETWEEN ITPA GENE POLYMORPHISMS AND LIVER TRANSPLANTATION OUTCOME

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Objective: Inosine triphosphate pyrophosphohydrolase (ITPase), an enzymes involve in the thiopurine metabolic pathway, hydrolyzes inosione triphosphate to inozine monophosphate.Deficiency of this enzyme activity leads to the accumulation of ITP in cells. So, the patients treated with purine drugs have the complications of abnormal inosin (Thio-ITP) metabolite accumulation.
Method: Patients received liver transplant were enrolled in this study and were divided into two groups, including, 100 non rejected, 100 rejected liver transplant patients and 100 normal subjects as control group .The Buffy coat of liver transplanted patients was available in the sample bank of transplant research center.Genomic DNA was extracted from the Buffycoat, RFLP-PCR method was performed for determining the ITPA gene polymorphisms.
Results: Allele and genotype frequencies for rs1127354 and rs7270101 studied by RFLP-PCR .The frequency of CA and AA genotype of rs1127354 SNP carriers were significantly higher in the rejected group than non rejected one (4% and 31% respectively; $p = 0.04$ and $p = 0.02$). Also the frequency of A allele was significantly higher in rejecting group than normal subjects, while the frequency of C allele was significantly higher in normal subject ($p = 0.002$). Significant correlation was found between the prevalence of relevant diseases (hepatitis and autoimmune hepatitis) and liver transplant rejection. So that, the frequency of these disease was significantly higher in rejected group ($p = 0.03$ and 0.002 respectively) comparing the non rejected ones.It should be noted that Iranian popplution are mono allelic for rs 7270101 .
Conclusion: ITPA deficiency results in the accumulation of ITP in the erythrocyte. Although, the deficiency of this enzyme in nucleated cells has been reported too.During thio purine drug (such as 6-Mercapto purine) metabolism, 6-MP is activated and convert to 6-thioinosin triphosphate in red blood cells. Inheritance of the ITPA 94C>A allele i.

023 KIDNEY

P332 CANCER AFTER RENAL TRANSPLANTATION M SAMHAN, T FATHI, A GAWISH, M ALMOUSAWI HAMED ALESA ORGAN TRANSPLANTATION CENTRE – KUWAIT

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Introduction and Objectives: A higher incidence of cancer was reported following organ transplantation. This study explores the incidence, types and outcome of cancer in renal transplant (KTx) recipients.
Patients and Methods: 1907 patients have received kidney transplantation in Kuwait. Of these, 1178 were males and 211 were under the age of 18 years at the time of transplantation. 1400 grafts were obtained from living donors and 507 grafts from deceased donors. The records of kidney recipients with post-transplantation cancer were reviewed.
Results: 92 instances of cancer were diagnosed in 88 recipients at 3 to 360 months (m) [mean 96 m] after KTx, with incidence of 4.8%. Recipients with cancer were 55 males and 33 females, aged 15–66 years at the time of KTx. Kidney grafts were obtained from 67 living donors and 21 deceased donors. Histopathological types were: 12 cases of post-transplantation lymphoproliferative disease (PTLD), 11 cases of breast carcinoma, 15 cases of cancer of GIT, liver and pancreas, 12 cases of cancer of native kidney and urinary bladder, 7 cases of Kaposi' sarcoma, 12 cases of other skin cancers, 8 cases of lung cancer, 5 cases of tongue cancer, and 18 other malignancies. The following findings were observed in the study: (1) the incidence was not influenced by recipient gender or donor source, (2) skin cancer was the commonest, and (3) the mean time to appearance was 19 m in Kaposi's sarcoma, 84 m in PTLD, and 148 m in SCC. 44 (50%) recipients are alive with functioning graft for 4 m – 208 m after cancer diagnosis (Dx), 9 recipients (10%) lost graft at 1–54 m after Dx, and are back on dialysis, and 35 (40%) recipients died with functioning graft 4 days to 62 m after Dx.
Conclusions: [1] A lower incidence of cancer was observed in this study group compared to other reports, [2] it can appear as early as 3 months or as late as 288 months after KTx [3] Post-transplantation malignancy was associated with lower patient and graft survival.

P333 OUTCOME OF RENAL TRANSPLANTATION FROM DECEASED DONORS M SAMHAN, H MATAR, T FATHI, F DONIA, M ALMOUSAWI HAMED AL-ESSA ORGAN TRANSPLANTATION CENTRE – KUWAIT

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Introduction and Objectives: An active program to expand the donor pool by procuring organs from deceased donors (DD) was started in March 1996. This paper presents a single centre experience in kidney transplantation from DD.
Patients and methods: 1346 kidney transplantation procedures have been performed in Kuwait since 1993, 385 (29%) of kidney grafts were obtained from deceased donors. The medical records of recipients who received kidney grafts from DD were retrospectively reviewed. 188 recipients were males, and 54 were children under the age of 18 years. Many patients had, beside renal failure, one or more other high risk factors. Renal grafts were transplanted after a relatively short cold ischaemia (mean 12.5 h), and the procedure was a re-transplantation in 47 recipients. While induction immunosuppression was mainly with antithymocyte globulin, the diagnosis of acute graft rejection was based on histopahtological findings.
Results: Recipients were followed up for 4–260 months. Primary graft function was observed in (84%) of cases. Pos-transplantation complications were: 20 (5%) vascular, 19 (5%) urological, 58 (15%) complications related to the kidney graft bed and 16 (4%) cases of malignancy. Thirty-six recipients died with functioning graft at 1–62 months after transplantation, and 126 more grafts were lost at 1 day to 230 months after transplantation. The 1-, 5- and 10-year actuarial survival rates were 95% and 92% and 91% respectively for recipients, and 82%, 71% and 63% respectively for grafts.
Conclusions: The kidney transplantation program in Kuwait is steadily growing. Kidney transplantation from deceased donors contributed to 29% of transplantation activity, and was associated with a high rate of primary function. The actuarial recipient and graft survival rates were comparable to those reported by other larger centers.

P334 RETROSPECTIVE REVIEW OF RECURRENT FSGS-CLINICAL COURSE AND THERAPEUTIC IMPLICATIONS

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Background: Focal Segmental Glomerulosclerosis (FSGS) recurs in 20–30% of renal transplant recipients (KTR) and often leads to graft loss. The recurrence rate in second or subsequent grafts is up to 80%. A combination of plasmapheresis (PLEX), rituximab and ACE inhibitors are often used to achieve partial or full remission.
Methods: We conducted a retrospective review of recurrent FSGS cases in our transplant centre between Jan 1988 to Jan 2015. In total, there were 10 cases, 2 patients underwent a second transplant and a third had 3 transplants in total. Descriptive statistics were performed and a hypothesis that proteinuria and graft survival is different between deceased and living donor KTR's was tested using Mann Whitney test.
Results: 47 patients with biopsy proven FSGS have been transplanted; the recurrence rate is 12.7% for first grafts and 100% in subsequent grafts. The median age of patients was 39 (20–51). Mean graft survival was 2.22 years (0.19–9.29). The median time from transplant to development of proteinuria (>1 gm) was 9 days (1–186), median peak proteinuria was 9.95 gm (1.94–28).6 cases were treated with PLEX, all but one patient transplanted post Jan 2000 were treated with PLEX. The median number of exchanges required to achieve control of proteinuria was 4 (2–14), the frequency of PLEX depended on the clinical severity of the patient, all patients treated with PLEX achieved either partial or full remission. No difference was found between recurrent FSGS cases that underwent deceased or living donor transplant in the timing of proteinuria (p0.917), graft survival (p1.000) or peak proteinuria (p0.175).
Conclusion: Patients develop proteinuria very early post transplant, PLEX is effective in controlling proteinuria and most patients achieve partial if not full remission. The role of rituximab in combination with PLEX requires further study.

Tx, Transplant; D, Deceased; L, Live; F, Failed; Fn, Functioning; Fu, Full; P, Partial.

Recipient	Tx type	Status	Graft survival (years)	Time to proteinuria (days)	Peak proteinuria (gm)	PLEX (sessions)	Remission post PLEX
1-Tx1	D	F	9.29	8	13.1	37	Fu
1-Tx2	D	Fn		22	1.94	15	Fu
2-Tx1	D	F	1.33	186	24.7	0	
2-Tx2	L	F	0.72	6	3.71	4	P
3-Tx1	L	F	3.27	10	6.8	0	
4-Tx1	L	Fn		7	5	2	P then Fu
5-Tx1	L	F	1.9	11	21.3	37	P
6-Tx1	D	F	0.62	1	1.7	0	
6-Tx2	D	F	0.42	3	5.9	0	
6-Tx3	L	F	0.19	12	3.2	37	Fu

P335

EFFICACY OF RITUXIMAB IN TREATMENT OF TRANSPLANT GLOMERULOPATHY

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Background: Transplant glomerulopathy is described as a histological feature of chronic active antibody mediated rejection (ABMR). Rituximab in various combinations has been used in treatment of acute ABMR. The aim of this study was to assess efficacy of repeated doses of rituximab in treatment of transplant glomerulopathy.
Material/Methods: This single center study included all 146 patients who underwent kidney graft biopsy for cause during years 2013–2014. All patients were recipients of kidney transplants from deceased donors and had received induction therapy with basiliximab or ATG. Maintenance immunosuppression consisted of calcineurin inhibitor or sirolimus, mycophenolic acid and corticosteroids. Rituximab was given in dosage of 500 mg once per month up to 4 times.
Results: Transplant glomerulopathy was identified in 10 (6.9%) patients (mean age 42.7 years, mean 32.8 months after transplantation). 7/10 patients had proteinuria (2 - nephrotic syndrome) and 4/10 patients met criteria for chronic ABMR by Banff 2013 classification. All patients were anti-HCV negative and had normal complement (C3, C4) levels. 6 patients were treated with rituximab, 2 patients continued to receive sirolimus and 2 patients were converted from cyclosporine to tacrolimus only. Reduction of proteinuria by rituximab was achieved in 4 of 6 patients (mean proteinuria decreased by 20%; from 2.75 to 2.2 g/day) and edema disappeared, but proteinuria increased by 50% (from 1.0 to 1.63 g/day) for patients without treatment by rituximab. At the same time graft function was not improved by rituximab (mean serum creatinine increased by 32%, from 160 to 210 mkmol/l), but for patients without treatment by rituximab graft function remain stable (mean serum creatinine decreased by 8%, from 180 to 165 mkmol/l).
Conclusions: Irrespective of positive influence on reduction of proteinuria and edema, kidney allograft function did not improve after treatment by rituximab.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P336

EVEROLIMUS BASED/CALCINEURIN INHIBITORS FREE PROTOCOL IN MARGINAL DONOR KIDNEY TRANSPLANTATION: RESULTS AT FIVE YEARS OF A COHORT STUDY

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Background: MTOR inhibitors are nowadays widely use in kidney transplant immunosuppressive protocol in association with CNI. We report long-term results of our experience with mTOR/DNA inhibitors association in patients receiving graft from marginal donor, comparing mTor population with a CNI/DNA inhibitors treatment group.
Matherials and Methods: From Genuary 2008 to December 2012, 122 kidney transplantation performed with marginal donor grafts (for age or histology) has been randomly assigned to immunosuppressive protocol mTor based (72 recipients) or CNI based (50 recipients). In both groups patients received DNA inhibitors (MMF OR EC-MPS), steroids and Basiliximab induction and have been regularly followed up in our transplant unit.
Results: The two study groups was similar for demographic characteristics. After an average follow up time of 5 years there wasn't difference in grafts and patients survival (p = ns) nor in grafts function. In mTor group and in CNI group, respectively, Creatinine was 136 $\pm$ 67.4 and 138.7 $\pm$ 37.1 μmol/l (p = 0.38), Creatinine Clearence 55.2 $\pm$ 16.2 and 46.7 $\pm$ 14.1 ml/min (p = 0.91), 24-h urine protein 0.2 $\pm$ 0.22 and 0.15 $\pm$ 0.22 g (p = 0.84), acute rejection rate 22% and 14% (p = 0.22). No difference was observed in: incidence of wuond dehiscence, limphocele and limphatic fistula, cardiovascular events, diabetes mellitus and neoplastic lesions. The two groups whereas differ for incidence of viral infections, higher in CNI patients (p = 0.009) and interstitial pneumonia, higher in mTor recipients (p = 0.015) and responsible for the higher rate of therapeutic shift in this recipients.
Conclusion: In our experience, in marginal donor kidney transplantation, an mTOR/DNA inhibitor based protocol ensure good long term functional results with higher pneumonia incidence and therapeutic shift but lower viral infection when compared to CNI standard protocol.

023 KIDNEY

P337 RENAL ARTERY ANEURYSM AS A MASK OF VARIOUS DISEASES - REPORT OF TWO CASES

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Background: Prevalence of renal artery aneurysm (RAA) in transplant recipients (KT) is a rare complication, but even this can lead to graft loss. The aim of the presentation is to show both similarities and differences in apparently the same disease.
Results: Case 1. A 30-y. woman, treated with peritoneal dialysis (PD), received a KT with end-to-side vascular connection. On the 103rd day (3 days after explantation of PD catheter) she experienced Pseudomonas septicemia. Therapy has given a favorable response. On the 110th day an inguinal pain at the transplant site occurred with a loud systolic murmur. CT angiography showed a 5 cm thrombotic false aneurysm at the site of the vascular connection. A resection of the aneurysm with implantation of an iliac-graft arterial bypass and iliac-iliac Gore-Tex prosthesis was done. After 5 h there was no flow in the graft artery detected. At the site of anastomosis a 10 cm hematoma was present. The transplanted kidney was immediately removed. 10 months later she received the 2nd KT on the opposite side. Case 2. A 27-y. man, treated with hemodialysis (HD), received a KT with nd-to-side vascular connection. The follow-up was complicated by one acute rejection episode. After 13-en years graft function unexpectedly deteriorated (sCr 1.8 mg/dl). CT angiography revealed a partially calcified aneurysm of the graft artery at the connection site. Due to the rapid acceleration of graft failure 2 months later he began HD. 2 months later graftectomy and after next 3 months stent grafting of the iliac artery were performed. Patient is now dialyzed and awaits second transplantation.
Conclusion: There are two main types of aneurysms. An early aneurysm, which is usually the consequence of a life-threatening sepsis, frequently requires immediate intervention involving the removal of the aneurysm. An aneurysm diagnosed late, probably slowly growing with ischemic or immune etiology, which allows comfortable plan of treatment.

P338 THE IMPACT OF NEPHRECTOMY ON THE SERUM AND URINE LEVELS OF SOLUBLE KLOTHO PROTEIN

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Jichi Medical University

Background: Klotho is a single-pass transmembrane protein predominantly expressed in the kidneys. It has a short cytoplasmic tail and a long extracellular domain, which can be cleaved and released as a soluble protein. We evaluated the changes in the serum and urine Klotho levels among renal donors before and after retroperitoneoscopic nephrectomy.
Methods: Ten consecutive renal donors with an average age of 58.6 $\pm$ 11.3 years old were included. The levels of serum and urine soluble Klotho before and 5 days after nephrectomy were determined using a sandwich enzyme-linked immunosorbent assay system.
Results: Soluble Klotho was detectable in both the serum and urine of our subjects. The creatinine clearance at baseline was 97.6 $\pm$ 30.6 ml/min, and it significantly decreased after the nephrectomy (61.1 $\pm$ 18.1 ml/min, $p < 0.05$). The levels of serum soluble Klotho before nephrectomy (median 1100.8 pg/ml, interquartile ranges [IR], 962.3–1826.3) were higher than that after the procedure (median 844.5 pg/ml, IR, 693.6–1412.0), while the median urine Klotho levels before and after nephrectomy were 586.7 (IR, 102.9–1489.9) ng/day and 1229.5 (IR, 521.4–1661.9) ng/day, respectively.
Conclusion: The kinetics of soluble Klotho in serum and urine may differ among living kidney donors.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P339

BUILDING A BALANCED TRUST RELATIONSHIP BETWEEN THE RENAL TRANSPLANT PATIENT ASSOCIATION AND RENAL TRANSPLANT MEDICAL PROFESSIONALS

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Background: The Kitasato University Hospital performed 524 renal transplant cases from 1972 to 2014 and it has been 10 years since the Kitasato Kidney Transplant Patient Association ("the Patient Association") was established in 2004 upon a request from kidney transplant patients. We will explain what can be called a new form of the Patient Association, which is not solely led by physicians but in which kidney transplant medical professionals ("medical professionals") are involved as ordinary members.
Objective: Patient groups in Japan can largely be categorized into any of those: the patient associations led by a hospital or physicians, the ones of a locality, or the ones supported by health centers. Renal transplants patients and medical professionals can join them as members. In the associations, they can talk about societal or physical worries and take part in activities such as sports events, lectures, and undertakings to raise organ transplant awareness.
Outcome: The Patient Association is not wholly dependent on medical professionals. This has resulted in a proactive association in which the patients themselves are empowered to freely make activity plans.
Considerations: It can be said that Japanese people are characteristically very delicate, however, they also discuss it when they have trouble. This has differentiated patient organizations in Japan from those in Europe or the Americas. At the time when the Patient Association was established, there were critical opinions in contrast to the progressive comments. However, aftergstra four years, starting with public awareness activities in 2007, the reports and website were created and the renal transplant consultation was held once a month. We believe that it made the Patient Association proactive that the patients operated it by themselves. This balanced relationship has been built up based on mutual trust and appropriate distance.

023 KIDNEY

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THE IMPACT OF RENAL TRANSPLANTATION ON THE SERUM AND URINE LEVELS OF SOLUBLE KLOTHO PROTEIN

Takaaki Kimura, Tetsu Akimoto, Koji Nanmoku, Akira Kurosawa, Toshihiro Shimizu, Shigeaki Muto, Daisuke Nagata, Takashi Yagisawa
Jichi Medical University

Background: Klotho is a single-pass transmembrane protein predominantly expressed in the kidneys. It has a short cytoplasmic tail and a long extracellular domain, which can be cleaved and released as a soluble protein. In patients with chronic kidney disease (CKD), the serum and urine Klotho levels tend to decrease with advancing stages of CKD. However, the kinetics of the serum and urine soluble Klotho in renal transplant recipients remain poorly understood. We herein evaluated the changes in the serum and urine Klotho levels among recipients before and after living-donor renal transplantation (LDRT).
Methods: Four consecutive renal transplant recipients who let us to collect all urine specimens voided during a 24-hr period were included in the current study. The soluble Klotho levels in the serum and urine at the baseline and 5 days after LDRT were determined using a sandwich enzyme-linked immunosorbent assay system.
Results: Soluble Klotho was detectable in both the serum and urine of our subjects. The creatinine clearance of the urine at baseline was 5.3 ± 4.9 ml/min, and it significantly increased after LDRT (53.8 ± 11.8 ml/min, $p < 0.01$). The levels of serum Klotho before LDRT (median 852.8 pg/ml, interquartile ranges [IR], 558.2–993.3) and after the procedure (median 621.3 pg/ml, IR, 480.7–1034.7) were comparable, while the urine Klotho levels after LDRT (median 813.0 ng/day, IR, 384.2–1534.6) were significantly higher than the baseline values (median 50.7 ng/day, IR, 14.8–104.8, $p < 0.01$).
Conclusion: The kinetics of soluble Klotho in serum and urine may be discrepant among renal transplant recipients.

P341

THE CLINICAL SIGNIFICANCE OF BK VIREMIA AND THE EFFECT OF CYCLOSPORINE AND/OR MIZORIBINE ON BK VIRUS INFECTION

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Background: BK virus infection is a significant risk factor for kidney transplant dysfunction and allograft loss. The diagnosis of BK virus nephropathy is based on renal biopsy findings, but as it may present focal disease, the false negative rate may be as high as 10 to 30%. In patients with sustained plasma BKV DNA loads of >4 log10 copies/ml, a diagnosis of presumptive BK virus nephropathy should be made in the absence of demonstrable BK virus replication in biopsies. However, the BK virus plasma cutoff of 4 log10/ml copies/ml may underestimate the diagnosis of BK virus nephropathy. A recent report showed that BK viremia was associated with a significantly decreased eGFR. The most feasible treatment of BK virus infection may be to intervene in the management of BK viremia, avoiding acute rejection. In this study, we evaluated the clinical significance of BK viremia and the safety and efficacy of a novel treatment consisting of cyclosporine and mizoribine for BK viremia.
Patients and Methods: Kidney transplant recipients have been screened for BK virus infection at our institution since January 2010. Plasma BK virus polymerase chain reaction (PCR) detection was examined by screening protocols at 1 year after transplantation or BK virus monitoring in the case of graft dysfunction. All cases of BK viremia were identified from a total cohort of 205 patients. We analyzed these recipients, focusing on immunosuppressive therapy at onset of BK viremia, time to BK viremia after transplantation, change in plasma BK viral load, frequency of BK virus nephropathy, and our treatment protocol for BK viremia.
Results: We experienced 6 kidney transplant recipients who developed BK viremia. The median plasma BK virus PCR at the diagnosis of BK viremia was 1600 copies/ml (370–9400 copies/ml). The median time to BK viremia after transplantation was 13.5 months (1–60 months). Five received immunosuppressive therapy consisting of tacrolimus, mycophenolate mofetil (MMF) and me.

025 LIVER

P342 IN-HOSPITAL AND FOLLOW-UP OUTCOMES OF PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION AFTER HEPATIC ARTERY RECONSTRUCTION WITH AN ILIAC INTERPOSITION GRAFT

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Objective: The aim of this study was to explore the indications, surgical method, and postoperative treatment of orthotopic liver transplantation (OLT) after hepatic artery (HA) reconstruction with an iliac interposition graft.
Methods: This study analyzed in-hospital and follow-up outcomes of 34 Chinese patients: 17 who received conventional OLT ("non-bypass" group) and 17 who received OLT with hepatic artery reconstruction by iliac interposition bypass ("bypass" group). Complications were tracked using findings from clinical presentation, liver function, and HA ultrasound.
Results: There were no differences between the groups in terms of age, sex, and primary disease. Compared to the non-bypass group, the bypass group had a longer average surgery time (48.47 $\pm$ 11.86 min vs. 82.29 $\pm$ 22.00 min, respectively; $p < 0.01$) and more blood loss (4.841.18 $\pm$ 1.268.39 ml vs. 7.047.06 $\pm$ 976.04 ml; $p < 0.01$). Within the bypass group, one patient suffered from a biliary fistula and another experienced a biliary infection combined with intrahepatic bile neoplasia; no other patients developed complication. The postsurgical hepatic function of both groups quickly recovered and, by 10 days, there was no significant difference in the HA peak blood flow velocity between groups. The bypass patients were followed for an average of 45.2 months (range: 20–56 months), with no arterial-related complications (e.g., artery stenosis or arterial thrombosis) or fatalities.
Conclusions: Iliac arterial interpositional graft is an effective and reliable method of HA reconstruction in OLT, when the use of the HA is not possible.

P343 RS199508964 DELETION IN EXON 6 OF IRF5 GENE IS CORRELATED WITH IL28B GENE SNP RS12980275 IN PATIENTS WITH RECURRENT HEPATITIS C FOLLOWING LIVER TRANSPLANTATION

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Background: In patients with recurrent HCV infection after liver transplantation (LT), analyses of single nucleotide polymorphisms (SNPs) of IL28B in recipient and donor tissues allows prediction of sustained virological response (SVR) to PEG-Interferon and ribavirin therapy. IRF-5, a member of Interferon Regulatory Factors, a transcription factor, functions as a key regulator in TLR4 cascade, and is capable of inducing inflammatory cytokines. IRF1 and IRF5 have antiviral roles that are IFN-independent and cell-type specific.
Aim: To investigate IL28B polymorphism and IRF5 mutations in Romanian LT recipients with recurrent hepatitis C in order to establish a possible functional explanation for the already proven association of IL28B gene SNP to SVR following double antiviral therapy in patients with recurrent hepatitis C following LT.
Methods: Fourty-five LT recipient DNA samples were screened for rs12980275 SNP near the IL28B gene and for rs199508964 deletion of 30 bases in IRF5- exon 6, using Sanger sequencing technique.
Results: There were analyzed 23 females and 22 males with a mean age of 52.5 $\pm$ 6.9 years and a mean time since LT of 16.3 $\pm$ 11.6 months. In our study group no other mutations than rs199508964 were identified in exon 6 of IRF5 gene. IRF genotypes were: wild type (WT) – 14%, heterozygous for the deletion – 44.2%, and homozygous for the deletion – 41.9%. Minor allele frequency (MAF) for rs199508964 in our study group was 64%, higher than - MAF according to Pubmed (48.4%). Distribution of IL28B genotypes were: C/C – 14%, C/T - 58.1%, T/T - 27.9%. There was an association between IRF5-non-WT and IL28B non-C/C genotypes ($p = 0.01$). A significant association was found between SVR and WT genotype of IRF5 ($p = 0.01$), however mutations in IRF5 gene were not associated to advanced fibrosis after LT.
Conclusions: There is a link between recipient IL28B and IRF5 genotypes that could explain correlation to SVR following double antiviral therapy.

007 DONATION/RETRIEVAL

P345

HOSPITAL STAFF'S KNOWLEDGE IN DONOR MANAGEMENT AND COOPERATION WITH THE ORGAN PROCUREMENT ORGANISATION IN BAVARIA

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Background: Since 2011 we evaluated all problems occurring during the organ donation process with regard to all stakeholders involved. The situation in Germany is different to most other countries: the DSO becomes directly involved in the donation process only after brain death is confirmed. Crucial for a successful donation is therefore the knowledge of ICU staff regarding donor management and the cooperation between hospital staff and coordinators from the organ procurement organisation (DSO). In this study we focused on these issues.
Methods: From 2011–2014 489 questionnaires were filled out by the DSO-coordinator following each organ donation process. Different issues and stakeholders in the donation process were graded into four catagories (very good, good, fair and poor).
Results: The level of cooperation with hospital staff was classified as very good or good in 98% (n = 428) of the cases.The level of knowledge of donor management was not satisfactory (fair and poor) in 11.6% (2011–2014) of cases. However, there was also a slight improvement over the years (2011: 14.1%; 2014: 10.6%).
Conclusion: The continuous effort to improve the relationship between the procurement organisation and hospital staff has shown positive results. Regarding knowledge in donor management there is still room for improvement. Continious education of ICU staff is therefore indispensable, but requires considerable resources.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P346

TACROLIMUS, MYCOPHENOLATE MOFETIL AND LOW DOSE STEROIDS WITH OR WITHOUT IL2-R ANTIBODY INDUCTION THERAPY – A RETROSPECTIVE COHORT ANALYSIS

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Background: Selective interleukin 2 – receptor (IL2-R) blockade is one option to decrease acute rejection rates in kidney transplant recipients. However, there is little data on the impact of basiliximab in a triple immunosuppressive regimen (tacrolimus, mycophenolate mofetil and low dose steroids). Thus, this analysis aims at investigating the impact of basiliximab induction on rejection rates and immediate graft function following kidney transplantation.
Methods: Basiliximab was introduced in our center according to our center's policy in the beginning of 2011. Patients who received basiliximab ($n = 83$) were compared to patients without induction therapy ($n = 65$) transplanted before the introduction of IL2-R antibody induction.
Results: The use of basiliximab as induction therapy decreased the incidence of biopsy proven acute rejection (BPAR) within the first year after transplantation (21.5% vs. 14.5%; $p = 0.283$). Overall rejection episodes (including BPAR and borderline rejection) were significantly reduced in patients with basiliximab compared to patients without (41.5% vs. 24.1%, $p = 0.033$). However, graft function (incidence of delayed graft function, primary non function, slow graft function and serum creatinine decline) and overall outcome (patient- and graft survival) were similar in both groups.
Conclusions: Herein we showed a favorable impact of basiliximab induction therapy on early acute rejection rate, that allowed lowering tacrolimus trough levels. The impact on long-time outcome must be addressed in further randomized controlled trial.

023 KIDNEY

P347

CLASSIFICATION OF RENAL VASCULARIZATION IN VIEW OF RENAL TRANSPLANTATION

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Background: Telemedicine based remote evaluation of kidneys before retrieval and benching may build a service over tele-communication networks assisting grafting and transplant surgeons in renal transplantation. The purpose of the present study is to provide a codified terminology of renal vascularisation.
Material and Methods: An anatomical study developed in the Laboratory of Descriptive Anatomy of the Medical School of Athens consisting 240 cadaveric kidneys (139 males and 101 females) and standardizing renal vascular variations.
Results: Except the main renal artery, the presence of one or more multiple renal arteries (MRA) at one or both sides seems to be the most common anatomic variation of the renal arteries: 1. Many sites of origin of MRA have been reported. 2. Number of MRAs varies from 1 up to 4. Additionally, MRAs are found to occur bilaterally in 11.4% of the cases. A single MRA seems to be most commonly notified, 3. Another commonly observed variation is the early division of the renal arteries, with an incidence of 2.6%. In this way, surgeons will be aware of what to expect and will be able to describe the vascularization of the donor's and receiver's kidney by using the proposed abbreviations: Single (main) Renal Artery, Multiple Renal Artery, Early Division of the main renal artery: For example, if the left kidney of the donor possesses a main renal artery (RA) with diameter of 0.4 cm and length of 2.6 cm which presents early division after a course of 1.3 cm and one lower polar MRA originating from the abdominal aorta (AA) with diameter of 0.2 cm and length of 3 cm, the classification and description will be as follows: LEFT KIDNEY: RA, D 0.4 cm, L 2.6 cm /ED $\leq$ 1.5 cm/ MRA 1: LP AA D 0.2 cm, L 3.0 cm.
Conclusion: The aforementioned codified classification of the renal vascularization may successfully notify and document renal graft vascular variations in the electronic medical record of the donor so as to support the grafting and the transplant te.

025 LIVER

P348

IS IT POSSIBLE TO MINIMIZE COMPLICATIONS RELATED TO T-TUBE REMOVAL IN THE SETTING OF ORTHOTOPIC LIVER TRANSPLANTATION?

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Background: The use of biliary T-Tube during orthotopic liver transplantation (OLT) remains controversial and can be associated with specific complications at removal, including bile leakage (in up to 35.7%) or cholangitis (in up to 11%). T-tube retroperitoneal tunneling may minimize the risk of choleperitonitis at removal. We retrospectively evaluated the results of this original unreported technique.
Material and Methods: From January 2005 to October 2014, 301 out of the 474 (63%) adult patients that underwent OLT at Croix-Rousse University Hospital had a T-tube protected end-to-end choledocho-choledochostomy. The T-tube was systematically tunnelized through a retroperitoneal and right prerenal route. At 3 months, 269 patients alive and with a T-tube in place were included for analysis.
Results: T-tube placement was feasible and safely performed in all patients. Median delay between OLT and T-tube removal was 96 days (range 83–243). At removal, 13 patients (4.8%) developed a T-tube-related complication, including 9 cases (3.3%) of cholangitis (but without septic shock and rapidly responsive to antibiotics), 3 cases (1.1%) of choleperitonitis, and 1 case (0.4%) of retroperitoneal bile leakage. Choleperitonitis was managed conservatively in 1 instance, and required laparoscopic peritoneal lavage in 2 patients followed by percutaneous transhepatic biliary drainage for 1 out of these 2 patients. The patient suffering from retroperitoneal bile leakage was treated by percutaneous drainage followed by percutaneous transhepatic biliary drainage. Median hospital stay for T-tube ablation was 2 days (range 1–55).
Conclusions: Retroperitoneal tunneling of the T-tube limits the risk of post-removal bile leakage requiring invasive management in about 1% of patients. When performing biliary reconstruction over a-tube in OLT, retroperitoneal tunneling of the T-tube should be considered as the technique of choice.

023 KIDNEY

P350 SUCCESSFUL MANAGEMENT OF SURGICAL WOUND MUCORMYCOSIS IN RECENT RENAL TRANSPLANT RECIPIENT: CASE REPORT

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Introduction and Aim of the Work: Cutaneous mucormycosis is a rare entity related to kidney transplantation. It usually presents with ecthyma-like lesions and black necrotic cellulites. We report an unusual case of primary cutaneous mucormycosis presenting as erythema-gangrenosum-like lesions in a man who had received a renal transplant.Case presentationA 33-year-old man who was suffering end stage kidney disease secondary to membranous nephropathy received a living-unrelated kidney transplant in Pakistan (12.2014). His post-transplant course was uneventful except for new onset diabetes after transplant and cutaneous lesions in the abdominal wall near the surgical wound. Later these lesions became multiple, painful, erythema-gangrenousum-like. Mucormycosis was diagnosed by skin biopsy. Microscopic examination also showed panniculitis. The patient was treated successfully with liposomal amphotericin B and repeated surgical debridement. To our knowledge, this is the first description of primary cutaneous mucormycosis with erythema-gangrenousum -like lesions and panniculitis after renal transplantation.ConclusionCutaneous mucormycosis should be considered in the differential diagnosis when a kidney transplant recipient develops erythema-gangrenousum-like lesions with panniculitis.
Keywords: Mucormycosis, renal transplant, erythema gangrenosus.

P351 NEW ONSET DIABETES AFTER RENAL TRANSPLANTATION IN KUWAIT

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OTC

Objective: This is a retrospective observational study aimed at evaluating the prevalence and long-term outcome of renal transplant recipients with diabetes mellitus after renal transplantation: 14 years single center experience
Methods: Out of 1229 renal transplant recipients- performed during the period between 2000 and 2014- 370 (30.1%) were diabetic before transplantation, group 1 and 192 (15.6%) developed NODAT after different periods of transplantation, group 2. Database of our transplant registry has been assessed regarding risk factors and outcome of transplant recipients with NODAT compared to non-diabetic recipients.
Results: Most of patients with NODAT were males (Kuwait and non-kuwaiti arab) with mean age of 50.9 $\pm$ 13.4 in group 1 and 44.2 $\pm$ 13.9 in group 2. The two groups were comparable regarding original kidney disease (mainly glomerulonephritis in nearly 35 to 40% respectively), type of donor and pre-transplant co-morbidities (tuberculosis, hepatitis C virus infection, hypertension, anemia and bone disease) ($p > 0.05$).However, ischemic heart disease was significantly more prevalent in pretransplant diabetic patients (13.5% vs.11.1% $p = 0.03$).Induction immunosuppression was significantly less potent in diabetic patients (18.5%vs.12.1%, $p = 0.003$) but the maintenance regimen was comparable in both groups ($p > 0.05$).We found no significant difference in the 2 groups regarding post-transplant infections, graft or patient outcomes ($p > 0.05$).
Conclusion: NODAT is not an uncommon complication in renal transplant. Meticulous evaluations to identify occult IHD and /or impaired glucose tolerance pre-transplant may be required to vent or decrease prevalence of this complication.

P352 MALIGNANCIES AFTER KIDNEY TRANSPLANTATION: INCIDENCE, RISK FACTORS AND OUTCOME –A 12-YEAR EXPERIENCE AT SINGAPORE GENERAL HOSPITAL

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Aim: Progress in transplantation, cancer surveillance and oncologic medicine may affect epidemiology of malignancy after kidney transplantation (KTX). We aim to examine epidemiology and risk factors for malignancy after KTX in Singapore General Hospital (SGH).
Methods: This was a retrospective cohort study of 491 patients who underwent KTX from January 1, 2000 till 31 December 2011 at SGH. Data linkage analysis was done between SGH and National Registry of Disease Office to determine standardized incidence ratio (SIR) and standardized mortality ratio (SMR) of malignancy after its diagnosis.
Results: Thirty-one patients (6.76%) developed malignancy during this period. The median age at diagnosis was 50 years (range 15 to 65 years) with 61.3% ($n = 19/31$) being of male gender. The median time to malignancy diagnosis was 2.6 years (range 0.3 to 7.9 years) with a cumulative incidence of 1% at 1 year, 4% at 5 years, and 10% at 10 years. The most common type of malignancy was lymphoma (29.0%) followed by kidney (19.3%) and colorectal (9.7%). In the multivariate analysis, only Cyclosporine was identified as an independent risk factor for malignancy. Compared to the Singapore general population, KTX recipients had higher rate of malignancy and mortality after malignancy diagnosis with a SIR of 3.36 (male 5.05, female 2.13) and a SMR of 9.45 (male 18.00, female 6.09). The survival rate for KTX recipients with malignancy is 100% at 1 year, 93% at 5 years, and 64% at 10 years, whereas for those without malignancy, the survival rate is 97% at 1 year, 93% at 5 years and 83% at 10 years.
Conclusion: The incidence of malignancy appears to be increasing and is associated with higher frequency and mortality compared to the general Singapore population. Newer immunosuppressive agents and antibody induction therapies that are more frequently used nowadays were not found to be risk factors for malignancy.

025 LIVER

P353

IRF7 GENE EXPRESSION AND HBV INFECTION IN LIVER TRANSPLANTED PATIENTS

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Background: Viral infection leads to induction of antiviral innate immune responses resulting in the expression of type I interferons (IFNs). Interferon regulatory factor 7(IRF7) is a member of interferon regulatory factor (IRF) family which mainly expressed in B cells, pDCs and monocytes and is a positive regulator of type I IFN gene expression in various cell types via Toll- like receptors (TLRs) or Retinoic-acid inducible gene I (RIG-I)-like receptors (RLRs). Active form of IRF7 is phosphorylated by TBK1/IKKe. Hepatitis B virus via HBV polymerase decrease activity of these kinases, phosphorylated form of IRF7 and host innate immune responses. In this study the effect of HBV infection on expression level of IRF7 after liver transplantation was analyzed.
Material and Methods: Here we investigated the expression level of IRF7 in confirmed HBV infection patients who undergoing liver transplantation in Namazi hospital, Shiraz, Iran between years: 2012–2014. The studied groups divided in two HBV confirmed (47 patients) and healthy control (13 persons) group. The expression level of IRF7 in Buffy coat of patients and controls was evaluated in 1, 3, 7 days after transplantation by Real time PCR using SYBR-Green PCR Kit (Takara, Otsa, and Shiga, Japan). Data was analyzed by using spss version 18.
Results: The IRF7 expression level was significantly down regulated in day1 ($p = 0.004$), day3 ($p = 0.017$), and day7 (0.006) post liver transplantation in HBV infected patients compare with healthy controls.
Discussion: The acquired data showed the effective role of HBV infection in down regulating of IRF7 after liver transplantation and this result was parallel to previous research .The HBV infection may reduce type I IFNs gene expression based on acquired result.

023 KIDNEY

P354 **MTOR INHIBITORS IN RENAL TRANSPLANTATION: A FIFTEEN YEAR, SINGLE-CENTER EXPERIENCE**

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Background: Literature does not provide unequivocal results on safety and efficacy of mTOR inhibitors (mTORi), sirolimus and everolimus. We analyzed our fifteen year (years) experience with these drugs in our Center, with a comparison with calcineurin inhibitors (CNI) treated patients (pts).
Methods: Cases: 418 mTORi treated pts (May 1997-December 2011, median f/up 68.4 months-mo-and median therapy time 32.1 months), in de novo or in conversion protocols. Among cases, G1 (n = 75/418) were mTORi treated without interruption fot the entire f/up. Controls (n = 403, f/up 76 month) were pts CNI treated (matched for gender, age, transplantation era). Cases and controls were compared for: organ and pts survival, onset of neoplasia, drop out rate. Acute rejection rate (AR) and serum creatinine (sCr) were reported only in G1, since different CNI treatments could introduce bias.
Results: Cases vs controls: higher drop out rate (18.9 vs 1%, $p < 0.001$), lower cancer rate (4.8 vs 11.7%, $p < 0.001$). Graft and pts survival (death censored): at 5 years respectively 87.7 and 93.8% (cases); 90.6 and 92% (controls) p = NS. In G1, sCr and proteinuria (pto) were worse than in controls (Table 1); AR was not statistically different: 13.3% (G1) vs 14.6% (controls). In pts switched from CNI to mTORi a sCr value at conversion was found as predictive of a better outcome: sCr<2.7 mg/dl correlated with a lower graft failure rate (16.7 vs 45.2%) and better graft survival (Roc curve). As for cancer in cases vs controls the incidence was 4.8 vs 11.7% ($p < 0.001$) and in pts switched to mTORi for cancer, the incidence of a second cancer was significantly lower vs those continuing on CNI (2.6 vs 12.8%, p = 0.02). No differences as for cancer relapse and regression, cancer related death and pts survival were noted.
Conclusions: We support the safety and efficacy of mTORi, in de novo and in conversion protocols. mTORi resulted protective towards cancer, with AR rate and graft/pts survival not significatively different from CNI teated patients.

sCrs (mg/dl)	Group 1	Controls	p
3 month	1.98	1.67	0.003
6 month	1.97	1.65	0.004
1 years	1.8	1.59	0.047
pto (g/day)	**Group 1**	**Controls**	**p**
3 month	0.41	0.25	0.003
6 month	0.34	0.3	0.016
1 years	0.41	0.29	0.001
2 years	0.35	0.3	0.03
3 years	0.43	0.35	0.028

001 ALLOCATION

P355

NEW FUNDAMENTAL APPROACH OF KIDNEY ALLOCATION IN IRAN

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Background: One of the main complexities of organ transplantation is that the number of people need organs is greater than the number of donor organs available. This means there has to be a system that allocates considering equity, queuing, utility and urgency as well. Computer based system improved allocation, but sometimes there are pitfalls in it. Although not having an automatic system in Ministry of Health was not acceptable, it made a very good opportunity to understand the allocation rules better and even find its advantages that is going to be discussed in this study.

Material and Method: Some steps of organizing Iranian organ allocation system since 1 year are: Creating National Kidney Transplant Waiting List Database in Feb 2014 Increasing allocation office activity time to 24 h a day, 7 days a week Making a unique donor information format Determining allocation policies according to the world guidelines Determining allocation criteria including blood group, waiting time, dialysis initiation time, age, size to ensure the best possible match Prioritizing patients with life threatening dialysis access problems or younger than 18.
Result: Number of national registered candidate for kidney transplant was 3100. Totally 1030 kidneys transplanted in this year. For age matching, age difference between donor and recipient of $\pm$10 years was acceptable. In marginal donor, recipient would be selected 5 years older than donor per each marginality factor, including creatinine more than 1.5 mg/dl, cerebro-vascular attack as brain death cause and history of hypertension or diabetes.
Conclusion: The manual allocation model can be beneficial for countries that do not have computerized program. Moreover it can play a crucial role in countries in which transplant specialists aren't enough satisfied with computer based model. Although it takes longer time, it is ethical and because of patient considerations makes allocation process more dynamic.

015 INFECTIONS

P356

CLINICAL UTILITY OF QUANTIFERON-CMV TEST (QF-CMV) IN MANAGEMENT OF KIDNEY TRANSPLANT RECIPIENTS (KTR)

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Background: Immune monitoring of CMV-specific T-cells responses becomes an additional tool in CMV risk assessment of KTR. QF-CMV assay based on IFN-γ release by CD8 + cells is commercially available in UE. Some data demonstrated its potential use in stratifying CMV risk before transplantation, at the end of prophylaxis and during preemptive strategy. High risk for CMV disease was also reported in KTR with indeterminate QF-CMV results in which both mitogen and CMV antigen responses were absent (IFN-γ <0.2 IU/ml in CMV tube, IFN-γ <0.5 IU/ml in positive control with mitogen), indicating high net state of immunosuppression.
Materials/Methods: 25 KTR in the first year after KT, including 17 KTR after CMV infection treatment (CMV- KTR), were studied by QF-CMV assay. The results were referred to occurrence of CMV infection, severe infectious complications (sepsis, systemic mycosis), recipients CMV serostatus (R+, R-), and a number of clinical and demographic features.
Results: Positive QF assay (QF+) was present in 16/25 (64%) of KTR, negative (QF-) in 5/25 (20%), and indeterminate (QF0) in 4/25 (16%). The QF0 patients in comparison to combined group of QF+ and QF- presented increased incidence of CMV disease (4/4 (100%) vs 7/21 (33.3%), $p < 0.05$) and severe infectious complications (4/4 (100%) vs 6/21 (29%), $p < 0.02$). Out of 17 CMV-KTR 11/17 (64.7%) were QF+, 2/17 (11.8%) were QF- and 4/17 (23.5%) were QF0. 4/11 of QF+, 1/2 QF-, and 1/4 QF0 CMV-KTR were initially R-, and demonstrated seroconversion except for QF- patient. Incidence of CMV disease was 6/11 (54.5%) in QF+, 1/2 (50%) in QF-, and 4/4 (100%) in QF0 (p = ns). Severe infectious complications were present in 4/11 (36.3%) of QF+, 2/2 (100%) of QF-, and 4/4 (100%) of QF0 patients (p = ns). CMV-KTR with IFN-γ <3.5 vs >3.5 IU/ml in mitogen tube, irrespectively of QF-CMV status, showed increased incidence of CMV disease (8/9 (88.9%) vs 3/8 (37.5%), $p < 0.05$) and severe infectious complications (8/9 (88.9%) vs 2/8 (25%), $p < 0.02$).
Conclusion: Indeterminate result of QF-CMV or IFN-γ <3.5 IU/ml in mitogen tube seems to be related to impaired immunity. The QF-CMV assay appears to be an useful tool in clinical practice, identifying the group of KTR with increased risk of infectious complications, that may benefit from immunosuppression reduction and maintenance of antiviral prophylaxis.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P357

BRAIN DEAD DONOR PRECONDITION WITH THE ANTI-INFLAMMATORY N-OCTANOYL DOPAMINE IN LUNG TRANSPLANTATION TO AMELIORATE THE IMMUNE ACTIVATION

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Brain death (BD) and ischemia reperfusion cause graft deterioration, limiting transplantation outcome substantially. N-octanoyl dopamine (NOD) has been shown to prevent graft deterioration in kidney and heart transplantation in rats. For this reason we investigated the effect of NOD donor preconditioning on the immediate outcome after lung transplantation.

Fischer rats were randomly assigned into 3 donor groups: 1) non brain dead donors, 2) NaCl treated - 3) NOD treated BD donors. Lungs were harvested after 4 h and the left lung was transplanted orthotopically into syngeneic recipients. Recipients were sacrificed after 6 h of continuous ventilation of the transplant. Physiological parameters were recorded and lung tissue was obtained to analyze changes in gene expression on RNA level and to determine histological injury before and after transplantation. NFkB translocation was investigated with immunofluorescence.

NOD treatment reduced Icam1 gene expression compared to the NaCl treated BD animals after 6 h of reperfusion in the recipient significantly. In addition, cytokine gene expression was only significantly different in the NOD treated group comparing the two time points after organ procurement.

The differences in Icam1 and cytokine gene expression suggests a beneficial effect of NOD donor preconditioning in lung transplantation on immediate outcome. However future studies are needed to determine the exact mechanism in an allogenic model.

023 KIDNEY

P358

TRANSPLANT RENAL ARTERY STENOSIS TREATED BY PERCUTANEUS TRANSLUMINAL REVASCULARISATION - ONE CENTER EXPERIENCE AND REVIEW OF THE LITERATURE

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Introduction: Transplant artery stenosis (TRAS) is a frequent vascular complication after kidney transplantation (KT) and may cause hypertension, graft failure and premature death of recipient. The aim of the study was to assess the outcome after percutaneous transluminal revascularization.
Material/Methods: We analyze retrospectively all 23 patients (13 m) at mean age 47 (range 20–66) years with TRAS treated with endovascular methods in Gdansk Center from Jan 2010 to Jan 2015. Time from KT to the TRAS diagnosis was 12 months (range 5 days-9 years). 11 patients underwent balloon angioplasty, 12 stenting.
Result: The prevalence of TRAS was about 5%. Before revascularization 100% of patients had hypertension, acceleration of hypertension 40%, positive duplex ultrasound findings 96%, bruit 67%, graft deterioration 70%, edema 35%, hyponatremia 9%, poliglobulia 9%, confirmation of TRAS in CT angiography/percutaneous angiography 100%.The prevalence of AR, DGF and CMV inf. was 1%, 30% 1.7% as compare to patients without diagnosis of TRAS transplanted in the same time: 10%, 37% and 3% respectively. The complications during the angioplasty included: hematoma–3, pseudoaneurysm–2, acute graft failure–1 (recovery after stenting), bleeding from femoral artery-1 case. All cured conservatively. 5 patients underwent repeated renal artery plastics with stenting. Despite technical success no graft function recovery occurred in 2 cases (43 days and 28 months after KT). Doppler normalization was observed in 83% patients, antihypertensive treatment reduction was noticed in only 9%.The mean pre-procedure and 1 month after angioplasty creatinine was 2.37 mg/dl (eGFR 36.6 ml/min; 4p MDRD) and 1.74 mg/dl (eGFR 46.4 ml/min; $p < 0.05$ t Student test), respectively. Graft function was stable in a follow up period ranging between 1 and 48.5 months.
Conclusion: Percutaneous transluminal angioplasty and stenting are safe and effective procedures in preserving renal function in TRAS.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P359

THERAPEUTIC DRUG MONITORING OF CONVERSION TO ONCE-DAILY TACROLIMUS SHOWS HIGHER P38MAPK ACTIVITY IN T-LYMPHOCYTES OF KIDNEY TRANSPLANT PATIENTS

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Erasmus MC

Background: The once-daily formulation of tacrolimus (TACOD) has been developed to overcome adherence problems. Conversion from the twice-daily TAC (TACBID) formulation to TACOD on a 1:1 basis, however, often leads to a decrease of TAC predose concentrations which averages ~15%. Switching between the two TAC formulations may thus influence drug efficacy and necessitates therapeutic drug monitoring. To improve the quality of transplantation diagnostics we used phospho-specific flowcytometry to study the biological effects of conversion on p38MAPK phosphorylation levels, a kinase involved in T-lymphocyte activation.
Methods: Stable renal transplant recipients ($n = 17$), at least 1 year after their transplantation, were converted from TACBID to TACOD on 1:1 mg for mg base. Co-medication consisted of mycophenolate mofetil ($n = 15$) and prednisolone ($n = 3$). TAC whole-blood predose concentrations were determined by immunoassay before and 3 months after conversion. P38MAPK phosphorylation levels were measured in T-lymphocytes by whole-blood phospho-specific flow cytometry.
Results: Three months after conversion, tacrolimus predose concentrations decreased by an average of 9.1%, from 6.2 ng/ml (mean) to 5.6 ng/ml. p38MAPK phosphorylation increased with 10.8% ($p < 0.05$) in CD4 + and with 17.6% ($p < 0.05$) in CD8 + T-lymphocytes. These predose concentrations inversely correlated with p38MAPK levels in T-lymphocytes ($Rs = -0.441$, $p < 0.05$).
Conclusions: P38MAPK phosphorylation inversely correlates with tacrolimus whole-blood predose concentrations. Our results demonstrate that p38MAPK phosphorylation levels can be used as a method to determine the biological effects of TAC and of conversion from the TACBID to the TACOD formulation upstream in the activation pathway of T-lymphocyte subsets. This method can be used as a new tool for detailed TAC drug monitoring.

027 LUNG

P360

EFFECT OF SIROLIMUS ON THE RECIPIENTS OF LUNG TRANSPLANTATION FOR LYMPHOANGIOMYOMATOSIS

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Background: We have performed 32 lung transplantations (LTx) for Lymphangiomyomatosis (LAM) of 84 LTx since 2000. Although LTx is for chronic respiratory failure due to LAM, the recipients sometimes develop the complication of LAM after LTx, such as chylothorax, ascites, pneumothorax and renal angiomyolipoma. Meanwhile sirolimus is an anti-proliferative and immunosuppressive drug for LAM as mammalian target of rapamycin (mTOR) inhibitor. We describe two cases to administer sirolimus for LTx patients due to LAM.

Material: At first, a 47-year-old woman underwent right single LTx due to LAM at 2008. In 2015, she had pneumothorax in native lung and chylothorax in right chest. We administered sirolimus with tacrolimus, MMF and steroid in order to control complications of LAM. The second case was a 37-year-old woman who underwent double LTx in 2013 due to LAM. We initiated hemodialysis for her due to renal dysfunction after LTx. Her white blood cell count got down because of the side effect of mycophenolate mofetil (MMF), so that we induced sirolimus instead of MMF for an immunosuppressant.

Result: We managed the trough level of sirolimus as around 3 ng/ml and that of tacrolimus as 7 to 8 ng/ml with steroid.

Conclusion: The purpose of sirolimus administration for LTx patient with LAM is to control LAM complication and replacement for immunosuppressant. When the recipient of LTx develops complications of LAM, we need to manage them and immunosuppression at the same time to avoid acute and chronic rejection and infection after LTx. Sirolimus has both effects of treatment of LAM and immunosuppression, therefore the recipients who underwent LTx for LAM may be good candidates for the induction of sirolimus to manage the disease of LAM and rejection of transplantation. However we need to pay attention for the side effect of sirolimus in these recipients such as cancer or interstitial pneumonia.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P361

THE IMPACT OF EXPLOSIVE AND GRADUAL BRAIN DEATH INDUCTION ON THE POTENTIAL DONOR LUNG

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Clinical data is inconclusive whether the cause of brain death (BD) is a risk factor for lung graft quality and transplantation outcome. Here we investigate the influence of the duration of brain death induction in a rat model on lung graft quality.

Fischer (F344) rats were randomly assigned into three groups: 1) no intervention and immediate sacrification, 2) explosive (induction time of 1 min) - and 3) gradual (induction time 30 min), brain death model. Animals were sacrificed after 30 min, 1 h, 2 h and 4 h following brain death induction. During the brain death period animals were hemodynamically stabilized (MAP >80 mmHg) and lung protective ventilated (VT=6.5 ml/kg of body weight and a PEEP of 3 cmH_2O). Hemodynamic changes and pulmonary inspiratory pressure were monitored, the lungs (n = 8/group) were investigated for histological total lung injury score and for pro-inflammatory changes in gene expression with rt-PCR.

In the explosive model six animals were lost immediately after brain death induction. While the models differed in MAP during the induction phase, MAP was comparable throughout the experiment with a respective higher need of noradrenaline in the explosive model. Gene expression of proinflammatory cytokines did not differ between the models with the exception of an increased Vcam1 in the gradual model throughout time. The histological scoring system revealed pronounced changes in the explosive model already at 30 min after induction.

The results of this study suggest that donor lungs suffer more injury after explosive onset of brain death, possibly making them unsuitable for transplantation, compared to gradual onset. However, findings in gene expression lead us to conclude if utilized for transplantation the outcome would be comparable.

015 INFECTIONS

P362

TRANSVERSAL OBSERVATIONAL STUDY ON RECURRENT AND LATE URINARY TRACT INFECTIONS (UTIS) IN RENAL TRANSPLANTATION

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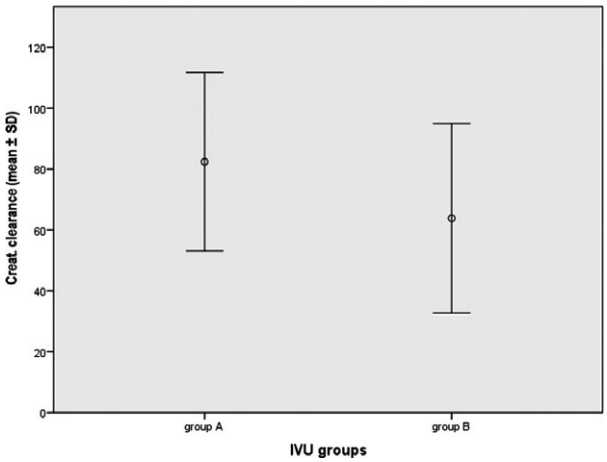
Introduction: Urinary tract infections (UTIs) are common complications after kidney transplantation. Renal transplant recipients with UTIs are often clinically asymptomatic as a consequence of immunosuppression and can occur in early or late sporadic forms or in recurrent forms. The aim of this study was to define the potential predisposing factors and the possible impact on graf function of sporadic late or recurrent UTIs.
Materials and Methods: We studied 254 patients (107 F, 147 M), undergoing kidney transplantation between January 2008 and October 2012, divided in two groups: group A (patients without UTIs or with early sporadic UTIs, 191 patients) and group B (late sporadic UTIs and recurrent UTIs, 63 patients). The statistical analysis was conducted with a Chi square test for dichotomous variables and with t-Student's test or Mann-Whitney test for continuous ones. Multivariate analysis was performed using logistic regression (outcome: Creatinine clearance <60 ml/min).
Results: The comparison of clinical variables at transplantation between the two groups showed that group B patients presented an advanced mean age (50.2 vs. 46.1, $p = 0.023$), an higher percentage of female (64% vs 34.7%, $p < 0.001$) and polycystic disease (21.8% vs. 6.3%, $p < 0.001$).

	Group A (no 190)	Group B (no 64)	p
Age (years)	46.1 ± 12.3	50.2 ± 12.7	0.023
Gender (M/F)	124/66	23/41	0.000
Dialysis (HD/PD)	156/34	57/7	0.191
Policystic disease (%)	6.3	21.8	0.000
BMI (kg/m^2)	24.88 ± 3.82	25.67 ± 4.92	0.219
Diabetes (%)	7.3	12.5	0.207
CMV infections (%)	38.9	51.5	0.077
Pre-TX urological abnormalities (%)	8.9	10.9	0.638
Post-TX urological complications (%)	7.3	14	0.107
DGF (%)	15.2	18	0.512
Acute rejection (%)	5.7	10.9	0.165

Interestingly, graft function at 36 months after kidney transplantation was significantly reduced in group B (mean Creatinine clearance 82.4 vs. 63.8 ml/min, $p = 0.002$).



In the logistic regression analysis, the recurrent UTIs and the late UTIs are independent risk factors on the graft's outcome in terms of Creatinine clearance <60 ml/min at 36 months after transplantation (OR 2.953 95% CI 1.174–7.428, $p = 0.021$).
Conclusion: The most common predisposing factors of UTIs were the female gender, the advanced age and the polycystic disease, that are unchangeable factors. The recurrent UTIs and the late UTIs are independent risk factors on the graft's outcome at 36 months after transplantation.

023 KIDNEY

P363 VENTRICULOPERITONEAL SHUNT IN KIDNEY TRANSPLANTATION

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Background: There are no published accounts of patients with ventriculoperitoneal shunts undergoing kidney transplantation in the literature, because patients with ventriculoperitoneal shunts are prone to infections, this may be theoretical contraindication to transplantation.
Case Report: We represent a case of a patient with end-stage renal disease due to a neuropathic bladder, undergoing chronic haemodialysis, who had a ventriculoperitoneal shunt placed at age of six months. The patient had no neurological complications including cognitive problems. The shunt was intact and functioning. The kidney transplantation was performed using a living kidney donor. A part an urinary infection, the graft function was at 0.8 mg/dl of creatininemia at the third day after transplantation. The neurological outcome was well.
Conclusion: In conclusion, patients who have ventriculoperitoneal shunts may considered for kidney transplantation as the risk of neurological complications is low and there are no graft survival impairment.

P364 EXCELLENT LONG-TERM OUTCOME OF KIDNEY TRANSPLANTATION AT A SMALL LOCAL HOSPITAL, THE TOKIWA-KAI FOUNDATION JYOBAN HOSPITAL) IN FUKUSHIMA

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Background: Kidney transplantation is considered to be an unusual medical treatment option in local area in Japan, however living kidney transplantation has been carried out at a small local hospital (Jyoban Hospital) in Fukushima since 1997 and have done 30 cases as of the end of 2014.

Patient and immunosuppression: Total 30 patients underwent living related kidney transplantation between October 1997 and November 2014. Primary kidney disease is chronic glomerulonephritis in 28 and Alport syndrome in 2 patients, and 21 were male and 9 f were female. Eight patients had ABO-blood type incompatible kidney transplantation and 22 were compatible transplant. Basic immunosuppression were consisted of calcineurin inhibitor, azathioprine or mycophenolate mofetil, and steroids in combination of induction treatment including ALG, basiliximab, and/or rituximab.
Results: During observation period 3 patients died of infectious complication and 3 patients lost their graft. The patient survival is 91.8%, 82.7%, and 82.7% at 5, 10, and 15 years, respectively and death-censored graft survival is 100%, 95.5%, and 75.9% at 5, 10, 15 years, respectively. The latest graft function is excellent in 70% of patients and average serum creatinine level is N1.51 + - 0.57 mg/dl.
Conclusion: Thirty cases of living related renal transplantation has been carried out since 1997 at a small local hospital in Fukushima, Japan and their long-term outcome up to 15 years is excellent.

P365 PROSTATE CARCINOMA IN SOLID ORGAN TRANSPLANT RECIPIENTS

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Introduction: Improvements in immunosuppression and anti-infection drugs in solid organ transplantation have led to a significant survival increase for patients and grafts. Prostate cancer (PC), being the most common tumor in men and given the increasing number of old male recipients, should show an increasing incidence in solid organ transplant recipients (SOTR). The aim of this study was to analyze retrospectively our Liver (LTR), Kidney (KTR) and Cardiac transplant recipients (CTR) treated for a PC.
Material and Method: Between January 1993 and December 2014, we found 43 PC in 1407 male SOTR (3%): 13 PC in LTR, 28 in KTR and 2 in CTR. Age at diagnosis was 64.5 ± 6.1 (51.7–77.6) years old and the interval from transplantation to diagnosis was 85.5 ± 60.7 (9.1–241.5) months. Mean PSA level was 11.2 ± 11.3 (0.5–53) ng/ml. Clinical stages were T1, T2 and T3 in respectively 25, 14 and 4 patients. Diagnosis was suspected during screening, because of prostatitis or bone pain in respectively 38, 1 and 1 patients. 3 PC were discovered after prostate transurethral resection.
Results: 31 patients (21 KTR and 10 LTR) with a localized disease underwent radical prostatectomy (RP). Histological findings were 21 pT2c and 9 pT3 tumors, with 5 positive surgical margins. Gleason score (GS) was 5 in 1 case, 6 in 22 cases, 7 in 6 cases and 9 in 1 case. One patient with positive pelvic lymph nodes was given hormonotherapy. Another had a biochemical recurrence at 10 months and was treated with salvage radiotherapy. With a mean follow-up of 63.4 ± 42.3 (0.6–199.1) months, two KTR died from KP, 3 and 11 years after Hormonotherapy and RP respectively.
Conclusion: Prevalence of PC in SOTR remains controversial, even though a significant increase can be expected in the coming decades. It is therefore recommended to systematically screen male transplant recipients after 50 years of age because outcome is much better if PC is diagnosed and treated early. Radical prostatectomy is feasible in KTR as well.

		LTR	KTR	CTR
Treatment	Radical Prostatectomy	10	21	0
	Radio+Hormonotherapy	2	1	2
	Radiotherapy	0	1	0
	Radiotherapy+Curiethérapie	0	1	0
	HIFU	1	1	0
	Hormonotherapy	0	2	
	Clinical monitoring	0	1	0
Follow up	Mean age at PC (years old)	65 (51.7-77.6)	65 (51.7-77.6)	65.8 (61,6-69,9)
	Time between PC and Transplantation (months)	59.5 (12-140,9)	92.7 (9,1-241,5)	152.2 (146,7-157,7)
	Time after treatment (months)	49.4 (5-90.2)	68,6 (0,6-199,1)	57,6 (49.9-65,4)
	Specific death	1	2	0

P366 MONOCLONAL GAMMOPATHY-ASSOCIATED DENSE DEPOSIT GLOMERULONEPHRITIS (GN) RECURRENT IN A RENAL TRANSPLANTED PATIENT (PT): CASE REPORT

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Dense deposit disease (DDD) and C3 GN are rare forms of GN associated with glomerular deposition of complement factors due to dysregulation of the alternative pathway of complement. Inhibition of the complement regulating proteins may result from monoclonal gammopathy. Proliferative GN are likely to recur in the graft and the risk is higher when circulating monoclonal Ig are present.

The pt was a 65 year old men, ESRD due to DDD, previous diagnosis of monoclonal gammopaty of undetermined significance (MGUS) at bone marrow biopsy with 8% plasmacells, serum monoclonal component (CM) 30%. In February 2014 he received a kidney transplantation. The immunosuppression was: induction with basiliximab, mycophenolate mofetil (MMF), steroid (ST); maintenance with tacrolimus (TAC) and ST. At hospital discharge: serum creatinine (sCr) 1.5 mg/dl, proteinuria 0.1 g/24 h, C3 61 mg/dl. One month post operatively, sCr 2.5 mg/dl and CM to 23%. A renal biopsy (RB) demostrated an early DDD recurrence. No evidence of complement mutations and of abnormal values of C5bC9 was found. A pulse ST therapy obtained a poor response. According to newly described entities of MGUS associated C3 GN, we proposed a treatment with plasmapheresis (5 sessions) and chemiotherapy: bortezomib and desametasone and subsequently cyclophosphamide (3 weeks monthly for a total of 6 months) for the CM increase. At protocol RB after 4 months the histological features were unchanged. After 12 months: sCr 1.5 mg/dl, proteinuria < 0.2 g/day, CM 14–7%. Well being was at high level. Maintenance regimen was: MMF-TAC-ST plus 1 plasmapheresis monthly to lower CM.

Currently, the best therapeutic approch for DDD and C3 GN-MGUS associated is unknow. Treatment should be aimed at eradicating the clonal cells responsible for the offending Ig and the chemioterapic approach is reported as a reasonable option. In our pt this therapy was associated with an improvement of renal function and a CM reduction without any adverse side effect.

025 LIVER

P367

MAINTENANCE IMMUNOSUPPRESSION WITH EVEROLIMUS AFTER LIVER TRANSPLANTATION (LTX), IMPEMENTATION IN WEEK 4: 6 YEARS OBSERVATION

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Background: Since the introduction of calcineurin inhibitors (CNI's) short term organ survival after solid organ transplantation has improved. But long time survival still is unsatisfactory due to side effects of immunosuppressives. Renal impairment is the main long time complication of CNI's usually occurring within the first 6- 12 months after transplantation and increases the risk of mortality more than four times. The implementation of the proliferation signal inhibitor Everolimus, being less nephrotoxic than CNI's with immunosuppressive and antiproliferative characteristics into long time management after LTX, may be an option.

A patient born in 1947 suffering from toxic liver cirrhosis, ascites and type II Diabetes mellitus and diabetic nephropathy was evaluated for LTX. Renal parameters revealed with an estimated glomerular filtration rate (GFR) of 68 ml/min and mild proteinuria (PU) of 289 mg/gCr. LTX was performed in 3. 2009. Induction therapy with ATG for 3 days and standard immunosuppression with Tacrolimus (Tac) and Mycophenolat Mofetil were administered. In week 3 after LTX GFR diminished below 60 ml/min and Everolimus was introduced into the protocol. Tac was stopped after one year at a GFR of 41 ml/min and PU of 263 mg/gCr. Everolimus monotherapy with trough levels around 5 ng/ml were the ongoing immunosuppressive regime.

Results: The early induced Everolimus based regime was well tolerated without clinical signs of rejection. The patient developed diabetic nephropathy II. Renal function after 6a observation period presented with GFR 64 ml/min and Creatinine 0.92 mg/dl. Hypertension and hyperlipidaemia required oral medication.

Conclusion: Immunosuppression with Everolimus was efficient. Renal function was preserved ongoing although IIDM and hypertension contributed to further kidney damage. The patient was prevented from CNI associated side effects. Further observations are necessary to prove superiority and safety to an Everolimus based regimen after LTX.

007 DONATION / RETRIEVAL

P368 NEONATAL DONATION – TAKING THE NEXT STEPS

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Background: Maintenance of UK neonatal organ donation momentum and future support.
Method: A 6–year audit of neonatal donation potential in 1 specialist trust identified significant opportunities(1).This, and other recent publications, along with successful DCD by a 6-week old in 2012 led to increased confidence and has led to subsequent neonatal donations. Whilst recognising increasing transplant surgeon expertise it is largely down to Specialist Nurses Organ Donation ⟨SNODs⟩ to raise awareness and support donation in Neonatal Intensive Care Units ⟨NICU⟩. Increasing SNOD confidence is key to managing the challenges and practicalities of facilitating these donations. Especially as brain death in <2 months is expected to be supported in the upcoming Royal Collage of Paediatrics & Child Health infant neurological determination of death revision.
Results: Donation potential in the specialist unit is arguably greater than in a standard NICU due to case mix (1) subsequent referrals, requests for education and transplantations suggest this is a worthwhile investment given 60 level 3 NICUs in UK, (2) each with at least several potential donors annually.
Conclusion: SNODs need to continue the momentum of organ donation by dying neonates and families as part of routine end–of–life–care. Confirmation of local potential should be established in NICUs by SNODs already skilled in this assessment. SNOD–neonatal nurse–neonatologists working groups need to be urgently established with support from local Clinical Leads Organ Donation ⟨CLODs⟩/Paediatric Intensive Care Unit teams if donation opportunities are to be realised.

1.Charles E, et al The potential for neonatal organ donation in a children's hospital. Arch Dis Child Fetal Neonatal Ed 2014; 0: F1-F5
2.British Association of Perinatal Medicine

025 LIVER

P370

LIVER TRANSPLANTATION FOR PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS TYPE 3 (PFIC-3) PRESENTING IN THE 5TH DECADE OF LIFE

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Background: PFIC a rare heterogeneous group of autosomal-recessive disorders that presents during the neonatal period or within the first year of life. PFIC-3 generally occurs later presenting either in late infancy, childhood or even early adulthood.

Case Report: 44-year old gentleman with history of DM and jaundice since childhood due to Dubin- Johnson syndrome without itching, he developed progressive jaundice and intractable itching associated with dark urine and pale stools, over the past 2 years, his total bilirubin was 563 μmol/L with high GGT. Serology for viral hepatitis, autoimmune hepatitis, Wilson, alpha 1 antitrypsin and hemochromatosis were negative. Abdominal US showed no bile duct dilatation. MRCP showed Moderate splenomegaly without evidence of primary sclerosing cholangitis (PSC), liver biopsy showed Chronic liver disease (stage II/ IV) with finding suggestive of small duct PSC, and Dubin-Johnson syndrome.

He was started on hemodialysis for biopsy proven diabetic nephropathy 1 year ago.

Progressive familial intrahepatic cholestasis (PFIC) was considered and liver biopsy stained negative for MDR3, and genetic testing using 3rd generation sequencing revealed a combination of Dubin-Johnson mutations and PFIC-3 mutations, this was confirmed using PCR technique.

He received Living donor liver transplantation from his daughter on September 16, 2014 and he has an excellent graft function, awaiting living related kidney transplant in 1 week.

Conclusion: To our knowledge, this is the first reported case of liver transplantation for pathologically and genetically confirmed PFIC-3 presenting in the fifth decade of life.

023 KIDNEY

P371

EFFECT OF IMMUNOSUPPRESSIVE TREATMENT ON CAROTID ATHEROSCLEROSIS IN RENAL TRANSPLANT RECIPIENTS

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The anti-atherosclerotic effects of mTOR-inhibitors were reported in animal models and heart transplantation, but they were not determined in the kidney transplant patients.

Aim: The aim of this study was to compare the effect of immunosuppressive regimens using either mTOR inhibitors (mTOR-i) or calcineurin inhibitors (CNI) on the risk of atherosclerosis in renal transplant patients.

Materials and Methods: The study involved 2 groups of recipients: 24 at age 60 years treated with mTOR-i and 20 at age 58 years treated with regimen based on CNI, at mean 9 years after transplantation. Carotid atherosclerosis was evaluated by measurement of the intima-media thickness (IMT) of the common and internal carotid artery walls and detection of carotid plaques by a high resolution ultrasonography. Carotid plaques were defined as the focal structures of more than 1.3 mm in thickness. The presence of plaque precluded IMT measurements.

Results: The mTOR-i group showed significantly higher level of total cholesterol, LDL, and triglycerides ($p < 0.01$). Posttransplant diabetes developed in 34% of mTOR-i group compared to 25% in the CNI-group. There were no differences in the time after transplantation, eGFR, BMI, HbA1C, hypertension, proteinuria, and uric acid level between the groups.

IMT of both common and internal carotid arteries was similar in mTOR-i and CNI groups. Carotid plaques were detected in 46% of patients from the mTOR-i group and 25% from CNI group ($p < 0.02$). The presence of carotid plaques combined with IMT >0.9 mm were associated with male gender, mTOR-i treatment ($p = 0.03$), and cardiovascular events. The incidence of coronary heart disease was higher in mTOR-i group than in CNI group ($p = 0.03$).

Conclusions: There was not observable beneficial effect of immunosuppressive treatment with mTOR inhibitors on carotid atherosclerosis in renal transplant patients. Cardiovascular events in the patients treated with mTOR inhibitors were more frequent than among the patients treated with CNI-based regimen.

025 LIVER

P372 GUT MICROBIOTA IN LIVER TRANSPLANT CANDIDATES WITH AUTOIMMUNE LIVER DISEASES

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Background: There is increasing evidence for the role of microbial-host interactions in the pathogenesis of both liver diseases and autoimmune disorders. The aim of this study was to assess the characteristics of fecal microbiota in liver transplant candidates with autoimmune liver diseases (AILDs).
Methods/Materials: Fecal microbiota of 60 liver transplant candidates were prospectively analyzed. Patients were divided into those with AILDs ($n = 11$), comprising primary biliary cirrhosis, primary sclerosing cholangitis and autoimmune hepatitis, and with cirrhosis of other aetiology ($n = 49$). Associations between gut microbiota and the severity of liver disease were explored with respect to the presence of AILD.
Results: Patients with AILDs had significantly decreased fecal Bifidobacterium counts ($p = 0.030$) and lower stool pH ($p = 0.050$) as compared to the remaining patients. Notably, the presence of AILD was independently associated with decreased Bifidobacterium counts in multivariable analysis ($p = 0.033$). Higher Model for End-stage Liver Disease (MELD) score was significantly related with decreased Bifidobacterium counts and increased Enterococcus counts in all patients ($p = 0.007$ and $p = 0.043$, respectively) and in those without AILD ($p = 0.049$ and $p = 0.043$, respectively). Conversely, none of the analyzed microbiota had a significant impact on MELD score in AILD patients. Accordingly, the pre-transplant dysbiosis ratio (PTDR, Bifidobacterium to Enterococcus count) was significantly associated with MELD score in all patients ($p = 0.006$) and in those without AILD ($p = 0.007$) but not in those with AILD ($p = 0.733$).
Conclusion: The composition of gut microbiota in liver transplant candidates with cirrhosis due to AILDs is characterized by particularly low abundance of Bifidobacterium species. Strong association between fecal Bifidobacterium and Enterococcus species counts and the severity of liver disease, as well as the use of PTDR is limited to patients without AILDs.

P373 RECONSTRUCTION OF THE REPLACED RIGHT HEPATIC ARTERY WITH AORTIC PATCH AT THE BACK TABLE IN THE DECEASED DONOR LIVER TRANSPLANTATION (CASE)

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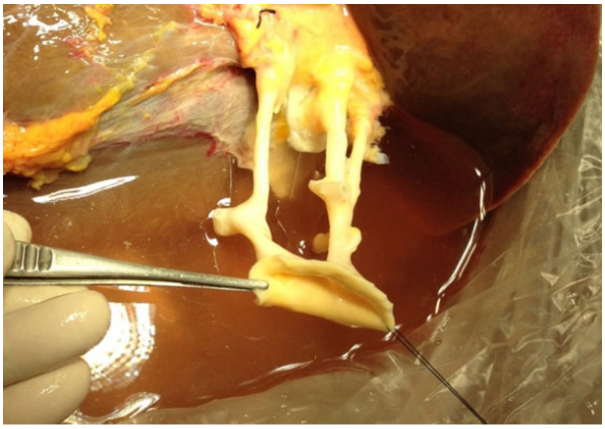
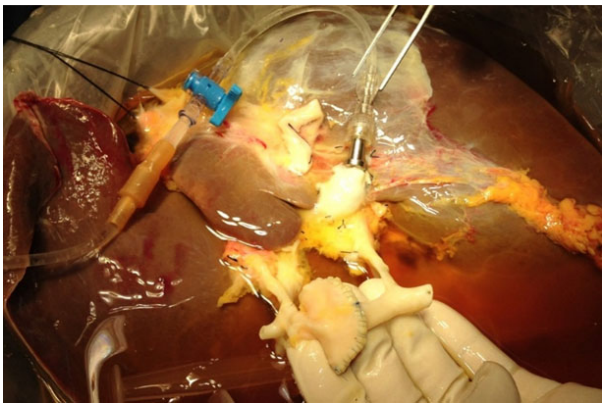
The replaced right hepatic artery arising from superior mesenteric artery is uncommon, however, we should check it along the right side of the common bile duct to harvest the whole hepatic artery without damage during donor liver procurement. Replaced right hepatic artery and gastroduodenal artery are usually reconstructed the back table.We present another useful method using aortic patch for reconstruction of superior mesenteric artery and celiac axis. Recipient was 51 years old male and had hepatitis B related liver cirrhosis and was KONOS status 2A. Donor was female and 39 years old with meningioma and diagnosed as brain death after brain surgery. During procurement, we found the replaced right hepatic artery arising from superior mesenteric artery, left hepatic artery from common hepatic artery, and accessary left hepatic artery from left gastric artery. After perfusion, cold dissection was performed. All three arteries were carefully dissected and common aortic patch including celiac axis orifice and superior mesenteric artery orifice were harvested.

At the back table, the aortic patch of the two orifices was reconstructed with 7–0 polypropylene. The splenic artery of the graft was anastomosed to the common hepatic artery of the recipient with 7–0 polypropylene.

The doppler scan showed good arterial flow and normal RI values during operation and 2 weeks after transplantation.This reconstruction method is easy to use and shows good arterial patency and therefore, will be a good alternative in reconstruction of hepatic artery at the back table.





023 KIDNEY

P374

AGE OF THE DONOR: TO WHAT EXTENT DOES IT INFLUENCE THE OUTCOME OF KIDNEY TRANSPLANTATION IN RECIPIENTS ABOVE 60 YEARS

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Background: The demand for donor organs is increasing. The number of kidney recipients and donors in advanced age is also increasing. Organs of expanded criteria donors are transplanted worldwide. We investigated the outcome of kidney transplantations performed during the last 5 years at our centre with special regard to the age of recipients and donors.Material: 862 kidney transplantation were performed from 2010–2014 at our centre. 181 recipients were >50 years. Out of them 14 living donor transplantation were carried out and 167 patients received cadaveric kidney. According to the donor's age patients were divided into 5 groups. (1. 65 years. Altogether 17 recipients died, 14 of them with a functioning kidney, 6 had to return to dialysis. 150 patients are alive with functioning kidney. There was no significant difference between the groups regarding the average age of recipients: 1. 65.15; 2. 64.59; 3. 65.0; 4. 64.59; 5.68.58 years. Number of HLA mismatches was 3.15 in average and rejection rate was 10%. The longest survival could be observed in the 50–55 years group: 21.02 months versus 14.5 in the group were donors were >49 years and 13.3 in the 66–76 groups. The average age of recipients receiving kidneys from living donors was 65.64 years, where average age of living donors was 53.21. Out of this group 4 patients died, their average survival was 24.5 months.Conclusions: The increasing number of recipients above the age of 60 necessitates the use of organs from donors of older age as well. In our comparison the outcome of transplantations was not inferior with donor 50 years. The condition of kidneys from older donors requires careful evaluation but it provides a solution to alleviate the donor shortage.

025 LIVER

P375

ECG-GATED SINGLE PHOTON-EMISSION COMPUTED TOMOGRAPHY EVALUATION OF SYSTOLIC AND DIASTOLIC MYOCARDIAL FUNCTION IN PATIENTS WITH CIRRHOSIS AND AFTER LIVER TRANSPLANTATION

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Cirrhotic cardiomyopathy is a chronic cardiac dysfunction, characterised by blunted contractile responsiveness to stress and altered diastolic relaxation with electrophysiological abnormalities, occuring in the absence of other cardiac disease in patients with end-stage liver disease. Recently ECG-gated single photon emission computed tomography (G-SPECT) was used in cirrhotic patients to assess myocardium perfusion and exclude the coronary artery disease, particularly before the liver transplantation (LT). The aim of our study was to estimate systolic and diastolic function of myocardium with G-SPECT in cirrhotic patients before and after LT. Materials and methods: 22 cirrhotic patients (Child B, C) with portal hypertension were included in the study. Mean age was 46 $\pm$ 12 years. The G-SPECT was performed within listing evaluation and mainly in 1 month after LT. Results: hyperdynamics diminishes after LT (all data is performed as median, minimum and maximum): left ventricle (LV) end-systolic volume (ESV) rises from 23 ml (1; 32) to 32 ml (10; 57) ($p = 0.02$), LV ejection fraction decreases from 74% (51; 97) to 60% (41; 86) ($p = 0.03$), staying in normal range, calculated cardiac output declines from 4897 ml/min (2898; 6549) to 3066 ml/min (2080; 4950) ($p = 0.001$), peak ejection rate (PER) declines from 302 ml/s (190; 508) to 227 ml/s (152; 340) ($p = 0.001$). We found no improvement in diastolic dysfunction early after LT: peak filling rate (PFR) decreased from 281 ml/s (148;525) to 188 ml/s (29;399) ($p = 0.001$), median of one-third mean filling rate (MFR/3) decreased from 1.48 per s (0.7; 2.42) to 1.09 per s (0.33; 2.2) ($p = 0.01$). Conclusion:hyperdynamic systolic dysfunction improves in 1 month after liver transplantation. However, diastolic function doesn't improve early after LT, according to the results of G-SPECT. Further investigations are needed to demonstrate that diastolic function in cirrhotic cardiomyopathy improves later than 1 month after LT.

P376

THE MOST USEFUL PRESERVATIVE MEDIA FOR CRYOPRESERVATION OF ISOLATED HEPATOCYTES FROM UNUSED LIVERS BEFORE LIVER CELL TRANSPLANTATION IN ACUTE LIVER FAILURE

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Introduction: Hepatocyte transplantation has been an accepted alternative to support ALF (acute liver failure) patients as a time bridge to liver transplantation and children with congenital liver enzyme deficiencies. One of the proposed methods is isolation of liver cells from discarded livers. The healthy status of isolated hepatocytes regardless of the tissue sources has great impact on clinical outcome of hepatocyte transplantation. UW (university of Wisconsin) solution is the most frequently utilized solution for preservation of the liver tissues during cold ischemia. Also there is strong evidence about the cytoprotective mechanism of UDCA (ursodeoxycholic acid) which inhibit apoptosis in hepatocytes mainly in experimental models. The goal of this study was to analyze the effect of UDCA and α –lipoic acid in different media on hepatocyte viability during cold preservation.
Material and Methods: Human hepatocytes were isolated from unused livers for transplantation by two step perfusion technique. Cell viability assessed by trypan blue exclusion test.4–6 $\times$ 106 cells/ml were incubated in each test media at 4°c.Different media composed of 5 mM α –lipoic acid and 5 mM UDCA in WEM culture medium and UW. Viability of the cells was analyzed immediately after isolation and after overnight incubation in different media .Each experiment was done in two different cell preparations.
Results: Isolated hepatocytes from 3 unused livers which their characteristic is shown in table-1 were analyzed. The influence of incubation media composition on viability of the cells is shown in table 1. The V0 (viability at zero time) shows the viability percentage of immediately isolated hepatocytes and VO (viability after overnight incubation) shows the viability percentage of overnight incubated hepatocytes in different media.
Conclusion: It seems that UW+UDCA composition preserves the cells better than other composition media.

015 INFECTIONS

P377

REFASHIONING THE EXCISED EXTERNAL ILIAC ARTERY: A CASE REPORT

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External iliac artery injury either as a part of allograft nephrectomy or fungal arteritis is usually managed by external iliac artery ligation, with or without an extra-anatomical revascularization procedure. This describes an alternative technique to utilize the patient's own arterial system as a conduit to re-vascularise the lower limb following transplant nephrectomy requiring excision of the external iliac artery.

A 70-year-old Afro-Caribbean lady presented unwell with fever and acute decline in renal function 4 months post deceased donor renal transplantation for end-stage diabetic nephropathy due to type II diabetes. Contrast angiography demonstrated a pseudo aneurysm at the renal allograft arterial anastomosis compressing the inflow to the kidney. Graft preservation fluid had scanty growth of Candida albicans indicating the possibility of a mycotic aneurysm. The patient was optimised for transplant nephrectomy. The kidney was found to have infarcted with the pseudo aneurysm compressing the inflow to the graft. The inflammatory process involved the recipient's external iliac artery extending a centimetre of the adjacent artery. Transplant nephrectomy was performed along with excision of the necrosed two-centimetre segment of the external iliac artery. Due to the presence of infection, the patients age and likely poor collateral circulation, a definitive revascularization procedure was felt to be in her best interests. The anterior division of the internal iliac artery was used to bridge the length of the excised external iliac artery. The internal iliac artery was found to have approximately 20–30% stenosis, but had minimal calcification. This was anastomosed end-end with the distal external iliac artery. Subsequently, the excised external iliac artery and the kidney tissue grew Candida albicans. The patient had an uneventful recovery and has been fully mobile without any further ischemic or infection complications with a 5-year follow-up.

012 HISTOCOMPATIBILITY

P378

PROPOSAL FOR A PREDICTIVE SCORE OF DE NOVO DONOR-SPECIFIC ANTIBODY DEVELOPMENT FOLLOWING KIDNEY TRANSPLANTATION

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De novo donor-specific HLA antibody (dDSA) development following kidney transplantation (KT) is commonly associated with a post-transplant detrimental course. The aim of the present study is to investigate the clinical role of dDSAs, with the intent to develop a specific predictive score adopting variables available before or immediately following KT. A retrospective analysis of 375 patients transplanted during the period Jan2001–Jan2013 was performed. None of them had pre-transplant DSA. A total of 59 (15.7%) patients developed dDSA post-KT. On multivariate logistic regression analysis, pre-KT peak PRA level ≥10% (OR=12.607; p-value<0.0001), HLA-DR mismatch (OR= 4.307; p-value <0.0001), initial use of CyA for at least 1 year from KT (OR=1.925; p-value 0.049) and time from KT (OR=1.124; p-value 0.025) were significant independent predictors of dDSA development following KT. Based on these findings, a scoring system predictive of dDSA development was derived. At ROC analysis, the score had a high predictive value for dDSA formation (area under the curve 80.2, 95%CI 73.9–86.5; $p < 0.0001$). A score value >2.80 (corresponding to the 2nd tertile) had a sensitivity of 72.9% and a specificity of 73.7%; patients exceeding this value exhibited the highest rates of dDSA formation (5-year: 15.5% vs. 0%; p-value<0.0001) and the poorest death-censored graft survival rates respect to patients with inferior values (5-year: 88.6% vs. 97.2%; p-value 0.004). The proposed scoring system may identify patients at highest risk for dDSA formation, which allows for the design of "tailored" immunosuppressive and clinical approaches to these patients. Further studies are needed to confirm the validity of this scoring system in other populations.

011 HEART

P379

HIGH FATTY ACID LEVELS PRIOR TO WARM ISCHEMIA DECREASE CARDIAC RECOVERY IN AN ISOLATED RAT HEART MODEL OF DONATION AFTER CIRCULATORY DETERMINATION OF DEATH

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Background: Insufficient cardiac graft availability could potentially be improved with donation after circulatory determination of death (DCDD). Preclinical studies suggest that high pre-ischemic circulating fatty acid levels, as may be expected with DCDD, affect post-ischemic cardiac recovery. Therefore, we investigated whether acute cardiac exposure to high fatty acid levels prior to global ischemia alters hemodynamic and metabolic recovery.
Methods: Isolated hearts of male Wistar rats underwent working-mode perfusion with high glucose (11 mM) and high fat (1.2 mM palmitate; HF) or no fat (NF) for 20 min. Hearts were subjected to global ischemia for 27 min (37°C) and reperfusion for 60 min under identical conditions. Additional hearts were reperfused in the presence of radiolabeled glucose for the measurement of early reperfusion glucose oxidation and glycolysis. Data are presented as mean±SD. Differences between groups were investigated using t-tests; p-values were corrected for multiple comparisons.
Results: After 60 min reperfusion, recovery of rate-pressure product (peak systolic pressure*heart rate) was two-fold lower in HF vs NF hearts ($32.7 \pm 17.7\%$ vs $69.6 \pm 18.2\%$; $p < 0.01$; $n = 7$). A trend toward lower glycolysis and glucose oxidation rates, with a greater imbalance between glycolysis and glucose oxidation, was measured in HF vs NF hearts during early reperfusion ($n = 3$–5).These results are consistent with higher lactate (10.6 ± 2.4 vs 5.8 ± 2.5 μmol/g/tissue; $p < 0.05$) and Cyt-c release (18.1 ± 9.2 vs 5.2 ± 1.8 ng/min/g/wet; $p < 0.01$) in HF vs NF hearts.
Conclusions: Pre-ischemic circulating fatty acid levels should be taken into consideration in pre-clinical models and clinical situations involving cardiac ischemia and reperfusion. In the context of DCDD heart transplantation, interventions to modify pre-ischemic circulating fat levels are limited. However, cardioprotective metabolic strategies applied at reperfusion may facilitate future use of DCDD cardiac grafts.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P380

TACROLIMUS HAS AGE-SPECIFIC IMMUNOSUPPRESSIVE CAPACITIES AND PROLONGES ALLOGRAFT SURVIVAL IN OLD MICE

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Immunosenescence impacts transplant outcome and the selection of immunosuppressants. Clinical trials, however, have not appropriately included older recipients and age-specific aspects of immunosuppressants remain largely unknown. Here, we dissected age-specific effects of Tacrolimus (TAC) on a fully MHC-mismatch skin transplantation mouse model.

TAC resulted into a significantly prolonged allograft survival in old (18 mths) recipient (26.3 vs. 11.3 d in young/3 mths; $n = 7$; $p = 0.001$). Strikingly, trough levels were two times higher in older mice. TAC was therefore applied based on trough levels in a 2nd set of experiments. Although differences in graft survival were less pronounced, older recipients contained their allografts significantly longer (15.4 d. in old and 11 d. in young recipients; $n = 7$; $p = 0.003$). Next, we evaluated age-specific effects of TAC on CD4 + T cells: While overall numbers of CD4 + T cells were significantly lower in old recipients, TAC suppressed cytokine production in an age-dependent manner. Lower levels of IL-2 led to a reduced proliferation and repopulation of old CD4 + T cells; systemic IFNγ production was lowest in the old recipients. Moreover, frequencies of CD4 + IL10 + IFNγ- increased in old while declining in young mice subsequent to TAC application. Of note, when naïve CD4 + T cells were cultured under TH1 polarizing conditions, TAC enhanced the production of IL10 + old naïve CD4 + T cells.

Taken together, we were able to show that allograft survival is prolonged in older mice treated with TAC. Moreover, TAC demonstrates age-specific changes of critical cytokines including IL2, IFNγ, and IL10. Those experimental data emphasize on the relevance of age-specific metabolization rates in addition to immunomodulatory effects of Tacrolimus.

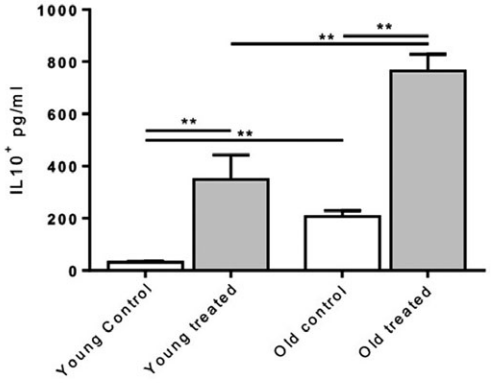

Figure1. $CD4^+$ naïve T cells were isolated and cultured for 96 h in medium with and without Tacrolimus (2ng/ml) under TH1 polarizing conditions; supernatants were analyzed by ELISA. ** $p<0.01$

015 INFECTIONS

P381

TUBERCULOSIS AND RESULT OF THERAPY AFTER TRANSPLANTATION AT CHO RAY HOSPITAL

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[1]Cho Ray Hospital; [2]Medical University in Ho chi Minh City

Background: Tuberculosis (TB) is a common infectious disease with a high rate in the developing countries. It is related to many factors such as: economic condition, living environment, environment sanitation, personal hygiene, nutrition and general health of the community, especially on the individual is immunocompromised such as: HIV or after organ transplantation.
Materials and Methods: The prospectively study for all the patients (pts), who are following after renal transplantation (Tx) from 1992 to 2013. The regiments of TB treatment are R12H12E12Z12, R24H24E24Z24Q24, or H12E12Z12Q12. The time of treatment can vary depending on the status of each pt and organ damaged. We have to do the evaluation of liver function, renal, hematologic, drug levels, and general health status of patients on their scheduled appointments. RESULTS: 710pts. 43 (6.06%) pts have tuberculosis disease including: 21 (48.8%) pts transplants at CRH and 22 (51.2%) pts transplants from other centers. The average time detection disease are 86.9 $\pm$ 92.7 (0.9;308) months (mths) after renal transplantation. The organ damaged includes: lung 33 (76.7%) pts, lymph nodes, joints 2 (4.7%) pts, peritoneum, spine, muscles 1 (2.3%) pts, multi- organs 3 (7.0%) pts. The regiments of TB treatment include REHZ 13 (31.0%) pts, EHZQ 22 (52.4%) pts, REHZQ 7 (16.7%) pts. The average time of duration is 13.43 $\pm$ 3.57 mths (6; 24). 1pt died of the inhalation pneumonia before to accept the TB therapy, 1pt died of the hypoglycemia and electrolyte disorders, 1pt died of the respiratory failure due to muscle weakness. 40pts (93.02%) achieved good results.
Discussion and Conclusion: TB can occur at any time, any organ of the patients after renal transplantation if they related to factors: high dose of immunosuppression drug, physical exhaustion or after the rejection treatment or other diseases. Need to monitor the side effects of TB drugs during the treatment times.

023 KIDNEY

P382

STUDYING THE ASSOCIATION BETWEEN ATORVASTATIN AND TOTAL PLASMA HOMOCYSTEINE LEVELS IN RENAL TRANSPLANT RECIPIENTS IN NORTH OF IRAN

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Introduction: Statins improve prognosis in patients with coronary heart diseases by decreasing the incidence of vascular events. Excess prevalence of hyperhomocysteinemia, an independent risk factor of cardiovascular diseases, has been observed in stable renal transplant recipients (RTR). The objective of our study was to evaluate the association between plasma total homocysteine (tHcy) levels and atorvastatin in RTRs.
Method: We performed a retrospective cross-sectional study in 148 cyclosporine treated stable RTRs. We compared tHcy level in RTRs with and without atorvastatin.
Results: Mean tHcy levels were lower in patients with atorvastatin (20–40 mg/day) compared to nonusers (15.06 $\pm$ 5.65 μmol/L, 17.91 $\pm$ 10.85; $p = 0.04$). The comparison of the group of 86 patients with atorvastatin and 62 non-users revealed that those subjects with atorvastatin were older, with higher HDL levels, eCrCl and BMI. They were more likely to have diabetes, higher systolic blood pressure and CsA trough level (C0). The association between lower tHcy levels and atorvastatin was confirmed in the multivariate regression model ($p = 0.004$). However tHcy levels were negatively associated with serum folate ($p = 0.0001$) and vitamin B12 levels ($p = 0.001$) and positively with serum BUN ($p = 0.0001$) and diastolic blood pressure ($p = 0.024$) as well.
Conclusion: These data support the association between lower tHcy levels and atorvastatin usage in RTRs. Further clinical trials are recommended to clarify homocysteine lowering effect of atorvastatin.

Model	β Coefficients ± SE	t	p	95% Confidence interval for β
Constant	12.22 ± 2.06	5.93	0.000	8.15–16.29
Atorvastatin	2.85 ± 1.37	2.08	0.040	0.14–5.59

013 IMMUNOBIOLOGY/BASIC SCIENCE

P383

BLOCKING CLASS II HISTONE DEACETYLASE ACTIVITY INHIBITS RENAL FIBROSIS

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Inje University

Introduction: Fibrosis is the final, common pathological outcome of many chronic kidney diseases. Although histone deacetylases (HDACs) have been reported to be involved in renal fibrosis, it is still unclear which class of HDAC is involved in the pathophysiology of renal fibrosis.
Objective: To investigate which class of HDAC is involved in pathogenic renal fibrosis and evaluate anti-fibrotic effect of the defined HDAC inhibitors.
Methods: The enzyme activity of class I and class II was examined on TGF-beta 1-induced epithelial-to-mesenchymal transition (EMT) of the human renal proximal tubular epithelial cell line HK-2. By using the pan-HDAC inhibitor (SB939), class I-specific HDAC inhibitor (MS275), and class II-specific HDAC inhibitor (MC1568), we defined the roles of class I and class II enzymes in EMT. To confirm the role of HDACs *in vivo*, we used the unilateral ureteric obstruction (UUO) model of renal fibrosis.
Results: We found that class II enzyme activity was markedly induced on TGF-beta 1-induced EMT but class I enzyme was not induced. Treatment of pan-inhibitor SB939 strongly inhibited TGF-beta 1-induced upregulation of collagen type I and alpha-SMA. Class II-specific inhibitor MC1568 had the similar effects of SB939, but class I-specific inhibitor MS275 did not have the effects. UUO model with SB939 treatment was markedly inhibited accumulation of alpha-SMA and deposition of collagen type I.
Conclusion: Our results demonstrate that class II HDACs contribute to renal fibrosis and suggest that class II-selective inhibitors have a therapeutic potential for the treatment of renal fibrosis.

023 KIDNEY

P384

THE IMPACT OF RENAL TRANSPLANTATION ON LOWER LIMB BLOOD FLOW

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Background: Given the dramatic benefits of renal transplantation, the previously strict criteria for inclusion have been extended to include older, more comorbid patients. Currently, those with peripheral vascular disease are often excluded due to the theoretical risk of post transplantation limb ischemia, where the donor kidney diverts blood away from an already under perfused leg. The aim of this study was to determine if renal transplantation affects lower limb perfusion.

Methods: Eighteen patients had lower limb perfusion measured before and after transplantation using two techniques; strain gauge plethysmography (SGP) and ankle brachial pressure index (ABPI). Perfusion change in the ipsilateral leg was compared to the change in the contralateral leg, giving an internal control for each patient.

Results: SGP: There was no significant postoperative blood flow change in either the ipsilateral leg (-0.63 ± 0.63 $cm^3/100$ cm^3/min) or the contralateral leg (-0.15 ± 0.60 $cm^3/100$ cm^3/min), nor was there any significant difference between the legs ($p = 0.379$). ABPI: There was no significant ABPI change in either the ipsilateral leg (-0.02 ± 0.03) or contralateral leg (0.02 ± 0.02), nor was there any significant difference between the legs ($p = 0.718$).

Conclusions: Renal transplantation has no significant impact on lower limb perfusion as measured by SGP and ABPI. It is unreasonable to exclude patients from transplantation based solely on the concern of a postoperative reduction in lower limb perfusion.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P385

POSTOPERATIVE RESPONSE OF CYTOKINES IN LIVER TRANSPLANT RECIPIENTS WITH DIFFERENT ETHIOLOGIES

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Hospitales Granada-IBS Granada

Purpose: To evaluate an early postoperative response of several cytokines (IL-2, IL-4, IL-6, IL-10, TNF-α, and IFN-γ) prior to liver transplantation (T0) as well as 1, 6, and 12 h and 1, 2, 3, 5, and 7 days afterward.
Methods: Cytokine levels were determined in plasma samples of liver transplant recipients at previously indicated times using a FACScan flow cytometer (Becton-Dickinson) by the cytometric beads arrays assay technique (CBA, Becton Dickinson) which combines an ELISA technique with flow cytometry. Quantitation of each cytokine was made using CBA Software (Becton-Dickinson).
Results: The study was approved by the local Clinical Research (Ethics) Committee. Written informed consent was obtained from patients' relatives. Forty seven patients recipients of a liver transplantation were studied being distributed into three groups taking into account their ethyology: enolic ($n = 22$), viral ($n = 14$) and other ($n = 11$). Patients aged 43 to 61 years. IL-6 and IL-10 reached their maximum concentrations 1 h after transplantation. The differences in IL-2 and IL-6 values in the differents time points of the study were statistically significants using the Test of Friedman. IL-10 did reach statistical signifcance 1 day and 2 days after transplantation for enolics ($p < 0.001$), viral ($p = 0.001$) and other ($p = 0.001$). Whereas IL-4, TNF-alpha and IFN-gamma did not show statistical significance.
Conclusion: We present plasma concentration values of pro- and anti-inflammatory cytokines in liver transplant recipients. IL-2 levels showed statistically significant differences in the groups studied. IL-6 our results shows a different correlation, being IL-10 correlated to IL-6. The balance between IL-6 (pro-inflammatory) and IL-10 (anti-inflammatory) must be regulating the inflammation. Our results seem to confirm that IL-10 exhibits anti-inflammatory properties suppressing the snthesis of other proinflammatory cytokines such as TNF-α and counter-balancing IL-6 synthesis.

015 INFECTIONS

P387

LONG TERM FOLLOW UP OF ACTIVE MANAGEMENT OF POST-KIDNEY TRANSPLANT BK VIRUS ASSOCIATED NEPHROPATHY VERSUS MINIMIZATION OF IMMUNOSUPPRESSIVE MEDICATIONS

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Ibn Sina Hospital, Hamed Al-Essa Organ Transplantion Center

Background: There is no active treatment for post-renal transplant BK virus associated nephropathy (BKVAN) proved to be effective so far. We aimed to assess the long term efficacy of active management of BKVAN with combined leflunomide, IVIG (immunoglobulin) and ciprofloxacin compared to immunosuppressive drugs minimization.
Methods: Our kidney transplant recipients were screened for BKVAN. Group1 ($n = 22$): with twice positive BKV-PCR in urine and blood underwent graft biopsy to confirm BKVAN. Once BKVAN is diagnosed, anti-metabolite (mycophenolate mofetil or azathioprine) was changed to leflunomide and a course of IVIG and oral ciprofloxacin were given. Group 2 ($n = 33$): BKVAN patients were treated with reduction of immunosuppressive drugs.Results: Fifty five patients were treated, risk factors were male gender, diabetes, high mean HLA mismatches and negative CW7. All patients received induction therapy (thymoglobulin in 55.6%) and 52.7% received antirejection therapy before diagnosing BKVAN. Maintenance immunosuppression was mainly prednisolone, MMF and tacrolimus. Majority of patients had positive viruria, viremia and BKVAN biopsy findings at the time of diagnosis. While viruria and viremia were clearing with time, BKVAN histopathological pattern was deteriorating gradually in the follow up biopsies. Subsequent rejection episodes have occurred in 38% of the patients after BKVAN diagnosis. Basal mean estimated glomerular filtration rate was 52.5 ± 25.5 which has reduced significantly to 38.1 ± 27.8 ml/min/1.73 m2 ($p < 0.0001$) at the end of the study without significant differences between the groups. Follow up period was 7.3 ± 4.99 years.Graft survival was significantly better in group2 (p 0.032).
Conclusion: Administration of three different anti-BK virus agents (leflunomide, IVIG and ciprofloxacin) added no benefit to the long term outcome in established cases of BKVN. Treatment of BKVAN by reduction of immunosuppressive medication alone appears to be more effective.

023 KIDNEY

P388 SERUM RESISTIN LEVELS PREDICT MORTALITY IN KIDNEY TRANSPLANT RECIPIENTS: A FOUR-YEAR PROSPECTIVE COHORT STUDY

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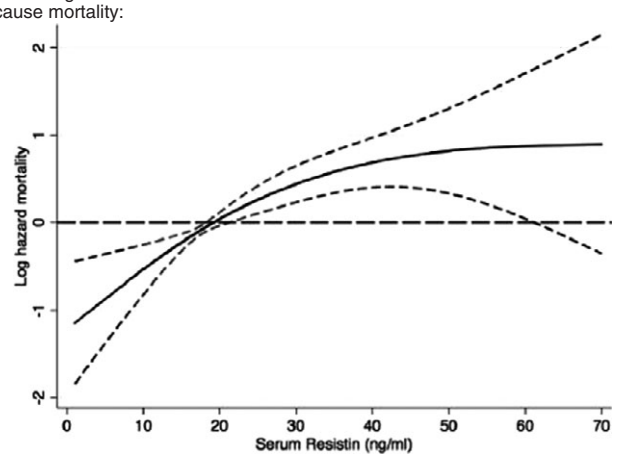
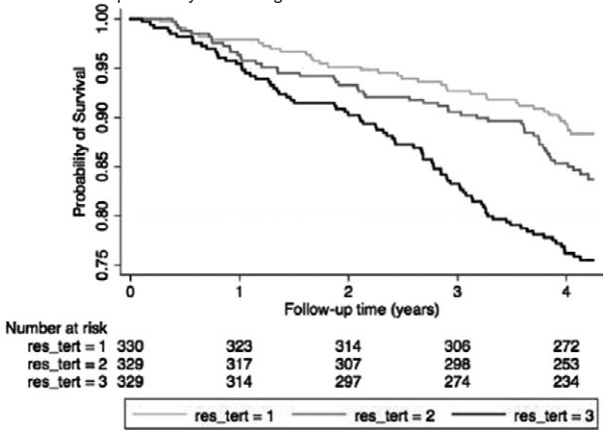
Background: Among patients without chronic kidney disease, resistin, an adipocytokine, has been related to inflammatory markers, coronary artery disease, and cardiovascular disease in the metabolic syndrome. However, the resistin impacts on outcome is not clear in kidney transplant recipients.
Methods: We collected socio-demographic, clinical parameters, medical and transplant history and laboratory data at baseline in 988 prevalent kidney transplant recipients (mean age 51 ± 13 [SD] years, 57% men, 21% diabetics). Serum resistin was measured at baseline. Associations between baseline serum resistin values and all-cause mortality over 4 years were examined in unadjusted and adjusted models (adjusted for age, gender, baseline eGFR, Charlson Comorbidity Index, serum CRP, albumin, blood hemoglobin and systolic blood pressure).
Results: Median serum resistin concentrations were significantly higher in patients who died (median [interquartile range – IQR] 22[16–18] ng/mL) as compared to patients who did not die during the study period (18 [14–24] ng/mL; $p < 0.001$). Increasing serum resistin was associated with increased mortality in both unadjusted ([HR1 ng/ml increase = 1.032; 95% CI: 1.019–1.045] and fully-adjusted models ([HR1 ng/ml increase = 1.023; 95% CI: 1.006–1.041].

Strong linear association was detected between serum resistin level and all-cause mortality:



Compared to patients with lowest (tertile) of serum resistin, patients with higher (middle tertile) had similar (HR = 1.164; 95% CI: 0.754–1.796) risk of mortality, but patients with the highest serum resistin (highest tertile) had 59% higher risk of mortality (HR = 1.586; 95% CI:1.026–2.454) in the multivariate adjusted model.

The survival probabilty according to tertile of serum resistin:



Conclusion: In our analysis serum resistin was an independent predictor of all-cause mortality in stable, prevalent kidney transplant recipients.

P390 DSA DETECTED BY ELISA-PRA IS ASSOCIATED WITH HIGH RISK FOR DEVELOPMENT OF AMR IN STABLE KIDNEY TRANSPLANT RECIPIENTS

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Background: Donor specific anti-HLA antibodies (DSA) are a major cause of antibody mediated rejection (AMR) and allograft loss, determining how to monitor patients for DSA and how to treat them is important. The purpose of this study was to evaluate the incidence of presence of DSA and the associations of DSA levels and development of AMR in stable kidney transplant recipients (KTRs).
Methods: We screened 208 stable KTRs by HLA-specific ELISA-PRA (panel reactive antibody) for DSA from July 2013 to June 2014. We compared the incidence of AMR, histopathologic finding and clinical parameters between Group 1 (DSA-positive, $n = 13$) and Group2 (DSA-negative, $n = 14$).
Results: Time to biopsy after transplantation was 74.3 (6–154.6) months. The median age of recipient and donor was 37.5 (24–59) and 39 (20–64) years, respectively. 55% were female. Median serum creatinine (cr.) level at the time of biopsy was 1.25 (0.6–2.3) mg/dl and FK level 5.9 (4.5–8.1) ng/ml. 27 (12.9%) had positive ELISA-PRA were biopsied. Median PRA level was 7.5% (2.5–47.5). In Group 1, 13 had DSAs [class I ($n = 6$), class II ($n = 5$) and class 1&2 ($n = 2$)]. Group 1 had a significantly higher risk for development of AMR than Group 2 [10 (76.9%) of 13 patients vs. 1 (7.1%) of 14 patients, $p < 0.001$]. After patients with AMR were treated with plasmapheresis (PP) with IVIG (4 (4–7)) and anti-CD20 antibody, anti-class I PRA level reduced by −7.1% and class II PRA level was not reduced. Class I DSA is more effectively removed than class II [40% in class I DSA vs. 85.7% in class II DSA]. All 27 patients had stable graft function and serum cr. level at last visit was 1.2 (0.7–2.3) mg/dl.
Conclusions: Our study demonstrated that DSA detected by ELISA-PRA is associated with high risk for development of AMR in stable KTRs. Routine monitoring of DSA with ELISA-PRA and subsequent allograft biopsy may be useful method to investigate development of AMR. Class II DSA seems to be more resistant to treatment of AMR than class I DSA. Long term effect of PP, IVIG and anti-CD20 antibody on AMR to remove DSA remains unknown

P392 CYSTATIN-C AND NEUTROPHIL-GELATINASE-ASSOCIATED LIPOCALIN (NGAL) AS GLOMERULAR AND TUBULAR BIOMARKERS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Human Neutrophil-Gelatinase-Associated Lipocalin (NGAL) plays an important role in manyphysiological and pathological states in clinical nephrology. Cystatin C is a nonglycosylated low molecular weight basic protein 13.26-kDa synthesized by all nucleated cells at a constant rate. The endogenous production rate is constant, and is not affected by inflammatory processes, changes of body mass, nutrition, fever or gender. Thus, due to stable synthesis, lack of degradation and tubular secretion, cystatin C is only influenced by renal GFR, making it an ideal marker. Since creatinine is not a sensitive marker of kidney function and since estimated GFR (eGFR) also has some limitations, the aim of this study was to investigate whether cystatin C and NGAL are potential glomerular and tubular biomarkers respectively correlated with kidney function in renal transplant recipients at different time periods of graft life.
Materials and Methods: Thirty five renal allograft patients were included in this study. The immunosuppressive regimen consisted of cyclosporine, prednisone and mycophenolate mofetil ($n = 17$ patients) or azathioprine ($n = 18$ patients). They were compared with ten matched normal subjects as control. Serum and urinary NGAL were estimated by enzyme linked immunosorbent assay (ELISA), serum cystatin C level by nephelometry.
Results: Kidney transplant recipients had significantly higher serum NGAL, urinary NGAL and Serum cystatin C than the control group. Serum NGAL correlated with BUN, creatinine, CKD stage by using MDRD equation, cholesterol, serum cystatin C and resistive index (RI) of ultrasound duplex on the graft.
Conclusions: Even though a kidney transplantation may be successful, its function is not always restored to normal, thus precise estimation of different aspects of renal functions by sensitive biomarkers is needed; in this context NGAL and Cystatin C are potentially promising markers.

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12-MONTH AND 5-YEAR ANALYSIS OF RISK FACTORS FOR NEW ONSET DIABETES AFTER TRANSPLANTATION (NODAT) IN HOMOGENEOUS GROUP OF PATIENTS IN TERMS OF IMMUNOSUPPRESSION

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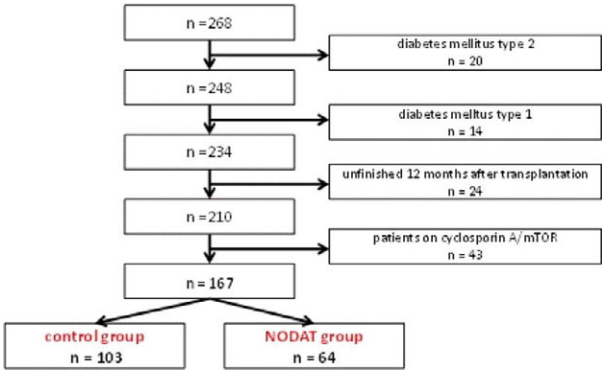
University Hospital in Martin and Jessenius Faculty of Medicine Comenius University

Purpose: NODAT is associated with increased mortality and morbidity in transplant recipients. In case of patient in early posttransplant period, or in patient with high immunologic risk, change of immunosuppression - IS (tarcolimus to cyclosporine A) can be counterproductive. Reduction of IS in risk patients can cause development of rejection and treatment of rejection eventually leads to further NODAT aggravation.
Material and Methods: We have been retrospectively evaluating risk factors for NODAT (in 12-month and 5-year analysis) in the set of 167 patients after kidney transplantation (KT). Both groups were homogeneous in terms of administered IS and monitored parameters were not distorted by the administered IS.
Results: In the 12-month analysis we have identified these risk factors for NODAT: age at the time of transplantation: 50–59, age at the time of transplantation ≥ 60, positive family anamnesis for diabetes mellitus type 2, BMI at the time of KT ≥ 30 kg/m^2, prediabetes before KT, proteinuria >0.15 g/day. Graft function negatively correlated with following risk factors: age at the time of KT, number of HLA, BMI at the time of KT, BMI 12 months after KT, weight 12 months after KT. In the NODAT group (5-year analysis), we have identified patients who were diagnosed with NODAT after the first year. We have identified following independent risk factors for NODAT diagnosed in later posttransplant period in these patients: age at the time of transplantation 50–59 years, age at the time of transplantation ≥ 60. 5-year graft survival (censored to patient's death) in the control group was 93.8% and in the NODAT group 90.6%.
Conclusion: Screening of risk factors for diabetes mellitus should be done even before placing a patient on the waiting list and it is advisable to carry out the oral glucose tolerance test also in patients with physiological levels of fasting glycemia.



12-month analysis	Control group *n* = 103	NODAT group *n* = 64	p Value
Average level of TAC (ng/ml)	4.7 ± 0.9	4.8 ± 1.2	0.5592
Average dose of prednisone/day (mg	8.2 ± 2.3	8.8 ± 2.0	0.0877
Average dose of MMF/day (mg)	849.4 ± 264.2	911.7 ± 175.4	0.0919
Average dose of mycophenolate sodium/day (mg)	670.7 ± 292	721.9 ± 113	0.1734
Age at the time of transplantation (years)	43 ± 12.1	50.5 ± 9.6	<0.0001
Positive family history for DM2 (%)	29.8	78.1	<0.0001
Male sex (%)	62.1	59.4	0.8627
HLA A30 (%)	2.9	0	0.4375
HLA B27 (%)	9.6	10.9	0.9937
HLA B42 (%)	1	0	0.8335
Average number of HLA mismatches	3.5 ± 1.2	3.7 ± 1.4	0.3266
APKD (%)	10.4	17.2	0.2839
ECD donor (%)	17.3	21.9	0.5926
Pulse treatment with methylprednisolone (%) except for induction	36.4	34.9	0.9792
Average dose (g) except for induction	2.0 ± 0.7	2.3 ± 0.7	0.0086
BMI at the time of transplantation (kg/m^2)	24.9 ± 4.1	26.5 ± 4.3	0.0170
Weight at the time of transplantation (kg)	73.7 ± 15.1	78.3 ± 14.5	0.0533
BMI 12 months after transplantation (kg/m^2)	26.8 ± 5.3	28.5 ± 4.1	0.0318
Weight 12 months after transplantation (kg)	78.5 ± 15.6	83.5 ± 13.1	0.0361
Weight gain 12 months after transplantation (kg)	5.6 ± 5.1	6.2 ± 5.6	0.4834
Average level of TAG (mmol/l)	2.0 ± 0.7	1.9 ± 0.5	0.3262
Average level of cholesterol (mmol/l)	4.4 ± 0.7	4.5 ± 0.5	0.3262
Artery hypertension (%)	96.2	98.4	0.7277
Basiliximab in induction (%)	52.4	84.4	0.0001
Average level of magnesemia (mmol/l)	0.79 ± 0.1	0.78 ± 1.3	0.9393
Prediabetes before transplantation (%)	0	15.6	0.0001
HCV PCR positivity (%)	0.9	4.7	0.2914
CMV replication (%)	45.8	45.2	0.9286
Average number of copies (cop/ml)	3500	3800	0.9763
Average proteinuria (g/24 hod)	0.18 ± 0.13	0.23 ± 0.16	0.0308

12-month analysis	Hazard ratio	CI 95%	p value
Age at the time of transplantation <30 years	0.3065	0.08262–1.1363	0.0769
Age at the time of transplantation 30–39 years	0.5000	0.0526–4.7518	0.5714
Age at the time of transplantation 40–49 years	0.7000	0.4292–1.1416	0.1529
Age at the time of transplantation 50–59 years	1.1376	1.0437–1.2399	0.0034
Age at the time of transplantation ≥ 60 years	2.5038	1.7179–3.6492	<0.0001
Positive family history for DM2 (yes/no)	6.3972	3.3032–12.3890	<0.0001
Pulse treatment with methylprednisolone (yes/no)	2.6024	0.7415–9.1334	0.1354
Average dose (g) except for induction	1.1026	0.7115–1.7086	0.6622
BMI at the time of transplantation <25 kg/m^2	0.6885	0.4612–1.0279	0.0679
BMI at the time of transplantation 25–29.9 kg/m^2	1.0800	0.7271–1.6041	0.7030
BMI at the time of transplantation ≥ 30 kg/m^2	1.5986	1.0650–2.3997	0.0236
Basiliximab in induction (yes/no)	1.0267	0.5107–2.0645	0.9410
Prediabetes before transplantation (yes/no)	4.5018	18669–10.8553	0.0009
Proteinuria >0.15 g/day (yes/no)	3.0785	1.6946–5.5927	0.0002

12-month analysis	Correlation coefficient	CI 95%	p value
Age at the time of transplantation (years)	−0.3213	−0.4530 to −0.1758	<0.0001
Positive family history for DM2 (%)	−0.1356	−0.2839–0.01898	0.0853
Male sex (%)	0.07585	−0.07927–0.2274	0.3374
HLA A30 (%)	0.05875	−0.09632–0.2110	0.4577
HLA B27 (%)	0.06825	−0.08686–0.2201	0.3881
HLA B42 (%)	0.02477	−0.1299–0.1783	0.7543
Number of HLA mismatches	−0.1573	0.3042 to −0.003218	0.0455
APKD (%)	0.04412	−0.1108–0.1970	0.5772
ECD donor (%)	−0.06060	−0.2128–0.09448	0.4436
Pulse treatment with methylprednisolone (%) except for induction	0.04754	−0.1074–0.2003	0.5480
Average dose (g) except for induction	−0.1050	−0.3537–0.1575	0.4326
BMI at the time of transplantation (kg/m^2)	0.2170	−0.3592–0.06500	0.0055
Weight at the time of transplantation (kg)	−0.1423	−0.2901–0.01216	0.0709
BMI 12 months after transplantation (kg/m^2)	−0.2211	−0.3629–0.06923	0.0047
Weight 12 months after transplantation (kg)	−0.1610	−0.3075–0.006957	0.0407
Weight gain 12 months after transplantation (kg)	−0.05421	−0.2067–0.1008	0.4932
Average level of TAG (mmol/l)	0.02079	−0.1744–0.1338	0.7928
Average level of cholesterol (mmol/l)	−0.05789	−0.2102–0.09717	0.4643
Artery hypertension (%)	0.009371	−0.1450–0.1633	0.9058
Basiliximab in induction (%)	−0.06891	−0.2208–0.08620	0.3836
Average level of magnesemia (mmol/l)	0.0186	−0.3308–0.03281	0.1078
Prediabetes before transplantation (%)	−0.1036	−0.2538–0.05139	0.1894
HCV PCR positivity (%)	−0.002401	−0.1565–0.1519	0.9758
CMV replication (%)	0.008967	−0.1454–0.1629	0.9098
Proteinuria	0.08382	−0.07130–0.2350	0.2889

5-year analysis	Control group $n = 64$	NODAT $n = 53$	p value
Age at the time of transplantation (years)	42.5 ± 11.6	51.1 ± 8.9	<0.0001
Positive family history for DM2 (%)	35.9	75.5	<0.0001
Male sex (%)	62.5	52.8	0.3841
HLA A30 (%)	3.1	1.9	0.8480
HLA B27 (%)	9.4	7.5	0.9730
HLA B42 (%)	1.6	0	0.9426
Average number of HLA mismatches	3.5 ± 1.2	3.9 ± 1.4	0.0988
APKD (%)	12.5	13.2	0.8689
ECD donor (%)	15.6	13.2	0.9178
Pulse treatment with methylprednisone (%) except for induction	39.1	39.6	0.8926
Average dose (g) exept for induction	10.3 ± 2.8	11 ± 3.3	0.2170
BMI 5 years after transplantation (kg/m^2)	27.9 ± 5.1	29.5 ± 6.4	0.1334
Weight 5 years after transplantation (kg)	81.3 ± 16.7	84.5 ± 15.5	0.2873
Weight gain 5 years after transplantation (kg)	8.6 ± 7.7	10.2 ± 9.7	0.3199
Average level of TAG (mmol/l)	2 ± 0.6	1.9 ± 0.6	0.3741
Average level of cholesterol (mmol/l)	4.3 ± 0.7	4.4 ± 0.6	0.4139
Artery hypertension (%)	96.9	100	0.5663
Basiliximab in induction (%)	96.9	94.3	0.8158
Average level of magnesemia (mmol/l)	0.8 ± 0.1	0.8 ± 0.1	1.000
Prediabetes before KT (%)	0	15.1	0.0043
HCV PCR positivity (%)	1.6	3.8	0.8721
Average proteinuria (g/24 hod)	0.17 ± 0.12	0.23 ± 0.18	0.0355

029 PANCREAS

P394 PANCREAS TRANSPLANT AT TAIPEI VETERANS GENERAL HOSPITAL

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Type 1 diabetes eventually leads to nephropathy, neuropathy, retinopathy and angiopathy after 10 – 30 years. Currently, pancreas transplant is the treatment of choice in tight control of blood sugar for IDDM patients, and further to stabilize, prevent or even to reverse the diabetic complications. We will present our experience in pancreas transplant which was initiated on September 19, 2003. From September 2003 to Nov. 2014, there were 102pancreas transplants performed for 98 patients at Taipei Veterans General Hospital, with 39 SPK, 10 PAK, 40 PTA and 13 PBK. Most (82.3%) of our pancreas transplants were for IDDM patients. The blood sugar usually returned to normal level within 5 h (median) after revascularization of the pancreas grafts. The fasting blood sugar maintained within normal range thereafter throughout the whole clinical course in most cases. There were 2 surgical mortality. The technical success rate was 96.0%. Excluding the 4 cases with technique failure, overall 1-year pancreas graft survival is 98.5% and 5-year is 94.1%, with 100% 1-year for SPK, 97.1% 1-year for PTA, 100% 1-year for PAK and 100% 1-year for PBK. In conclusion, pancreas transplant provided an ideal insulin-free solution for DM, especially IDDM. Pancreas transplant could be performed with similar successful rate irrespective of the type of pancreas transplant at our hospital.

P395 HEPATIC VENO-OCCLUSIVE DISEASE RELATED TO TACROLIMUS AFTER PANCREAS TRANSPLANTATION

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Background: Hepatic veno-occlusive disease (HVOD) describes the non-thrombotic, fibrous obliteration of the small centrilobular hepatic veins by connective tissue and centrilobular necrosis in zone 3 of the acini.
Materials: We describe a case of HVOD occurring after pancreas transplantation, in which tacrolimus might have played a causative role since complete recovery was observed after discontinuation of tacrolimus.
Results: A 25-year-old female with NIDDM and uremia. She underwent SPK transplantation. Nine months after transplantation, she reported development of fever, mild right abdominal pain and an increase in abdominal girth. The CT scan showed pictures of HVOD with hepatomegaly, massive ascites, periportal edema, diffuse mottled hepatic enhancement and patent hepatic veins (Fig. 1b). The periportal edema and diffuse mottled hepatic enhancement, in addition to the signs of portal hypertension, might suggest sinusoidal stasis. Tacrolimus was discontinued and replaced by cyclosporine. Three months after discontinuing tacrolimus, there was resolution of the patient HVOD demonstrated by CT scan (Fig .1c).
Conclusion: This is the first case of HVOD after pancreas transplantation in the literature. HVOD should be suspected when a recipient presents with hepatomegaly, ascites or jaundice after pancreas transplantation under tacrolimus.

P396 EN BLOC SIMULTANEOUS PANCREAS AND KIDNEY COMPOSITE GRAFT TRANSPLANT WITH LIMITED VASCULAR ACCESS

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Purpose: Limited vascular access could be encountered in an obese or re-transplant patient. We described modifications that facilitated an en bloc simultaneous pancreas and kidney (SPK) composite graft transplant in an obese type 2 diabetic patient with renal failure under hemodialysis.
Materials and Methods: At the back-table, the superior mesenteric artery and splenic artery of the pancreas graft were reconstructed with a long "Y" iliac artery graft. The smaller left renal artery is anastomosed end-to-side to the larger and longer common limb of the arterial Y graft and the shorter portal vein is anastomosed end-to-side to the longer graft left renal vein. Thus, this en bloc composite graft allowed to facilitate "real" SPK transplant using single common graft artery and vein for anastomosis to one recipient arterial and venous site. The en bloc pancreas and kidney composite graft was implanted by suturing the graft left renal vein to IVC and graft common iliac artery the recipient distal aorta. Exocrine drainage was provided by anastomosis of the graft duodenum to a roux-en-y jejunum limb in an side-to-side fashion. Immunosuppressants included basiliximab, tacrolimus, mycophenolate mofetil, and methylprednisolone.
Results: The operative time was 7 h with cold ischemic time of 6 h and 25 min. and warm ischemic time of 47 min. The patient was discharged on postoperative day 20, with a serum creatinine level of 1.4 ng/ml and a blood glucose level of 121 mg/dL. He has not had any rejection episodes or postoperative complications in the following 12 months after the en bloc SPK transplant.
Conclusion: En bloc pancreas and kidney composite graft might be an option for patients with limited vascular access. This technique (1) facilitates "real" simultaneous pancreas and kidney (SPK) transplant with only si.

023 KIDNEY

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YOUNG TRANSPLANT SURGEON'S DECISION WHEN SURGEON CONFRONTED EXPANDED CRITERIA DONOR KIDNEY TO FAIL ALLOCATION: DISCARD OR DUAL TRANSPLANTATION

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Yonsei University Wonju College of Medicine

Backgrounds: The utilization of expanded criteria donor has been increased. Unfortunately, discard rate or primary non-function rate is also increased. There was no consensus to decide the discard. We evaluated the outcomes of dual kidney transplantation in expanded criteria donor that failed allocation.
Methods: We retrospectively reviewed the medical record of patients who underwent dual kidney transplantation. We reviewed the condition of expanded criteria donor and analyzed patients and graft survival.
Results: Thirty five patients underwent kidney transplantation during 2 years since first cadaveric kidney transplantation was performed at March, 2012. Among them, three patients underwent dual kidney transplantation. Donors' age was 72, 51 and 26 year old. The origins of brain death were traumatic subarachnoid hemorrhage, diabetic ketoacidosis and hypoxic brain injury. Preoperative creatinine was 2.1, 1.99 and 2.65 mg/dL. Later two donors needed continuous renal replacement therapy. In all cases, national allocation was failed. 65, 62 and 75 years old male underwent dual kidney transplantation. Mean cold ischemic time was 130 min for one kidney and 255 min for the other kidney. We used thymoglobulin (1.5 mg/kg) during mean 4 days. During infusion of thymoglobulin, we adjust the level of tacrolimus as less than 3 ng/mL and maintain mycophenolate as fixed dose (250 mg/250 mg). Only second recipient showed delayed graft function. There was no acute rejection episode, graft and patient loss during mean 12 month follow-up period. Mean creatinine was 0.98 mg/dL.
Conclusions: Young transplant surgeon may have a dilemma when confronted expanded criteria donor kidney to fail allocation, especially to need dialysis. Although we need more long-term outcomes, dual kidney transplantation showed good short-term outcomes. Therefore, young transplant surgeon may be like to decide dual kidney transplantation instead of discard in expanded criteria donor to fail allocation.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P398

EARLY VS. LATE ACUTE ANTIBODY MEDIATED REJECTION AMONG RENAL TRANSPLANT RECIPIENTS IN TERMS OF ITS RESPONSE TO RITUXIMAB THERAPY-SINGLE CENTER EXPEREINCE

Torki Alotaibi, Osama Gheith, Naryanan Nampoory, Medhat Halim, Tarek Said, Prasad Nair, Mohamed Abdolmoniem, Salah Alwaheeb, Rashad Hasan

OTC

Introduction: There are no comparable trials concerning the use of rituximab among renal transplant recipients with acute antibody mediated rejection.
Aim of the Study: We aimed to compare early and late acute AAMR among renal transplant recipientsin terms of its response to rituximab therapy.Patients and methods:Out of 1200 kidney transplant recipients performed in Hamed Al-Essa Organ Transplant Center of Kuwait over the last 10 years, 103 developed acute AAMR and were subcategorized into 4 groups according to the onset of rejection and rituximab management. All patients received the standard management of AAMR according to our protocol (PP and IVIG). We added rituximab to the management of cases of group 1 (n = 27, early AAMR) and group 2 (n = 38, late AAMR) while groups 3 and 4 represented non-rituximab groups (n = 20, early AAMR&18, late AAMR respectively).We compared the 4 groups regardinggraft and patientoutcome.
Results: All patients were comparable regarding demographic data (patient age, sex, pre-transplant type of dialysis viral profile, type of induction, donor criteria, and pretransplant co-morbidities).we observed that delayed and slow graft function were significantly higher in groups 1.3 ($p = 0.016$), however we found no significant difference in the 4 groups regarding NODAT, BK viral infection or malignancy. Graft outcome was significantly better in group 1, 2 compared to the other groups ($p = 0.028$). However, patient outcome was comparable in the 4 groups ($p > 0.05$).
Conclusion: Early AAMR in renal transplant recipients had significantly better outcome when rituximab was added to the standard management.

023 KIDNEY

P399

PREGNANCY OUTCOME AFTER RENAL TRANSPLANTATION: KUWAIT EXPERIENCE

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Introduction and Aim of Work: The influence of pregnancy on graft function in patients after solid organ transplantation is still uncertain. Aim of the work was to evaluate the outcome of pregnancy in our kidney transplanted women.Patients and methods:Our study is based on a group of 38 renal transplant recipients with 64 deliveries in the past 12 years and followed up in Hamed Al-Essa organ transplant center of Kuwait.We compared duration of pregnancy, mode of delivery, weight of neonates, and graft function in two groups (tacrolimusbased group and cyclosporinebased group) of patients. Results: The two groups were comparable regarding the viral profile (HBV, HCV and CMV), types of dialysis modalities, type of kidney donors and blood groups.Pregnant ladies maintained on tacrolimus were significantly younger with significantmore diabetic patients ($p < 0.05$). Ladies maintained on cyclosporine experienced more frequent abortions; while the fetal mortality was higher in tacrolimus based group, however this did not rank to significance ($p = .16$). The mean fetal body weight was comparable in both groups (2.5 ± 0.7 vs. 2.57 ± 0.6, $p = 0.97$). Most ladies who were maintained on tacrolimus delivered more females (63.6%vs. 40% in cyclosporine group) by caesarian section (81.8% vs.53.8%in cyclosporine group) ($p = 0.16$ and $p = 0.094$ respectively).The two groups were comparable regarding patient and graft outcomes.Conclusions: Pregnancy in kidney transplan

029 PANCREAS

P401

LONGTERM-OUTCOME OF PANCREATIC GRAFTS AFTER POLYOMAVIRUS INFECTION IN COMBINED KIDNEY- PANCREAS TRANSPLANT RECIPIENTS: A SINGLE CENTER REPORT

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Purpose: We retrospectively analyzed the longterm survival and function in pancreas grafts after reduction of immunosuppression due to polyomavirus infection in simultaneous pancreas kidney transplants (SPK) performed at our center.
Methods: In totally 6 SPK recipients (among them one renal retransplant within a functioning pancreas) a polyomavirus infection was diagnosed by serum PCR in all cases (additionally biopsy proven in three patients) at mean 9.6 (1–30) months post transplant. The preceeding immunosuppression consisted of tacrolimus (TAC, $n = 5$) or cyclosporine A (CyA, $n = 1$) combined to MMF and steroids after an induction therapy with thymoglobuline ($n = 5$) or alemtuzumab ($n = 1$). The therapeutic regimens in the polyomavirus infection consisted of a dose reduction of TAC/CyA in all patients, conversion from TAC to CyA ($n = 2$), permanent discontinuation of MMF ($n = 1$) and application of Leflunomide ($n = 3$). The mean observation time was 35.3 (9–92) months.
Results: 5/6 (=83.3%) pancreas grafts remained at stable function within normoglycaemia without requirement of exogenous insulin and normal values of c-peptide. One pancreas was lost due to chronic rejection at month 21. Two kidneys were lost at month 11 and 13, respectively. The mean serum creatinine in the remaining renal grafts was 1.9 (1.0 – 2.6) mg/dL. The polyomavirus serum PCR turned completely negative in two patients at mean month 4.5 (2–7) after diagnosis and significantly decreased in four patients at mean month 12.0 (8–18).
Conclusion: A stable function in pancreas grafts can be kept if the immunosuppression is cautiously reduced in polyomavirus infected SPK patients. An early and regular post transplant screening of polyomavirus serum PCR is recommended.

023 KIDNEY

P402 OSSEOUS METAPLASIA IN A REJECTED RENAL ALLOGRAFT: THE KIDNEY THAT GREW A BACKBONE

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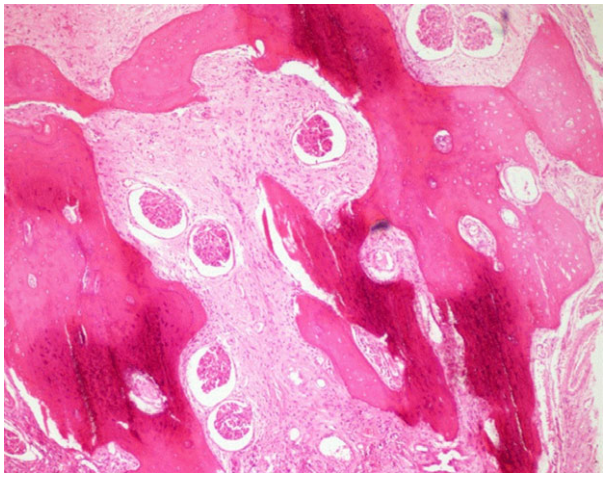
Background: The pathogenesis of osseous metaplasia (OM), defined as the presence of heterotopic normal bone tissue in soft tissue, is poorly understood. Few case reports of OM in transplanted kidneys exist. The origin of the osteogenic precursor cells is presumed to be mesenchymal progenitor cells of the transplanted kidney, however there is active debate surrounding the possibility of circulating peripheral blood mesenchymal stem cells (i.e. recipient cells) that may also have osteogenic potential in response to tissue damage. Here, we examine a case of OM in a rejected renal allograft and report, for the first time, the likely origin based on genetic comparison of donor/recipient.
Case: 15 year old Caucasian female received a live renal transplant from her adoptive father (HLA 1:1:2 mismatch). Following poor immunosuppressant compliance in her later teenage years, she suffered severe acute cellular and antibody mediated rejection necessitating graft nephrectomy. Histological examination revealed the presence of mineralised woven bone containing osteocytes, osteoclasts and osteoblasts, surrounding surviving glomeruli (figure 1). To investigate the likely mesenchymal stem cell (MSC) origin of the heterotopic bone, macro-dissected bone fragments were analysed using Quantitative fluorescent polymerase chain reaction of sex chromosome and autosomal DNA and compared with donor and recipient peripheral blood genotypes. The identification of donor autosomal and Y chromosome sequences in the osseous material supported donor progenitor cell origin.
Discussion: The findings in this case do not support the controversial notion of circulating MSC, but are in keeping with the progenitor origin being MSC resident to the renal interstitium. Our findings are also suggestive that, in keeping with the findings in transplanted hearts, functional MSC of donor origin remain present in the kidney for several years after transplantation and maintain their differentiation capacity.



P403 CONTRAST-ENHANCED ULTRASONOGRAPHY TO PREDICT THE OUTCOME OF THROMBOTIC MICROANGIOPATHY AFTER RENAL TRANSPLANTATION – A CASE REPORT

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Background: Contrast-enhanced ultrasonography (CEUS) enables the assessment of tissue perfusion of parenchymal organs. This is a highly promising diagnostic tool in kidney allograft recipients, but so far the experience with the use of CEUS in this clinical setting is limited.Case report: A 52-year-old woman with a history of minimal change disease received a standard-criteria deceased-donor pre-emptive kidney transplantation. She initially received basiliximab, cyclosporine, mycophenolate mofetil and steroids. After surgery she presented with anemia and thrombocytopenia. Her blood laboratory tests also revealed signs of haemolysis (elevated LDH, low haptoglobin concentration). She was oliguric and her blood urea nitrogen and creatinine failed to decrease. Cyclosporine was discontinued in conjunction with administration of fresh frozen plasma, which led to the recovery of the above hematologic features. After the introduction of tacrolimus, anemia and thrombocytopenia recurred. This time the treatment comprised a combination of plasma exchange with fresh-frozen plasma and switching immunosuppressive therapy from tacrolimus to everolimus. As a result normalization of the platelet count and improvement of haemolysis occurred, but renal function still did not improve. In Doppler ultrasound focal areas of marked cortical hypoperfusion were described. Before renal allograft biopsy CEUS examination was performed, that showed uniformly well-perfused kidney allograft. Renal allograft biopsy specimens were consistent with CEUS results and showed only minor chronic vascular changes (features of FSGS and chronic ischemic glomerulopathy with IF/TA II). Based on CEUS and biopsy results we decided not to escalate the treatment any further. Renal function improved slowly but uneventfully.Conclusions: CEUS may be a valuable diagnostic tool to predict the clinical course of thrombotic microangiopathy after renal transplantation.

P404 DOES DOUBLE J STENT WITH ANTI REFLUX DEVICE USE DECREASE BK NEPHROPATHY RISK? A TWO CENTER EXPERIENCE

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Objectives: There are studies that show that double J stenting (DJS) increase BK nephropathy (BKN) 4 fold. DJS may cause vesicoureteral reflux (VUR) with normal bladder contraction.This fact was explored with experimental animal models. Superficial epithelial destruction, ulceration on transitional epithelium and inflammatory changes were shown on animal ureters with DJS. Studies have shown that situations that cause persistant hydronephrosis such as kinking of posttransplant ureter and ureteral stenosis might involve a dynamic role in the pathogenesis of polyoma virus associated nephropathy by enabling ureteral reflux.DJS may cause VUR with normal bladder contraction. The aim of this study is to investigate whether the increased risk of BKN with DJS decrease with anti-reflux device double J stent (ARD-DJS) or not.
Matherial and Methods: Ninety patients (male/female: 50/40) that had undergone kidney transplantations in Diyarbakır Training and Research Hospital and Dicle University, Faculty of Medicine Hospital between January 2012 and April 2014 were enrolled in the study. Demographic data, immunosuppression protocols, presence of rejection, graft loss, postoperative urologic complications, urinary tract infections (UTI), plasma BK levels of the patients were evaluated retrospectively.
Results: Median and IQR follow up time for ARD-DJS and non ARD-DJS patients were 11 (8–13.8) months and 21 (12–26) months respectively. Follow up of 57 cases were less than 12 months. Three cases (5.3%) had BK viremia. All 3 cases with BK viremia were non ARD-DJS users. But there were no statistically significant difference between ARD-DJS and non ARD-DJS use ($p = 0.11$).
Conclusion: We have found less BKV clinically eventhough there is no statistical significance in this study. ARD-DJS use may decrease the risk of BKV associated with non ARD-DJS. We think that to demonstrate this benefit, we need randomized controlled studies with more patients and longer follow up.

012 HISTOCOMPATIBILITY

P405

RATIONALE FOR A PRAGMATIC RANDOMIZED CONTROLLED TRIAL TO TEST EFFECTIVENESS OF ADDING RITUXIMAB IN DESENSITIZATION PROTOCOLS OF HYPER-SENSITIZED KIDNEY TRANSPLANT CANDIDATES

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The success of kidney transplants depends largely on genetic and immunological compatibility between the organ and its recipient. An important barrier to kidney transplantation is the sensitization of transplant candidates to human leukocyte antigen (HLA). The presence of donor specific antibodies (DSA) anti -HLA is generally a contraindication for transplantation. Hyper-sensitized patients (cPRA >85%) have to wait longer for a suitable donor, if one is found at all. Rituximab is a B-cell depleting antibody which is directed against CD20 epitope and leads to apoptosis of mature B cells. Rituximab-based desensitization protocols among highly sensitized transplant candidates may have some benefit in reducing risk and improve outcomes after transplantation. A recent study mentioned a modest decrease in anti-HLA antibodies and an appeared bigger effectiveness in preventing DSA rebound, when rituximab is added to high-dose IVIg. Rituximab produces prolonged B-lymphocyte depletion but does not affect antibody-producing plasma cells. By preventing B-Lymphocyte differentiation into plasma cells, rituximab precludes new alloantibody synthesis. High dose of IVIg is a standard desensitization protocol, adding a low dose of rituximab could translate in reducing candidates' cPRA values and allowing kidney transplantation with a deceased donor without compromise transplant outcomes. The demand for transplanting hypersensitized patients will likely increase with the growing number of candidates seeking re-transplantation, thus, new desensitization therapies must be pursued to allow transplantation. Despite the promises of some previous reported results, existing evidence is not sufficient to use low dose rituximab in desensitization protocols pre-transplantation. Therefore a pragmatic randomized controlled trial with a sufficient number of hyper-sensitized candidates to deceased donor kidney transplant is needed to test the use of rituximab in IVIg desensitization protocols.

011 HEART

P407

BIVENTRICULAR FAILURE IN DEXTRO-TRANSPOSITION OF THE GREAT ARTERIES CORRECTED WITH THE MUSTARD PROCEDURE: VAD SUPPORT OF THE SYSTEMIC VENTRICLE IS ENOUGH

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Introduction: Miniaturization and surgical progress in the field of ventricular assist device (VAD) therapy will lead to an increasing use in grown up patients with congenital heart disease (GUCH). VAD implantation in such patients, especially biventricular VAD (BVAD) placement, can be very challenging, potentially associated with high morbidity and mortality.
Methods and Results: We report about a 47-year-old male patient in terminal biventricular failure with pulmonary hypertension 40 years after Mustard procedure. The patient was successfully provided with a HVAD (HeartWare®, HeartWare Inc., Framingham, MA, USA) into the systemic ventricle (SV) as bridge to transplantat (BTT), with the pulmonary ventricle leaving unsupported.
Discussion: We present our institutional strategy for VAD selection in these patients and highlight intracorporeal VAD implantation technique.

015 INFECTIONS

P408 **PATTERNS OF CMV INFECTION POST-RENAL TRANSPLANT**

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Background: CMV infection post-renal transplant is most common in seronegative recipients of seropositive donors (Donor+/Recipient-) leading to widespread use of antiviral prophylaxis. Non-prohylaxed, combinations manifest a lower incidence. We evaluate incidence and timing of CMV viraemia and disease in all donor/recipient serological combinations.
Methods: This was a single-centre, historical cohort study. It included consecutive renal transplant patients from 1st July 2010 to 30th June 2013 with a minimum of 1 year follow-up. Demographic data, donor/recipient serological pre-transplant CMV status and post-transplant CMV PCR were extracted from a prospectively compiled, electronic patient record. Time to CMV DNA PCR positivity was calculated in all groups. A manual data collection was then carried out to determine which cases of CMV viraemia progressed to symptomatic CMV disease.
Results: A total of 335 patients underwent successful transplantation within the study period. Pre-transplant donor and recipient CMV status was established for 294/335 (87.7%). 43.5% (30/69) of the prophylaxis group encountered CMV viraemia post-transplant *versus* 8.9% (20/225) in the non-prophylaxis group. 27.5% (19/69) developed symptomatic CMV; this was defined as CMV syndrome or tissue-invasive CMV disease, *versus* 1.8% (4/225) in the non-prophylaxis group. Peak incidence of CMV viraemia was at 90-days in the non-prophylaxis group versus 270-days post-transplant in the prophylaxis group.
Conclusion: CMV viraemia occurs in the high risk group despite prophylaxis but mostly later than 6 months post-transplant. Clinicians should maintain a high level of clinical suspicion for CMV infection in non-prophylaxed patients early post-transplant. In prophylaxed patients, infection is more likely 6-18 months post-transplant.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P409

CYCLIC HELIX B PEPTIDE IN PRESERVATION SOLUTION AND AUTOLOGOUS BLOOD PERFUSATE AMELIORATES ISCHEMIA REPERFUSION INJURY IN ISOLATED PORCINE KIDNEYS

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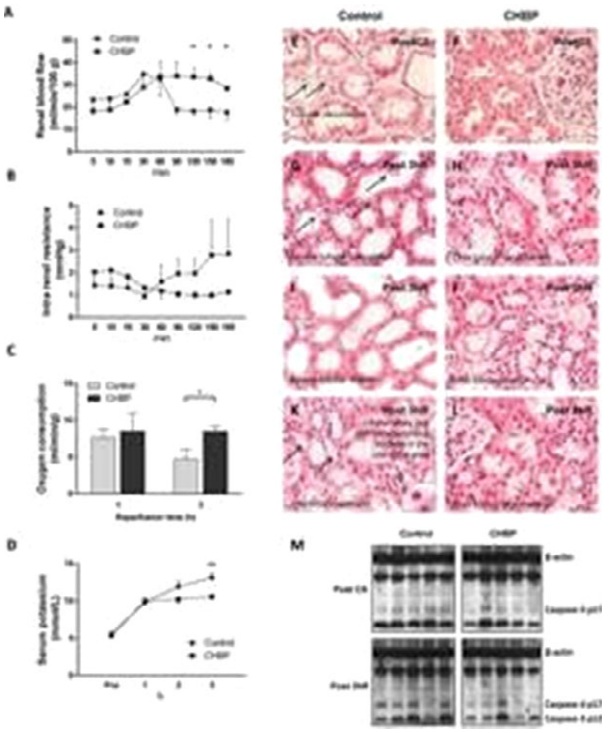
Background: There is an imperative need to better preserve isolated organs before transplantation. A non-erythropoiesis cyclic helix B peptide (CHBP) derived from erythropoietin was newly developed by us, which has potent tissue protection and prolonged serum stability. The renoprotection and potential mechanism of CHBP were evaluated in a kidney preservation model.
Materials and Methods: Porcine kidneys ($n = 5$) subjected to 20-min warm ischemia were retrieved and flushed with hyperosmolar citrate to mimic deceased donation. The kidneys and autologous blood ± 10.56 nmol/L CHBP were cold stored (CS) for 18 hr. These kidneys were then normothermically hemoreperfused for 3 hr using an isolated organ perfusion system. The renal function and structure, apoptosis, inflammation, caspase-3 and HSP70 expression were assessed.
Results: CHBP significantly increased renal blood flow, oxygen consumption and urine output during reperfusion, but decreased serum potassium and renal tissue damage. Apoptotic cells were significantly decreased in tubular areas, but increased in lumens and interstitial areas in the post-CS and post-reperfused kidneys, whereas myeloperoxidase+ cells were reduced. In addition, the expression of 32-kD caspase-3 precursor, 12 and 17-kD active subunits was down-regulated by CHBP in reperfused kidneys, while the 12-kD subunit was also decreased in the post-CS kidneys. However, HSP70 was up-regulated in both post-CS and post-reperfued kidneys treated with CHBP.
Conclusions: CHBP administrated into the solution of preservation and reperfusion ameliorated renal ischemia reperfusion injury, which might be associated with decreased apoptosis, inflammation and caspase-3, but increased HSP70. This novel preservation approach using CHBP may be applied in a porcine kidney transplant model and potential human donor kidney preservation.



023 KIDNEY

P410

CLINICAL ANALYSES OF PERSISTENT HYPERCALCEMIA AND HYPERPARATHYROIDISM AFTER KIDNEY TRANSPLANTATION IN SHORT- AND LONG-TERM DIALYSIS PATIENTS

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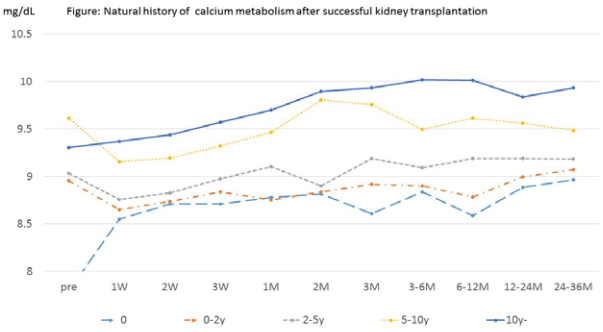
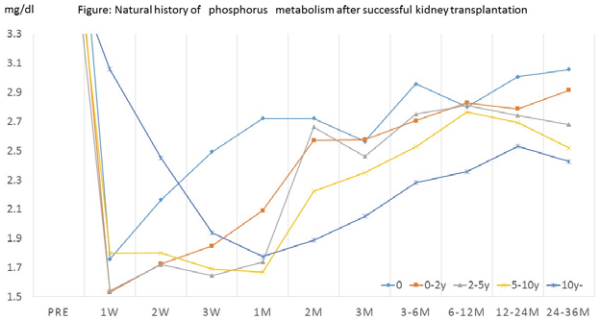
Mineral and bone disorders (MBD), including hypercalcemia (HC) and hypophosphatemia, are common complications after kidney transplantation (KTx). This study analyzed the natural history of MBD after KTx in each-term dialysis patients and post-KTx risk factors for hyperparathyroidism (HPT) and HC. Subjects: In this retrospective single-institution study, we analyzed data on patient characteristics and MBD parameters in 130 allograft recipients transplanted between 2004 and 2011. MBD parameters, including serum levels of intact parathyroid hormone (iPTH), corrected calcium (cCa), phosphorus (P), and alkaline phosphatases (ALP), were examined until 3 years after KTx. Results: iPTH showed a significant reduction only until the 3rd month post KTx (pre-KTx iPTH, 246.8 mg/dL vs in 3rd month, 125.8 mg/dL; p = 0.001), when it reached a nadir and remained thereafter. Serum cCa levels increased significantly from the 1st to the 4th week, after which they increased gradually. Serum P decreased dramatically in the 1st week (pre-KTx P, 5.05 mg/dL vs in the 1st week, 1.75 mg/dL; p = 0.001) and steadily increased thereafter. Multivariate analysis showed the potential predictors for HC in the 12th month post KTx to be pre-KTx cCa, dialysis duration, and post-KTx iPTH and ALP.

The Figure shows the natural course of mean serum cCa for each dialysis duration.In long-term dialysis patients, serum levels of cCa, ALP, and iPTH were higher, and serum P was lower than those in short-term dialysis patients. Conclusion: Long-term dialysis and high pre-KTx calcium levels are risk factors for persistent HC and HPT. This study suggests that management of MBD before KTx may be needed, and dialysis duration may need to be shorter pre KTx to prevent MBD post KTx. Therapy for persistent HC and HPT, if needed, should be initiated 6–12 months post KTx because further spontaneous improvement of parathyroid gland function thereafter is limited.





Factors		All *n* = 130	Hypercalcemia *n* = 12	Not hypercalcemia *n* = 118	p value
Duration of dialysis (months)		23 ± 59.1	135 ± 77.2	21.5 ± 53.6	<0.01
Age (yearas)		46 ± 13.85	50 ± 11.02	46 ± 14.0	0.007
Sex M/F		89/41	7/5	82/36	0.41
Maintenance immunosuppression	Steroids	130	12	118	1
	Cyclosporin A	11	1	10	0.98
	Tacrolimus	119	11	108	0.98
	Mycophenolate mofetil	114	11	103	0.48
	Azathioprine	3	0	3	0.48
	Mizoribine	8	1	7	0.48
Parameters of mineral metabolism					
pre-KTx	Corrected Ca (mg/dL)	9.1 ± 1.0	9.9 ± 0.9	9 ± 1.0	<0.01
	P (mg/dL)	4.9 ± 1.7	4.0 ± 1.3	4.9 ± 1.7	<0.01
	ALP (U/L)	195.5 ± 89.3	163 ± 84.4	198 ± 89.9	<0.01
	Intact PTH (pg/mL)	195 ± 206	193.5 ± 152.3	196.5 ± 211	0.08
1 year post-KTx	Corrected Ca (mg/dL)	8.9 ± 0.82	10.7 ± 0.3	8.85 ± 0.6	<0.01
	P (mg/dL)	2.8 ± 0.65	2.35 ± 0.4	2.8 ± 0.6	<0.01
	ALP (U/L)	232 ± 146.84	359 ± 222	229 ± 134.1	<0.01
	Intact PTH (pg/mL)	77 ± 83.6	175 ± 165.0	72 ± 60.8	<0.01
	eGFR	56.06 ± 18.5	61.1 ± 22.6	54.0 ± 18.1	0.11

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P411

ALTERNATE USE OF UW AND HTK FOR LIVER TRANSPLANTATION IN A SINGLE CENTER BASED ON EXPECTED COLD ISCHEMIA TIME: IMPROVED COST EFFICIENCY WITHOUT THE COMPROMISE OF THE OUTCOME

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University Hospital Merkur

Background: University of Wisconsin (UW) and Histidine-Tryptophan-Ketoglutarate (HTK) are two solutions with the widest use for cold preservation of liver grafts. In several reports HTK was found to be an independent risk factor for graft loss, especially with increasing cold ischemia time (CIT). We present the results from a center where HTK is used for locally procured grafts with very short expected CIT (<5 h) while UW is used for all other procurements.
Methods: 183 patients with first time, whole liver-only transplants between March 2011 and March 2013 were reviewed. They were divided in two groups based on the type of preservation solution. Median CIT in the UW group ($n = 148$) was 8 h and the median CIT in the HTK group ($n = 35$) was 4 h ($p < 0.05$). Groups were matched regarding donor and recipient characteristics. Analyzed parameters included post-transplant liver function, incidence of complications, and patient and graft survival (PS and GS).
Results: Bilirubin and AST levels at 1, 7 and 30 days post-transplant were similar in both groups. The incidence of primary non-function, vascular and biliary complications was not different between the groups. Neither PS nor GS at 3, 12 and 24 months post-transplant differed significantly between the HTK group and the UW group (91%, 86% and 80% vs. 92%, 87% and 81% for PS, and 89%, 83% and 71% vs. 90%, 84% and 73% for GS). Due to lower cost of HTK, this strategy yielded the savings of approximately 21000€ during the analyzed two year period.
Conclusion: Our results suggest that the use of HTK for liver preservation with very short CIT is safe. UW remains the gold standard for liver transplants with longer CIT, pancreas donors, extended criteria donors and donation after cardiac death donors. Significant savings can be achieved if preservation solutions are used in the presented manner. However, this approach requires high flexibility and excellent communication between the procurement team and the transplant team.

031 PEDIATRIC TRANSPLANTATION

P412

ALTERED ENERGY REQUIREMENTS AND FAILURE TO THRIVE AFTER INTESTINAL TRANSPLANT: A CASE REPORT

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Introduction: We report the case of a now 12-year old boy who received a combined liver-pancreas-small bowel transplantation at the age of 2 because of a short bowel syndrome after the complications of routine urologic surgery. The postoperative period was complicated due to extensive wound closure problems which led to a prolonged hospital stay of 2 years and a considerable abdominal wall defect. After that period his further follow up was uneventful despite a persistent failure to thrive: his height evolved from SD-0.7 to SD-2.9. Extensive investigations could not reveal problems of inadequate intake/absorption nor of increased losses. Endocrinologic evaluation was normal. As part of the evaluation of his energy requirements an indirect calorimetry was carried out which revealed a significant increase in resting energy expenditure (REE, 138% predicted) demanding a caloric intake of about 100 kcal/kg body weight/day taking into account de activity and catch-up growth factor. Because of the significant abdominal wall defect we explored the presence of increased heat loss as a potential cause of elevated REE in this boy
Methods: A Gobi-384 thermal camera from Xenics Infrared Solutions was used to measure the heat loss. This type of camera is not a standardised measurement tool in medicine but is routinely used in industry. The accuracy of this camera is two degrees Celsius. The identical twin brother of the patient was used as the control patient. The thermal images of both brothers were taken on the same day in the same environment.
Results: The body temperature of both subjects was identical. However the patient's aberrant abdominal area was 1.6°C to 2.9°C warmer compared to the abdominal area of the control patient (9% of total body surface). There was no difference in temperature measured at the face, thorax or upper leg region.
Conclusion: In the exploration of failure to thrive after intestinal transplantation altered energy metabolism might be taken into accoun.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P413

ISCHEMIC PRECONDITIONING OF INJURED STEATOTIC LIVERS REDUCES HEPATOCELLULAR CARCINOMA RECURRENCE

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Background: Although livers with parenchymal abnormalities poorly tolerate ischemic damage, there is limited data as to whether the susceptibility of steatotic livers to ischemia-reperfusion (IR) injury also impacts on cancer recurrence.

Methods/Materials: Wild type C57BL/6 mice were fed with a choline-deficient (CD) diet for 6 and 12 week, or standard chow. Hepatic IR injury and ischemic preconditioning were achieved by clamping the liver blood inflow. Hepa 1–6 hepatocellular carcinoma (HCC) cells were inoculated through the spleen. After three weeks, tumor burden, serum alpha fetoprotein and cancer cell aggressiveness were compared among groups.

Results: Hepatocellular damage and inflammatory genes (Il6, Tnf-α, Hif-1α, E-selectin) expression were significantly exacerbated after IR injury in severely steatotic mice. Compared to control livers or those with minimal steatosis, livers exposed to prolonged CD diet developed larger tumor nodules, and exhibited higher serum AFP levels. Non-ischemic lobes of steatosis/IR+ mice were not protected from IR-mediated accelerated tumor overgrowth. This remote effect was linked to a promotion of the aggressiveness of HCC cells exposed *in vitro* to the serum of steatosis/IR+ mice. Importantly, the tumor burden of livers undergoing ischemic preconditioning before IR was reduced to the level of non-ischemic steatotic controls.

Conclusions: Steatotic livers poorly tolerate IR injury, contributing to more severe HCC recurrence patterns in mice with increasing degree of fatty liver infiltration. IR mitigation by performing ischemic preconditioning results in reduced tumor load and serum AFP. In addition to *in situ* effects, the IR-related susceptibility of steatotic livers impacts on remote cancer cell aggressiveness.

023 KIDNEY

P414 RISK-ADJUSTED ANALYSIS OF RELEVANT OUTCOME DRIVERS FOR PATIENTS AFTER MORE THAN TWO KIDNEY TRANSPLANTS

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Renal transplantation is the treatment of choice for patients suffering end stage renal disease, but as the long-term renal allograft survival is limited, most transplant recipients will face graft loss and will be considered for a retransplantation. The goal of this study was to evaluate the patient and graft survival of the 61 renal transplant recipients after second or subsequent renal transplantation, transplanted in our institution between 1990 and 2010, and to identify risk factors related to inferior outcomes. Actuarial patient survival was 98.3%, 94.8% and 88.2% after one, three and 5 years, respectively. Actuarial graft survival was 86.8%, 80% and 78.1% after one, 3 and 5 years, respectively. Risk-adjusted analysis revealed that only age at the time of last transplantation had a significant influence on patient survival, whereas graft survival was influenced by multiple immunological and surgical factors, such as the number of HLA mismatches, the type of immunosuppression, the number of surgical complications, need of reoperation, primary graft non-function and acute rejection episodes. In conclusion, third and subsequent renal transplantation constitutes a valid therapeutic option, but inferior outcomes should be expected among elderly patients, hyperimmunized recipients and recipients with multiples operations at the site of last renal transplantation.

P418 SUCCESSFUL ELONGATION OF A SHORT GRAFT RENAL ARTERY BY A GONADAL VEIN

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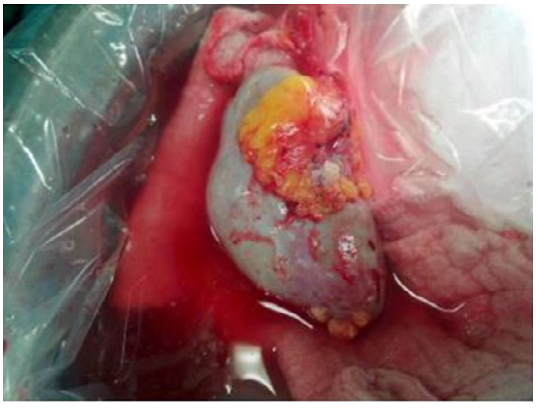

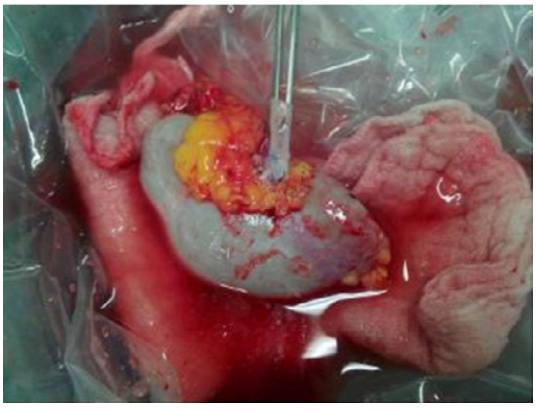

Laparoscopic donor nefrectomy became more prefered in renal transplantations. This procedure has some drawbacks, like hard control of bleeding in major bleedings during surgery, risk of graft ischemia, injury or laceration of donor kidney artery, vein or ureter.

The objective of this presentation is to share an experience of a successful reconstruction of a short graft renal artery by a gonadal vein, which occured during a hard laparascopic donor nefrectomy. A 27 years old male patient referred to our clinic for living related renal transplantation, who had a diagnonsis of end stage renal disease. Donor was his mother. Laparoscopic left donor nefrectomy was planned. Massive intraabdominal haemorrhage occured during the dissection of renal artery. Urgent intervention was performed to maintain the patency of renal allograft and to stabilise the donor. Haemorrhage was brought under control. Donor nefrectomy was completed with a short remaining segment of renal artery. Elongation of graft renal artery using gonadal vein of the same side was decided. End to end anastomosis was performed. After elongation of graft renal artery, anastomosis to internal iliac artery was performed. The transplantation procedure was completed successfully. The kidney functioned immediately. Doppler ultrasound revealed that the perfusion of the kidney was normal. The postoperative creatinine levels of recipient were in normal ranges. Daily urine output was normal. There are not enough publications about elongation of graft renal artey using gonadal vein. Elongation of a short remaining graft renal artery by using gonadal vein seems to be a simple, safe and reliable method. This technique provides a new approach for the reconstruction of short renal arteries in living donor kidney transplantations.

Keywords: Renal Artery, Gonadal vein.

P419 WHY DO RENAL TRANSPLANT RECIPIENTS ADMIT TO EMERGENCY DEPARTMENT?

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After renal transplantation, patients admitted to emergency department (ER) usually with urinary or gastrointestinal infections, and the most frequent findings are fever and increased heart rate. Acute rejection can be seen in renal transplant patients.

The Emergency Departments (ER) of hospitals that have active transplantation units take an important part in the treatment and care of transplant patients in the postoperative period. In this retrospective study, we analyzed the admission reasons to the ER, diagnosis and results of 41 patients who underwent renal transplantation in our hospital between 2011 and 2013. Forty one renal transplant patients enrolled to the study, 25 were male and 16 were female. Mean age was 40.63 ± 10.95. Twenty (48.7%) of them admitted to ER twice and 8 of them (19.5%) three times. The most frequent reason was gastroenteritis and encountered in 19 patients (46.3%), following reasons were sino-pulmonary infections in 7 (17%), urinary infections in 4 (9.7%), traumatic wrist fractures in 4 (9.7%), and other miscellaneous reasons in 5 (12.1%). Two patients had acute organ failure at admittance and one developed multiorgan failure. Among the patients with first and second admittance, 21 (51.2%) and 9 (45%) were hospitalized, respectively. In the second admittance group (20 patients), 6 patients (30%) had gastrointesinal disorders, 4 (20%) had sino-pulmonary infections and another four (20%) had urinary infections. Among 8 patients who admitted three times, leading reason was gastrointestinal symptoms that were encountered in three patients, and 2 of them (25%) needed hospitalisation. The most frequent reasons of admission of renal transplant patients to the ER are gastroenteritis, sino-pulmonary and urinary infections and wrist fractures, respectively. Patients who admitted with rejection related symptoms were fewer in our series.

Keywords: Renal transplant recipients, causes of admission, emergency department.

Male/Female	25/16
Age, mean	40.63 ± 10.95
Cadaver/ Living	21/20
Time between Tx and admissions, months	
Tx and 1st admission (ranges)	11.04 ± 8.2 (1–36) months
Tx and 2nd admission (ranges)	12.50 ± 11.0 (5–34) months
Tx and 3rd admission (ranges)	21.50 ± 8.6 (5–31) months
Patients acoording to number of admissions	
Once	22 (53.6%)
Twice	11 (26.8%)
Three times	8 (19.5%)

025 LIVER

P420

A SINGLE CENTER EXPERIENCE OF NEWLY STARTED LIVER TRANSPLANTATION PROGRAM IN KAZAKHSTAN

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JSC National Research Center for Oncology and Transplantology

Background: Liver transplantation (LT) is the only viable option for patients with end-stage liver disease (ESLD). Kazakhstan is the country experiencing high need in LT with over 1000 patients with ESLD.
Methods: We were intended to analyze the outcomes of deceased donor liver transplantation (DDLT) and those who had right lobe living donor liver transplantation (LDLT). Between from February 2013 and December 2014, 7 patients received LT at National Research Center for Oncology and Transplantology, Astana.
Results: Six out of 7 patients were adults; remaining pediatric recipient is 7 years old, who was excluded from this analysis. The most prevalent cause of end stage liver disease (ESLD) in DDLT group was characterized by autoimmune disorders: 2 recipients had primary biliary sclerosis and remaining recipient had cirrhosis due to autoimmune hepatitis. The cause of ESLD in DDLT group was represented by viral etiology: one due to cirrhosis from chronic HCV infection, and two recipients had cirrhosis due to chronic HBV + HDV infections. The mean cold ischemic time of the cadaveric liver was more than 8 h due to long distance transportation. The cadaveric donors had median age of 45y.o., and they were on inotropic support >3 days, with ICU stay >5 days. The cumulative survival was 66.7% for both groups calculated by Kaplan-Mayer method till 15 months (image-1). One lethal case in DDLT group was due to hepatic artery thrombosis (HAT) with no available donor organ for re-transplantation. One recipient in LDLT group died at early post-operative period due to hemorrhage, the patient had *a prior* poor condition of v.portae, despite performed cavalvenoplasty the recipient died of hemorrhagic shock.
Conclusions: Our single-center experience emphasizes that we have similar survival in both DDLT and LDLT groups, even though the cadaveric donor liver conditions were not perfect. Also, timely diagnosis of early post-operative complications is necessary.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P421

MICROALBUMIN AND TRANSFERRIN IN URINE CAN BE MARKERS FOR POSTTRANSPLANTATION DIABETES MELLITUS (PTDM)

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Objectives: Calcineurin inhibitor toxicity can lead to Posttransplantation Diabetes Mellitus (PTDM) and it is a common cause of renal failure after allo-liver transplantation. Microproteinuria as a hallmark of reflecting early changes in the glomeruli and proximal tubular function can be used as an accurate predictor to monitor early changes in renal function. But whether there is association between PTDM and microproteinuria is still unclear.

Methods: We included 260 liver transplantation patients. The recipients were all in a stable stage with normal serum creatinine. Serum glucose was traced for 16–90 months. The recipients were divided into two groups: PTDM and non-PTDM. Microproteins in urine (MA, TRU, IGU, A1M) were determined by nephelometry.

Results: Microalbumin and transferrin in urine were significantly higher in PTDM than in non-PTDM. A1M as a marker of kidney tubule damage was not significantly changed in PTDM compared to non-PTDM.Conclusions: Large molecular-weight protein, leaks through the glomerular membrane into urine only when glomerular filtration is disrupted. Urinary microalbumin is a major marker of damage to the charge selectivity and barrier integrity of the glomerular membrane. The earlier diagnosis of renal injury could lead to more timely intervention, and potentially, to better patient outcomes.

031 PEDIATRIC TRANSPLANTATION

P422

INTRAHEPATIC PORTAL VEIN HYPOPLASIA: A NEW HISTOLOGICAL MARKER OF BILIARY ATRESIA AT LIVER BIOPSY?

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Background: Biliary atresia (BA) is the most frequent cause of cirrhosis in children, and the main indication of pediatric liver transplantation (LT). Cirrhosis secondary to BA is often associated with extrahepatic portal vein (PV) hypoplasia (PV caliber $\leq$ 4 mm). We hypothesized that there are histological modifications of native extrahepatic and intrahepatic PV in BA.
Methods: A prospective study including 31 cirrhotic children (median age: 0.9 year), transplanted with a living donor was conducted since March 2012 (23 affected by BA). Native extrahepatic PV caliber was measured invasively during the LT procedure. Extrahepatic PV was sampled for histological analysis to quantify the fibrosis of PV wall (measurement of extrahepatic PV intima/total wall thickness). Histological morphometric analysis of portal tract vessels was also performed in order to measure the surface occupied by hepatic artery (HA) and PV lumens in 3 to 5 portal tracts for each patient (mean HA/PV ratio).
Results: Pre-transplant extrahepatic PV caliber was significantly smaller in children with BA, with median external PV caliber of 5.5 mm, compared to other cirrhotic children (median PV caliber of 8 mm; $p = 0.012$). A significant thickening of native extrahepatic PV intima was observed in children affected by BA, with a median PV intima/total wall thickness ratio of 0.37, compared to a ratio of 0.077 in non-BA cirrhotic children ($p = 0.0046$). Moreover, a negative correlation was observed between native extrahepatic PV intima thickening and PV external caliber (tau = -0.41; $p = 0.0019$). Median HA/PV ratio in portal tracts for children affected by BA was 1.69, compared to a median ratio of 0.39 for other cirrhotic children ($p < 0.001$).
Conclusion: PV hypoplasia seems to constitute a feature specific of BA, as manifested by a thickening of native extrahepatic PV intima, with a significant reduction of intrahepatic PV lumens in the portal tracts. This last observation might constitute an additional argument for the histological diagnosis of BA in native liver biopsies, provided these include large portal tracts.

P423

PRE LIVER TRANSPLANT HEMODYNAMIC DISTURBANCES IN CIRRHOTIC CHILDREN: CORRELATION TO PELD SCORE

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Background: Cirrhosis in children is often associated to a portal vein (PV) hypoplasia (PV caliber $\leq$ 4 mm), and to severe alterations of liver hemodynamics, particularly in case of biliary atresia (BA). We hypothesized that these pathologic parameters are correlated to a more severe degree of clinical cirrhosis.
Methods: External PV caliber, and intraoperative flowmetry of native liver hemodynamics were studied prospectively at liver transplantation (LT) in 31 cirrhotic children (median age: 0.9 year), including 23 BA. The gradient between PV pressure and central venous pressure (PVP-CVP) was invasively measured to estimate the severity of portal hypertension in the native liver. These parameters were correlated to the clinical severity of cirrhosis (PELD score).
Results: The prospective hemodynamic studies showed that: (1) pediatric cirrhosis was associated with a reduction of pre-LT total liver flow of more than 60% (median: 35 ml/min/100gr of liver; range: 25–48), compared to expected values (100 ml/min/100gr); (2) total flow of the native liver was correlated with PELD (tau = -0.259; $p = 0.041$); (3) PVP-CVP gradient was high (median: 15 mmHg; range:13–17), and was also correlated with PELD (tau=0.263; $p = 0.036$); (4) PV hypoplasia was only observed in children with BA ($p = 0.012$); (5) BA was also characterized by a more severe reduction of the pre-transplant total liver flow/100gr of liver (median: 26 ml/min/100gr of liver; range 19–36; $p = 0.0055$).
Conclusions: Pediatric cirrhosis is associated to severe native liver hemodynamic disturbances, which are correlated with PELD. Children affected by BA have more severe alterations of the pre-transplant liver hemodynamic parameters. These hemodynamic factors, which are correlated with the clinical severity of cirrhosis, could be considered as additional elements to evaluate the degree of emergency for a LT.

025 LIVER

P424 LIVER TRANSPLANTATION FOR PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS TYPE 3 (PFIC-3) PRESENTING IN THE 5TH DECADE OF LIFE

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Background: PFIC a rare heterogeneous group of autosomal-recessive disorders that presents during the neonatal period or within the first year of life. PFIC3 generally occurs later presenting either in late infancy, childhood, or even early adulthood.
Case Report: 44-year old gentleman with history of DM and jaundice since childhood due to Dubin- Johnson syndrome without itching, he developed progressive jaundice and intractable itching associated with dark urine and pale stools, over the past 2 years, his total bilirubin was 563 μmol/L with high GGT. Serology for viral hepatitis, autoimmune hepatitis, Wilson, alpha 1 antitrypsin and hemochromatosis were negative. Abdominal US showed no bile duct dilatation. MRCP showed Moderate splenomegaly without evidence of primary sclerosing cholangitis (PSC), liver biopsy showed Chronic liver disease (stage II/ IV) with finding suggestive of small duct PSC, and Dubin-Johnson syndromeHe was started on hemodialysis for biopsy proven diabetic nephropathy 1 year ago. Progressive familial intrahepatic cholestasis (PFIC) was considered and liver biopsy stained negative for MDR3, and genetic testing using 3rd generation sequencing revealed a combination of Dubin-Johnson mutations and PFIC-3 mutations, this was confirmed using PCR technique. He received Living donor liver transplantation from his daughter on September 16, 2014 and he has an excellent graft function, awaiting living related kidney transplant in 1 week.
Conclusion: To our knowledge, this is the first reported case of liver transplantation for pathologically and genetically confirmed PFIC-3 presenting in the fifth decade of life.

P425 PLASMAPHARESIS, INTRAVENOUS IMMUNOGLOBULIN AND RITUXIMAB SUCCESSFULLY TREAT RECURRENT PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS TYPE 2 AFTER LIVER TRANSPLANTATION

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Background: In patients with PFIC-2, the bile salt export bump (BSEP) is either absent or dysfunctional.After liver transplantation, antibodies against BSEP receptors can form and bind BSEP receptors causing a picture similar to PFIC-2, this was first described in 2009. Since then, few cases of PFIC-2 recurrence was reported with mixed outcome from re-transplantation, death to clinical improvement.
Methods: We present two cases with PFIC-2 recurrence after liver transplantation; a 14 years old boy and his 19 years old sister who had received cadaveric liver transplantation in the united states in 2011. In January 2014 they presented with severe itching, high bilirubin, high AST/ALT and high serum bile acid. Virology, Autoimmune screen, Abdominal CT Scan and liver biopsy were negative. Initial liver biopsy on both patients were not conclusive but repeat biopsy of the 14 year-old boy on May 2014 showed recurrence of PFIC2, his anti-BSEP came positive with a very high serum titer 1:1200, Treatment regimen by course of 5 sessions of plasmapharesis each session followed by IV immunoglobulin (IVIG) using the same protocol used by Northwestern University, Chicago. The second course of Plasmapharesis where modified by doing 5 sessions of plasmapharesis every other day with an exchange volume of 1.5, followed by 3 days of IVIG to avoid washing out the IVIG by plasmapharesis, followed by one dose of IV Rituximab 375/m^2. His sister's liver biopsy on July 2014 showed PFIC2 recurrence. She started treatment using the above modified protocol.
Results: Currently, both patients improved clinically and biochemically and still on treatment plan.
Conclusions:PFIC-2 recurrence after liver transplantation occur through an antibody mediated rejection against BSEP receptors and can successfully be treated with plasmapharesis, IVIG and rituximab obviating the need for re-transplantation

P426 SAFETY OF RIGHT-LOBE LIVING DONOR LIVER TRANSPLANT FROM DONORS WITH GILBERT SYNDROME

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Introduction: Donor safety is the most important consideration of living donor liver transplantation evaluation. There is a debate on the use of living-liver donors with Gilbert syndrome. Case reports and small case series demonstrated safety of use of donors with Gilbert syndrome. Our aim is to review the donor safety of liver donation from Gilbert and the effect on the recipients.
Methods: Between January 2001 and December 2013, 423 living-donor liver transplants (LDLT) were performed in our hospital, of which 222 using right-lobe grafts and 201 using left later segment (LLS). Donors with Gilbert syndrome were defined as those whose serum bilirubin level was greater than 20.5 μmol/L (1.2 mg/dL) predominantly indirect hyperbilirubimenia. Twenty one donors (15 right-lobe and 6 LLS) were performed using donors with Gilbert syndrome, data on the age, gender, body mass index (BMI), total and direct bilirubin before donation, post-operative maximum bilirubin (PMB), percentage of remaining liver volume for right lobe donors, donor and receipt outcome.
Results: The mean follow up period is 75 months (4–138), the mean age was 26 (18–41), all male, mean BMI was 23 (18–29), mean pre-operative total bilirubin was 28 (18–34), mean pre-operative direct bilirubin was 7 (1–11), mean PMB total was 79 (42–122), mean PMB direct was 21 (9–45), the mean remaining volume right lobe hepatectomy with a of 36% (30–43). No mortality in the donors, one recipient died of hepatic artery thrombosis at post-operative day 7, all other recipients are alive. To our knowledge, this is world second largest series of liver donors with Gilbert syndrome.
Conclusion: Living donor liver transplantation from donor with Gilbert disease is safe for donors wi.

P427 GILBERT'S SYNDROME AS A CAUSE OF UNCONJUGATED HYPERBILIRUBINEMIA AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background and Aim: Liver transplantation has been safely performed using donors with Gilbert syndrome. After liver transplantation, Liver grafts from donors with Gilbert's syndrome can cause unconjugated hyperbilirubenemia. This may lead to unnecessary or invasive investigation unless properly identified.
Methods: Between January 2001 and December 2013, 423 living-donor liver transplants (LDLT) were performed in our hospital, of which 222 using right-lobe grafts and 201 using left later segment (LLS). Donors with Gilbert syndrome. Twenty one donors (15 right-lobe and 6 LLS) were performed using donors with Gilbert syndrome, recipient's data from these donor were examined.
Results: The mean follow up period is 75 months, the mean age was 41, 17 male (81%), mean BMI was 23, mean total bilirubin was 39, mean direct bilirubin was 9. One recipient died of hepatic artery thrombosis at post-operative day 7, another receipt with biliary stricture died after 3 years of HCV recurrence, all other recipients are alive. Of the 21 recipients, 14 (67%) has episodic or persistent unconjugated hyperbilirubinemia, (11 adults and 3 pediatrics), of the 11 adults recipients, 4 has isolated unconjugated hyperbilirubinemia, with normal ALT, AST and ALP, two of them has normal MRCP and liver biopsy, while 7 has elevation of ALT, AST or ALP were found to have either recurrent hepatitis C plus biliary stricture requiring intervention (4 patients), mild anastomotic stricture on MRCP causing minimal elevation of ALP with normal ALT (2 patients) or recurrent hepatitis C alone (1 patients). The 3 pediatric receipts that should Gilbert pattern have no evidence of biliary complication.
Conclusion: Living donor liver transplantation from donor with Gilbert disease can present with unconjugated hyperbilirubinemia the recipients, it should not prompt further testing or liver biopsy in absent of abnormal ALT, AST, and ALP.

023 KIDNEY

P429

MULTIPLE RENAL ARTERIES IN LIVE DONOR TRANSPLANTS- RADIOLOGICAL ESTIMATION OF VOLUME OF KIDNEY SUPPLIED BY EACH ARTERY COMPARED WITH INTRA-OPERATIVE ASSESSMENT AND GRAFT OUTCOME

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Aim: Multiple renal arteries occur in 25% of donor kidneys. Pre-operative imaging (either CT or MRI) can identify accessory arteries with >98% accuracy, but the fractional renal volume supplied has not been studied. We studied the accuracy of three radiological parameters (diameter, cross-sectional area of artery and segmented renal volume) for predicting volume of kidney supplied and compared with intra-operative assessment during implantation.

Methods: 4 donors undergoing laparoscopic nephrectomies with multiple renal arteries were assessed. Pre-op contrast enhanced arterial phase CT was evaluated blindly. On MIP projections, maximum diameter and cross sectional area of each artery was recorded. Volume of renal tissue supplied was calculated by manual segmentation of arterial territory using proprietary volumetric software. Intra-operatively the surgeon estimated the area of kidney supplied by each artery independent of radiologist readings. Graft outcome was recorded at Day 7 and 30.

Results: Main arterial diameter (Art 1) was 5 mm (4.8–5.3 mm), accessory artery (Art 2) was 2.95 mm (1.6–3.9). Mean CT estimate of kidney supplied by main renal artery was 76% (62–85%). % Volume supplied by each artery showed no statistically significant difference between the CT and intra-operative estimation. Positive correlation between CT volume and intra-operative volume supplied ($r = 0.95$; $p = 0.04$). The recipient's mean serum creatinine/e-GFR at day 7 was 99.8 (>60) and at day 30 was 101 (>60).

Table 1 % kidney supplied (R= Radiologist, S=Surgeon) *Wilcoxon Signed Ranks Test $p > 0.05$

	Art 1 (R)%*	Art 1 (S)%*	Art 2 (R)%*	Art 2 (S)%*
1	85	80	15	20
2	76.6	70	23.4	30
3	81	75	19	25
4	62	50	38	50

Conclusion: Pre-operative fractional segmentation on CT studies can help predict the volume of kidney supplied by each artery. This may help in deciding which accessory artery can be potentially sacrificed without affecting the graft outcome.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P430

PRE-TRANSPLANT RISK FACTORS FOR OBESITY AT 1 YEAR AFTER SOLID ORGAN TRANSPLANTATION: A SECONDARY DATA ANALYSIS OF THE PROSPECTIVE, NATIONWIDE SWISS TRANSPLANT COHORT STUDY

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Obesity after solid organ transplantation (Tx) has been associated with decreased patient and graft survival and a higher risk for comorbidity. Knowledge about risk factors for post-Tx obesity is limited. We examined biomedical, socioeconomic, behavioral, and psychological factors pre-Tx risk factors for obesity at 1 year after Tx across kidney, liver, lung and heart Tx. This secondary data analysis used data from the prospective, nationwide Swiss Transplant Cohort Study. We included 1721 (65% male, mean age 52.9 $\pm$ 13.2) adult solid organ Tx recipients (single kidney (n = 1014), liver (n = 353), lung (n = 213), and heart (n = 141) from May 2008 to April 2014. Obesity at 1 year post-Tx was defined as body mass index (BMI) $\geq$ 30 kg/m^2. Risk factors assessed were biomedical (cardiovascular, metabolic, endocrine or kidney disease), socioeconomic (gender, age, marital status, education, working capacity, income) behavioral (smoking), and psychological (depression) factors. Analysis was done by generalized estimating equation models, adjusting for age, gender, organ and pre-Tx BMI. Obesity at 1 year post-Tx was 16.8% in the total sample (n = 1110), 21.2% in kidney (n = 702), 10.6% in liver (n = 189), 3.8% in lung (n = 132), and 13.8% in heart Tx (n = 87), respectively. Significant independent risk factors for obesity at 1 year post-Tx were higher pre-Tx BMI (OR=1.81; 95% CI: 1.66–1.97), female gender (OR=1.99; 95% CI: 1.20–3.30), and having stopped smoking before Tx (OR=2.19; 95% CI: 1.04–4.64) compared to having never smoked before Tx. Organ groups differ in the prevalence of obesity at 1 year post-Tx. Identified risk factors call for early interventions pre-Tx.

025 LIVER

P431

VIRAL LOAD AT WEEK 2 AFTER LIVER TRANSPLANTATION AS PREDICTOR OF EARLY HEPATITIS C RECURRENCE UNDER STEROIDS-FREE IMMUNOSUPPRESSION REGIMEN

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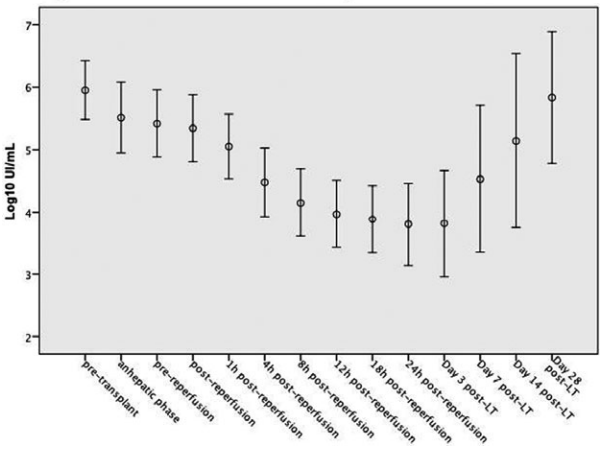
Introduction: There have been few detailed studies of viral kinetics after liver transplantation (LT) and the results are controversial regarding viral load paper on hepatitis C recurrence mainly in the era of new therapies.
Aim: To study the hepatitis C virus (HCV) kinetics during and immediately after LT and their impact on early hepatitis C recurrence.
Methods: Observational prospective study, which analyzes LT recipients performed from 2013–2014 and who presented pre-transplant positive HCV RNA-PCR and normal renal function. Induction immunosuppression was steroids-free regimen based on tacrolimus and mycophenolate mofetil. Serum samples were taken immediately before LT, at the end of the anhepatic phase, pre- and immediately post-reperfusion and at 1, 3, 7, 14 and 28 days post-LT. The concentration of HCV RNA was determined by using a quantitative reverse transcription polymerase chain reaction (RT-PCR) assay (Cobas Ampliprep/ Cobas TaqMan; Roche Molecular Diagnostics®, Barcelona, Spain). Hepatitis C recurrence confirmed by liver biopsy $\leq$ 3 months post-LT was defined as early recurrence. Minimal follow-up: 6 months. (ClinicalTrials.gov NCT 01707849).
Results: Fifteen patients were included with a mean age of 57 $\pm$ 7 years, 87% of the cases were transplanted due to hepatocellular carcinoma and 80% presented with genotype 1. Median real MELD=13 (6–33). Median donor age=54 years (16–67 years). Mean cold ischemia time=6.3 $\pm$ 0.47 h. HCV kinetics after LT is shown in Figure 1. Early recurrence was observed in 5 patients (33%) two of them as cholestatic type (total bilirubin$\geq$3 mg/dL). Viral load at week 2 post-LT $\geq$ 6.0 log10 IU/mL was the only prognosis factor of early hepatitis C recurrence (p: 0.043, OR:16).
Conclusions: Our study suggests that viral load at week 2 post-LT could select those patients with high risk of early hepatitis C recurrence after LT and therefore those with indication for preemptive antiviral therapy.

Figure 1. Viral kinetics before and after liver transplant



003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P432

GRAPEFRUIT JUICE AS A CAUSE OF IRREVERSIBLE GRAFT DYSFUNCTION IN A KIDNEY TRANSPLANT RECIPIENT TREATED WITH EVEROLIMUS

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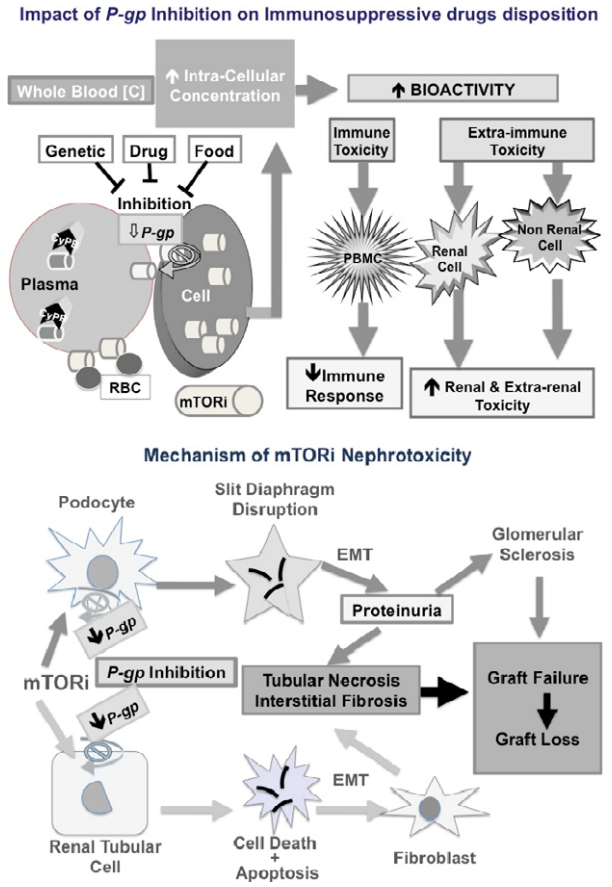
We report a case of a 47-year-old male who underwent a cadaveric kidney transplant from a 65-year-old female donor. Discharge serum creatinine (Scr) was 1.6 mg% on Tacrolimus (TAC), Mycophenolate Mofetil (MMF) and prednisone. At 5 months post-transplant (MPT5), he was converted to Everolimus (EVR) following a first kidney graft biopsy (KGB1) that revealed acute tubular injury with isometric vacuolization (TIV) on baseline chronic changes: 30% glomerulosclerosis, 15% interstitial fibrosis and tubular atrophy (IFTA). During follow-up, he developed several extra-renal adverse effects prompting EVR and MMF tapering. At MPT 10, he exhibited bilateral ankles edema with tremor prompting further reduction in EVR dosage following a KGB2 that showed similar findings with stabilization of Scr at 1.6 mg%. By MPT24, he exhibited sudden rise in Scr to 2.5 mg%. A 3rd KGB revealed a doubling in IFTA to 30%. Electron microscopy findings revealed mild glomerular and peri-tubular capillaries endothelial cell damage with focal effacement of the foot processes without lamellation. All Viral and C4d stains were negative. He admitted taking daily 2–3 glasses of natural grapefruit juice (GFJ) over the preceding 3 months. Graft dysfunction occured despite EVR therapeutic levels folllowing the introduction of GPJ, potent inhibitor of both CYP3A4/5 and efflux permeability glycoprotein (P-gp) pump. It was associated with doubling of IFTA, despite considerable regression in the TIV and in the absence of immunological or infectious insults. P-gp inhibition increases EVR intra-cellular concentration without any change in blood levels. Epithelial mesenchymal transition (EMT), a key mediator of IFTA, is associated with EVR therapy. it may occur at therapeutic dose in case of low P-gp expression caused by either genetic mutation and/or ingestion of P-gp inhibitors. This this is the 1st reported case of EVR-induced injury in a kidney graft recipient following the introduction of GFJ.



009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P433

COST MINIMIZATION FOR NATIONAL HEALTH INSURANCE ORGANIZATIONS INDUCED BY GENERIC IMMUNOSUPPRESSIVE DRUGS IS ABOVE ALL DRIVEN BY NATIONAL LEGAL REIMBURSEMENT FRAMEWORKS: A COMPARISON BETWEEN BELGIUM AND FRANCE

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Riziv-Inami

This analysis assessed the degree of generic use and impact on cost minimization for national health insurance in Belgium and France, within a different legal reimbursement framework.
Methods: Non-hospital L04-Pharmanet data from Belgium and France were analyzed between 2008 to 2013 for DDD-used and reimbursement costs/DDD for original and generic drugs of oral cyclosporine (CyA), tacrolimus (Tac, both BID and QD forms) and mycophenolic acid ((MPA), both mofetil (MMF) and sodium (NaMPA) forms).
Results: In both countries no generic CyA is reimbursed, although there was one during a 2 year period in Belgium. No generics of Tac QD or NaMPA are available. For Tac BID and MMF several generics are available, but in Belgium only 0.24% of Tac DDD used is generic, versus 0.50% of DDD in France (factor 2.1), which for MPA is 4.26% of DDD versus 14.90% of DDD (factor 3.5). From 2008 until 2013 the Belgian reimbursement cost of original CyA decreased from 9.86€/DDD to 8.79€/DDD (−10.8%), of original Tac BID from 13.89€/DDD to 6.21€/DDD (−55.3%), of QD MR4-Tac from 12.88€/DDD to 5.77€/DDD (−55.2%), of original MMF from 10.84€/DDD to 4.30€/DDD (−60.3%) and of Na-MPA from 15.06€/DDD to 9.42€/DDD (37.4%). In France this was much less, from 10.98€/DDD to 10.01€/DDD (CyA, −8.0%), from 13.46€/DDD to 12.21€/DDD (Tac BID, −9.3%), from 13.30€/DDD to 11.98€/DDD (QD MR4-Tac, −9.3%), from 11.41€/DDD to 7.64€/DDD (MMF, −33.0%) and from 15.07€/DDD to 13.86€/DDD (NaMPA, −8.0%) respectively. The mean 2013 Tac BID generic cost was 6.23€/DDD in Belgium versus 8.93€/DDD in France (+43.5%) and 2.13€/DDD versus 4.86€/DDD (+128.2%) for generic MMF.
Conclusion: Although the DDD percentage use of generic L04 drugs is lower in Belgian public pharmacies compared to France, the Belgian legal framework results in a greater cost reduction/DDD for both original and generic compounds compared to France.

025 LIVER

P434

NEW LIVER TRANSPLANTATION BIOMEARKERS: PLASMA AND BILE FRACTIONAL GGT ANALYSIS IN THE EARLY FOLLOW-UP

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Background: g-glutamyltransferase fractions b, m, s, fGGT have been identified in human plasma and specific pattern have been found in different chronic liver diseases. Aim of this study was to assess plasma and bile GGT fractions in patients undergoing liver transplantation (LT).
Methods/Materials: GGT fractions were determined by size-exclusion chromatography. Plasma and bile samples (n = 250) were obtained between the 4th and 15th days after surgery from 29 patients subjected to LT with T-tube placement. Data have been analysed to find correlation with biochemical markers and graft functional recovery.
Results: We observed an increase of bGGT within the first week post-LT followed by a decrease being at T5 (mean±SD): 74 ± 63 U/L, T7: 136 ± 110; T15: 54 ± 43 ($p < 0.05$ T7 vs. T15). The other fractions increased up to T7 (mGGT T5 15 ± 9, T7 24 ± 11, T15 18 ± 14; sGGT U/L T5 30 ± 7, T7 72 ± 63, T15 70 ± 43; fGGT U/L T5 9 ± 3, T7 16 ± 9, T15 16 ± 5). Interestingly sGGT showed an asymmetric peak and its elution volume changed within the 15 days post-LT ($p < 0.05$ linear trend) indicating sGGT had a smaller molecular size at T5 than at T15. Spearman's analysis showed that bGGT and mGGT positively correlated with plasma bilirubin (r 0.52 and 0.50 respectively) and alkaline phosphatase (0.85 and 0.86), any correlation was found with transaminases and lactate dehydrogenase. The fractions b and mGGT correlated also with monocytes (0.25), eosinophils (0.39) and basophils (0.36). Bile GGT analysis showed the presence of only two fractions corresponding to plasma b and fGGT. Bile bGGT showed an activity peak before that observed in plasma (T4 1338 ± 1329, T7 492 ± 421, T15 187 ± 134).
Conclusions: Early increase of plasma and bile bGGT is a constant pattern in the setting of a regular post liver transplant course and might be considered predictive of the early graft functional recovery. The plasmatic pattern of bGGT and sGGT might be an epiphenomenon of canalicular regeneration after ischemia and reperfusion.

023 KIDNEY

P436 ALLORESPONSE AND NATURAL KILLER CELL FUNCTION PREDICTS DEVELOPMENT OF CANCER POST RENAL TRANSPLANT AND ALSO SEPTIC AND MALIGNANT DEATH

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Reducing immunosuppression has been proposed as a means of preventing cancer in Kidney Transplant Recipients (KTR) but can precipitate graft rejection. Measuring anti-tumour NK cell function and allo-responses in KTR may predict cancer risk and define risk of rejection. We have found that both peripheral blood NK cell function measured via Lactate Dehydrogenase (LDH) release and IFN-γ quantification via Panel of Reactive T cell (PRT) ELISPOT are diminished in KTR with malignancy compared to KTR with no history of malignancy, within two separate cohorts of a total number of 78 KTR. With prospective follow-up, KTR with a PRT <280 spots/300 000 PBMC had Hazard Ratio (HR) [95% Confidence Interval] = 3 [1.2–7] for recurrent cancer ($p = 0.019$). KTR with poor NK cell function (<4% lysis via LDH release) had HR = 6.6 [1.7–13] for recurrent cancer or cancer death ($p = 0.003$). In addition KTR with cancer and PRT value <93 spots/300 000 PBMC had HR = 8.8 [1.6–46] for septic or cancer death ($p = 0.014$). In these cohorts, these assays therefore predicted significant adverse events related to immunosuppression.

P437 SKIN CANCER AND CUMULATIVE DOSE OF IMMUNOSUPPRESSION IN LONG-TERM KIDNEY TRANSPLANT RECIPIENTS: A RETROSPECTIVE AND CASE-CONTROLLED ANALYSIS

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Introduction: Renal transplant recipients are 3 times more likely to develop skin cancer (SC) when compared to age-matched general populations, and this is associated with increased morbidity and mortality. This probably relates to treatment with immunosuppression (IS), but the association is not fully understood.
Objectives: To determine the prevalence of SC in our long-term kidney transplant recipients (LKTs). To assess whether SC prevalence is related to the type and/or cumulative dose (CD) of IS taken.
Methods: We collected data retrospectively from all ($n = 335$) LKTs (>8 years) attending transplant clinic between 2010–2013. We documented the total number of SCs, time to development of first SC post transplant and IS. For the analysis of IS as risk factor, patients with SC were matched to an equal number of controls in age, total years from first transplant and skin type criteria. McNemar's test was used to test the effect of IS on risk of SC. Wilcoxon signed-rank test was used to test the effect of CD of IS.
Results: 67 (21%) patients had at least one SC. In these a total of 281 BCCs, 157 SCCs, 4 melanomas and 1 Kaposi's sarcoma were diagnosed. Average time to development of a SC was 13 years (range 2–32 years) after transplant. There were no statistically significant differences between case and control patients in the proportion of patients taking any of the IS drugs 1 year before the first SC. However, the difference in the proportion of patients who developed SC after taking azathioprine (Aza), compared to controls, is borderline significant. CD of Aza is significantly related to development of skin cancer.
Conclusion: We have identified a high prevalence of SC in our LKTs. In our analysis we found prevalence was not significantly related to the type of IS taken, although preliminary results point to Aza as a risk factor, and tacrolimus as protective.Further work to determine other risk factors for SC and assess effectiveness of available treatments is warranted.

Drug	%SC cases	% Matched controls	McNemar's p-value	Median CD (SC cases)	Median CD (Matched controls)	Wilcoxon p-value
Prednisolone	62.7	62.7	1	27826	22272	0.121
Azathioprine	61.2	46.2	0.05	318800	272350	0.041
Cyclosporin	61.2	52.2	0.21	297500	377950	0.723
Tacrolimus	20.8	13.4	0.30	0	0	-
Mycophenolate	26.8	31.3	0.66	0	0	-

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P438

ATTIDUDES AND OPINIONS ABOUT DONATIONA AND TRANSPLANTATION OF THE HEALTHCARE PROFESSIONALS OF MOLDOVA

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[1]Transplant Agency; [2]State Medical and Pharmaceutical University "Nicolae Testemitanu"; [3]Departament de Salut, Generalitat de Catalunya; [4]Organització Catalana de Trasplantaments

Introduction: In 2010, the Republic of Moldova started activities related to organ donation and transplantation by establishing the Transplant Agency (TA). However, only in 2014 it was managed to have a braind-dead donor. In the same year, the TA started a strategy to improve donation, which consisted of studying the perceptions and opinions of involved professionals. The goal of the study is to evaluate the opinions and attitudes of the healthcare professionals in connection with donation and transplantation.
Methods: A survey was conducted with questionnaires filled in personally by the respondents, consisting of 42 questions, targeted at healthcare professionals, to evaluate their interest, opinion and knowledge about donation and transplantation. There were received 610 questionnaires from various professionals from 10 hospitals located in Chisinau. 96.7% disclosed information about their job: 191 nurses, 169 surgeons, 77 intensivists, 48 internists and 105 with other specializations. 64.7% were female.
Results: 84.8% of the respondents agree with organ donation. The respective percentage is lower among nurses (77.5%). 64.9% of the respondents think that information they have is insufficient; 56.9% of the sample state that they have an average-high level of knowledge. 73.3% state that they know that the criteria on recipient selection are public, and 13.3% declare that are aware that there exist centralized waiting lists. Finally, 91.6% of respondents state that they agree to obtain more information and 77.9% would attend training courses.
Conclusion: The survey results prove a very favorable attitude of professionals towards donation and transplantation and emphasize a high level of interest towards improving their knowledge in this field. The identified improvement areas comprise the legal framework, such as specific protocols and procedures, and the organization and functioning of the donation and transplantation system in the country.

025 LIVER

P439

SENT LIVER GRAFTS HAVE NOT A DETRIMENTAL IMPACT ON POST-TRANSPLANT OUTCOME

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IRCCS Ca' Granda Ospedale Maggiore Policlinico

Sent livers (SL), as interregional allocated grafts, are considered extended donor criteria grafts. In our donor allocation program (NITp), the frequency of allocating SL is increasing. We evaluated our single centre experience during 2014. A retrospective case match analyses was carried out from our prospective collected database. 57 liver transplants (LT) were included: 22SL and 35 grafts procured by our team (nSL). Donor (age, gender, ICU time, DRI), transplantation (TIT, procedure time, transfusion requirement) and recipient (age, gender, creatinine, bilirubine, INR, MELD, immunosuppression, ICU time, hospital time, graft survival, complications) characteristics were compared. No major retrieval damages were observed. A single PNF occurred among nSL grafts. No differences in donor characteristics were found: DRI showed a trend towards significant value (SL 1.901 vs nSL 1.726, $p = 0.07$). The only differences found in transplant and recipient variables were the number of patients receiving immunosuppressive induction with IL-2 inhibitor (SL 7 vs nSL 20, $p < 0.05$) and the number of patients transplanted with HCC (SL 50% vs nSL 34%, $p < 0.05$). Re-LT were performed in five cases: one in SL group (at POD89 for severe cholestasis) and four in nSL group (at POD5 and 70 for vascular complications, at POD7 for PNF and at POD11 for acute toxic liver injury). Only one patient died, in group SL, for sepsis after re-LT. Grafts' survival at 30-60-90 days was 100-100-95% in SL group and 94-92-92% in nSL group (log-rank test NS). SL performance did not differ from those of nSL either as graft/transplant complications and as retrieval damages. nSL were more commonly transplanted in worse recipients as expressed by the higher use of IL- 2 inhibitor; nevertheless, grafts' survival was similar in the two groups. At most in our experience, in NITp area SL performs as the grafts retrieved by the same teams of the LT centers. Our personal results need to be confirmed.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P441

POSTCONDITIONING OF ISCHEMIA REPERFUSION INJURY WITH NOBLE GASES IN A PIG KIDNEY TRANSPLANT MODEL

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KULeuven

Background: Renal ischemia-reperfusion injury (IRI), unavoidable in transplantation, is untreatable. In rat renal IRI, xenon (Xe) and argon (Ar) improve renal function, downregulate inflammation/apoptosis, promote cell survival/growth, and improve mitochondrial stability.We evaluated whether Xe and Ar improved kidney graft function when administered in a postconditioning setting.

Materials/Methods: In our previously validated pig kidney autotransplant model (female, 30–45 kg), kidneys were exposed to 60 min of warm ischemia (WIT) and 18 h of cold ischemia (CIT) in HTK. Pigs were randomized to Xe (70Vol%+30Vol%O_2;n = 6), Ar (70Vol%30Vol%O_2;n = 6) or control (70Vol%N_2+30Vol%O_2;n = 5). Xe or Ar were administered from 5 min before until 2 h postreperfusion. Renal function was followed until day (D)10: daily and peak creatinine, start of urine production and creatinine clearance. AST was used as marker for kidney cellular injury.(1) Creatinine and AST are corrected for animal and kidney weight, respectively. Groups were compared by Kruskal-Wallis test, median (interquartile range) are given.

Results: Baseline characteristics were similar (kidney weight, arterial and venous pressure at reperfusion) (Table). There was no difference in WIT, CIT or anastomosis time. Kidney function was similar in all groups. Survival was also comparable.

Conclusion: Postconditioning with Xe or Ar does not improve function of a graft exposed to severe IRI in a pig model of kidney transplantation. The effect of Xe and Ar on protective molecular mechanisms needs exploration.

Parameter	Control (n = 6)	Xe (n = 5)	Ar (n = 6)	p
WIT (min)	60 (60–60)	60 (59–60)	60 (58–60)	0.72
CIT (h:min)	18:00 (17:56–18:03)	17:58 (17:57–18:08)	17:58 (17:56–18:00)	0.81
Anastomosis time (h:min)	0:30 (0:28–0:31)	0:28 (0:26–0:30)	0:29 (0:25–0:30)	0.39
Peak creatinine (mg/dL)	20.8 (16.4–23.7)	18.4 (17.0–21.0)	21.4 (17.1–24.9)	0.63
Peak AST (U/L)	238 (156–253)	179 (148–209)	197 (147–254)	0.40
Start urine production (D)	3 (2–5)	3 (2–4)	3 (2–4)	0.98
Survival (D)	10 (6–10)	10 (10–10)	10 (10–10)	0.14

(1) Jochmans I, et al; Ann Surg;254:784.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P442

DIFFERENTIATION OF DENDRITIC CELLS WITH TOLEROGENIC PROFILE FROM HUMAN CD14 + SPLEEN CELLS

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Background: Tolerogenic dendritic cells play a key role in the peripheral tolerance induction and maintenance. Therapies based on tolerogenic DCs transfer, differentiated with pharmacological agents, are a promising strategy for transplantation tolerance induction. Recently, studies have suggested that the human spleen may constitute an extramedullary reservoir of monocytes in humans. By considering this, we proposed to evaluate whether the methods described to differentiate dendritic cells whit tolerogenic markers from blood monocytes *in vitro* are also valid in CD14 + cells derived from human spleen.
Methods: Dendritic cells were differentiated from blood and spleen CD14 + cells cultured *in vitro* with GM-CSF and IL-4 for 7 days and in the absence or presence of vitamin D3. By flow cytometry, we evaluated the percentage of differentiation of Lin1-HLA-DR+ Cells and surface expression of ILT3, PD-L1 and PD-L2 as markers of tolerogenic dendritic cells.
Results: The percentage of differentiated DCs was not significantly different between peripheral blood and spleen CD14 + cells cultures (75.96 ± 16.23% vs 78.45 ± 14.26%); and the presence of Vitamin D3 did not interfered with the differentiation process (79.06 ± 16.06% vs 77.11 ± 14.21%). Interestingly, when these cells were differentiated in the presence of Vitamin D3, we observed higher percentage of tolerogenic markers as demonstrated by high surface levels of ILT3, PD-L1 and PD-L2 molecules. The increased expression of these molecules were significantly both in spleen and blood cells cultures except PD-L1 which was higher only in spleen differentiated dendritic cells.
Conclusion: We could demonstrate that the methods described to differentiate DC from blood monocytes are applicable to CD14 + cells derived from human spleen. These findings open the possibility of using spleen from deceased donors as a source of dendritic cells precursors for induction and maintenance of transplantation tolerance.

P443

AN ACUTE CELLULAR REJECTION WITH DETRIMENTAL OUTCOME OCCURRING UNDER BELATACEPT-BASED IMMUNOSUPPRESSIVE THERAPY, AN IMMUNOLOGICAL ANALYSIS

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[1]Erasmus MC; [2]Erasmus Medical Center; [3]Eramus Medical Center; [4]Leiden University Medical Center

Belatacept, an inhibitor of the co-stimulatory CD28-CD80/86-pathway, has been associated with increased acute rejection rates after kidney transplantation. This case report sheds light on the possible immunological mechanisms responsible for this.A 61-year old female treated with belatacept, who received her first 1-2-2-mismatched cross-match negative kidney-transplant from her husband, was admitted with acute kidney failure 56 days post-transplantation. Because of absent transplant-perfusion, a transplantectomy was performed. Histological examination of the explant demonstrated an acute vascular rejection (Banff ACR grade III) with large vessel thrombosis and massive necrosis, and mostly T cells perivascular. During rejection, non-complement binding DSA were found against HLA-DR from her husband (MFI 600). Nonetheless, no signs of antibody mediated rejection were found (C4d-negative in peritibular capillaries). In contrast to the peripheral blood monocytes, CD86 + was expressed by 15–20% of the mononuclear cells in the explant.Isolated graft cells were mostly CCR7 + CD45RO+ effector-memory CD4 and CD8 T-cells (60–70%). Both CD28POS as CD28NULL T-cells were present in the explant, expressing granzyme B together with a great IFNγ-production capacity. Only 8% of the isolated cells were B cells.We postulate this steroid-resistant cellular rejection under belatacept was predominantly mediated by cytotoxic memory T-cells, which might be not susceptible to the co-stimulatory blockade by belatacept in tissue.

017 INTESTINE

P444

OSMOTIC SELF-INFLATABLE TISSUE EXPANDERS TO FACILITATE PRIMARY ABDOMINAL CLOSURE IN INTESTINAL TRANSPLANTATION

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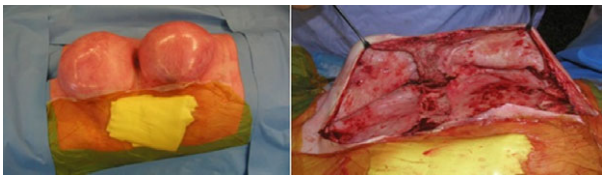
University Hospitals Leuven

Background: Intestinal transplantation (ITx) is an accepted treatment for complicated short bowel syndrome, often associated with decreased abdominal domain, limiting the available organ donor pool and rendering abdominal closure difficult. Pre-transplant inflatable tissue expanders (TE) have been described to overcome both problems by expanding the abdominal wall before transplantation. However, percutaneous injections to inflate the prostheses have resulted in serious complications. We hypothesised that osmotic, self-inflatable TE -a technique not described before- might avoid this risk.
Methods: We present two patients (7.5-, 34-year-old females), respectively awaiting combined liver-ITx and isolated ITx (living donation) and describe the technical details and outcome. Furthermore, we provide the first detailed literature review on TE in ITx.
Results: The first patient received 3 TE (1350 cc) and the second 2 TE (800 cc). All were placed subcutaneously and one was removed due to stoma-bag application difficulties. No other TE-related complications occurred and both patients underwent uncomplicated ITx with primary skin closure in the first *(Figure)* and primary skin and fascia closure in the second. Nineteen other cases of TE (inflatable) in ITx candidates have been described. Complication rate was relatively high (67%) with life-threatening infections and hematoma being the most frequent. Although, with successful expansion, primary skin closure was always achieved, offering physiological graft protection.
Conclusion: For selected patients, TE offer an important benefit in allowing primary abdominal closure at the time of ITx. Osmotic TE seem to offer a safer alternative to conventional prostheses by avoiding percutaneous injections and the associated risk of infection and discomfort.



023 KIDNEY

P445

INCIDENCE OF URINARY TRACT INFECTION (UTI), HYDRONEPHROSIS AND THEIR EFFECT ON GLOMERULAR FILTRATION RATE (GFR) AT 1 YEAR POST-KIDNEY TRANSPLANTATION IN CHILDREN

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Objective: To determine the Incidence of Urinary Tract Infection (UTI), hydronephrosis and their effect on Glomerular Filtration Rate (GFR) at 1 year post-kidney transplantation in children.
Method: This is a retrospective study, included charts review of all pediatric kidney transplant patients transplanted at KFSH&RC in the period from September 2009 to September 2011 and followed up for at least 1 year post transplant. Eligibility Criteria: Inclusion criteria:All Pediatric kidney transplant patients less than 14 years of age transplanted in KFSH&RC from September 2009 to September 2011 who has been followed up at least 1 year post transplant.
Statistical Analysis: The data collected from this study will be electronically entered into a database.
Results: 32 patients were identified. 2 were excluded (One with acute graft loss due to renal artery thrombosis and one did not follow up at KFSH&RC until the end of first year post transplant. So, 30 patients (13 males [43.3%]) were included in the study. Mean age at transplant was 8.3 years. 17 children (56.7%) had UTI during the study period. 4 of them (13.3%) had 1 UTI episode and the remaining 13 (40.3%) had 2 or more UTIs. The most common organisms were *E. coli* (66.7%), Klebsiella pneumonia (16.7%). 19 patients had US during the first year post transplant. 14 (73.7%) had hydronephrosis ranging from mild to moderate. FGR at 1 year post kidney transplantation was comparable between those who had UTI, single or recurrent and those who did not have UTI.
Conclusion: UTIs were common in the 1st year post kidney transplantation (56.7%) as well as hydronephrosis in those who did renal US (73.7%). There were NO correlation between UTIs, hydronephrosis and GFR at 1 year post kidney transplantation. Type of transplant (living related donor vs cadaveric) had no effect on incidence of UTIs, hydronephrosis nor on GFR at 1 year post kidney transplantation.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P446

ECDI FIXED DONOR SPLENOCYTES COMBINED WITH A-1 ANTITRYPSIN INDUCE IMMUNE TOLERANCE IN MICE CARDIAC TRANSPLANTATION MODEL

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Our previous study have shown that infusions of donor splenocytes fixed with 1-ethyl-3-(3′-dimethylaminopropyl)-carbodiimide (ECDI-SPs) could prolong allografts survival in mice cardiac transplantation model. However, proinflammatory factors (IL-6, IFN-γ and TNF-α) increased dramatically in the allografts that failed to be tolerated, this suggested proinflammatory factors could be important obstacles for tolerance induction. α-1 antitrypsin has been reported to effectively reduce the secretion of proinflammatory factors. In this study we found that combined α-1 antitrypsin and ECDI-SPs could provide indefinite cardiac allografts survival in 100% of recipients. Proinflammatory factors in serum and allografts were significantly lower in α-1 antitrypsin group. ECDI-SPs combined with α-1 antitrypsin could induce more Tregs *in vivo* compared to ECDI-SPs only. ECDI-SPs could suppress the mixed leucocytes reaction of donor and recipient T cells *in vitro* by inducing Tregs and secretion of high level of IL-10, which could be dampened by adding proinflammatory factors. α-1 antitrypsin could restore the suppressive function of ECDI-SPs by suppress proinflammatory factors *in vitro*. These findings suggested that ECDI-SPs combined with α-1 antitrypsin could serve as a promising strategy for promoting immune tolerance in transplantation.

011 HEART

P447

FETAL HEART TRANSPLANTATION: INFLUENCE OF SOME FACTORS

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Background: The influence of preservation, site peculiarities and others - on the issue of the fetal digestive organs growth *in vivo* has been described. Concerning heart fetal organ and cultured cardiomyocyte transplantation, though reported results are controversial, the link between grafting techniques and issues was not established.

Aim: to verify the incidence of the fetal heart implantation conditions into adult on its success or failure.

Methods: 80 Wistar rats were used as recipients. Donors were fetuses aged 15–20 days. Duration of the fetal heart preservation at 18–20°C varied between 5 and 60 min. Implantation sites were: subcutaneous pouch formed in the ear auricle, Marfan space, thoracic cavity, pouch between thymus lobes, lung hile, surface of intact or injured heart. Echography was performed to localize the growing implant at different time intervals up to 11 months after the operation.Then the animals were euthanasied for histology and electron microscopy study.

Results: The success rate of the implantation into the ear site was not influenced by the fetal donor age, but it dropped from 80 to 50% when the preservation duration increased from 15 to 60 min. Fetal heart implanted into Marfan site or freely in the thoracic cavity have 100% failed. Fetal heart implanted at the ear site and in the thymus gave growth to an adult-like ventricle, with normal cardiomyocytes, able to contract as a whole and to ensure a blood flow. In the lung hile the implant « colonized » the pulmonary vein external surface, forming a long multilayer muscular tube able to contract and to ensure a blood flow.

Conclusion: For fetal heart implant growth initiation *in vivo* preservation duration and implantation site anatomy are important. For complete development interactions (vascularization, pressure) between surrounding tissue and the graft may ensure it or stop it at the asymetry folding stage. Grown *in vivo* fetal heart might be used as a pulsatile tape for heart repair.

025 LIVER

P448

OUTCOME OF LIVER TRANSPLANTATION IN ALCOHOLIC LIVER DISEASE

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Introduction: The primary effective strategy for patients with alcoholic liver disease (ALD) is total alcohol abstinence. When total alcohol abstinence does not result in a significant improvement of liver function, liver transplantation (LT) represents the gold standard treatment for end-stage ALD. This study evaluated the outcome of LT in ALD.

Methods: We evaluated 76 patients from Oct 2001 to Feb 2013. Clinical records were reviewed for intake and duration of alcoholic consumption, abstinence duration, history of psychiatric consultation, recidivism and survivals.

Results: Mean survival year after LT was 3.47 (± SD: 2.71, range: 0–11.41) and there was no significant difference in acute and chronic alcoholic liver failure ($p = 0.099$). The amount of alcoholic consumption and duration, history of pchychiatric consultation, and type of LT (LDLT vs DDLT) also showed no statistical significance. The role of 6 months abstinence was not clear in patients survivals ($p = 0.064$).

Conclusion: Liver transplantation for acute alcoholic hepatitis has good prognosis and should not be banned. LDLT can be applied for alcoholic liver disease with similar survival as DDLT. A flexible approach to "6 months rule" should be applied. A multidisciplinary support for alcoholic patients is warranted.

007 DONATION/RETRIEVAL

P449

ORGAN TRANSPLANT REGISTRY: A CLINICAL AND RESEARCH TOOL? OR A KEY TO OPERATIONAL EFFECTIVENESS OF ONE THE LARGEST ORGAN TRANSPLANT CENTERS IN THE MIDDLE EAST?

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Background & Aim: Patient or drug registries are a well-established epidemiological and research tool to document and analyze data on incidence, prevalence, patterns and outcome of a disease or a drug in a defined patient population. Transplant registries such as Euro-transplant as well as OPTN in the US are examples of registries across various countries. We describe and compare our experience in developing an organ transplant registry (OTR) with international organ transplant registries in terms of design and added value to operational effectiveness in one of the largest organ transplant centers in the Arab world.

Materials/Methods: We established a comprehensive web-based database of recipients and donors who underwent liver, kidney and lung transplantation. Data variables were defined based on hypothetical questions of clinical relevance, research interest, quality measures and operational requirements. Case report/capture forms have been designed into tightly validated data interfaces to ensure accurate data entry and customized data reports.

Results: OTR includes a total of 45 different forms; 22 forms for the liver transplant registry, 11 for kidney transplant registry, 7 for lung transplant registry. Transplant Waiting List, Post-transplant ICU Stay and Deceased Donor Forms are shared by all organs. This application was built over Visual studio 2010 on web application Integrated and backed with MS-SQL 2012 Database, dotNet Framework 4.0, Web Language ASPX, Server side language Vb.net and JQuery 1.9.1 used for client side events.

Conclusion: Even though OTR is a hospital based registry, it contains variables and a solid relational model to include other hospitals in the country. The flexible design allows application to be customized to users' needs without affecting the integrity and novelty. Certain data items were pre-defined for administrative purposes which were apparently useful in supporting the center's operational effectiveness.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P450

REGULATORY T CELLS - AN APPROACH FOR OPTIMISATION OF HEPATOCYTE TRANSPLANTATION

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Background: Hepatocyte transplantation is a promising therapeutic approach in congenital liver diseases as well as liver failure. Despite being immunoprivileged, transplanted allogeneic hepatocytes have only survived for a few days without immunosuppression. In grafts of tolerant liver transplanted patients, however, higher fractions of regulatory T cells (Treg) could be found. These Treg suppress T cell mediated immunity and modulate effectors of the innate immune system. They might therefore play a role in the reduction of postoperative cell-loss and enhancement of long-term allograft-acceptance. We hence evaluated the regulatory potential of Treg and characterised hepatocyte induced immune reactions.
Material and Methods: Hepatocytes were isolated in 2-step perfusion from partially resected livers and cultured as monolayers. CD4 + CD25high Treg were sorted from human peripheral blood lymphocytes and expanded using CD3/CD28-expanderbeads and high doses of interleukin-2. They were then co-cultured in single-well and trans-well setup with hepatocytes and lymphocytes. Cell proliferation in mixed lymphocyte cultures (MLC) and mixed lymphocyte hepatocyte cultures (MLHC) was detected in flow cytometry by labelling responder cells with PKH-26 and T cell subpopulations characterised using multi-colour flow-cytometry. Bio-Plex technology was used for analysis of cytokine profiles.
Results: T cell response in MLHC was noticeably reduced and delayed compared to conventional MLC. Response was mediated by CD4 + T cells with CD8 + cells only slightly proliferating with an early up-regulation of CD69. Co-culture of Treg within the same well resulted in efficient T cell suppression with reduced effect when cultured as trans-well. This regulatory potential could be confirmed in cytokine profiles.
Conclusion: Treg efficiently suppress CD4 + T cell driven immune response on hepatocytes with immunomodulatory potential also shown in cytokine expression.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P452 FAMILY VETO IN ORGAN DONATION

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University Health Network

Purpose: This study investigates the portrayal of family veto in organ donation in Canadian news media. Family veto occurs when a family overrides the deceased's expressed wishes to donate e.g. signed an official organ registry.
Methods: Using the Canadian Newsstand Complete database, we identified articles published in English newspapers in Canada addressing the issue of family veto between the years 2000 – 2014. The use of specific search terms yielded a final sample of 89 newspaper articles. Content analysis identified the issues surrounding family veto that featured most prominently in the print media discourse.
Results: Preliminary results highlight an overwhelmingly negative view of family veto in organ donation. Family veto is represented as a stumbling block in our present system, with the majority of publications calling for change. Findings also indicate wide discrepancies within the popular press on the prevalence of family veto. In addition, varying interpretations concerning legislation on organ donation are present throughout the media discourse.
Conclusion: Family veto in organ donation is portrayed nearly unanimously in a negative manner in the Canadian popular press, with a tremendous call for change. Further research is needed to explore the ethical, legal and social implications surrounding family veto, including the challenge of balancing the wishes of the family with the duty to respect the previously expressed final donation wishes of the deceased. Clarity on the legal framework for organ donation is called for, with recommendations for changes in organ procurement practice and policy appearing warranted.

011 HEART

P453

HIGH-VOLUME HEMOFILTRATION DURING EXTRA-CORPOREAL CIRCULATION FOR HEART TRANSPLANTATION IN A RECIPIENT WITH ACUTE RENAL FAILURE AND HYPERKALEMIA

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Conventional haemodialysis is very effective treatment for life-threatening hyperkalemia. In settings where haemodialysis is not readily available, haemofiltration might be an alternative. This presentation is a case report elucidating the problem. A 62 year old man with ischemic heart failure was accepted for heart transplantation (TX) 5 month before TX. He had previously gone through CABG twice and had diabetes. Ten days before TX he had a p-creatinine of 98 μmol/l, a p-urea of 10.4 mmol/l, and normal values for sodium and potassium. He arrived for TX with p-creatinine = 174 μmol/l, p-urea = 25.8 mmol/l, p-sodium = 130 mmol/l, and p-potassium = 6.0 mmol/l. During extra-corporeal circulation 6300 ml was filtered and 5000 ml of potassium-free replacement fluid were added. After an initial increase, peroperative potassium values decreased. During surgery the following potassium containing solutions were added: 4700 ml of Ringer's acetate, 1600 ml Octaplas, and 2100 ml blood (SAG-MAN). Despite the administration of all these potassium containing solutions, the p-potassium value was reduced to 4.8 mmol/l at the end of surgery. Postoperatively, potassium values were kept within normal values. P-creatinine increased to a maximum of 309 μmol/l 2 days after surgery and p-urea reached a maximum of 37.1 mmol/l 5 days postoperatively. A furosemide-infusion contributed to a diuresis of 2000–4500 ml/day for the first 4–5 days, and no further dialysis/haemofiltration was performed. Six months later he was wellbeing with a p-creatinine of 92 μmol/l and a p-urea of 8.3 mmol/l. **Conclusions:** High-volume haemofiltration in the extra-corporeal circuit is effective treatment for severe hyperkalemia during heart surgery.

027 LUNG

P454

FIRST REPORT ON COMBINED LUNG-LIVER TRANSPLANTATION IN PATIENTS WITH PROGRESSIVE HEPATIC AND PULMONARY EPITHELIOID HEMANGIOENDOTHELIOMA

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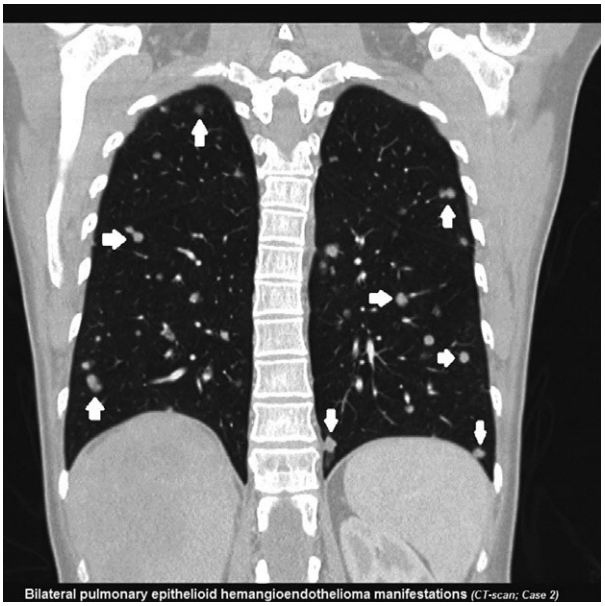
University Hospitals Leuven

Introduction: Hepatic *epithelioid hemangioendothelioma* (HEHE) is a rare benign vascular tumor with various clinical manifestations for which liver transplantation is an established treatment with excellent results. We report for the first time on 2 patients with HEHE metastatic to the lung in whom a combined lung-liver transplantation (cLuLiTx) was performed.
Case Report: A 26- and 51-year-old female presented with progressive multinodular HEHE and bilateral pulmonary metastases. The first patient suffered from bile duct compression with a lab-Meld of 11, FEV1 of 32% and DLCO of 34%; the second patient had a lab-MELD of 6, FEV1 of 107% and DLCO of 89%. Based on the restricted pulmonary function in the first and diffuse pulmonary metastases in the second patient (Figure), cLuLiTx was preferred. Brain-dead donors were 24- and 43-year-old. In the first patient LuTx preceeded LiTx. Cold ischemic time (CIT) of the left/right lung was 149/315 min and of the liver 712 min. To limit hepatic CIT and to prevent exposure from the liver reperfusion syndrome to the pulmonary grafts, LiTx was performed first in the second case. Meanwhile, lungs were perfused and preserved at 37°C on the OCSLung™ device for 492 min. Hepatic CIT was 305 min and CIT/cross clamp time for the right and left lung were 80/642 min and 266/822 min, respectively. Both received ATG as induction and tacrolimus, mycophenolate mofetil and steroids as maintenance immunosuppression. The first patient lost her liver due to hepatic artery thrombosis 3 month post-Tx and was successfully retransplanted. None developed rejection of the lung or liver graft. With a follow-up of respectively 6 year and 6 month, both patients are alive and free from disease recurrence.
Conclusion: cLuLiTx is a life-saving option in patients with progressive multifocal HEHE metastatic to the lung. The usual order of transplanting lungs prior to liver could successfully be reversed in the second patient by using a normothermic *ex-vivo* lung perfusion device.



Bilateral pulmonary epithelioid hemangioendothelioma manifestations *(CT-scan; Case 2)*

035 TOLERANCE

P455

TOLEROGENIC INTESTINAL TRANSPLANT PROTOCOL IMPROVES LONG-TERM SURVIVAL BY PROMOTION OF T-REGULATORY CELLS

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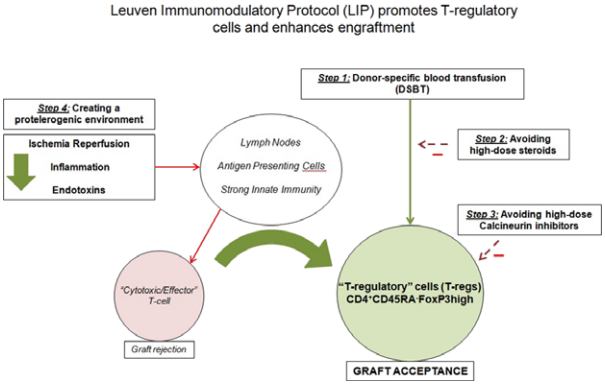
Background: Intestinal Transplantation (ITx) remains compromised by frequent rejection, strong immunosuppression (IS) and its side-effects (infection, malignancy, nephrotoxicity). We aim to translate the Leuven Immunomodulatory Protocol (LIP), experimentally-proven to promote T-regulatory Cells (Tregs) to clinical ITx. LIP consists in: peri-Tx *Donor-Specific-Blood Transfusion* (DSBT) (activates T-Reg); avoid high-dose steroids/calcineurin-inhibitors (abrogates DSBT-effect); reduce reperfusion injury and endotoxin-translocation (Fig).
Methods: LIP was applied (2000–2014) to 13 consecutive ITx from deceased donors. In our observational study, collected data were: demographics; crossmatch, HLA-mismatch; early(<3 month)/late(>3 month) Acute (AR), Chronic Rejection (CR); fatal infection, malignancy. At last follow-up we analyzed: DSA; circulating CD4 + CD45RA-FoxP3hi T-regs {vs IS-free Tolerant KidneyTx (Tol-KTx), stable IS-KTx, CR-KTx and Healthy Volunteers (HV) (One-Way Anova}; eGFR; TPN-independence; Karnofsky; 10 years graft/patient survival (Kaplan-Meier).Results are reported as median (range).
Results: Age was 37 years (3–57). CDC-Crossmatch was negative. HLA-A/B/DR mismatches were: 1/2/1. Early AR developed in 2 (15%), late AR in 3 (23%) patients; all were reversible. No CR occurred. One patient died at 9 month post-Tx to invasive Aspergillosis, another to NSAID-induced enteropathy at 12 year post-Tx. No malignancies developed. At last follow-up {3.5 year (0.5–12.5)}, eGFR was 76 ml/min (46–159); no DSA were detected; high T-Regs frequency was found {1.8% (1.39–2.1)}, comparable to Tol-KTx and superior to stable IS-KTx ($p < 0.05$), CR-KTx ($p < 0.001$) and HV ($p < 0.01$). All 11 survivors were TPN-free. Karnofsky in 8 recipients with more than 1 year follow-up was >90%. *10y graft/patient survival was 90%.*
Conclusion: DSBT administration in a protolerogenic environment activates T-Regs at levels similar to Tol-KTx, without causing sensitization. LIP limits rejection under minimal IS and thereby prolongs survival.



007 DONATION / RETRIEVAL

P456

DONOR ACTION PROGRAM IN THE EMILIA-ROMAGNA REGION (ERR): RESULTS AFTER 16 YEARS OF ACTIVITY

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The ERR, aiming at reaching quality levels in organ donation, has supported the "Donor Action" program (DA) since 1998, deciding to apply it so as to check whether all brain deaths are diagnosed, referred and assessed.
Methods: The program started in July 1998 in 28 ERR Intensive Care Units (ICUs, 247 beds), 7 belonging to hospitals with neurosurgical department (81 beds). The DA program analyzes the potential donor identification through deceased patient charts in ERR (about 4 million inhabitants). The program is used by transplant coordinators through the regional computer network, whose data are collected and analyzed by the CRT-ER.
Results: Total deaths rose from 1998 to 2014, in spite of a decrease in the percentage of deaths with severe brain damages on total deaths (43.9% vs 22.2%) and a significant increasing brain death assessments (86 vs 188). In the last 4 years is reported a light decrease of family refusals.Over the years, organ donation improved from 24.1 to 26.7 per million population (p.m.p.) in 2010, decreased to 21.8 in 2011 (even though the ERR population increased from 3.9 to 4.3 million inhabitants in the last 3 years), increased in 2012 and 2013. However transplant centres achieved high level activity standards.
Conclusions: These results confirm that DA program is an efficient quality control program and helped the ERR system to improve potential donor's identification in the ICUs.

001 ALLOCATION

P457

ORGAN PROCUREMENT AND TRANSPLANT IN "CALCULATED RISK" DONORS IN THE EMILIA-ROMAGNA REGION (ERR): RESULTS AFTER 12 YEARS OF ACTIVITY

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The "calculated risk" (CR) protocol was implemented in Italy in 2003, in order to increase organ procurement. It provides organ donation between donors and recipients having either the same pathologic agent or serological status (HBV+, HCV+ or HBV anticore+); meningitis and bacteremia donors are also included. Aim of this study is to review CR organ procurement in ERR between the 1st of October 2003 and the 31st of December 2014 and related transplantations.
Methods: CR donors with related transplants carried out in the considered period have been divided in 7 categories (Table 1) and reviewed.
Results: 266 CR out of 1259 total utilized donors were carried out (21.1%).
305 kidneys (16.5%), 238 livers (18.2%) and 37 hearts (10.9%) were transplanted by CR donors and these transplans represented the 16.6% on total transplants carried out in that period.
Conclusions: These results confirm that the CR protocol helped the ERR system to increase organ procurement and transplant activity, in a controlled follow-up.

021 ISLET/CELL TRANSPLANT

P458

SELECTION OF A HUMAN BONE AS A SCAFFOLD FOR ISLET ENCAPSULATION IN A 3-DIMENSIONAL DEVICE

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Background: Islets encapsulation in a monolayer cellular device (2D-encapsulation on a human acellular collagen matrix) can correct diabetes up to 8 months in a pig-to-primate pre-clinical model without immunosuppression. The aim of this study is to develop a 3D-encapsulation system using a human bone scaffold to improve graft survival and function by a better nutrients/oxygen supply and an increased yield of islets loaded per volume of implant.
Materials: Human cancellous bones from different sites (talus, femoral head, calcaneus, condyle, tibial plateau, greater trochanter) were tested. After decellularization, tissues were cut into small pieces (1 cm^2*4 mm), demineralized and scanned by microtomography to analyze pore size distribution, open/close porosity. These structural results were correlated with the human islet size distribution obtained from 24 post-purification preparations (50–99, 100–149, 150–199, 200–249, 250–299, 300–349, 350–399, 400–500 μm).
Results: The close porosity was nearly inexistent in the selected bones (mean: 0.015% of the total bone volume). All bone types were able to receive smallest human pancreatic islets (50–349 μm) which represent 83% of the total volume, but, after statistical analysis, only calcaneus and tibial plateau demonstrated a suitable pore size distribution able to accept islets with a diameter >350 μm (17% of the total volume). The tibial plateau was avoided due to a higher inter-donors variability and lower bone matrix, resulting in hyperconnectivity between pores and then leading to lost of islet during the cellular seeding on the scaffold. The calcaneus was the most adapted bone to load the largest volume of islets (+12.5% compared to other samples).
Conclusion: From theses theoretical results, the calcaneus was selected as the best scaffold for islet encapsulation in a new tridimensional device. The human islet viability and function must be now compared *in vitro* and *in vivo* for a 2D versus a 3D scaffold.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P459

BORTEZOMIB AS A NOVEL APPROACH TO EARLY RECURRENT POST-KIDNEY TRANSPLANT MEMBRANOUS GLOMERULONEPHRITIS REFRACTORY TO RITUXIMAB THERAPY

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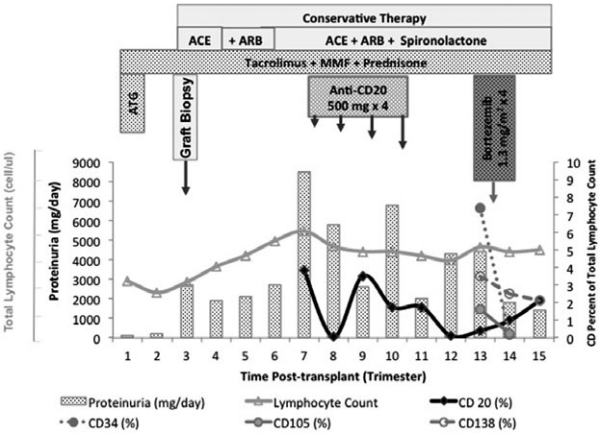
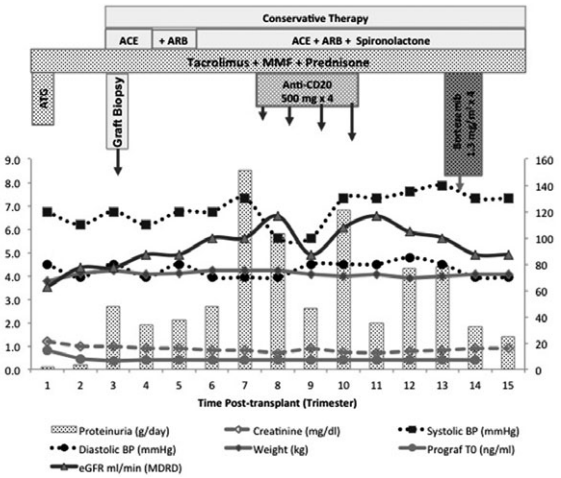
We report a case of 55-year-old male patient with early recurrence of membranous glomerulonephritis (MGN) following cadaveric kidney transplantation. He received induction therapy with anti-thymocyte globulin-Fresenius (ATG-F) and was discharged with a serum creatinine (Scr) of 0.78 mg/dl on triple maintenance therapy Tacrolimus, Mycophenolate Mofetil and Prednisone. At 7 months post-transplant, graft biopsy for new onset isolated, X-match and PRA negative proteinuria (2.7 g/day), revealed stage II recurrent MGN with 10% IF/TA, linear C4d immunostaining, diffuse coarse granular deposit with IgA, IgG, Kappa, Lambda and C3 in the glomerular capillaries and subepithelial dense deposits with extensive foot processes effacement and focal fenestrations loss in the glomerular endothelial cells. Interestingly, increasing proteinuria was paralleled by a rise in total lymphocyte count while on the same immunosuppression throughout the follow-up period (figure 1). In the face of worsening proteinuria (8.5 g/day) in spite of triple RAAS blockade including Irbesartan, Ramipril and Spironolactone, maintaining normal Scr, optimal BP control and stable weight; anti-CD20 (Rtiuximab) was introcuded over 6 months period (500 mg x 4 doses) with partial reduction in proteinuria ~ 4.2 g/day over several months (figure 2). In the abscence of complete remission despite total eradication of CD20 + cells, Bortezomib (BZM) was started (1.3 mg/m^2 x 4 doses, last on 15/1/2015) with substancial decline in proteinuria (~70%) from 4.4 to 1.4 g/day within one month. This was paralleled by considerable drop in plasma cell count (figure 1). These preliminary observations indicate that recurrent post-transplant MGN is associated in part, with B cell-mediated process that may involve both CD20 + and plasma cells. To our knowledge, this is the first case report where Rituximab-resistant or partially responsive recurrent post-transplant MGN responds to proteasome inhibitor-based therapy.





023 KIDNEY

P461

IDENTIFYING THE CYTOKINE MOLECULAR PROFILE IN RENAL TRANSPLANT RECIPIENTS OF EXTENDED CRITERIA DONOR KIDNEYS

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Medical School- FAMERP/FUNFARME- Hospital de Base

Background: Transplant recipients (RTx) of kidneys classified as extended criteria (ECD) seems to have worst outcomes when compared with RTx of standard kidneys (SCD) and there are not tools and markers for predict these outcomes. The aim of the present study was to evaluated the molecular inflammatory profile of ECD and SCD kidneys in pre-implantation (T0) biopsies and sought possible changes in this profile induced by different immunosuppressive drugs (ISS) after 15 (T15) and 90 days (T90) post-Tx.
Methods: Prospective open label, randomized according to the donor type ECD or SCD to receive induction therapy with Basiliximab followed by maintenance ISS with Tacrolimus (TAC) or Everolimus (EVL), used immediately after transplantation, associated with enteric coated Sodium Mycophenolate and Prednisone. Kidney biopsies were evaluated the levels of mRNA expression of FOXP-3, MCP-1, RANTES, TGF-β and IL-10. Correlations were performed between inflammatory gene expression and clinical risk factors.
Results: 80, 58 and 51 biopsies samples were obtained at T0, T15 and T90 respectively. Biopsies T0 from ECD showed higher expression of TGF-β, MCP-1, RANTES and IL-10 than SCD ($p < 0.05$). RANTES was highly expressed in all time period biopsies of both types of kidneys, the highest levels observed in T90 of SCD recipients treated with EVL and the lowest in T90 biopsies of ECD-TAC. MCP-1 was highly expressed only in SCD kidneys regardless the ISS while FOXP-3 was predominantly expressed in EVL treated patients regardless the kidney type. No donor factor could be associated with the cytokines changes observed and no differences were found in renal function or graft survival in the first year.
Conclusions: T0 biopsies of ECD kidneys have an inflammatory molecular profile. After transplant ISS did modify the pattern of cytokine expression and these changes are affected by the donor kidney type.

025 LIVER

P463 CURRENT ACHIEVEMENTS OF LIVING DONOR LIVER TRANSPLANTATION PROGRAM IN KAZAKHSTAN: EXPERIENCE OF NATIONAL SCIENTIFIC MEDICAL RESEARCH CENTER

Marlen Doskali, Myltykbay Rysmakhanov, Jamilya Saparbay, Aliya Taganova, Aidos Kulmaganbetov, Aibolat Smagulov, Abay Baigenzhin, Zhaksylyk Doskaliyev
National Scientific Medical Research Center

Background: Living donor liver transplantation (LDLT) has being increasingly performed for patients with end stage liver disease and has become a standard and effective treatment method. We present the initial experience of LDLT due to collaborative work with colleagues from abroad in National Scientific Medical Research Center during 2 years after opening the transplantation program.
Materials and Methods: From January 2013 to February 2015, 18 LDLTs were performed in our center. All data retrospectively collected from patient charts.
Results: Operation procedures were performed by standard methods in donor and recipients. Seventeen out of 18 right hepatectomies, 1 out of 18 left hepatectomies were performed. At a median follow up of 2 years, both the patient and graft survival rates were 84%. The main causes of transplantation were primary biliary cirrhosis (50%), viral hepatitis (30%) and other liver diseases. The median age of the recipients at the time of LDLT was 43.9 ± 17.2 (19–65 years). Recipients average hospital stay was 30 ± 5 days (23–38 days, median 30 days) found. Vascular and biliary complications were the leading cause of reoperation, graft loss and retransplantation. Postoperatively, these recipients were started on a triple therapy immunosuppression. We have not seen any early and/or late surgical complications in donors.
Conclusion: Collaborative work with experienced centers gives knowledge and understanding of management in liver transplantation to develop own strategy of LDLT program. All donors are doing well, that shows that LDLT is a safe procedure and it is efficient way of treatment method in countries with low number of deceased transplant activity.

P464 ADULT LIVER TRANSPLANT RECIPIENTS HAVE A LIFETIME RISK FOR SURGERY FOR AN INCISIONAL HERNIA

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ANLTU, Royal Prince Alfred Hospital

Aim: Incisional hernias (IH) are common in liver transplant (OLTx) recipients. The management is challenging due to patient comorbidities and immunosuppression.

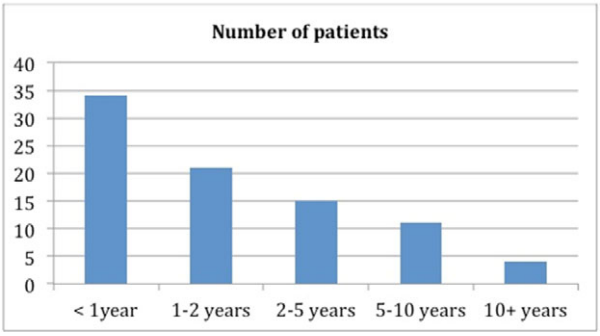
We aim to determine the true incidence of IH post OLTx, nature of the surgery required and recurrence rates following operative repair.
Method: Retrospective chart review of all adults who underwent OLTx from 8/01/1986 to 30/06/2014, survived 30 days post op and underwent IH surgery. The median recipient follow up for this study was 6.33 years (0.25–23 years). Statistics were by SPSS.
Results: IH requiring surgical repair developed in 85/1047 (8.1%) of OLTx recipients. There was no significant difference between the demographics of patients with or without IH. The incidence of IH in males (9.0%) was similar to in females (7.7%) ($p = 0.5$).

Table 1 Incidence of IH post OLTx by Age.

Age (Years)	Incisional hernia	No Incisional hernia	Incidence of IH for age group (%)
<40	9	168	5.1
>40	76	758	9.1

The incidence of IH in recipients aged >40 years (9.1%) tended to be higher than for recipients aged <40 years (5.1%) [$p = 0.09$].

Figure 1: Time to presentation of IH post OLTx



The median time to initial IH repair was 1.89 years (0.09 to 18.86 years). 35% of patients underwent initial repair >2 years post OLTx and 17.5% underwent initial repair >5 years post OLTx (Figure 1).

The overall recurrence rate of IH was 28% with a median time to first recurrence of 1.66 years (0.21 – 8.62 years). The recurrence rate of IH was not significantly different between mesh repair 18/65 (27%) and suture repair 6/20 (30%), ($p = 1.0$). The recurrence rates were similar between types of mesh; composite mesh (31%), Prolene mesh (25%), Polypropylene mesh (33%) and ePTFE (20%).
Conclusions: This study reveals that IH remains a common complication following OLTx and tends to be more common in patients ages >40 years. Despite advances in surgical techniques and technology, the current methods used to manage IH are associated with similar outcomes and recurrence rates.

As IH can still occur many years following OLTx, it is a lifetime risk.

023 KIDNEY

P465

DECEASED KIDNEY TRANSPLANTATION FROM EXPANDED CRITERIA DONORS

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Objective: To identify and analyze the use of Expanded Criteria Donors (ECD) and the outcome of kidney transplantation in the Kingdom of Saudi Arabia.
Methods: This is a retrospective study of all deceased donor transplantation from the year 2008 to 2010 investigating the impact on graft, patient survival and graft function of ECD kidneys compared to Standard Criteria Donors (SCD). RESULTS: Out of the 433 kidney transplants in the year 2008–2010, the number of ECD kidneys transplanted were 68 (16%), out of which 7 kidneys were from > 60 years old donors; 43 kidneys from serum creatinine > 133 umol/L or 50–59 years old with CVA/HTN and 18 kidneys were from donors with serum creatinine doubled at harvesting with cases of CVA/HTN. Moreover, it showed significant difference in the mean age group (39 vs. 48 years). Furthermore, as the causes of brain insult, 38% of SCD were due to trauma while only 1 case (.02%) for ECD. There was increase number of days from the mean period of transplantation to discharge from 19 days for SCD and 32 days with ECD. The mean serum creatinine at discharge was doubled between the 2 groups. In comparison kidney recipients, who had delayed graft function also doubled between SCD 16% and ECD 36%. On the other hand, episodes of acute rejection are significantly increased from 5% in SCD to 20% in ECD group.
Conclusion: The use of Expanded Criteria Donors is an acceptable method to use in specified category for kidney transplantation in Saudi Arabia. The outcome of marginal kidney transplantation is comparable to international data.

007 DONATION/RETRIEVAL

P466 **OUTCOME OF LIVER TRANSPLANTATION FROM DONORS WITH HIGH LIVER ENZYMES**

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Shiraz center for organ transplantation

Background: growing liver transplantation waiting list, at the same time waiting list mortality and organ shortage make us to use marginal organs more than before. Here we present our center experience in using liver from donors with high liver enzymes.

Method: livers from 24 donors with AST and/or ALT more than 500 U/L used for transplantation between April 2013 and January 2015.

Result: Cause of brain death was trauma in 19 donors, 20 was received inotropic support and five had at least one episode CPCR. ALT and AST was more than 1000 U/L in two and four donors respectively, median cold ischemia time was 8 h (2 to 13 h). Overall recipient survival was 91.3 percent, mean hospital stay was 12.5 days (5 to 30), three vascular and one biliary complication occurred and patients had 7 episodes of rejection without bad sequela.

Conclusion: It seems that high liver enzymes level of donor is not a significant predictor of liver recipient outcome, especially that these cases are mostly post trauma and young.

025 LIVER

P467

SUCCESSFUL PERCUTANEOUS TRANSHEPATIC ENDOVASCULAR STENTING FOR EARLY-ONSET STENOSIS OF THE PORTAL VEIN AFTER LIVER TRANSPLANTATION FOR BUDD-CHIARI SYNDROME

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Portal vein stenosis or thrombosis are uncommon complications after liver transplantation and when they occur in the early post-transplantation period, they can carry dramatic consequences. Surgical interventions such as thrombectomy, refashioning of the anastomosis, and retransplantation have been adopted as standard treatment in the past but these options are often limited due to technical factors and major risks of morbidity and mortality. We report a case of the treatment for early-onset portal vein stenosis after cadaveric liver transplantation by percutaneous transhepatic venous stenting under ultrasound and fluoroscopy guidance.A 38-year-old woman affected by polycythemia vera underwent cadaveric liver transplantation with side-to-side piggy-back technique for hepatocellular carcinoma and liver cirrhosis due to Budd-Chiari syndrome in March 2014. After two-month follow up a routine a Doppler ultrasound of the liver revealed turbulent waveforms and mildly elevated velocities in the main portal vein. TC scan confirmed portal vein stenosis and splenomegaly. The patient underwent a percutaneous transhepatic portovenography, which demonstrated a severely stenotic short segment of portal vein at the level of the anastomosis. Percutaneous balloon venoplasty did not achieve a reduction in the gradient across the stenosis. Finally, an uncovered 12 mm–4 cm stent was deployed inside the portal vein at the site of the anastomosis with immediate improvement in the portal pressure gradient from 40 mmHg to 6 mmHg. After 1-year follow-up, no complications had occurred and portal flow was regular with no signs of thrombosis and portal hypertension. In conclusion, treatment of portal vein stenosis with percutaneous transhepatic portal venoplasty is a safe and effective procedure for resolving symptoms of portal hypertension and preserving allograft function also in patients with prothrombotic conditions such polycitemi vera.

023 KIDNEY

P468

THE INFLUENCE OF RECIPIENT'S MDR1 GENE POLYMORPHISMS ON KIDNEY GRAFT FUNCTION

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Background: Polymorphisms of MDR1 genes are connected with inter-individuals pharmacokinetics variability of calcineurin inhibitors. However, potential correlation of donor's and recipient's MDR1 genotype and graft function is still unknown. The aim of this study was to examine the influence of the three most important single nucleotide polymorphisms of MDR1 gene (C1236T, G2677T/A, C3435T) and its haplotypes on kidney graft function.
Methods: A retrospective study included 91 kidney transplant recipients who received CNI based immunosuppressive protocol. DNA was isolated from peripheral blood. The purity of DNA was determined by measuring absorbance at 260 and 280 nm, respectively. Detection and analysis of MDR1 gene polymorphisms were performed using PCR method. Haplotypes frequencies were estimated by Arlequin 3.5.1.3. During the first 2 years after transplantation we followed kidney graft function, measured by serum creatinine and creatinine clearance.
Results: According to our results, genotype frequencies were: CC 35.16%, CT 63.74%, TT 1.1% (C1236T); GG 34%, GT 47.3%, TT 18.7% (G2677T); CC 27.5%, CT 45%, TT 27.5% (C3435T). Eight haplotypes were found, but four most frequent were CGC (47.25%), TTT (30.22%), CTT (9.89%) and CGT (8.79%), and they constituted four major diplotypes (CGC/TTT, CGC/CGC, CTT/TTT and CGT/TTT). No difference was found among genotype and diplotype groups related to gender and age. We did not find difference in allograft function between genotype groups ($p > 0.05$). Diplotype groups also had approximately equal function ($p > 0.05$). Only CTT/TTT patients had higher serum creatinine in the 2nd year (p 0.08).
Conclusion: Our study did not show the influence of recipient's MDR1 gene polymorphisms on allograft function. There is an indication that TT homozygotes in position G2677T and C3435T may be genetic marker for inferior graft function.

025 LIVER

P469

PLASMAPHARESIS, INTRAVENOUS IMMUNOGLOBULIN AND RITUXIMAB SUCCESSFULLY TREAT RECURRENT PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS TYPE 2 (PFIC-2) AFTER LIVER TRANSPLANTATION

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King Faisal Specialist Hospital & Research Center, Organ Transplant Centre

Background: Allo-immune mediated BSEP dysfunction may occur after liver transplantation in PFIC2 patients leading to a PFIC2 like phenotype. The IgG antibodies are reactive toward a canalicular epitope of BSEP, are of high affinity, and inhibited transport activity of BSEP, thus causing severe cholestasis. This phenomenon was first described in 2009, since then, few cases of PFIC-2 recurrence were reported with mixed results.
Methods: We report on two patients who developed recurrent normal GGT cholestasis mimicking primary BSEP disease, after liver transplantation. A 14 years old boy and his 19 years old sister who had received cadaveric liver transplantation at the United States in 2011. In January 2014 they presented with severe itching, high bilirubin, high AST/ALT, high serum bile acid with persistently low GGT. Virology, Autoimmune screen, Abdominal CT Scan, ERCP and liver biopsy were negative. Immunosuppressions were maximized with no improvement. A repeat biopsy of the 14 year-old boy on May 2014 showed recurrence of PFIC2, His Anti-BSEP came positive with a very high serum titer 1:1200, Treatment regimen for him started on June 2014, he received a course of 5 sessions of plasmapharesis each session followed by IV immunoglobulin (IVIG), then received first dose of I.V. Rituximab 375/m^2. The second course of Plasmapharesis where modified by doing 5 sessions of plasmapharesis every other day with an exchange volume of 1.5, followed by 3 days of IVIG to avoid washing out the IVIG by plasmapharesis, followed by the second dose of IV Rituximab 375/m^2. His sister's liver biopsy on July 2014 showed PFIC2 recurrence started treatment for recurrence September 2014, using the same modified protocol.
Conclusions: PFIC-2 recurrence after liver transplantation occur through an antibody mediated reaction against BSEP receptors on canalicular membrane and can successfully be treated with plasmapharesis, IVIG and rituximab obviating the need for re-transplantation

023 KIDNEY

P470 SKIN CANCER IN RENAL TRANSPLANT RECIPIENTS

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Hamad AL Essa Organ transplant centre

Introduction and Objectives: Renal transplant recipients have an increased incidence of skin cancers, which may be multiple and aggressive. This is a retrospective study of skin cancers after renal transplantation in a Middle East country.
Patients: 1907 patients have received kidney transplantation in Kuwait between February 1979 and December 2014. Of these 1178 were males. The donor source was a living donor in 1400 and a decreased donor in 507 cases. The study includes other patients who were transplanted abroad and were followed up in our Centre. The medical records of all kidney recipients with skin cancer were retrospectively reviewed.
Results: Twenty five instances of skin cancers were diagnosed in 22 recipients, 19 instances were in 16 locally transplanted patients, with disease incidence of 1% in locally transplanted patients. 15 of recipients were males and 18 grafts were received from living donors. Lesions were: 10 instances of Kaposi sarcoma, 6 instances of squamous cell carcinoma, 2 instance of Basal cell carcinoma and a single instance of each of Bowen's disease, melanoma, angiosarcoma, and dermatofibrosarcoma. While Kaposi sarcoma was diagnosed at 5 to 312 months (mean 45.2 months), other lesions were diagnosed 24 to 215 months (mean 149 months) after Transplantation. 11 recipients are alive with functioning grafts, 5 recipients lost grafts and were back on dialysis therapy, and remaining 6 recipients died with functioning grafts.
Conclusions: It was observed in this study:1- A lower incidence of skin cancers in local renal graft recipients (1%) compared to that reported in the literature.2- Kaposi sarcoma was the commonest type (40%) and appeared earlier than other types of skin cancer.3- The incidence was not influenced by the recipient gender or the donor source.

027 LUNG

P471 *EX VIVO* LUNG PERFUSION PITFALLS, INTERIM REPORT

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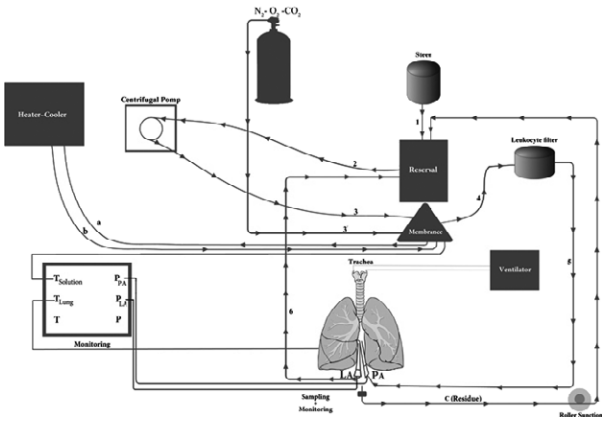
Introduction: While the number of lung transplantations is limited because of a general lack of donor organs, *ex-vivo* lung perfusion (EVLP) is a novel method to evaluate and recondition marginal donor lungs prior to transplantation. In spite of our limited experience in EVLP, sharing the learnt lessons would be helpful for other motivated centers.
Material and Methods: All brain dead multi organ donors have been evaluated for criteria of lung transplantation or EVLP since May 2013 in Tehran. If a donor did not have any sign of severe chest trauma or pneumonia, but had poor oxygenation due to possible atelectasis or neurogenic pulmonary edema would be selected for EVLP.
Results: Iranian EVLP team qualification course was held in Vienna Medical University and first experimental trial of EVLP has been conducted. Then two EVLP's have been carried out. The donor of first EVLP was a 65-year-old man, brain dead due to brain tumor. Yellowish foam suggestive of pulmonary edema was coming out trachea after 1 h of starting ventilation. Through the first experience the team learned not to follow the constructions just based on the time but also judge and manage based on lung condition and compliance. At the beginning of second experience, team could overcome the situation up to 3 h, made pre and post membrane PO2 difference near 250 mmHg and expanded lung atelectasis obviously. Team assessed the circuit according to all published articles and concluded 60 important points to prevent pulmonary edema again. Perfect lung harvesting, core and surface lung cooling, mandatory use of prostaglandin, antegrade and retrograde buffered perfadex and steen washing, gradual increase of perfusion flow and temperature, correction of hypoglycemia and acidosis every 1 h after recruitment are some crucial rules for successful EVLP.
Conclusion: There are lots of tiny vital hints through which a successful EVLP would be happen.

Ex - vivo Lung Perfusion Figure



023 KIDNEY

P472

ABSCESS BUT NOT A SIMPLE URINARY TRACT INFECTION IN TRANSPLANTED KIDNEY – A USEFULNESS OF CONTRAST IN ULTRASOUND IMAGINE

Ewa Król[1], Piotr Czarniak[2], Dominik Swieton[3], Barbara BułłO[4], Alicja DęBska-ŚLizień[1], BolesłAw Rutkowski[1]

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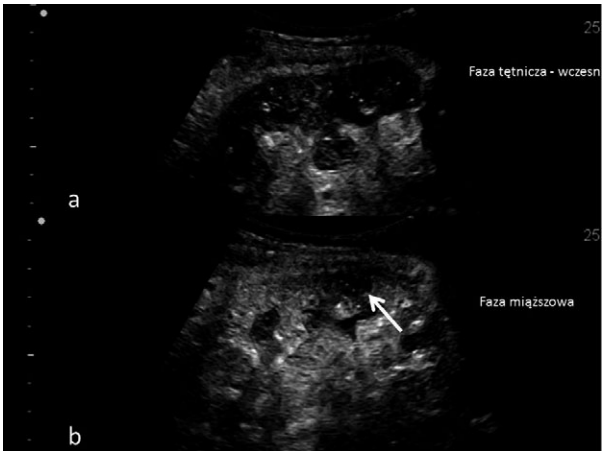
A 44-years old female, 8 years after kidney transplantation was admitted to the University Hospital because of high fever above 39°C with chills since 3 days before admission. In physical examination she presented symptoms of dehydration, low blood pressure: 90/60 mm Hg, tachycardia: 110/min, pain in the region of transplanted kidney (TK). Ultrasound (US) picture of TK was normal. She was diagnosed by urinary tract infection (UTI) and ciprofloxacin i.v. was initiated. However, because of the persistent pain during palpation of the TK and high levels of the serum indicators of inflammation, there was a suspicion of occupation of kidney parenchyma. US with contrast medium (Sono Vue) revealed abscess in low pole of TK (picture 1).

Antibiotic therapy was continued for 4 weeks, until clinical symptoms resolved and US picture with contrast normalized.

In a case of suspicion of complicated UTI US with contrast is highly recommended, especially for transplanted patients.



003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P473

ASSESSMENT OF SAFETY, PHARMACOKINETICS AND PHARMACODYNAMICS OF A NOVEL ANTI-CD40 MONOCLONAL ANTIBODY, CFZ533, IN HEALTHY VOLUNTEERS

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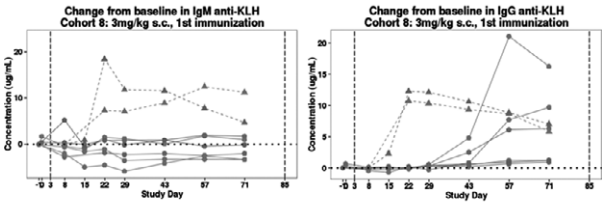
Purpose: CFZ533 is a novel, fully human, Fc-silent, anti-CD40 monoclonal antibody (Ab) being developed for use in autoimmune disease and transplantation. In non-clinical studies, CFZ533 prolonged allograft survival and inhibited the response to a T cell-dependent antigen. Here, we present data from an early assessment of safety, pharmacokinetics (PK) and pharmacodynamics (PD) of CFZ533 in healthy human subjects.
Methods: A double-blind, placebo controlled, ascending, single-dose study with an intravenous (i.v.) infusions of 0.03, 0.1, 0.3, 1.0 and 3.0 mg/kg, 3.0 mg/kg CFZ533 subcutaneously or matching placebo was conducted. All subjects ($N = 48$) were immunised with a single intramuscular dose of a T-cell dependent neo-antigen, Keyhole Limpet Hemocyanin (KLH; anti-KLH Abs validated by ELISA system with an LOQ of 0.7 (IgG) and 2.1 (IgM) mg/mL) with alum adjuvant on Days (D) 3 and between D 29–85 (based on predicted loss of CD40 receptor occupancy as a function of CFZ533 dose). PK, CD40 receptor occupancy and anti-KLH IgG and IgM profiling were evaluated at multiple time points.
Results: All doses of CFZ533 and KLH were well tolerated. CFZ533 PK concentrations were quantifiable at all dose levels tested. At 3 mg/kg i.v. CFZ533 dose, complete (≥90%) peripheral CD40 receptor occupancy was maintained for 28D. During full receptor occupancy period, full suppression of the primary humoral response to KLH was evident in all treated subjects (KLH administered 2D after CFZ533 dosing). After complete CFZ533 washout in 3 mg/kg cohort, all subjects mounted a robust anti-KLH response following a KLH re-challenge on D85.
Conclusion: The favourable safety and tolerability profile of CFZ533 coupled with a predictable concentration-CD40 receptor occupancy relationship and suppression of a primary T cell-dependent Ab response supports future clinical trials of CFZ533 in this population.

Figure 1 CFZ533 Immune Profiling: anti-KLH IgM / IgG response following KLH administration on day 3



Filled circles (●) represent CFZ533 treated subjects. Filled triangle represents placebo treated subjects (▲). Note: Full peripheral receptor target suppression on B-cells maintained through day 28 in CFZ533 treated subjects. KLH re-challenge on Day 85 (Data not shown).

011 HEART

P474

IMPACT OF CARDIAC REOPERATION ON HEART TRANSPLANTATION LONG TERM OUTCOME

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Purpose: The aim of this study was to compare early and very long-term results of patients undergoing HTx after cardiac redo operations.
Methods: Among 520 HTx performed between 1985 and 2015, 342 patients had no previous cardiac operation (group A), 143 one previous operation (group B) and 35 patients previous multiple redo operations (group C). Pre-, intra- and post-operative variables and long term results at median follow-up of 14 ± 6 years were analyzed.
Results: Pre-operative recipients findings in group A, B and C were respectively: mean age 53 ± 12, 56 ± 10, 57 ± 10 ($p = 0.07$); ischemic etiology 35%, 61%, 40% ($p < 0.01$), status 1 31%, 44% and 39% ($p = 0.02$) Pre-operative donors findings in group A, B and C were similar apart from ischemic time 186 ± 58, 202 ± 69, 200 ± 61 min ($p = 0.03$) respectively. Postoperative in-hospital mortality and morbidity was higher in patients with 1 or multiple redo. In group A, B and C in hospital death was 7%, 19% 11% ($p = 0.01$) being early graft failure the most frequent cause of death. Dialysis was employed in 4%, 11%, 7% ($p = 0.03$) of patients, prolonged mechanical ventilation in 11%, 22%, 30% ($p < 0.01$) and ICU stay was 5 ± 5.10 ± 14, 18 ± 36 days ($p < 0.01$) in the 3 groups. One year survival was 89 ± 2%, 79 ± 3% and 83 ± 6%, 5-year 77 ± 2%, 67 ± 4% and 68 ± 8%, 10-year 64 ± 3%, 53 ± 5% and 57 ± 9%, 15-year 50 ± 4%, 40 ± 6% and 36 ± 11%, and 20-year 34 ± 5 vs 24 ± 7 vs 24 ± 12 ($p < 0.01$) in the 3 groups respectively. One year conditioned survival was similar in the 3 groups ($p = 0.173$). In patients transplanted in the last 15 years there was a tendency to lower mortality in all groups ($p = 0.08$) pursuing an higher mortality in redo patients ($p = 0.05$). The incidence of infections, rejection, neoplasia and CAV was similar in the 3 groups.
Conclusion: Single or multiple cardiac surgeries before HTx are associated with higher early morbidity and mortality, but with satisfactory long-term survival. The freedom from infection, neoplasia and CAV was similar among the 3 groups.

025 LIVER

P475

SHOULD THE PATIENT WITH LIVER CIRRHOSIS AND SEVERE AORTIC REGURGITATION BE QUALIFIED FOR VALVE REPLACEMENT BEFORE LIVER TRANSPLANTATION? CASE REPORT

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Liver cirrhosis, may increase perioperative mortality risk of aortic valve replacement (AVR). However, delay of AVR until the patient becomes more symptomatic may result in advanced cardiac dysfunction. Successful AVR before liver transplantation (LTx) guarantees a better hemodynamic situation during LTx.Case report. 46-year-old man with liver cirrhosis caused by HCV infection and with suspected hepatocarcinoma, was referred for cardiac assessment before LTx. A year before he was diagnosed and treated for infective endocarditis. On admission he presented no sympotms of heart failure, MELD 13 points. Physical examination revealed splenomegaly and of the lower limbs oedema. Loud holodiastolic murmur was present over the aortic valve auscultation area. At transthoracic echocardiography despite the hyperdynamic left ventricle contractility with preserved ejection fraction, severe aortic regurgitation (AR) was seen. No bacterial vegetation was shown but destruction of aortic valve leaflets and the perforation of aortic cusp. The destruction of aortic valve was confirmed by transeshophageal echocardiography. Bearing in mind that an excessive load would be on the heart during and after LTx, we adjudged the benefits of such procedure outweighed its risk. It was decided to perform the procedure of AVR before LTx. Two weeks later, after the correction of coagulopathy, the damaged valve was surgically replaced with a bioprosthesis. The postoperative period was complicated by bloody pericardial effusion treated with pericardial drainage. Five months after cardiac surgery an uneventful LTx was performed. The hemodynamic changes during LTx were well tolerated. The diagnosis of hepatocarcinoma was confirmed in the explanted liver. Ten months after LTx the patient is alive in good condition.Conclusion: In patients with liver cirrhosis and severe aortic regurgitation AVR should be considered before LTx so the hemodynamic changes during LTx can be better tolerated.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P476

IL-17 POLYMORPHISMS IN TUNISIAN KIDNEY TRANSPLANTATION

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The role of proinflammatory cytokines in renal allograft loss was established. Since cytokine production may be affected by several genes polymorphisms, the aim of the present study was to investigate the effect of IL-17 polymorphisms in outcome of kidney transplantation. A total of 115 renal transplant recipients were enrolled and classified in: - G1: 23 transplant (20%) who developed at least one episode of acute rejection (according Banff criteria)- G2: 92 controls, kidney recipients also followed for at least 1 year with stable renal function.All patients were treated with the same baseline immunosuppressive regimen including methylprednisolone, mycophenolate mofetil and cyclosporine or tacrolimus. IL-17 gene polymorphisms, including -1507 C/T (rs18889570), 7384 A/G (rs2397084), 7470 G/A (rs11465553), and 7488 T/C (rs763780) were evaluated by direct sequencing. The serum levels of IL-17 were checked by Bio-Plex ProTM Human cytokine assays (BIORAD) kit.There was no significant effect of any IL-17F polymorphism on acute renal rejection in Tunisian transplant recipients. Besides, no association was found between these SNPs and the presence of HLA antibodies before and after transplantation. However, recipients with CAGCA haplotype showed lower graft survival than recipients with other haplotypes ($p = 0.06$). Quantitative study showed that the average of IL-17 serum levels was paradoxically higher in G2 (33.54 ± 24.37 pg/ml) than in G1 (8.6 ± 9.9 pg/ml) ($p = 0.045$) but it does not seem to be influenced by genetic variants of IL-17 gene.Further studies are needed in larger number of patients to understand the role of IL-17 gene polymorphisms on renal transplantation.

023 KIDNEY

P478 TRENDS IN THE ANTIHYPERTENSIVE TREATMENT IN RENAL TRANSPLANT RECIPIENTS

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Hypertension (HT) is a major problem in the population of kidney transplant recipients (KTR). HT affects 60 up to 85% of KTR. Treatment of HT in KTR requires multidrug therapy and individual approach to the patient. The aim of the study was to evaluate the antihypertensive treatment in KTR.We analyzed a group of 652 KTR (405M) with a mean age of 52 years transplanted in years 1987–2011, The analysis of antihypertensive treatment was based on medical records and consisted a comparison of the data reported at the first and last point of observation. The mean time for the first and last observation points after kidney transplantation was 2.9 years (1–18 years) and 9.2 years (3–27 years), respectively. The time interval between those points varies from 3 to 13 years (average observation time 6.3 years) regardless of the time after renal transplantation. During the former point of observation, 2.9 years after kidney transplantation the presence of hypertension and need of antihypertensive treatment was noticed in 93.4% of patients while at the latter in 93.7%. The most common used drugs during the first visit were: ß blockers, calcium antagonists, α blockers, ACE/ARB and diuretics: 84, 61, 34, 34, 31%, respectively; during the second visit the percentage of mentioned medication was as follow: 84, 54, 36, 49, 39%. The need for intensification of the treatment was observed in 33.6% of patients, the number of drugs was reduced in 21.8%, while the therapy remained unaltered in 44.6% of patients.The most commonly added drugs were: ACE/ARB and diuretics (43 and 22% respectively), but the most frequently discontinued drugs were selective calcium antagonists (30%).1. HT is a common syndrome occurring in KTR.2. In the analyzed group of KTR the most frequently used antihypertensive drugs were: β-blockers, calcium antagonists, ACE/ARB, diuretics and α-adrenergic receptor blockers.3. As the time passed ACE/ARB and diuretics were more frequently used.

P479 LIVE KIDNEY DONOR'S EVALUATION - A HARDWORKING PROCESS, WITH MOST OF THOSE EVALUATED ENDING ON GIVING UP OR BEING REFUSED BY MEDICAL CONDITIONS

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[1]Hospital Garcia de Orta; [2]Hospital de Santo António; [3]Centro Hospitalar de Trás-os-Montes

Background: Live donor kidney transplantation is frequently the best option for the recipient. An exhaustive evaluation of the potential donor is a top priority in the donation process. Knowing the number of evaluated candidates who do not proceed with donation and the reasons for non-donation is important to optimize the selection process.
Methods: We analyzed registries of first appointments made in our transplantation unit to individuals who went to start evaluation to donate a kidney.
Results: 158 individuals were studied between January 2013 and June 2014, the majority of which (68%) were women. Most were either husband/wife (29.88%), sibling (27.44%) or parent (16.46%) of the recipient. The mean age of the potential donors was 45.1 years. Of those who, at the time of data collection, had completed the evaluation ($N = 142$), 65.4% ended up as non-donors, since only 34.5% proceeded with donation. Time average from first appointment to day of nephrectomy was 6.88 months. Reasons for non-donation included donors who no longer wanted to donate (22.58%), medical condition in the donor precluding donation (29.03%) or availability of a better suited alternative donor (25.81%). Cardiovascular risk factors were a major cause for donor refusal (more often due to diabetes / positive oral glucose tolerance test or due to simultaneous risk factors in the same individual). Wolff-Parkinson-White Syndrome and abdominal lymphoma were included in the diseases found during investigation of some supposedly healthy individuals.
Conclusions: Medical evaluation of potential living kidney donors is a laborious process, and most of those evaluated do not proceed with donation. Willingness to donate must be rechecked early in order to avoid expensive and useless medical investigations. Also, freedom to alter decision to donate must be guaranteed until the end of the process. Medical investigation of supposedly healthy individuals may result in previously undiagnosed relevant diseases.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P480 SOURCES OF ORGANS FOR TRANSPLANTS IN CHINA

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The Government of China does not make public an aggregate data stream of sourcing of organs for transplants. The Chinese health system runs four transplant registries, one each for liver, kidney, heart and lung. The China Liver Transplant Registry in Hong Kong used to provide public access to statistical aggregate data on its site. However, that access has since been shut down. Access is available only to those who have a Registry issued login name and password. The other three registries are located in mainland China, kidney and heart in Beijing and lung in Wuxi. The data on the other three sites is also accessible only to those who have registry issued login names and passwords.

Official information about sourcing of organs for transplants in China comes largely from speeches and media interviews by Huang Jiefu, formerly deputy health minister and presently the chair of the combined organ transplant committee and organ donation committee. These speeches point to a number of different sources, but are often inconsistent with each other and internally inconsistent. Moreover, the volume of sources indicated in the speeches and interviews do not match the volume of transplants indicated without any attempt to explain the discrepancy. The data on which these speeches and interviews is based are not available to determine which of the contradictory statements is correct and how the unexplained gap is filled. We are left then with analyzing these speeches and interviews to attempt to determine the sources of organs for transplants in China, and there are many such speeches and interviews, including a recent proliferation with a shifting explanation of sources. The purpose of this presentation would be to do just that, to examine the many speeches and interviews of Huang Jiefu and other Chinese health officials to attempt to determine both from the utterances and silences what are the sources of organs for transplants in China.

007 DONATION/RETRIEVAL

P481

THE BENEFITS OF TRANSPLANT PROCUREMENT MANAGEMENT (TPM) TRAINING ON PROFESSIONAL COMPETENCE DEVELOPMENT AND CAREER EVOLUTIONS OF DONATION AND TRANSPLANT RELATED HEALTH CARE WORKERS

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Background: Training of healthcare professionals involved in organ donation is identified as a key to success.
Objective: To investigate the perceived benefits of Transplant Procurement Management (TPM) specialized training programs on professional competence development and career evolutions of donation and transplantation (D&T) related health care workers.
Methods: Institutional review boards at the University of Barcelona (Spain) and Purdue University (USA) approved the study. A survey was developed and translated into five languages (Spanish, English, Italian, French, and Portuguese). A total of 6839 subjects were emailed the link to the online survey. They were also asked to forward the link to other individuals active in D&T. Links were posted on Facebook and handed out at organ donation events. Respondents were asked to rate the influence of trainings on 12 different items related to professional competence development and career evolutions. Two main research questions (RQ1&RQ2) were identified.
Results: 1102 (16.11%) agreed to take the survey, 87% reported participating in a TPM course, out of which 95% selected TPM courses as most influential.

To answer RQ1, 98% reported influence on knowledge [score 4.45/5], 93% on technical [4.15] and communication [4.14] skills, 89% on attitude toward D&T [4.08], 92% on motivation to work [4.23], 91% on desire to innovate [3.98], 87% and 79% on ability to change D&T practices [3.85] and policies [3.51], respectively.

As for RQ 2, main significant effects for type of training and position as well as significant interaction effects with position and type of trainings on the different survey items were reported.
Conclusion: TPM specialized training programs in D&T had positive effects for a significant percentage of D&T related health care workers on professional competence development and career evolutions.

023 KIDNEY

P482 LONG-TERM OUTCOMES IN RENAL TRANSPLANTATION: 10 YEARS SINGLE CENTRE FOLLOW-UP

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Background: The improvement of renal transplantation (RT) results observed in previous decades tends to slow down in the recent years, so the causative factors are sought. The aim of this study was to evaluate the long-term outcomes of RT.
Methods: A total of 756 consecutive kidney transplantations were performed from 1998 to 2003 and followed for 10 years in our single center. The results were analyzed retrospectively. Primary endpoints were patients' death and graft loss. Secondary endpoints included graft function, incidence of new-onset diabetes after transplantation (NODAT) and overall post-transplant complications estimated by the length of the hospitalization per patient per year. The influence of the dialysis time before transplantation, the number of HLA missmatches, cold ischemia time (CIT) and immunosuppressive agents on the endpoints was evaluated.
Results: Out of the total 756 RT recipients (RTR) 703 received no induction therapy and were analyzed. The 10 years patient and graft survival in ITT group was 88.9% and 78.7%, whereas in the ORT was 86.7% and 73.5%, respectively. Patient survival was significantly better in ITT RTR treated with mycophenolate mofetil (MMF) in comparison to azathioprine (AZA). However, in the ORT subgroup such difference was not found. Patient survival in ORT group was significantly better in RTR treated MMF in combination with cyclosporine (CSA) than with tacrolimus. We observed significant positive correlation of CIT with the NODAT incidence and with the length of hospitalization in ITT group. In ORT patients CIT correlated significantly with the length of hospitalization and graft function. In this group NODAT was significantly correlated to the time on dialysis before RT.
Conclusions: Detailed analysis revealed RTR subgroups who are at risk for NODAT or may benefit from different treatment modalities. High survival rates in our center necessitate description of the contributing factors.

P483 THE EFFECT OF DONOR NEPHRECTOMY TECHNIQUE ON RECIPIENT LYMPHATIC DRAINAGE

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Background: Lymphatic drainage of recipient have not been investigated regarding to donor nephrectomy technique. I this study we aimed to evaluate the postoperative recipient lymphatic drainage depending on open donor nephrectomy (ODN) or laparoscopic (LDN) techniques.
Methods/Materials: Between March 2012 and August 2014, 58 patients had renal transplantation from living related donors. Thirty donors underwent ODN (Group 1), whereas 28 had LDN (Group 2). Operations were performed by the same surgeons. Both cranial and caudal drainage catheters for lymphatic leakage were placed peroperatively and all the recipients received tacrolimus+MMF+steroid as immunosuppressive regimen. None of the patients had coagulation abnormalities.
Results: All grafts were functioning during early postoperative period and diuresis was ensured. No difference was observed on early postoperative period regarding to acute rejection ($p = 0.329$) or infection ($p = 0.546$). No difference was seen concerning MMF and MNa regimens among the two groups ($p = 0.227$). In group 1 and group 2, the cranial drainage catheters were not taken out until the 5.5 ± 2.5 (range:0–11) and 6.4 ± 3.8 (range: 0–14) postoperative days and the caudal catheters were stayed in place until the 8.8 ± 3.5 (range: 1–16) and 9.9 ± 5.9 (range: 3–22) days, respectively. No significance was found when comparing the cranial and caudal drainage periods ($p = 0.308$ and $p = 0.426$). However, during clinical acute rejection episodes cranial drainage period was longer in Group 1 ($p = 0.003$). Three patients developed lymphoceles, one requiring drainage in Group 2.
Conclusion: There seems to be no difference in recipient lymphatic drainage concerning donor nephrectomy techniques. The laparoscopic procedure may be advantageous due to shorter lymphatic drainage during clinical acute rejection episodes.

P484 NON INVASIVE EVALUATION OF RENAL ALLOGRAFT HYDRONEPHROSIS T. FATHI, NAYAZ A, M. SAMHAN, M. MOSAWI, HAMEDALESSA ORGAN TRANSPLANTATION CENTRE- KUWAIT

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Introduction: Allograft dysfunction with hydronephrosis may be due to a surgically correctable cause. This study evaluates the accuracy of output efficiency (O/E) in the diagnosis of ureteric obstruction.
Patients & Methods: Ultrasound scanning and diuresis renogram with O/E were performed in all recipients with impaired allograft function. Results were compared with the base line findings. In suspected cases of ureteric obstruction, percutaneous nephrostomy and nephrostography were done, cases were managed accordingly
Results: In 16 recipients who developed graft dysfunction with hydronephrotic changes, dieresis renogram was done.[A] In 11 cases O/E dropped from>85%to<79%. Antegrade nephrostogram findings were suggestive of obstruction in 9 cases. Recipients were managed by stenting (5 cases), ureteric reimplantation (4 cases), lymphocele drainage (1 case) and lithotripsy (1 case). All 11 cases (100%) showed improved O/E with parallel improvement in kidney function including those two cases with negative antegrade study[B] In 5 cases there was no change in O/E, but antegrade nephrostogram was suggestive of ureteric obstruction, and were treated by introducing ureteric stent, with no improvement in O/E. But 2 of recipients (40%) showed improved renal function.
Discussion: Outflow obstruction can be serious if not treated properly .Output efficiency is non-invasive diagnostic tool. It was observed that correction of ureteric obstruction was associated with improved O/E and kidney function in all recipients with positive O/E findings (0/E drop with dysfunction followed by rise of O/E after restored function) and in 40% of patients with negative O/E findings.
Conclusion: Diuresis renogram with O/E measurement is a simple, non invasive and safe procedure. While positive O/E test is a reliable indication of ureteric obstruction, negative O/E test does not rule out ureteric obstruction and has to be correlated with other diagnostic methods.

P485 PSEUDO ANEURYSM IN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: Pseudo aneurysm (PA) at the anastomosis site in kidney transplantation is a rare but serious complication. It usually results in graft loss and may affect the vascularity of the lower limb. This report explores the incidence, presentation, management and outcome of PA in kidney recipients.
Patients and Methods: Since 1979. 1346 kidney transplantation procedures have been performed in Kuwait, 961 grafts were obtained from living (LD) and 385 grafts from deceased donors (DD). 806 of recipients were males and 164 were children. The records of recipients with PA were reviewed.
Results: PA was diagnosed in 4 recipients (with an incidence of 0.24%). They were 2 males and 2 females, aged 12 to 56 years at the time of transplantation (mean 39.5 years). Kidney graft was obtained from LD in 2 and from DD in 2 recipients. The renal graft artery was anastomosed end to side to external iliac artery in 2, and end to end to internal iliac artery in the other 2 recipients. The lesion appeared at 2 months to 5 months (mean 3.5 months) after transplantation. Clinical presentation was a combination of graft dysfunction, fever, ipsilateral lower limb swelling, and uncontrolled hypertension. The lesion was detected by ultrasound Doppler and isotope renal scanning and the diagnosis was confirmed by CT angiography in 3 cases. In the fourth case it was reported as a peri-graft collection. All cases underwent surgical exploration. The renal graft artery and adjacent iliac artery were successfully reconstructed and normal graft function was restored in 2 recipients (those with end to end anastomosis), and the graft was removed in the other 2 recipients, with no harmful effect on the ipsilateral lower limb vascularity in all recipients.
Conclusion: PA is an extremely rare complication after kidney transplantation. A high index of suspicion is required for the timely diagnosis. Only aggressive management can rescue the kidney graft and save the vascularity of the lower.

P486

RECURRENT LUPUS NEPHRITIS IN KIDNEY TRANSPLANT RECIPIENTS: FEAR OR REALITY?

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Background: Lupus nephritis (LN) is an important cause of morbidity in lupus patients and progression to end-stage renal disease (ESRD) occurs in 15% of patients. Kidney transplant is the treatment of choice although concerns still remain regarding recurrent lupus nephritis (RLN) with an incidence up to 44%.
Objective: Determine the incidence of RLN in kidney transplant recipients.
Methods: Retrospective, observational and descriptive study of kidney transplant recipients who had ESRD secondary to lupus nephritis between 1980 and 2014 in a Portuguese Kidney Transplantation Unit.
Results: In 2687 patients submitted to kidney transplantation only 22 had LN. They were all non-black with a predominance of women (86.4%). Mean age at the time of LN diagnosis was 25 $\pm$ 11 years and the first biopsy revealed a LN class IV in 66.7%. Pre-transplant immunosuppression included corticosteroids in 82% of patients. Cadaveric kidney transplantation (heart-beating donors) was performed in 91% of the patients (mean age of 33.5 $\pm$ 11.7 years) and 90.9% had been on hemodialysis. The median PRA was 0% and a complete HLA-mismatch was present in 13.6% of the recipients. Maintenance immunossupressive regimen with calcineurin inhibitors associated to prednisone ($\pm$ antiproliferative or AZA) was used in 86.4% of recipients. Delayed renal allograft function was seen in 13.6% of patients. During the follow-up (mean 71.0 $\pm$ 71.7 months) there were no histologically documented cases of RLN although 27.3% of recipients developed acute rejection confirmed by biopsy.
Conclusion: This study revealed that RLN is a rare event after transplantation while a significant number of our patients developed acute rejection. It is important to underline that, as is described in the literature, RLN post-transplantation is less severe and frequently subclinical. It is conceivable that its real recurrence is underdiagnosed and its actual rate underestimated.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P487

INDUCTION OF T CELLS APOPTOSIS BY DENDRITIC CELLS GENERATED IN THE ENVIRONMENT OF IMMUNOSUPPRESSIVE AGENTS

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Background: Dendritic cells (DCs) present antigen to T cells. The state of DCs maturation is crucial for induction of T cell response. It was noted that immature DCs play an important role in peripheral tolerance, whereas mature DCs induce a complete immune response. This is very important in transplantation, especially in allograft rejection. Immature DCs or DCs with tolerogenic properties may prolong allograft survival. The manipulation of DCs to become insensitive to maturation signals *in vivo* or activation tolerogenic DCs may improve transplant tolerance. It appears that this could be achieved using the immunosuppressive therapy with cyclosporine A and rapamycin.We have studied the effect of DCs generated in the environment of immunosuppressive agents: rapamycin and cyclosporine A on the viability and activation of T cells.
Methods: Human peripheral blood monocytes were induced by using cytokines: IL-4 and GM-CSF, in the direction of DCs in the presence of rapamycin (Rapa-DCs) and cyclosporine A (CsA-DCs) or without drugs (control). To evaluate allogeneic T cells stimulation by CsA-DCs and Rapa-DCs *in vitro*, mixed leukocyte reaction (MLR) was applied. At the end of MLR cultures T cells were stained with propidium iodide and annexin V and analyzed by flow cytometry. The expression of CD95 on T cells was measured by flow cytometry. The supernatants have been collected and measurements of IL-2 level were performed by ELISA.
Results: We have not observed a significant effect of Rapa-DCs and CsA-DCs on the expression of CD95 on CD4+ and CD8+ T cells and T cells apoptosis. In contrast the percentage of necrotic T cells was increased in the presence of CsA-DCs. We have also observed a diminished production of IL-2 by T cells, when these cells were cultured with CsA-DCs.
Conclusions: We have shown that the DCs generated in the environment of cyclosporine A may affect the viability and activation of T cells.

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023 KIDNEY

P488

DOES PRUNE BELLY SYNDROME AFFECT THE OUTCOME OF RENAL TRANSPLANTATION?

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Introduction: Prune Belly Syndrome (PBS) is a constellation of congenital anomalies with a variable degree of severity. Urinary tract anomalies constitute the essential feature of the syndrome. A half of affected patients surviving infancy will develop end-stage renal disease in childhood or adolescence, with a possible impact on the outcome of renal transplantation. This study explores the outcome of kidney transplantation in patients with PBS.
Patients and Methods: Between 2001 and 2013, 989 kidney transplantation procedures have been performed in Kuwait. Four male recipients were diagnosed to suffer of PBS, aged 13, 14, 17 and 21 years at the time of transplantation. They received 5 kidney grafts, 3 were from living and 2 from deceased donors. Their medical records were reviewed for the outcome of kidney transplantation, the incidence of post-transplantation surgical complications and urinary tract infection, and the need for post-transplantation urological intervention. The results were compared with those achieved in an age-matched control group.
Results: all kidney recipients with PBS are alive. A single renal graft was lost at 6 years after transplantation and the patient has received a second graft, currently with a normal function. The 1- and 5-year actuarial survival rates were 100% and 100% respectively for recipients, and for grafts. 4 post transplant urological interventions were required in 2 recipients. The incidence of post-transplantation UTI and surgical complications was comparable to that reported in the age matched control group.
Conclusion: Renal transplantation in patients with PBS who develop renal failure is a safe and successful therapeutic modality and it is not associated with increased risk of surgical complications.

007 DONATION/RETRIEVAL

P489 **TRAINING IMPACT ON THE PERFORMANCE OF ORGAN DONATION PROCESS IN BRAZIL**

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The Brazilian System of Transplant, invested in training health care workers (HCW) in all country to improve the number of donor, this study was to analyze the impact of this program on the performance of organ and tissue donation. Such study adopted as a method, a quantitative, retro and prospective analysis, from 2009 to 2013. This research involved two types of units of analysis: the HCW and hospitals, and the main aspects evaluated were knowledge acquisition, reaction level and indicators of the donation process; number of reports of brain death, of family interview (FI), of refusal family (RF) and of effective donation (ED). For the analysis of the indicators were investigated the results of 12 months before and after the training. As main results, we that 2213 HCW were trained, and most of them were nurses (57%). As for learning the general assessment, improvement was in 77.4% of the HCW. In 2011, there was on average a significant increase ($p < 0.001$) of 2.61 (SD = 2.29) correct questions in the second evaluation. The value of the Pearson correlations for the conversion rate was 0.87, indicating a strong correlation between the conversion rate and the number of trained HCW. As for the indicators, all showed an average increase after training. In the comparative analysis of indicators before and after being trained was observed that there was a difference that was statistically significant, between times (pre and post training), compared to the number of FI and of FR ($p < 0.05$). There was a strong negative correlation between the index of FI and the average range of scores of HCW ($rs = 0.738$) and between the indicator of FR and the average range of scores of HCW ($rs = 0.680$). In conclusion, there is an important improvement in the acquisition knowledge after the training and found that the greater the number of trained HCW higher is the conversion rate in hospitals and the greater the knowledge retention after the training, the lower the rate of FR.

023 KIDNEY

P490

A TREND OF IMPROVING OUTCOME OF MANAGEMENT OF PTLD IN KIDNEY RECIPIENTS T. FATHI, F. DONIA, M. SAMHAN, HAMED ALESSA ORGAN TRANSPLANTATION CENTRE - KUWAIT

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Introduction: Post transplantation lymphoproliferative disease (PTLD), which generally has an aggressive course and poor outcome, has become the focus of interest of different transplantation centers. A marked trend of improved outcome in PTLD has been noted during the last few years. This study explores the incidence, risk factors, and outcome of PTLD in kidney transplant recipients in Kuwait, and compares the outcome between recently diagnosed cases (during the last 8 years) and those diagnosed earlier.

Methods: Between 1976 and 2012, around 1900 kidney transplant recipients came under regular follow up at organ transplantation center in Kuwait. The medical records of recipients with PTLD were retrospectively reviewed.
Results: Twenty two lesions were diagnosed in twenty one patients. 9 lesions were in GIT, 6 lesions in CNS, and 7 lesions in other sites (one case was multifocal in lungs, stomach and colon). All lesions were B cell Non Hodgkin's Lymphomas. The main risk factors were the overall immunosuppression and EB virus status of the recipient. The mean period between the time of transplantation and the diagnosis of PTLD was 92.4 months. All 13 recipients who developed PTLD before 2004 were lost after a mean time of eight months. The remaining eight recipients who were diagnosed after 2004 are alive with complete remission of the disease with functioning allograft in five of them including the multifocal case.
Conclusion: Although PTLD is a serious complication following solid organ transplantation with a high mortality rate, there is a trend towards better disease control and overall outcome in recent years. This is attributed to early diagnosis, better antiviral drugs, advanced chemotherapy and better tailoring of immunosuppression therapy.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P491 THE ROLE OF VOLUNTEERS IN ORGAN PROCUREMENT

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Background: Having been living in a rapidly changing world, all people must be able to adapt themselves to this situation but this issue should not lead the spirituality to be completely forgotten. In this mechanical world, there are some people named volunteers who play a crucial role in different organizations with no financial aim. The role of volunteers in organ procurement is going to be discussed in this paper.
Methods/Materials: The first point which should be taken into consideration is that the presence of volunteers in various congresses and symposiums as a member of executive committee make them aware of the different aspects of organ donation and transplantation. The awareness through which they would be able to convince public to donate organs.The second point is that having been studied different majors and being in a different social situations will make them acceptable for the people around so that they would be confident for the people's confabulations and problems as organ donor cards holders.
Results: The presence of volunteers in organ procurement process specially in promoting the organ donation culture not only would save the limited budget of Organ Procurement Unit (OPU) but also will help people to feel free to contact the organ procurement system through them and talk about their particular beliefs or ideas which will be make it easy for OPUs to eliminate the wrong public beliefs and put the correct ones instead.
Conclusion: Having been an organ donation volunteer for the years, I believe that volunteers can play the pivotal role as a communication path between-people and organ procurement units.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P492

INTRAVITAL MICROSCOPY TO ANALYZE LEUKOCYTE-ENDOTHELIUM INTERACTIONS IN AN EXPERIMENTAL HUMAN PERFUSION MODEL

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Background: The failure of translating results obtained in animal models into humans is a pivotal problem of transplantation research. The aim of our study was to test the feasibility of a novel research model using the human placenta in order to study leukocyte-endothelial reactions after ischemia-reperfusion by means of intravital microscopy.
Material and Methods: Human placentas ($n = 8$) from elective caesarean deliveries were used after informed consent. All placentas were connected to a double perfusion system consisting of two roller-pumps, reservoir, oxygenator, filter and bubble-trap. A pulsation unit to allow pulsatile flow was included. The placentas were reperfused with compatible human blood for 240 min after 60 min ischemia (perfusion with Ringer Lactate). Four experiments were made after treatment after induction with ATG (Thymoglobuline 1.25 mg/kg); Four served as control. Pressure, flow, and AVDO2 were investigated. Biopsies were obtained after the experiments. Tissue expression of inflammation (IL-6, TNF-α) and adhesion-molecules (ICAM-1, PECAM, CD62E) was investigated by immunohistochemistry. Intravital Microscopy was performed to analyze adherence and infiltration of leukocytes.
Results: Our human placenta model could be validated for the study of inflammatory and vascular-endothelial reactions after ischemia-reperfusion. The hemodynamic measurements were consistent within the single experiments and the AVDO2 showed a continuous vitality of the perfused tissues. The blood cells counts were stable. Morphological and immunohistochemical analyses showed decreased endothelial damage after treatment with ATG. Intravital microscopy was feasible and allowed quantification of adherent leukocytes.
Conclusion: The isolated human placenta allows the study of functional human endothelium in a vascular structure. Our preliminary results show that this model is an adequate tool for the study of leukocyte-endothelial reactions after Ischemia-Reperfusion.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P493

ANTIBODY-MEDIATED REJECTION IS ASSOCIATED WITH HIGHER SERUM LEVELS OF CXCL13 AND CCL21 IN RENAL TRANSPLANT PATIENTS AND ALTERED BY BORTEZOMIB/RITUXIMAB TREATMENT

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In renal transplant patients (pts), B- and plasma cells (PC) are crucial for donor-specific HLA antibody (DSA) formation. The mechanisms, which lead to B cell migration into the allograft are not fully understood in the transplant context. Chemokines, like CXCL13/CXCR5 are known to play a key role in B cell trafficking to lymphatic tissue. Their role in context of antibody-mediated rejection (AMR) is rarely explored

The aim of this prospective study was to investigate serum chemokines, in particular CXCL13 and CCL21 and their diversification in renal transplant pts undergoing AMR therapy including rituximab and bortezomib (BZ) with adequate control pts. In total, 34 pts participated and were divided into 3 groups. 16 pts had DSA and biopsy proven AMR according to BANFF-criteria (AMR-group). Therapy included steroids, PPH, IVIG, 1cycle of BZ and or 500 mg rituximab. 10 pts had confirmed DSA only, but stable renal function and no signs of AMR (DSA-group). The control group consists of 10 pts with stable graft function and no evidence for DSA or rejection. CXCL13 and CCL21 were quantified along with 15 other chemokines including CXCL5, 12, CCL13 with multiplex technique at baseline, month (Mo) 3 and 12.

At baseline, AMR group demonstrated significant higher levels of CXCL13 and CCL21 compared to DSA group (577 vs 77 and 760 vs 641; pg/ml, $p = 0.02$) or control group. Interestingly, levels of CXCL12 and 5 were lower in contrast to DSA (3414 vs 4230 pg/ml; $p = 0.04$ and 1098 vs 1983 pg/ml; p=ns) or control group. 12 Mo after AMR therapy, CXCL13 (276 pg/ml) and CCL21 (672 pg/ml) showed sustained elevated levels. Noticeable, CCL13 and CXCL5 were affected by AMR therapy leading to lower levels.

The present study observed a profound and sustained elevation of CXCL13 and CCL21 values in pts with diagnosed AMR in contrast to DSA- or control groups. Noticeable, reduced CXCL12 and 5 levels in AMR pts indicate a specific chemokine repertoire, which might help to stratify pts by risk.

007 DONATION/RETRIEVAL

P494

SINGLE CENTER EXPERIENCE IN HAND ASSISTED LAPAROSCOPIC DONOR NEPHRECTOMY

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Objective: The primary benefits of minimally invasive donor nephrectomy are: less pain, shorter hospitalization and recovery time. It also increases the number of donors by helping them make a decision to donate.

The aim of the study was to present the biggest polish single center experience in hand assisted laparoscopic donor nephrectomy (HALDN).

Material and Method: First HALDN in Poland has been done in our department in June 2003 and was performed retroperitoneally as well as next two cases. From 06.06.2011 we changed the method to transperitoneal approach utilizing hand assisted laparoscopic method. From this time we used it in all consecutive donors except three who refused laparoscopy and 4 with multiple renal arteries, which we considered contraindication for laparoscopy on the beginning of our experience. We harvested 54 kidneys – 29 left (3 retro- and 26 transperitoneal) and 25 right (transperitoneal). All but three had single renal artery. In all cases we used hand-port (Gelport in last 51 cases) and renal vessels were closed with endo-staplers. WIT was 80–420 seconds (mean 184.6 seconds).

Results: All surgeries were uncomplicated and all donors were discharged home after 2–8 days. The follow-up was uneventful in all cases. All kidneys were successfully transplanted and all recipients were dialysis-free after DGF in 5 cases. There was ureter necrosis in two cases, one of those kidneys was explanted due to concomitant infection.

Conclusion: Our limited experience shows, that minimally invasive donor nephrectomy is safe and can be used as the method of choice. In the face of organ shortage and having the good early and late success rates, living renal donor pool in our country should certainly be more effectively expanded.

011 HEART

P495 NEW MANUAL HEART ALLOCATION METHOD IN IRAN

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Background: One of the main complexities of organ transplantation is that the number of people who need organs is greater than the number of donor organs available. This fact demonstrates system that allocates organs according to equity, queuing, utility and urgency as well. Computer based allocation improved allocation but sometimes there are pitfalls in that system and on the other hand in some countries there is not any automatic system. Manual allocation can overcome those problems. In this study advantages of manual allocation in Iran have been reviewed.
Material and Method: Some efforts for organizing organ allocation system in Iran since 1 year ago are:Creating National Heart Transplant Waiting List Database in July 2014Extending allocation office activity to 24 h a day, 7 days a weekDetermining allocation policies according to the world guidelinesDetermining allocation criteria including blood group, age, waiting time, ischemic time, size of donor and recipient, and special considerationsPrioritizing patient in medical urgency approved by head of transplant department (according to UNOS 2014 guideline)
Result: From 270 patients who have been registered for heart transplant, totally 70 have been transplanted in 9 centers in 2013. If there was any emergent case in the waiting list heart would be allocated to that case. If there was more than one emergent case other criteria including severity of disease, age of recipient and waiting time duration were helpful in choosing the best recipient. Furthermore when there was not any emergent candidate that criteria play crucial role in appropriate recipient selection.
Conclusion: Meanwhile computer program is used to identify the best matched patient, alternatively manual allocation can be effective for other countries that they do not have computerized program. Moreover manual allocation can be more flexible according to centers strategies for achieving better outcomes.

025 LIVER

P496

UNUSUAL INDICATIONS FOR LIVER TRANSPLANTATION; SINGLE CENTER EXPERIENCE

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Baskent University Faculty of Medicine

Background: The only potentially lifesaving intervention for acute liver failure or endstage liver disease is liver transplantation (LT). Some unusual liver diseases can treated with LT. The aim of this study was to evaluate the efficacy of LT for unusual liver diseases.
Methods/Materials: The results of 476 patients who underwent LT from 1988 to January 2015 were retrospectively analyzed. 245 of them were adult patients and 231 of them were pediatric. 31 of them were unusual liver disease.
Results: Nine of the patients were adult and 22 of them were pediatric. In pediatric group, indications for liver transplantation respectively Alagille syndrome ($n = 5$), Crigler Najjar syndrome type 1 ($n = 5$), glycogen storage disease ($n = 3$), oxalosis ($n = 3$), familial hypercholesterolemia ($n = 2$), alpha-1-antitrypsin deficiency ($n = 2$), Caroli's disease ($n = 1$), cystic neuroblastoma metastasis ($n = 1$). Six patient had acute rejection episodes and they were successfully treated with pulse steroid. In two patient, retransplantation was performed due to chronic rejection. Three patients passed away during the follow up period. Two of them passed away due to sepsis and 1 of them passed away due to cranial hemorrhage. In adult group indications for LT were, respectively; neuroendocrine tumor metastasis ($n = 1$), liver angiosarcoma ($n = 1$), familial hypercholesterolemia ($n = 2$), alveolar hidatid disease ($n = 2$), cystic fibrosis ($n = 1$), congenital hepatic fibrosis ($n = 1$) and oxalosis ($n = 1$). Four patient had acute rejection episodes and they were successfully treated with pulse steroid. One patient passed away due to the recurrence of primary disease during the follow up period.
Conclusions: Advances in liver transplantation and our understanding about unusual liver disease have led to significant improvements of management of these diseases. Liver transplant effectively treats both the underlying defect and the complications of portal hypertension or risk of malignancy for those disorders in which the liver is affected.

021 ISLET/CELL TRANSPLANT

P497

PRODUCING ISLET LIKE CELL CLUSTERS FROM HIPSCS WITH MIR-7 AND MIR-186

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Introduction: Islet transplantation is considered as an ultimate option for the treatment of type I diabetes. Human induced pluripotent stem cells (hiPSCs) have raised the possibility that patient-specific insulin-secreting cells might be derived from somatic cells through cell fate reprogramming. MicroRNAs (miRNAs) are key players in different stages of pancreatic development, miR-7 and miR-186have high expression level during pancreatic islet development in human. We present a novel method that over-expression of miR-7 and miR-186 promotes pancreatic differentiation in hiPSCs.

Methods: The hiPSCs colonies were transfected with hsa-miR-7 and has-miR-186 separately by electroporation method. Total RNA was extracted 24 and 48 h after transfection. DTZ was used to identify the existence of the beta cells. The gene expressions of insulin, NGN3, GLUT2, PDX1, Glucagon, and OCT4 were then evaluated through Real- time qPCR. On the third day, the potency of the clusters was assessed in response to high glucose levels. Besides, the presence of insulin and NGN3 proteins was investigated by immunocytochemistry.
Results: Morphological changes were observed on the first day after the physical transfection and cell clusters were formed on the second day. The expression of pancreatic specific transcription factors was increased on the first day and they had significantly increased on the second day. The ILCs were positive for insulin and NGN3 proteins in the immunocytochemistry.
Conclusion: miR-7, miR-186 and transcription factor network are important in pancreatic endocrine differentiation. Physical transfection with miR-7 and miR-186 can differentiate human iPS cells into functional ILCs in a short time.
Keywords Diabetes, Pancreas, beta-cell, Human induced pluripotent stem cells, miR-7, miR-186

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P499

IMPACT OF ORCHESTRATED DYSREGULATION OF DONOR METABOLIC PATHWAYS AFTER BRAIN DEATH WITH INCREASED CELL DEATH PROTEINS AND ROS SCAVENGER MOLECULES ON EARLY FUNCTION AFTER KIDNEY TRANSPLANTATION

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Background: By the time delayed graft function is diagnosed in the kidney transplant recipient, the window of opportunity to intervene and attenuate kidney injury has been missed. Better insight in biological mechanisms that impact on donor kidney quality after brain death will allow targeted interventions during donor management improving allograft outcomes.
Method: Serum and urine samples obtained from living donors (LD) and brain dead donors (DBD) were grouped according to the incidence of delayed graft function (DGF) or immediate function and analysed by label free quantitative (LFQ) proteomics. Proteins in donor samples were precipitated digested and analysed using tandem mass spectrometry (LC-MS/MS, LTQ Orbitrap Velos). Selected proteins associated to cell death, oxidative stress and markers of cytoprotection with higher expression in DGF associated DBD serum and urine samples were further investigated by immunoassays using donor biopsies obtained at donor kidney retrieval.
Results: In DBDs, our proteomic data showed that 137 proteins were at least two fold upregulated in DGF compared to both IF and LD control groups. Further analysis revealed an orchestrated dysregulation of the glycolysis pathway (Fig 1) in parallel to increased ROS production with cell death activation but also cytoprotection through ROS scavenger molecules. Pathway interrogation of identified cell death proteins pointed towards the pertinent involvement of two kinases, JNK and MAPK. Cytoprotection markers such as catalase and peroxiredoxins were either upregulated or uniquely expressed in DBDs and associated with DGF outcomes (DGF vs IF> 2 fold change, ANOVA $p < 0.05$) (Table1).
Conclusion: Proteomic profiling identifies pathways of injury and repair in DBD donor kidneys and enables assessment of quality of renal allografts prior to transplantation. This insight will allow studies with targeted intervention during donor management to ameliorate injury and enhance repair mechanisms.

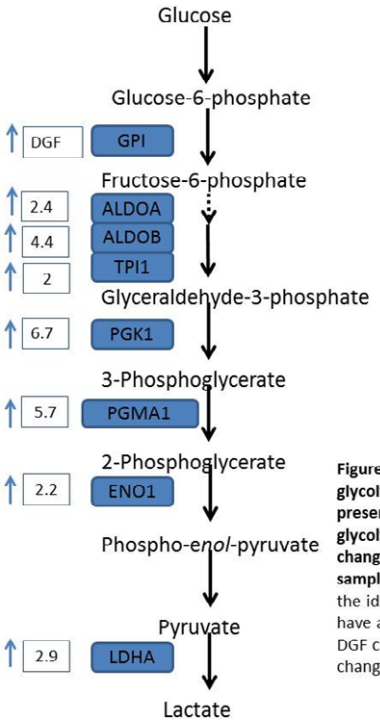

Figure 1. Glucose flux through the glycolytic pathway. A schematic presentation of all the identified glycolytic enzymes and the fold change of DGF vs IF in DBD donor samples. The arrows indicate that the identified glycolytic proteins have an increased expression in DGF compared to IF by the fold change indicated in the boxes.

Table 1. Regulation of cytoprotective Proteins

Entrez Gene Name	Protein Description	Fold Change (DGF vs IF)
CAT	Catalase	Uniquelly in DGF associated DBD serum samples
PRDX2	Peroxiredoxins -2	3.8
PRDX1	Peroxiredoxins -1	3.0
PRDX5	Peroxiredoxins -5	2.3

P500

INVOLVEMENT OF AUTOPHAGY ACTIVATION IN TUBULAR CELL PROTECTION AGAINST ISCHEMIA/REPERFUSION-INDUCED ACUTE KIDNEY INJURY IN TRANSGENIC MICE OVERPRODUCING OMEGA-3 POLYUNSATURATED FATTY ACIDS

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Background: Many reports has been demonstrated the exogenous supplement of omega-3 poly-unsaturated fatty acids (ω-3 PUFAs) might prevent tubular cell damage induced by renal ischemia/reperfusion-induced acute kidney injury (AKI). In accordance with these studies, we recently elucidated that elevated level of endogenous ω-3 PUFA suppressed AKI-induced renal tubular damages by using fat-1 transgenic mice overproducing ω-3 PUFA. However, underlying mechanisms beneath these beneficial effect is largely unknown.
Methods/Materials: In this study, we demonstrated that significant enhancement in autophagy activity was seen in fat-1 mice compared with control by performing ultrastructural observation of autophagosomes and biochemical analysis of beclin-1 and microtubule-associated protein 1A/1B-light chain 3 (LC3) expression. At 30 min after AKI challenges, obvious elevation of autophagy signals were clearly observed in control mice.
Results: Postoperative changes in levels of autophagy activity were hardly detectable in fat-1 mice. Most importantly, protective properties against AKI-induced tubular damage in fat-1 were seriously abolished by intraperitoneal injection of 3-MA, an autophagy inhibitor.
Conclusion: We might suggest that basal autophagy activation possibly contributes to protective effect of ω-3 on AKI-induced renal damages.

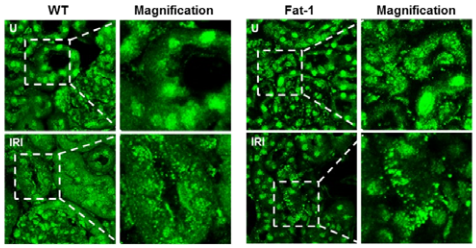

Figure. Demonstration of basal autophagy activation in fat-1 mice renal tubular cells by laser confocal microscopic observation of anti-LC3 immunoreactivities

015 INFECTIONS

P501

COLONIC DIVERTICULITIS IN SOLID ORGAN TRANSPLANT RECIPIENTS - A SINGLE CENTER EXPERIENCE

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Background: Acute diverticulitis in immunosuppressed patients is associated with a high risk of perforation and consecutively high mortality rate. Treatment options are controversial and not necessarily standardized. We herein report an experience with 20 cases of acute sigmoid diverticulitis in solid organ transplant recipients.
Material and Methods: Over the course of ten years (2005–2015) 20 solid organ transplant recipients (10 kidney, 4 liver, 6 lung) were admitted for acute diverticulitis. Clinical data were retrospectively collected from patient records. 14 patients presented with complicated diverticulitis. Therapeutic measures consisted of antibiotic therapy, percutaneous drainage with subsequent elective sigmoid resection and emergency resection as well as placement of intraabdominal vacuum devices.
Results: Median time interval between transplantation and diverticulitis was 4 years (range 0 -25). All 6 patients presenting with uncomplicated diverticulitis were susscessfully managed with atibiotic therapy. One patient subsequently underwent uneventful elective sigmoid resection. 12 patients with complicated diverticulitis required primary surgical intervention. In all but three, a primary Hartmann-resection with a terminal colostomy was performed. In the remaining patients, a primary anastomosis was attempted. Due to anastomotic leakage two patients required surgical revision and secondary colostomy. Overall mortality was 25%, yet 35% in patients with complicated diverticulitis. The rate of complications demanding surgical intervention was 35%. All lung transplant recipients presented with complicated diverticulitis and underwent surgery. However, 4 out of 6 died due to sepsis and graft failure.
Conclusion: Diverticulitis in organ transplant recipients is a potentially life-threatening condition with a high rate of perforation. Surgical management is hampered by a high rate of complications and mortality secondary to sepsis and graft loss.

029 PANCREAS

P502

THE CLINICAL UTILITY OF INFLAMMATORY AND DIABETES MARKERS POST- SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANTATION

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Introduction: Patients undergoing simultaneous pancreas and kidney transplant (SPKT) suffer with a significant clinical inflammatory response. However, neither the inflammatory marker (IM) nor the diabetes marker (DM) profiles are defined, despite the potential utility these may have in prognosis prediction and management of peri-operative care post-SPKT. This study aimed to determine the expression of these biomarkers following SPKT and establish a correlation to clinical outcome.
Methods: The temporal patterns of inflammatory cytokines (interleukin (IL)-6, -10 and TNF-α), IM's (WCC and CRP) and DM's (insulin, C-peptide, glucagon and resistin) were serially measured at 8 time-points in the first 72 h post-SPKT.
Results: 46 patients were recruited to the study. Temporal evolutions of biomarkers were delineated. Levels of C-peptide, insulin and glucagon were significantly negatively related to prolonged CIT within the first 72 h post-pancreas perfusion ($p < 0.05$, linear regression model).

In addition, 48-h levels of CRP (mean 132.14 mg/L [SD 84.73]) correlated significantly with the post-operative morbidity survey on days 5, 7 and 10, total number of complications and the time taken for patients to mobilise post-operatively ($p = 0.001$, 0.019, 0.015, 0.007 and 0.005 respectively, Spearman Correlation).

Finally, levels of pro-inflammatory markers, TNF-α and IL-6 peaked at 30 min post-pancreas perfusion, compared to anti-inflammatory marker, IL-10, which peaked at 6 h post-perfusion ($p < 0.05$, ANOVA).
Conclusions: This paper is the first to identify the temporal evolutions of biomarkers post-SPKT and correlate to clinical outcome. We find that CIT is significantly related to early pancreatic endocrine function and that 48-h CRP levels provide an easily measurable predictor of inpatient recipient morbidity. Of note, the pattern of activity of IM's provide evidence for the trial of targeted anti-inflammatory therapies in the peri-operative period.

023 KIDNEY

P503 EVALUATION OF POST-OPERATIVE ANALGESIA PRACTICE IN RENAL TRANSPLANTATION RECIPIENTS: A PROSPECTIVE SINGLE CENTRE EXPERIENCE

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Introduction: Renal transplantation is the best treatment for end stage renal failure (ESRF). In recent years, it has been recognized that multimodal analgesic methods are superior for postoperative pain; most transplant centres in UK uses patient controlled analgesia (PCA) after renal transplantation. The role of continuous infusion of local anaesthetics in the wound is still under evaluation. Here, we report an interim analysis of a service evaluation study in renal recipients.
Methods: The Service evaluation study prospectively analyzed the effectiveness of analgesic modalities in renal transplant recipients. Group A ($n = 9$) had Fentanyl PCA alone and Group B ($n = 8$) had PCA and continuous infusion of local anaesthetic agent (Levobupivacaine) in the wound through inter-muscular catheter. The parameters used were the cumulative dose of paracetamol, tramadol, Fentanyl, Cyclizine, Ondansetran in the post-operative period up to 72 hrs where final assessments were completed. The numerical analogue score (NAS) and visual analogue score (VAS) were recorded to assess the pain and also postoperative nausea and vomiting score (PONV) at 6, 24, 48, 72 hrs, post-transplantation.
Results: Comparing group A with Group B, the cumulative dose of paracetamol (7 gm versus 5.5 gm; $p = 0.8$), tramadol (105 mg versus 31 mg; $p = 0.18$), Fentanyl (404 mcg versus 549 mcg; $p = 0.53$), Cyclizine (127 mg versus 168 mg; $p = 0.64$), Ondansetran (5.3 mg versus 5 mg; $p = 0.63$) were not significantly different between the two groups respectively. The NAS, VAS and PONV scores were not significantly different between the 2 groups at all-time points (24, 48 and 72 hrs) post-transplantation.
Conclusion: The continuous infusion of local anaethetic agent is a useful method for pain relief following renal transplantation. However, there was no significant difference in the analgesic and antiemetic effect seen the 2 groups. More importantly patients in Group A still required to use PCA for pain relief.

P504 SIGNIFICANCE OF CANCER SCREENING FOR DONORS AND RECIPIENTS PRIOR TO LIVING KIDNEY TRANSPLANTATION

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Cancer has a strong influence on the survival of dialysis patients as well as those who have received kidney transplantation, thus effective cancer screening for kidney transplant candidates is expected to have great benefit to improve survival rates. Pre-transplant cancer screening is also important for kidney donors for maintaining a healthy state. We evaluated the necessity of cancer screening for both recipient and donor candidates prior to living kidney transplantation.

Materials and Methods: One-hundred twenty pairs of living kidney transplantation candidates (120 recipients, 122 donors) underwent cancer screening at our hospital from 2006 to 2014.Pre-transplant cancer screening included chest and abdominal CT, thyroid, breast and abdominal ultrasonography, gastroduodenal fiberscope, colonoscopy, feces occult blood, urine cytology, uterine cancer, and tumor marker examinations.
Results: Ten (8.3%) of the 120 recipient candidates had malignancy revealed by screening. Eight of 10 patients with malignancy were in an early stage, of whom 4 underwent transplantation after cancer treatment. Of the 122 donor candidates, 4 (3.3%) were shown to have malignancy. One of 2 donors with early stage malignancy participated in donation after cancer treatment, while the other is presently ready to donate.
Conclusion: Although the significance of pre-transplant cancer screening for recipient candidates (detection rate 8.3% in present study) is generally recognized, the present findings indicate that cancer screening for donor candidates is also significant (detection rate 3.3% in present study). As noted in the Declaration of Istanbul, protection and safety of living donors are important issues in living transplantation. In addition, in the present situation of the increasing need of live donors because of a world-wide cadaveric donor shortage, pre-transplant cancer screening of donors is also vital.

P505 HEPATITIS B VIRUS REACTIVATION IN ABO-INCOMPATIBLE KIDNEY TRANSPLANT RECIPIENTS UNDERGOING IMMUNOSUPPRESSIVE THERAPY

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Introduction: In response to the shortage of deceased donors, living donor kidney transplantation (LKT) between marriedcouples and from ABO-incompatible (ABO-IC) donors is spread in Japan. Reactivation of hepatitis B virus (HBV) istriggered by immunosuppressive therapy after kidney transplantation, and often causes severe hepatitis, resulting acuteliver failure.
Objectives: Reactivation can occur in a patient with previous inactive HBV infection; either an inactive carrier or a patientwith resolved hepatitis. The purpose of this study was to examine HBV-reactivation in ABO-IC LKT recipients withresolved hepatitis B.
Methods: We performed 195 cases of LKT between April 2003 and August 2014, including 51 (26%) from ABO-ICdonors. Among 51 ABO-IC recipients, 7 patients (mean age 64.3 years) were anti-HBc-positive, HBsAg-negative, all ofwhom were HBV DNA-negative by PCR before LKT. For ABO-IC LKT, plasmapheresis was performed to remove anti-AB antibodies prior to LKT. Splenectomy wasperformed at the time of or before LKT. Since March 2010, rituximab administration was performed before LKT instead ofsplenectomy. The end of study observation was January 2015, namely, a mean observation period of 44.1 months.
Results: Among them, no patient died, one patient lost his graft with a severe rejection. No patient experienced a lethalinfectious complication. At routine follow-up after LKT, one patient was HBeAg and HBsAg positive with HBV DNApositive.The incidence of HBV reactivation was 14%. She was diagnosed as de novo hepatitis B and entecavir wasadministered immediately. Her hepatitis improved, and hepatitis B viral load reduced over time with a well-functioningallograft.
Conclusions: Our results demonstrated the risk of HBV-reactivation was triggered by immunosuppressive therapy after kidney transplantation. We should monitor closely serum HBV-DNA for ABO-IC LKT recipients with resolved hepatitis B.

007 DONATION/RETRIEVAL

P506

SIGNIFICANT INCREASE IN THE RATE OF POTENTIAL DONOR DETECTION BY USING PPDDP (PERSIAN POSSIBLE DONOR DETECTION PROGRAM)

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Introduction: Donor detection is one of the most important parts of organ donation process. The usual detection methods are:Passive detection Administrative detectionActive detection (in hospital coordinator) which is the best worldwide method According to the socioeconomic status of Iran and high number of Hospitals affiliated to each OPU, it is not practical to establish in-hospital coordinator method in Iran

Method: We designed a project named PPDDP (Persian Possible Donor Detection project) consisted of: IP (Inspector Project): Using trained nurses for visiting the ICUs regularlyTDDP (Telephone Donor Detection Program) Using trained medical students for primary evaluation of possible donors and following GCS 4,5 and GCS3 non brain dead cases by phone.HR (Hospital Reporting) Hospitals were divided according to the number of ICU beds and having neurosurgery ward (Image 1).

Results: We tried this project in one of the IRAN OPUs and the possible donor detection rate increased more than 7 times (TABLE 01).364 Possible donor have been detected in 2 months (TABLE 02), Correlation between the stage of coma and method of detection, Correlation between the detection method and donor type (TABLE 03).

Conclusion: PPDDP is an effective method which can increase the rate of donor detection significantly and is recommended for all countries.

Divisions	Numbers	Percentage
Unsuitable BD	173	47.5
Not BD	37	10
Death before arriving TC	87	24
Death after taking consent	3	0.8
Family refusal	3	0.8
Referred to other hospitals	5	1.4
Under observe cases	18	0.5
Actual Donors	38	10.5
Total	364	100

Situation\The kind of detection	IP	TDD	HR	Summation
BD	27	17	12	56
GCS=3 not BD	22	7	2	31
GCS = 4,5	78	25	1	104
Calculated	127	49	15	191

The kind of detection\Title	Possible donor	Potential donor	Eligible donor	Consented	Actual donor
IP	248	54	18	16	15
TDD	86	27	12	11	11
HR	30	30	14	14	12
Calculation	364	104	44	41	38

025 LIVER

P507

EXCELLENT OUTCOME OF THE NEW LIVER TRANSPLANTATION CENTER

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Ewha Womans Univeristy School of Medicine

New liver transplantation center has difficulty in showing good outcome because of the shortage of manpower with experience and proper equipment. And therefore, most of the transplantation centers perform less than five cases, although forty-four centers have performed liver transplantation (LT) in Korea. We present our initial experiences and outcome of the LT. We have prepared LT for more than 5 years. An experienced surgeon of liver transplantation who had been trained in the experienced center specialized in the live donor LT in Korea as well as deceased donor LT was employed. Experienced surgeon was the control tower in the setting of patients evaluation, operation procedure, and postoperative care. Multidisciplinary team was formally established. Doctors and nurses were educated over 10 h. Some of them were sent to the experienced center to observe the procedure. We have performed 15 consecutive LTs (6 live donor LTs, 9 deceased donor LTs) from April 2013 to July 2014; One cryptogenic liver cirrhosis (LC), two alcoholic LC, seven hepatitis B related LC, four hepatitis C related LC patients, five patients with hepatocellular carcinoma, and one biliary atresia 26 years after Kasai operation. The median MELD score was 14 (8–35), Child-Turcotte-Pugh score was 10 (6–14). Operative time was 540 min (380–605) and estimated blood loss was 5500 ml (1380–16600). Warm and cold ischemic time was 50 min (35–109) and 290 min (60–67), respectively. There was no re-operation and operative mortality. Until now, there has been no mortality caused by severe complication. Without enough experiences, equipment and skilled surgeon and nurses, to reach better outcome is difficult in LT. Newly starting centers, therefore, need strict and well-prepared strategy and proper training program and thorough preparation as well as manpower for optimal result. Well-trained surgeon is prerequisite for preparation and performing LT as a control tower.

023 KIDNEY

P508 A CASE OF INVASIVE ASPERGILLOSIS OF THE PARANASAL SINUSES TREATED WITH SURGERY AND VORICONAZOLE AFTER KIDNEY TRANSPLANTATION

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Invasive fungal sinusitis is a rare, severe disease, most commonly presenting in immunocompromised patients who haveimpaired neutrophil function or who have received long term immunosuppressive therapy. The gold standard for treatmenthas been wide surgical debridement, intravenous administration of antifungal agents such as amphotericin B (AMB), andcorrection of the underlying immunocompromised state. A 51-year-old female was admitted to our hospital with fever andheadache who had received renal transplantation 14 years ago in the other hospital. Paranasal sinus CT scan revealed hyperplasiaand soft tissue density of the left maxillary sinus. Histological examination of the fungus ball and edematous mucosa ofthe left maxillary sinus revealed suspicious invasion of Aspergillus in the mucosa. Clinical improvement occurred after acombination of surgery and post-operative systemic antifungal therapy with voriconazole. We think that voriconazole as initialtreatment may be initiated for invasive sinonasal aspergillosis, if the infection is known to be due to Aspergillus species.

P509 USE OF A CONTINUOUS WOUND INFILTRATION CATHETER REDUCES POST OPERATIVE MORPHINE REQUIREMENTS IN LIVE DONOR RENAL RECIPIENTS

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Background: Effective post operative analgesia for renal recipients remains a challenge. Unrelieved pain may promote respiratory complications yet morphine metabolites can accumulate in this patient group resulting in serious adverse effects. The use of continuous wound infiltration (CWI) of local anaesthetic (LA) has had benefit in other surgeries. Its use has not been described in renal transplant recipients.
Methods: We examined 16 live donor recipients. Surgery was performed by a single surgeon. Two groups: 48 h CWI to transversus abdominis plane (TAP) (n = 7; ON-Q TAP group); morphine only (n = 9; control group). Both groups received paracetamol and/or oxycodone for breakthrough. In the ON-Q group, an infiltration catheter was placed during surgery in the TAP. A bolus of LA was given on wound closure and a continuous infusion of 10 ml/hr of 0.125% levobupivacaine for 48 h.
Results: TAP ON-Q group used less morphine over 48 h: 4.29 vs 18.8; and required less breakthrough analgesia at 24 and 48 h [5.6 vs 15.1; 3.3 vs 5.7]. They had a median length of stay of 7 days (5 – 12 days) compared to the control group of 8.5 (6 -15 days). They experienced less constipation.
Conclusion: There is a clear need for a multimodal, morphine sparing analgesic technique in renal recipients. Evidence for TAP blocks in this group had been conflicting, and where benefit is shown the analgesic effect is short lived. The ability to provide CWI may overcome this limitation and negate the risks of TAP injections.

Furthermore there is wide variability in the TAP block techniques used. Standardisation using a CWI system would eliminate this source of variability in pain management and facilitate enhanced recovery protocols.

We are the first to report our experience of the ON-Q catheter in renal recipients. In doing so, we have shown that its use reduces 48 h morphine consumption by 77% and it may reduce length of hospital stay, and in turn have significant financial benefits.

P510 CONSERVATIVE MANAGEMENT OF AN EMPHYSEMATOUS ISCHAEMIC SEGMENTAL PYELONEPHRITIS IN A RENAL ALLOGRAFT

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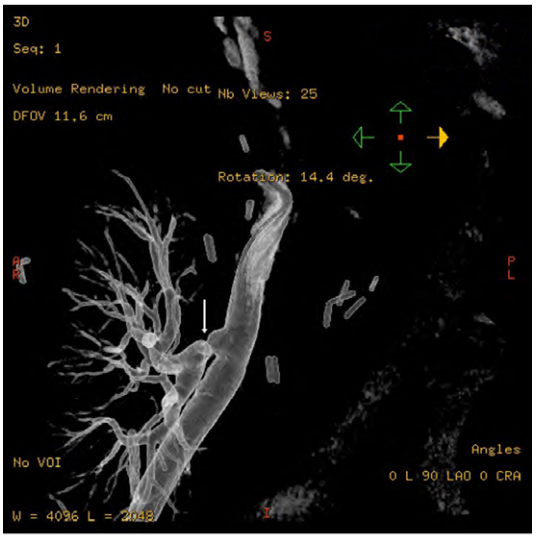
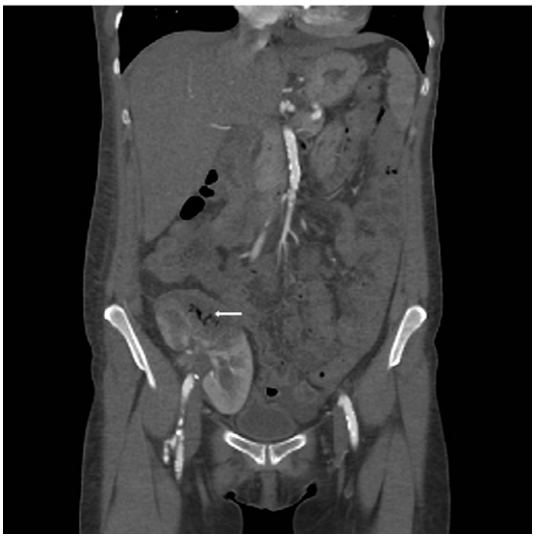
Cardiff & Vale University Health Board

Introduction: Emphysematous pyelonephritis is an uncommon form of severe necrotizing infection of the renal parenchyma, usually affecting diabetics and is mostly associated with E. Coli or to a lesser extent Klebseilla infection. We report a case of emphysematous pyelonephritis within a segmental ischaemia of a transplanted kidney.
Case Report: 57 year old female known hypertensive with end-stage renal disease secondary to 45 years of IDDM who received a related live donor kidney. Despite good renal function initially, she was found to have a renal artery stenosis 3 months after her transplant (Figure 1), which was managed with angioplasty and stenting. During the angioplasty she "lost" a branch supplying the upper third of the kidney, and she deteriorated 2 days post procedure with rising temperature, tachycardia, low blood pressure and raised inflammatory markers and creatinine. Urine culture grew E.Coli and subsequent imaging demonstrated patent transplanted main renal artery but a fairly large segmental infarct containing gas (Figure 2).This was managed non-operatively with long term intravenous antibiotics and rehydration. Her follow up imaging confirmed the presence of large segmental upper pole infarction with no abscess, perfused mid and lower pole, and a resistive index of 0.8 – 0.87, however, persistent gas remains a worrying feature. The conservative management seems to be the recommended path in cases of emphysematous pyelonephritis in native kidneys. In a renal allograft, following radiological intervention this remains to be seen.





003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P511

PROTECTIVE EFFECT OF TETRAHYDROCURCUMIN AGAINST TACROLIMUS-INDUCED NEPHROTOXICITY: *IN VITRO* AND *IN VIVO* STUDIES

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Calcineurin inhibitors are effective immunosuppressive agents, but associated adverse effects such as nephrotoxicity may limit efficacy. Tacrolimus (FK-506) is an immunosuppressive drug used mainly to lower the risk of organ rejection after allogeneic organ transplant. Adverse effect of FK-506 can prompt patients to end treatment despite of the efficacy. In the present study, we investigated the protective effect and mechanism of tetrahydrocurcumin (THC) on FK-506-induced renal damage, oxidative stress, and inflammation to evaluate its possible use for kidney protection. The FK-506-induced LLC-PK1 renal cell damage was markedly ameliorated by THC treatment. The effect of THC on FK-506-induced kidney cell damage was investigated in mice. THC was orally administered every day at a dose of 20 mg/kg body weight for 7 days, and a single dose of FK-506 was administered intraperitoneally (10 mg/kg body weight) in 0.9% saline at the same days after THC administration. The serum creatinine levels, markers of renal dysfunction, in FK-506-treated mice were recovered significantly after administration of THC. Moreover, THC exhibited protective effects against FK-506-induced oxidative renal damage in rats by inhibiting iNOS. These results collectively provide therapeutic evidence that THC ameliorates the FK-506-induced renal damage via inhibiting oxidative stress and inflammation.

021 ISLET/CELL TRANSPLANT

P513

RED GINSENG ENHANCES ISLET CELL FUNCTION AND ATTENUATES APOPTOSIS IN MOUSE ISLETS

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Background: The transplantation of isolated islets is believed to be an attractive approach for curative treatment of diabetes mellitus. Panax ginseng has been widely used in traditional oriental countries for pharmacological effects such as anti-diabetic, anti-inflammatory and anti-apoptotic activities. Red gingseng (RG) is a steamed ginseng, and had been reported enhancing the insulin secretion-stimulating and anti-apoptotic activities in pancreatic beta cells. We performed this study to examine the hypothesis that preoperative RG treatment can enhances islet cell function and anti-apoptosis before islet transplantation in mouse islets.

Method: Balb/c mice were randomly divided into two groups according to the culture of RG after the islet isolation. Group A served as control and received no RG. Islet cells were treated with containing supplementation of RG 200 μg/mL in culture media for 24 hr (Group B). Islet function was assessed using a glucose-stimulation insulin secretion. Proteins related to apoptosis were analyzed at islet cells via Western blot.

Result: Cell viability was similar between two groups and islets were cultured in medium supplemented with RG showed a 1.4-fold higher glucose-induced insulin secretion than islets cultured in vehicle in normal condition. After cytokines treatment, RG treated group was significantly increased glucose-stimulated insulin release, HO-1, and SIRT1, attenuated apoptosis, iNOS, nitrite, UCP2, BAX, caspase3 than cytokine treated group ($p < 0.05$).

Conclusion: We suggest that preoperative RG administration before islet transplantation enhances islet cell function and attenuates apoptosis which maybe a prospective management for the ischemic damage of islet cell and early inflammation at the site of implantation.

029 PANCREAS

P514

PANCREAS TRANSPLANT ALONE RECIPIENT OVER THAN 65 YEARS: THE EXCELLENT IMPROVEMENT OF QUALITY OF LIFE – CASE REPORT

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Pancreas transplantation alone (PTA) in patient with recurrent episodes of hypoglycemia or hypoglycemic unawareness can be considered to avoid hypoglycemia, to improve the quality of life (QOL), and to prevent the development or progression of secondary complications. However, the impact of aging of the recipient has received very little attention in the pancreas transplantation. Especially, results of PTA recipients older than 65 years are scarce.We report the excellent short-term improvement in the QOL after PTA in 65 years old male with Type 1 diabetes. Diabetes over than 30 years caused recurrent hypoglycemia and the noncompliance for insulin treatment frequently broke out the emergency status with loss of consciousness. At August 2013, he received PTA from deceased donor. His postoperative course has been stable except the angiographic embolization for the pseudoaneurysm, which was developed from the transected mesenteric root of pancreas graft in the immediate postoperative period. At present, his follow-up HbA1C has been maintained in below 5% and oral hypoglemic agents or insulin have never used. The QOL of His and his family have remarkably been improved. After 16 months, we switched from twice-daily tacrolimus (PROGRAF) to tacrolimus once-daily formation (ADVAGRAF) and he has been well tolerated. Conclusively, older patients with Type 1 diabetes are feasible candidates for PTA, to achieve the improvement of QOL.

033 TISSUE ENGINEERING

P515 **THE EFFECT OF COLLAGEN GEL SCAFFOLD ON HUMAN BONE MARROW MESENCHYMAL STEM CELLS**

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Transplant Research Center

Background: Application of biomaterials is an interesting subject in the tissue engineering science. Collagens are popular candidates to establish an engineered tissue for research and clinical applications. The purpose of this study was to evaluate the effect of type I collagen gel on human bone marrow mesenchymal stem cells (BM-MSCs).
Methods/Materials: Human bone marrow of healthy donors was aspirated from the iliac crest. BM-MSCs were isolated, expanded, and maintained with periodic passages until a relatively homogeneous population was established. The identification of adherent cells was also done. Type I collagen was extracted from rat tail tendon and dissolved in 0.1% acetic acid. After neutralization of collagen solution with 10X DMEM and 1M NaOH, gelation of collagen solution was done at 37° C. Human BM-MSCs were plated on the surface of gel. Culture of these cells on the surface of tissue culture plate was served as control group. Morphology of BM-MSCs was evaluated by light microscope. For assessment of cell viability MTT assay was done.
Results: The differentiation potential into osteoblast and adipocytes showed that human MSCs were positive by functional tests. After the cells were plated on the gel, BM-MSCs maintained their fibroblastic morphology, viability, and proliferation in the gel environment.
Conclusion: These results suggest that collagen gel scaffold serve as an effective carrier for the human BM-MSCs in tissue engineering research.

025 LIVER

P516 **OUTCOMES OF PATIENTS WITH HEPATOCELLULAR CARCINOMA AFTER LIVER TRANSPLANTATION**

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Baskent University Faculty of Medicine

Background: Liver transplantation (LT) is one of the few effective treatment options for hepatocellular carcinoma (HCC). Our aim in this study was to evaluate the risk factors for HCC recurrence after LT.
Material and Methods: In this retrospective study, between October 1988 and March 2015, 473 LTs were performed at our institution. 231 of them were pediatric and 242 were adult. Among these patients LT was performed in 52 patients (10.9%) for treatment of HCC. As well as HCC was detected incidentally in 6 patients (1.2%) who underwent LT for other reasons.
Results: In the pediatric group, 11 (4.8%) were undergone LT for HCC. In the adult group, LT were performed for HCC in 47 (19.4%) patients. Overall 39 (67.2%) patients were undergone LT beyond the Milan criteria in both pediatric and adult groups. HCC recurrence was detected in 14 (24.1%) patients. Overall 5-year and 10-year survival rates of patients were undergone LT beyond the Milan criteria for HCC were 50.3% and 43.1%, respectively. Overall 5-year and 10-year survival rates of patients were undergone LT within the Milan criteria for HCC were 78.4% and 72.6%, respectively. Significant better overall survival rates were noted in the within Milan criteria group ($p = 0.024$). Disease free 5-year survival rates of patients were undergone LT beyond the Milan criteria and within the Milan criteria for HCC were 56.8% and 78.7%, respectively ($p = 0.024$). The main predictive variable was whether the tumor had expensed beyond the Milan criteria.
Conclusions: As expected, outcomes were significantly better in the within the Milan criteria group. Even though, the overall and disease free survival rates were promising in such a group of patients who had no better chance. It could be asserted that liver transplant is one of the safe and effective treatment options with promising results; even if the tumor expanse is beyond the Milan criteria.

023 KIDNEY

P517 HIGH PREVALENCE OF HYPERURICEMIA IN KIDNEY TRANSPLANT RECIPIENTS

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Background: Several experimental and clinical studies have shown that the hyperuricemia is an important cardiovascular risk factor, as well as cause of nephropathy. In kidney transplant recipients (KTr) recent studies suggest that the hyperuricemia is an independent risk factor of graft dysfunction and reduced graft survival. Aim of this work has been to evaluate the prevalence and risk factors of this metabolic alteration in KTr.
Methods/Materials: We retrospectively analyzed the data of 166 KTr transplanted at our Center. Of these patients 54% were males .The mean age was 52.1 + /- 11 years with a transplant median age of 6.7 years. The endogenous creatinine clearance was 54.9 + /- 18 ml / m'. The immunosuppressive therapy included steroid, calcineurin inhibitors, and MMF or AZA. Hyperuricemia was defined by values greater than 6.5 in females and 7 mg /dl in males or by treatment with hypouricemic drugs. Were excluded from the study KTr with pathological conditions or taking medications which can increase the blood levels of uric acid.Data analysis using a multivariate logistic regression model to identify variables significantly associated with hyperuricemia was performed.
Results: Hyperuricemia was found in 32% of our KTr and only 12% were the patients treated with hypouricemic drugs.At the multivariate analysis the factors independently associated with the risk of hyperuricemia resulted: male gender ($p < 0.001$), reduced renal function ($p < 0.01$), increased body mass index ($p < 0.02$), dyslipidemia ($p < 0.04$), use of Cyclosporine ($p < 0.029$), post-transplant diabetes mellitus ($p < 0.05$).
Conclusions: The prevalence of hyperuricemia in KTr is high and its pharmacological treatment is rarely practiced. Immunosuppressive therapy seems to play a role in its development. Hyperuricemia is associated with the presence of other well-known cardiovascular risk factors .Additional studies are needed to clarify the full effects of hyperuricemia on KTr survival and graft dys.

P518 THE CLINICAL IMPORTANCE OF ANOMALY ON INFERIOR VENA CAVA IN THE GRAFT DONATION SURGERY FROM A DECEASED DONOR

Mi-Hyeong Kim[1], Kang-Woong Jun[2], Sun-Cheol Park[3], Sang-Il Kim[1], In-Sung Moon[1], Ji-Il Kim[1]

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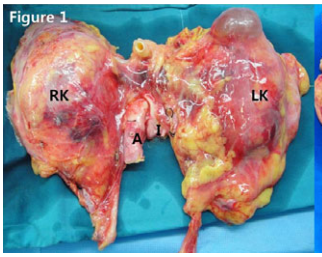
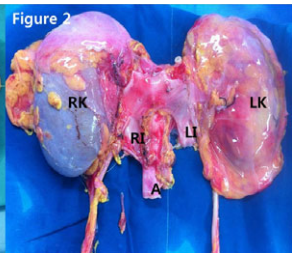
Introduction: Anomaly of inferior vena cava (IVC) is rare, and it is estimated to 0.2–0.5% of the population. Most cases were found during nephrectomy for a living donor kidney transplantation or during evaluations for other disease. To the best of our knowledge, anomalies of IVC which were found in the graft donation surgery from a deceased donor have never been reported. We experienced each cases of left-sided IVC and duplicated IVC during the graft donation surgery from a deceased donor.
Case 1: 55 year-old male was diagnosed brain death and his family decided to donate his internal organs. Graft donation surgery was performed and we dissected the infrarenal aorta, and then, tried to find the IVC on the right side of the aorta, but we failed. The IVC was found in the left side of the aorta. The left renal vein was shorter than right.
Case 2: 44 year-old female was diagnosed brain death and her family wanted to donate her internal organs. Graft donation surgery was performed, and the infrarenal aorta was identified and the IVC was recognized in the right side of the aorta. During further dissection, we found that the left gonadal vein and another vein were drained into the left renal vein. We traced this unknown vein, and figured out that it was an additional left IVC. Both side grafts needed renal vein angioplasties.
Conclusion: Radiologic evaluations are uncommonly performed in deceased donor, so it is difficult to know anatomic anomalies before surgery. If the operator failed to perceive anomalies of the IVC, it can lead to unexpected bleeding. In the case of duplicated IVC without control of left-sided additional IVC, continuous drainage of warm blood from the left lower extremity affect the efficient graft cooling. And several cases reported attendant anatomic variations such as circumcaval ureter, retrocaval ureter, and renal arterial variation, so it needs a caution to do surgery.





025 LIVER

P519

SUCCESSFUL TREATMENT OF HEPATIC ARTERY STENOSIS USING PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY FOLLOWING ABO INCOMPATIBLE LIVING DONOR LIVER TRANSPLANTATION

Young-Dong Yu, Sung-Won Jung, Dong-Sik Kim, Sung-Ock Suh
Korea University Anam Hospital

In living donor liver transplantation (LDLT), the hepatic arteries tend to be smaller than those in cadaveric transplantation. Stenosis of the hepatic artery is one of the fatal complications in liver transplantation, and rapid treatment is mandatory to avoid fatal results. Percutaneous transluminal angioplasty (PTA) is one of the treatments used to improve hepatic artery stenosis. We report our experience of successfully treating hepatic artery stenosis following ABO incompatible living donor liver transplantation. A 49-year-old male patient (blood type O) diagnosed with hepatocellular carcinoma and liver cirrhosis due to hepatitis B received ABO incompatible living donor liver transplantation from his son (blood type B). After initial decrease of liver enzymes following liver transplantation the aspartate transaminase (AST) and alanine transaminase (ALT) levels started to increase on the seventh postoperative day. After excluding other causes for liver enzyme elevation, plasmapheresis was performed for suspected graft dysfunction by alloantibodies and the AST, ALT levels decreased. On the twenty-second postoperative day, re-elevation of liver enzymes occurred. We performed splenic artery embolization for suspicion of splenic artery steal syndrome again after excluding other causes for liver enzyme elevation. While performing splenic artery embolization, severe stenosis at the arterial anastomosis site was noted on the angiogram. Due to persistent elevation of liver enzymes following splenic artery embolization and abnormal wave form of the intrahepatic artery on doppler sonogram, PTA was performed. Following PTA, the patient's AST, ALT started to decrease. In conclusion, since it can be successfully treated using PTA, hepatic artery stenosis should be suspected if other causes of graft dysfunction have been ruled out following living donor liver transplantation.

023 KIDNEY

P520

HISTOPATHOLOGICAL ANALYSIS OF THE PARATHYROID GLANDS IN PATIENTS WITH TERTIARY RENAL HYPERPARATHYROIDISM AFTER KIDNEY TRANSPLANTATION

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Background: Among long-term dialysis patients with renal hyperparathyroidism, some patients undergo parathyroidectomy (PTx) in the early postoperative period following kidney transplantation (KTx). In contrast, renal hyperparathyroidism is moderate in the early period but is sometimes prolonged more than 1 year; PTx is indicated even if a graft function is satisfactory. The aim of this study is to characterize the parathyroid glands (PGs) in the patients with persistent HPT (perHPT) and clarify the persistent pathogenesis.

Subjects and Methods: We analysed 44 PGs resected from 11 patients (10 men, 1 woman) who underwent PTx after KTx. The histopathological types and weights of all the PGs were evaluated, and the biochemical data and backgrounds of the enrolled 11 patients were analysed.

Results: Nodular hyperplasia was present in the PGs in all cases. The mean glandular weight was 396.0 $\pm$ 299.0 mg, and the maximum glandular weight was 3.200 mg. The mean dialysis period of the enrolled patients was 15.8 years. The mean time from KTx to PTx was 22.1 months. Seven patients who underwent PTx more than 1 year after KTx (latePT) were compared with 4 patients who needed PTx within 10 months after KTx (earlyPT). The preoperative Ca2 + level (latePT, 10.9 mg/dl vs. earlyPT, 12.2 mg/dl, $p = 0.017$), maximum glandular weight (442.9 mg vs. 1.503 mg, $p = 0.018$), and the mean glandular weight (312.5 $\pm$ 177.4 mg vs. 1135.6 $\pm$ 977.7 mg, $p = 0.001$) were significantly lower in patients who underwent latePT compared to those who underwent earlyPT. Considering the histopathological type and glandular weight of each parathyroid gland, nodular hyperplasia of 150 mg or less was common in patients who underwent latePT, and it was observed in 6 of 7 patients.

Conclusion: We clarified the characteristics of the PGs of patients with perHPT who needed PTx. The presence of nodular hyperplasia in the PGs with a low weight may possibly be involved in the perHPT that occurs after KTx.

025 LIVER

P522 LIVER TRANSPLANTATION DUE TO FULMINANT HEPATIC FAILURE: SINGLE CENTER EXPERIENCE

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Baskent University Faculty of Medicine

Background: Acute liver failure (ALF) is a life threatening condition with sudden onset liver injury, decreased liver functions, hepatic encephalopathy and coagulopathy in patients without preexisting liver disease. We aimed to evaluate the results of liver transplantation as a treatment choice for ALF in our study.
Material and Metods: Between November 1988 and March 2015, we performed 482 liver transplantation in 471 patients. We performed 36 liver transplantation in 35 patients due to ALF. Only five of these were from cadaveric donors.
Results: Thirty (85%) of those 34 patients were pediatric and five (15%) of them were adults. We lost five patients (4 patients in early postoperative period, one patient at 18th month of LDLT). We diagnosed eleven acute rejections (32%). Six biliary leaks (17%), six intraabdominal hemorages (17%), five hepatic arter thrombosis (15%), an one venous complication (3%) in early postoperative period. We have no morbidity or mortality in 364 (75%) LDLT donors.
Conclusions: LDLT is an efficient and successful treatment for ALF patients. In our center we mostly consider and prefer LDLT to cadaveric LT due to scarcity of organ donation and impropriety of organs especially for pediatric patients. Considering acceptable postoperative complications LDLT is a life saving treatment for ALF.

P523 OUR EXPERIENCE OF POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES) AFTER CADAVERIC LIVER TRANSPLANTATION

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Posterior reversible encephalopathy syndrome (PRES) is a rare cliniconeuroradiologic syndrome attributed to calcineurin inhibitor (CNI) use. PRES is characterized by a wide-ranging variety of mild-to-serious neurologic symptoms (e.g. headache, visual disturbances, focal neurological deficits, seizures, mental status changes, delirium and coma) depending on the location of the lesion(s). The incidence of PRES after solid-organ transplantation is extremely low, and due its rarity few studies are currently available on this phenomena. We report our experience of PRES that occurred following cadaveric liver transplantation.A 60-year-old woman received cadaveric liver transplantation in our center as treatment for decompensated alcoholic cirrhosis. Tacrolimus, mycophenolate mofetil, and steroids were used for immunosuppression. She developed right side weakness and dysphasia in addition to acute mental depression on the ninth postoperative day after an initially uneventful course after transplant. Diagnostic imaging revealed PRES. After conservative management including reducing the dose of tacrolimus, she recovered without neurologic sequelae.In conclusion, clinicians caring for liver transplant patients presenting with central nervous system neurological symptoms, especially within the early postoperative period, should evaluate them with radiographic imaging to identify or rule-out PRES.

007 DONATION/RETRIEVAL

P524 IROSS: IRANIAN OPU'S SUPPORTING SYSTEM

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[1]Iranain Ministry of Health and Medical Education; [2]Iran University of Medical Sciencs; [3]Ministry of health and Medical Education

Introduction: A new project for organ procurement was designed in IRAN in 2011 according to our circumstances, religion and culture named New Persian OPU Model "NPOM".It was performed in one of IRAN OPUs as a pilot for 2 years with excellent results. With moving the designers of the NPOM to Ministry of health as Director and Deputy Director of Organ donation and Transplantation, IrNOPT (Iranian Network for Organ Procurement and Transplantation) project was written included NPOM for all Universities. IrNOPT project was started in October 2014.The directors of OPUs and Chief coordinators from all Universities were trained during two courses (first one for teaching NPOM and the second one by TPM). It was absolutely logical that these 2 weeks training course was not enough for establishing a new OPU with a new model. So a new project was designed in order to make a strong support for OPUs named "IrOSS" (Iranian OPUs Supporting System).
Method: In this project the country divided to 7 zones between 7 expert coordinators whom had been trained with "NPOM" and "IrOSS" as a "supportive coordinator" (SC). At the first step SC should travel to each under coverage OPU and stay for 3 weeks for running the "NPOM"At the 2nd step SC should cover OPUs for 2 years 24 hrs. and solve all of their problems by the phone or periodic traveling to OPU.
Result: These are the results of supporting a new OPU in IRAN named "IMU OPU" (Iran Medical University OPU) which has been established since 2 months ago and worked under coverage of an expert SC:population: 5 000 000hospitals: 62detected possible donors: 364/2 monthspotential donors:104/2 monthsThe rate of eligible donors: 44/2 monthsThe rate of taking family consent: 41 (93%) The rate of actual donors:38The average duration of taking family consent: 10 hrs.PMP=45.6Conclusion: it is very important that an expert coordinator accompany every new OPU especially for the first weeks.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P525 **NOVEL APPROACH FOR THE PREVENTION OF ISCHEMIA/REPERFUSION INJURY (IRI)**

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Innsbruck Medical University

Background: Reactive oxygen species (ROS) produced at the mitochondria are responsible for the development of IRI during solid organ transplantation. However, antioxidants yielded little benefit in the clinical setting. In our work we are thus pursuing strategies to limit or prevent the unwanted increase in ROS by identifying and targeting intracellular signaling pathways that may control mitochondrial ROS levels. The feasibility of achieving this is supported by recent findings including our own. p66SHC is one of the main sources of ROS and gene ablation experiments confirmed its importance for the development of IRI. Here we studied pathways essential for the activation of p66SHC as targets for future therapeutic intervention. We first reassessed the role of PKCβ implicated earlier in this process and identified a novel regulatory pathway.
Methods: In our experiments we used genetically modified cells, inhibitors, signaling analyses, proteomics, and hypoxia/reoxygenation (HR) as a model for early events in ischemia/reperfusion.
Results: Using PKCß deficient MEFs or PKC inhibitors we failed to detect the previously reported PKCß-dependent activating phosphorylation of p66SHC on S36 and instead identified S139 as regulatory site. *In vitro* kinase assays using recombinant PKCß and p66SHC confirmed these findings. Consistently, in p66SHC-deficient MEFs reconstituted with the S139A mutant of p66SHC we observed significantly reduced mitochondrial ROS levels and cell death. In search for the kinase phosphorylating S36 we found a pronounced decrease in p66SHC S36 phosphorylation following inhibition or ablation of JNK 1,2, which resulted in decreased mitochondrial ROS production and reduced damage to DNA and cells. Finally, the low ROS phenotype of JNK 1, 2 knockout MEFs was reversed by introducing p66SHC mutated in S36E to mimic phosphorylation.
Conclusion: Interference with p66SHC activation by targeting upstream pathways (PKCß, JNK) thus may provide a therapeutic app

025 LIVER

P526

LIVER TRANSPLANTATION IN AN ADOLESCENT WITH CYSTIC FIBROSIS: CASE REPORT

Mahir KıRnap, AydıNcan Akdur, Ebru Soy, MüşErref ŞUle Akçay, Dalokay KıLıÇ, Gokhan Moray, Mehmet Haberal
Baskent University Faculty of Medicine

Background: Orthotopic liver transplantation (OLT) is an effective treatment for patients with cystic fibrosis especially those with only mild pulmonary involvement. Long-term follow-up in such transplanted patients is still lacking.

Case Report: A 18-year-old boy with cystic fibrosis received an OLT because of severe decompensated cirrhosis. The patient suffered from repiratory problems in early postnatal period and he was diagnosed with cystic fibrosis by positive sweat test. In 2010, the patient was diagnosed by liver failure and severe bronchiectasis due to cystic fibrosis. pseudomonas aeruginosa colonization has been present for three years in the patient's expectorated sputum. The patient received a living related (mother) left lobe liver transplant on november 2014. Pleuredesis was performed three times after liver transplantation due to recurrent pneumothorax. An intensive physiotherapy program was carried out and the patient was discharged 30 days after the operation. The patient has normal liver function tests in the fourth postoperative month did not experience any problem.

Conclusion: This four mounts post-operative follow-up confirms that OLT can represent a good alternative in those patients with severe liver disease and mild pulmonary involvement

023 KIDNEY

P527

ANALYTIC VALIDATION OF PETINIA ASSAY FOR THERAPEUTIC DRUG MONITORING OF MYCOPHENOLIC ACID IN KIDNEY TRANSPLANT RECIPIENTS COMPARED WITH LIQUID CHROMATOGRAPHY–MASS SPECTROMETRY

Su Hee Kim, Young-Jae Park, Min Young Seo, Sukyung Lee, Jong-Hak Lee, Sun Young Cho, Eugene Kwon, Hee-Yeon Jung, Ji-Young Choi, Sun-Hee Park, Yong-Lim Kim, Chan-Duck Kim, Jang-Hee Cho
Kyungpook National University Hospital

Background: Therapeutic drug monitoring of mycophenolic acid (MPA) is required to optimize immunosuppressive effect and minimized toxicity. This study validated a new particle enhanced turbidimetric inhibition immunoassay (PETINIA) assay for determination of MPA and evaluated relationship of MPA trough level with drug-related adverse events.
Methods: A total of 54 kidney transplant recipients (KTRs) determined MPA concentrations prior to administration of the morning MPA using PETENIA and liquid chromatography–mass spectrometry (LC-MS) assay. Agreement between PETINIA and LC-MS assay was assessed by the Passing-Bablock regression and Bland-Altman plot method. Adverse events were collected from all KTRs who maintained the dosage of MPA for at least 6 month after the measurement. The association of adverse events with MPA trough level obtained by PETINIA assay was analyzed.
Results: PETINIA assay revealed a good degree of agreement with LC-MS method: Regression analysis gave an equation of $y = 1.273\ x - 0.119$ ($r = 0.996$). PETINIA assay showed a systemic positive bias with a mean difference of 0.66 ug/mL (95% confidence interval [CI] 0.47–0.84 μg/mL) compared with LC-MS. However, the magnitude of the positive bias decreased to 0.36 ug/mL (95% CI 0.29–0.44 μg/mL) within the therapeutic range of MPA. Multiple logistic regression showed that MPA trough level determined by PETINIA assay was an independent risk factor for adverse event (hazard ratio 2.28, 95% CI 1.25–4.16, $p = 0.007$). MPA trough level predicted adverse events with a sensitivity of 77.8% and a specificity of 86.7% using a cutoff level of 5.25 ng/ml.
Conclusions: Positive bias of PETINIA over LC-MS assay was observed when measuring MPA concentration. However, correlation between two methods warrant that PETINIA assay is an acceptable method for the monitoring of the therapeutic MPA level. Furthermore, MPA trough level obtained by PETINIA might be a useful monitoring tool to minimize toxicity in KTRs.

007 DONATION/RETRIEVAL

P528

COMPLICATIONS FOLLOWING TRANSPERITONEAL HAND-ASSISTED LAPAROSCOPIC DONOR NEPHRECTOMY - EXPERIENCE OF FIRST 141 CASES

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Background: The complications following transperitoneal hand-assisted laparoscopic donor nephrectomy (HALDN) in our centre is presented.
Methods: Data was collected prospectively.
Results: The demography and the complications are shown on the table below:

Period of study	15/9/05 to 21/11/13
Number of HALDN	141
Age (median, range)	43 (21–73)
Sex Male: Female	62: 79
BMI (median, range)	27 (18–34)
Smokers	37 (26%)
Post-operative hospital stay (median, range) days	3 (1–8)
Operating time (Knife to skin -arterial clamping) (minutes)	164 (107–307)
Chest infection	22 (15%)
Ileus	16 (11%)
Wound infection	9 (6%)
Retention of urine	6 (4%)
UTI	5 (3.5%)
Rectus sheath haematoma	3 (2%)
Deep vein thrombosis	3 (2%)
Lateral cutaneous nerve neuropraxia	2 (1.5%)

The donors developing chest infection had significantly higher BMI (28 ± 2.7 vs. 26 ± 3.3; $p < 0.01$) and operating time (199 ± 55 vs. 169 ± 44 min; $p < 0.05$) compared to those without. The incidence of ileus was not related to the operating time and BMI. The hospital stay was significantly prolonged in the presence of chest infection (4 ± 1 vs. 3.3 ± 1 days; $p < 0.01$) and ileus (4.4 ± 1.5 vs. 3.3 ± 1 days; $p = 0.01$).
Conclusions: Chest infection and ileus were the two major complications following HALDN in our series causing morbidity, which prolonged the hospital stay.

023 KIDNEY

P529

A SUCCESSFUL KIDNEY TRANSPLANTATION WITH PROPHYLACTIC ECULIZUMAB TREATMENT IN A PATIENT WITH ATYPICAL HEMOLYTIC UREMIC SYNDROME

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Atypical hemolytic uremic syndrome (aHUS) is a problematic issue for kidney transplantation (Ktx) because of high recurrence, graft failure rates and limited treatment options. Herein, we presented a successful Ktx performed with prophylactic eculizumab (monoclonal anti-C5 antibody) therapy. An 18-year-old male patient was attended to our center for Ktx from his mother. He had a history of rapid progression to end-stage renal disease (ESRD) with unknown etiology and hemodialysis for 1 year. According to his medical reports, initial laboratory were; Hemoglobin 6.6gr/dl, Platelet 90.000/mm3, LDH 660 IU/L, Indirect bilirubin 2.9 mg/dl and creatinine 13 mg/dl. Our initial diagnosis was aHUS due to laboratory and without predisposing factors as seen in typical HUS. Subsequently, genetic analysis performed; exons identified by using genomic DNA as a template were amplified and sequenced (compared to reference sequences) including the non-coding regions that are approximately 20 base-pairs long.

Exon	DNA sequence variation	Effect	Reference
7	Heterozygous	p.D268N	-
7	Heterozygous	p.Y271X	-
9	c.1204C>T, Homozygous	p.H402Y	rs1061170
10	c.1419 G>T, Heterozygous	p.A473A	rs2274700
12	Heterozygous	p.Q672Q	rs3753396

The variations that found on exon 7 were not reported in the database previously. It was also determined that p.Y271X (p.Tyr271stop) mutation on exon 7 generated a stop codon that may lead to the formation of a short form of the protein.

According to PolyPhen analysis and 3D modelling, this mutation was reported as a potential cause for aHUS. In this situation, we decided to perform Ktx under eculizumab prophylaxis. We administered 900 mg eculizumab preoperatively followed by 900 mg/weekly for one month and ceased after then. The maintenance immunosuppression protocol was steroid, MMF and tacrolimus. The graft functioned immediately after Ktx; creatinine was 1.1 mg/dl at fourth day. The patient is completed his first year uneventfully in our follow-up with a creatinine 0.79 mg/dl. The kidney transplantation could be performed safely under eculizumab prophylaxis for aHUS. However the dose, dose interval and duration of eculizumab should be further investigated.

025 LIVER

P530

ACUTE KIDNEY INJURY AFTER LIVER TRANSPLANTATION DOES NOT AFFECT THE PATIENTS' MORTALITY

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Ulsan University Hospital

Introduction: Acute kidney injury (AKI) after liver transplantation is not uncommon. Several literatures have shown a greater number of complications and higher mortality rates for patients with AKI after liver transplantation. The goal of this study was to determine the incidence of AKI during the early posttransplant period and evaluate the effects of AKI on mortality.

Patients and Methods: We retrospectively reviewed the medical records of the patients aged >18 years who underwent liver transplantation from March 2002 to September 2013. AKI was defined as an elevation of serum creatinine 1.5 times above the baseline or an absolute serum creatinine level >2 mg/dL. The exclusion criteria were hepatorenal syndrome at the time of transplantation and chronic renal failure with hemodialysis before liver transplantation.

Results: Of the 70 selected patients, 20 patients (28.6%) developed AKI after liver transplantation, with 7 patients (35%) requiring renal replacement therapy (RRT). All the patients with AKI requiring renal replacement therapy could be weaned from hemodialysis. 1-year survival rates were 90% and 80% for patients without AKI and with AKI, respectively. But, the difference was not significant statistically ($p = 0.265$; odds ratio, 2.25). For patients who underwent RRT, the 1-month mortality rate and the 1-year mortality rate were significantly higher compared to the other patients who did not need RRT.

Conclusions: There was a high incidence of AKI in patients undergoing liver transplantation. There was no survival difference between AKI group and no-AKI group. But patients who required RRT showed significantly lower survival rates.

011 HEART

P531

DONOR RELATED FACTORS AND EARLY CORONARY ARTERY VASCULOPATHY (ECAV) DEVELOPMENT – IS THERE A LINK?

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The aim of our study was to evaluate eCAV development in dependence of donor related factors and HT procedure.
Methods: From 209 pts (169 men), mean age 46.3 ± 15.3 transplanted between 2001 and 2014 in a single center, 183 patients with at least 1 angiography done after OHT were included. We analyzed donor parameters: age, gender match, cause of brain death, blood group compatibility, cold ischemia time. CAV was assessed according to ISHLT Working formulation of a standardized nomenclature for cardiac allograft vasculopathy (2010). Early development of CAV was defined as earlier than 5 years after HT
Statistical Analyses: Student t-test, Chi square test, Kaplan Meier survival analysis and logistic univariate and multivariate regression analysis were used (Statistica 10).
Results: Patients were divided into 2 groups: eCAV(+) early development 5 year or without CAV. eCAV(+) diagnosed in 30 pts (26 men) v. eCAV(-) in 153pts (123men); mean age 53.2 ± 12.63 v. 44.9 ± 23.1 ($p < 0.001$); mean BMI in time of OHT 24.53 ± 6.9 v. 24.0 ± 5.0 (NS), cold ischemia time 153.3 ± 90 v. 179.0 ± 64.0 ($p < 0.02$). The mean age of the donors eCAV(+) v. eCAV(-) was: 37.6 ± 10 v. 30.7 ± 18.0 ($p = 0.06$); donors-recipient compatibility in 24 cases v. 99 (NS), blood group compatibility in 27 cases v. 141 (NS). Catecholamin infusion in donors was in CAV(+) group 15 v.86 (NS), number of death in eCAV(+) 9 v. 30 (NS). In eCAV (+) group we observed 8 v. 14 antibody mediated rejection episodes ($p < 0.01$).In multivariate logistic analysis significant factors contributing to early appearance of CAV were age of heart recipient, shorter time of cold ischemia and episodes of antibody mediated rejection.
Conclusions: Factors promoting early appearance of eCAV in transplanted hearts are: older age of heart recipient, shorter time of cold ischemia and antibody mediated rejection episodes after HT.

023 KIDNEY

P532

SINGLE-INSTITUTE EXPERIENCE WITH THIRD KIDNEY TRANSPLANTATION: CHALLENGING OPTION FOR GRAFT FAILURE

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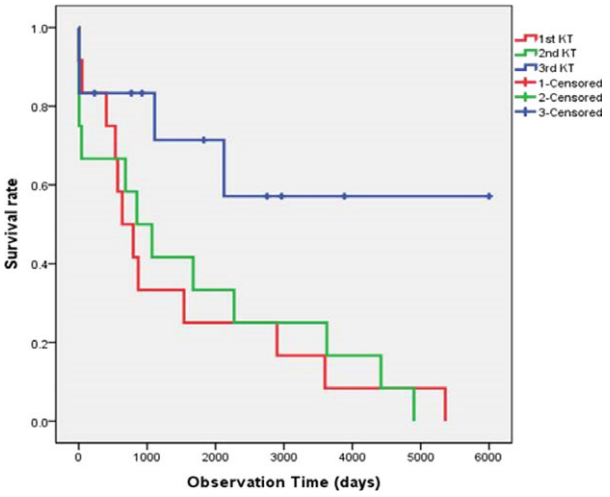
[1]Seoul St. Mary's Hospital The Catholic University of Korea; [2]Yeouido St. Mary's Hospital, The Catholic University of Korea; [3]Incheon St. Mary's Hospital, The Catholic University of Korea; [4]Uijungbu St. Mary's Hospital

Introduction: A Third kidney transplantation (3rd-KT) is a challenge in an aspect of not only medical issue but also surgical technique. This study was aimed to investigate the outcome and prognostic factors of 3rd-KT.
Method: From March 1969 to July 2014, 12 cases of 3rd-KT were performed in our institute. We retrospectively reviewed medical records.
Results: Eleven were diagnosed chronic glomerulonephritis as a cause of renal disease. Mean age of patients was 25 years. Five (41.6%) were highly sensitized (positive in crossmatch or donor-specific antibody test or positivity in panel reactive antibody test over 50%). Two cases of hyperacute or accelerated rejection were occurred. Other two patients were needed contemporary hemodialysis because of delayed graft function. These four (33.3%) patients were total cases of graft loss after 3rd-KT in our center. Three of them were performed 3rd-KT before 2000, so they took cyclosporine based immunosuppression therapy. Duration of graft survival was longer in 3rd-KT (2930 days) than their 1st (1489 days) or 2nd (1628 days) KT. Estimated graft survival rate with Kaplan Meier survival curve was also better in 3rd-KT (respectively, 1, 5, 10 years - 83%, 71%, 57%) than their 1st (83%, 25%, 8.3%) or 2nd (66%, 33%, 16%) KT. There was no rejection episode in functioning graft group.
Conclusion: 3rd-KT may be an acceptable option for the graft failure after re-transplantation owing to advancement in immunosuppressant and desensitization strategy. Episode of rejection and/or delayed graft function is thought to be associated with a failure of 3rd-KT.



029 PANCREAS

P533

REVIEW OF UK-WIDE PRACTICE OF PANCREAS TRANSPLANTATION: DONOR SELECTION, BACKBENCH PREPARATION AND IMPLANTATION TECHNIQUE

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Background: Since the first pancreas transplant, refinements in surgical technique, organ preservation and availability of novel immunosuppressive therapies have improved patient and graft-survival rates in long term. However, existence of variability of surgical technique in pancreas transplantation might explain difference in outcomes between centers.
Methods: The current UK-wide practice of pancreas transplantation was reviewed on the basis of an online survey to assess current opinions about donor selection, back-bench preparation and implantation technique. The survey was sent to consultant pancreas transplant surgeons practicing at 8 transplant centers in the UK.
Results: 27/31 (88%) consultants completed the survey. 84% (21/25) would accept pancreas offers (DCD/DBD) with <16 hrs of predicted CIT. 72% (18/25) agreed to 60 years as upper limit of donor age. 63% (17/27) accept donor BMI of 30 as upper limit. 55% (15/27) surgeons did not have a uniform pancreas benching technique; 15/23 used haemostatic devices for pancreas benching. 74% (17/23) used continuous sutures for Y-graft arterial reconstruction. 85% (22/25) bury the duodenal staple line. 95% (25/27) surgeons used midline incision for pancreas transplant and 96% preferred intra-peritoneal placement. 54% (14/26) placed pancreas head-up and 67% (16/24) placed kidney intraperitoneally. IVC was used for portal venous drainage by 85% (22/26) surgeons and 81% (21/26) used common iliac artery for inflow. Jejunum and ileum was used for exocrine drainage by 43% and 46% surgeons respectively with 92% (22/24) using hand sewn double layer continuous anastomosis technique.
Conclusion: This first ever UK survey was conducted to formally assess the variability in pancreas transplantation practice both between and within transplant centres. Non-uniformity in practice may explain the varied ou.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P534

SCOT-15 VERSUS UW AS PRESERVATION SOLUTION FOR LIVER TRANSPLANTATION: EARLY CYTOKINE RELEASE AND ORGAN DYSFUNCTIONS. A PILOT STUDY

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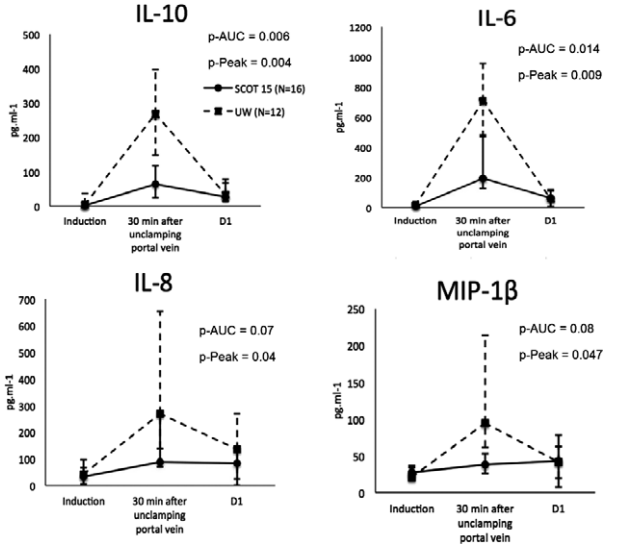
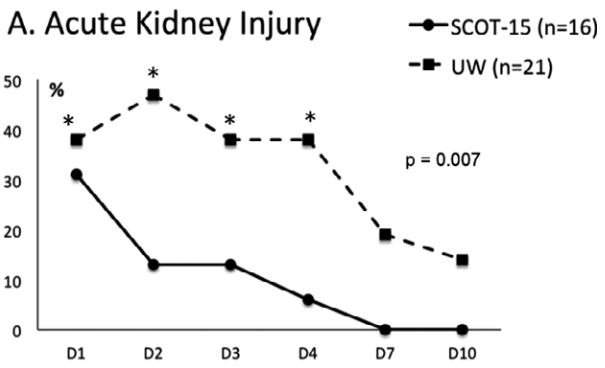
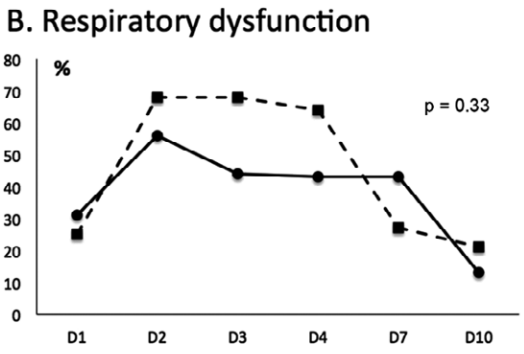
Introduction: During Liver Transplantation, graft ischemia-reperfusion injury leads to a systemic inflammatory response producing post-operative organ dysfunctions. The aim of this observational, prospective and non-randomized study was to compare the impact of Solution de Conservation des Organes et Tissus (SCOT) 15 and University of Wisconsin (UW) preservation solutions on early cytokine release, postreperfusion syndrome and post-operative liver, renal and cardiorespiratory functions.
Results: Thirty-seven liver transplantations were included: 21 in UW Group and 16 in SCOT 15 group. Five cytokines were measured in systemic blood after anesthetic induction, 30 min after unclamping portal vein and on post-operative day 1. Following unclamping portal vein, a release of cytokines was observed in the systemic circulation. However, systemic concentrations were higher in UW group than in SCOT 15 group: Interleukine-6 ($p = 0.009$), Interleukin-10 ($p = 0.004$), Interleukin-8 ($p = 0.04$) and Macrophage Inflammatory Protein-1β ($p = 0.047$). In SCOT 15 group, there was a significant reduction of the incidence of postreperfusion syndrome (37.5% vs. 85.7%, $p = 0.018$) and acute kidney injury (13% vs. 47%, at post-operative day 2, $p = 0.007$). Immediately after liver transplantation, alanine and aspartate aminotransferase peak concentrations were higher in SCOT 15 group than in UW group ($p = 0.01$ and $p = 0.04$, respectively). From post-operative day 1 to day 10, aminotransferase returned to normal values and did not differ between groups.
Conclusion: Compared to UW, SCOT 15 decreases the systemic release of pro-inflammatory cytokines resulting from graft ischemia-reperfusion injury, reduces the postreperfusion syndrome incidence and improves post-operative renal function.







023 KIDNEY

P535

CLINICAL IMPACT OF FEMORAL MOTOR NEUROPATHY AFTER KIDNEY TRANSPLANTATION: CASE SERIES STUDY

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Introduction: Femoral motor neuropathy (FMN) after kidney transplantation (KT) can injure patient and graft and sometimes it leaves sequelae on gait. Nevertheless, the cause of FMN is not clear. We experienced five cases of FMN and we are going to review traits of these patients.

Method: Between March 2009 and February 2014, five cases of FMN after KT were occurred in our institute.

Results: Four women and one man were affected. Mean value of body mass index (BMI) was 20.38 kg/m^2. All grafts were implanted on right side of iliac fossa. There was no patient who has diabetes mellitus. There was no complication which can induce compressive effect, such as hematoma or abscess. All of them complained numbness or tingling sense on their right thigh as a first sign within 2–3 days after transplantation. Rehabilitation was started on 3rd to 31st postoperative day. Motor function recovery was obtained 3 to 313 days after rehabilitation. Three patients took more time to recover over 2 months. They had some tendencies comparing to the other 2 patients. They had lower value of body mass index less than 20 kg/m^2, higher ratio of graft weight per recipient weight, and relatively delayed start of rehabilitation.

Conclusion: We have to take a caution in patients with lower BMI or higher graft weight per recipient weight ratio. Early rehabilitation may have a benefit for these patients. Most FMN presented symptoms in early days after KT, physical examination have to be performed to every recipient in early period.

015 INFECTIONS

P536

POLYOMA NEPHROPATHY: THE IMPACT OF SURVEILLANCE WITH BK VIREMIA AND PROTOCOL BIOPSIES

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Objective: The aim of this study is to investigate the impact of routine surveillance strategy with viremia and protocol biopsy on the clinical course of PVAN.

Method: Consecutive 20 KTx patients diagnosed as PVAN were included. Seventeen of them had positive BKV DNA PCR in serum, histological findings suggestive viral infection at allograft biopsy and positive SV40 staining. Remaining three had no detectable BKV DNA PCR in serum, but PVAN diagnosis was made with positive real-time PCR for BKV in allograft tissue, and positive SV40. Patients were divided into two groups according to the presence (Group 1, *n*: 8) or absence of graft dysfunction (Group 2, *n*: 12) at the time of PVAN. In group 2 histologic diagnosis was made with protocol biopsies.

Results: Mean age were 45 $\pm$ 12 years, 16 of them were male. ATG induction was used in 15 patients. MMF and CNI-inhibitor based regimen were used in all. Baseline creatinin level was 1.3 $\pm$ 0.7 mg/dl, 8 patients had an acute rejection episode.

In Group 1, all were male; PVAN was diagnosed 7.4 $\pm$ 4.0 months after KTx. Creatinin at baseline and at the time of PVAN were 1.4 $\pm$ 0.4 and 2.6 $\pm$ 0.8 mg/dl, respectively. BKV DNA was 11 756 $\pm$ 17 078 copy/ml at PVAN. With a mean 52 $\pm$ 36 month follow up after PVAN, 2 patients lost their grafts due to rejection at 2 and 27 month after PVAN.

In Group 2, 8 of them were male; PVAN was diagnosed 11 $\pm$ 10 months after KTx. Creatinin at baseline and at the time of PVAN were 1.2 $\pm$ 0.3 and 1.3 $\pm$ 0.3 mg/dl, respectively. PVAN was diagnosed at 6th (*n*:9) 12nd (*n*:1), 30th (*n*:1) and 36th (*n*:1) protocol biopsies. PVAN was confirmed with tissue real time PCR in 3 patients although they were not viremic. In remaining 9 patients, BKV DNA was 5004 $\pm$ 3221 copy/ml. There was no graft loss at 67 $\pm$ 16 months follow up after PVAN.

Conclusion: Routine surveillance with BK viremia and protocol biopsies may allow subcinically diagnosing the PVAN before the occurrence of graft dysfunction in more than half of the patients.

023 KIDNEY

P537

RISK FACTORS INFLUENCING SHORT AND LONG-TERM RENAL ALLOGRAFT SURVIVAL OF LIVING DONOR TRANSPLANTS: A SINGLE CENTER EXPERIENCE IN TURKEY

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[3]Department of Surgery, Ankara University School of Medicine

Background: Renal transplantation is the best treatment of choice for end stage renal disease. In developing countries, renal transplantation is mainly performed from living donors.

Methods: We retrospectively analysed records of 271 living donor kidney recipients, which were grafted between January 2002 and October 2013 at Renal Transplantation Unit of Ankara University School of Medicine. Recipients and donors demographic properties, immunologic and nonimmunologic characteristics, posttransplantation allograft function and complication data were collected. Patient and graft survival analyzed with Kaplan-Meier method and risk factors were examined with Cox regression analyses.

Results: Mean follow-up 59 $\pm$ 35 months. 68.4% of the patients were male and mean age was 36 $\pm$ 12 years. Preemptive transplantation was performed to 15.9% of patients. Pretransplant PRA I or II positivity were only seen in 19.7% of patients. Mean estimated GFR (MDRD) at first month was 76.0 ($\pm$22.0) ml/dk/1.73 m^2. 3.4% of patients had delayed graft function and 17.0% had acute rejection at the follow-up. 17 patients (6.3%) had graft loss and patient loss was seen in 3 recipients (1.1%). One and five year graft survival rates were 98.1%, 92.7%; for the same years patient survival rates were 99.3%, 98.7%, respectively. Recipient age over 46 years ($p < 0.001$) and acute rejection ($p < 0.001$) were associated with poor graft survival and acute rejection was the only independent risk factor for graft loss (HR = 5.53 [1.95–15.78], $p = 0.001$). We demonstrated that recipient age over 46 years ($p < 0.001$), unrelated donor transplantation ($p < 0.001$) and dialysis vintage $\geq$55 months ($p < 0.001$) were associated with poor patient survival. However, no risk factors were found in multivariate analysis.

Conclusion: According to our study, including relatively low immunologic risk and young age recipients, acute rejection was the only independent risk factor.

025 LIVER

P538

DOES FRACTIONATED PLASMA SEPARATION AND ABSORPTION (FPSA) IMPROVE SURVIVAL AFTER LIVER TRANSPLANTATION AS THE TREATMENT OF AMANITA PHALLOIDES INTOXICATION?

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Department of General Transplant and Liver Surgery

Background: One of the rare causes of acute liver failure is Amanita phalloides poisoning. Use of a liver support therapy by fractionated plasma separation and absorption (FPSA) can offer a safe way for patient improvement but in a number of cases liver transplantation (LTx) is the only treatment. The objective of this study was to investigate whether FPSA before LTx improves patients survival in Amanita phalloides poisoning.
Materials and Methods: The study population consisted of 10 patients who had liver transplantation in the Department of General, Transplant and Liver Surgery due to acute liver failure caused by Amanita phalloides intoxication. 6 patients had been treated with FPSA before LTx. All the patients who had dialysis were enlisted as liver recipients simultaneously with FPSA qualification according to King's College Criteria.
Results: 30-day and one year survival in study population was 50% and 50% respectively. In the group treated with FPSA 30-day survival rate was 16.5% while in patients without albumin dialysis 100% ($p = 0.016$). After one year survival rate has not changed. Median time on recipient list was 3 days (range 2–8) for FPSA group and 1.5 day (range 0–2) for patients without albumin dialysis.
Conclusion: When conservative medical modalities are ineffective the only treatment in mushroom poisoning is liver transplantation. When fulfilling King's College Criteria patients should be enlisted as liver recipients. FPSA prolongs waiting time but does not improve the outcome after the procedure.

P539

LIVING DONOR LIVER TRANSPLANTATION WITH RESECTION OF EXTRAHEPATIC BILE DUCT FOR DIFFUSE BILIARY PAPILLOMATOSIS

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Ulsan University Hospital

Diffuse involvement of the biliary system with intraductal papillomatosis carries a high risk of malignant transformation. This condition is very difficult to manage because complete surgical resection is very demanding. We herein present a case of intraductal papillomatosis treated by living donor liver transplantation and extrahepatic bile duct resection, avoiding pancreatoduodenectomy.

The patient was a 67-year-old male showing diffuse involvement of the whole biliary system. Preoperatively, multiple biopsies under endoscopic retrograde cholangioscopic examination revealed diffuse involvement of the biliary system with villotubular adenoma with focal high grade dysplasia. Although there was no evidence of overt adenocarcinoma on endoscopic biopsy, we couldn't be sure that there is no malignant tumor. Because there was diffuse involvement of both the intrahepatic as well as extrahepatic bile ducts with papillomatosis, we decided to perform liver transplantation in addition to resection of extrahepatic bile duct.

We used modified right lobe graft from his son and graft-recipient-weight-ratio was 1.07. Fortunately. intraoperative choledochoscope confirmed the terminal segment of intrapancreatic CBD being free of tumor, so we could avoid pancreaticoduodenectomy. Final biopsy diagnosis was the same as preoperative biopsy result, and distal bile duct margin was tumor negative. After liver transplantation, the patient recovered without any complication and he is doing well without any evidence of recurrence 9 months after the surgery.

We suggest that living donor liver transplantation can be a good therapeutic option for diffuse intraductal papillomatosis. Intraoperative choledochoscope was very helpful in securing the distal margin of the extrahepatic bile duct in papillomatosis.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P540

POLYETHYLENE GLYCOL PRECONDITIONING: AN EFFECTIVE STRATEGY TO PREVENT LIVER ISCHEMIA REPERFUSION INJURY

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Background: Hepatic ischemia reperfusion injury (IRI) is an inevitable clinical problem for liver surgery. Polyethylene glycols (PEGs) are water soluble nontoxic polymers that have been used as oncotic agents in preservation solutions and have been shown to protect efficiently abdominal organs against cold IRI in experimental and clinical essays. We investigated whether a high molecular weight PEG of 35 kDa (PEG35), could be effective to assess pharmacological preconditioning against hepatic IRI.
Methods/Materials: PEG35 was administered intravenously at 2 and 10 mg/kg to male Sprague Dawley rats. Then, rats were subjected to 1 h of partial ischemia (70%) followed by 2 h of reperfusion. In ischemia group, saline was injected intravenously before ischemia.
Results: PEG35 at 10 mg/kg protected efficiently the liver against the deleterious effects of IRI as revealed by lower transaminases and histological findings. This protection was associated with the preservation of mitochondrial status. In fact, mitochondrial polarization visualized by intravital microscopy of rhodamine 123 was preserved in PEG-pretreated rats and the activity of the mitochondrial enzyme GLDH was diminished. Moreover, PEG35 preserved hepatocytes morphology following reperfusion which was evidenced by the increased F-actin/G-actin ratio and falloidin staining. In addition, PEG35 protective mechanisms are due to, on one hand, the activation of pro-survival protein kinase B (Akt) and the inhibition of apoptosis and, on the other hand, to the activation of cytoprotective factors such as AMP activated protein kinase (AMPK).
Conclusion: We demonstrated that PEG35 protects rat liver against warm IRI. Giving that PEGs are non-toxics polymers, our results suggest that PEG35 can be considered as a suitable pharmacologic agent to attempt future applications in liver surgery.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P541

DOES PRE-TRANSPLANT DONOR SPECIFIC ANTIBODY (DSA) STATUS AFFECT THEIR EMERGENCE IN POST LIVING DONOR KIDNEY TRANSPLANTATION? – A RETROSPECTIVE ANALYSIS OF A SINGLE CENTRE TRANSPLANT UNIT. DEPARTMENT OF RENAL TRANSPLANT MEDICINE, MANCHESTER ROYAL INFIRMARY, MANCHESTER, UNITED KINGDOM

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Methodology: Retrospective data was collected on Living donor kidney transplant recipients from Jan 2009 to Oct 2014. They were either historic or immediate pre-transplant DSA positives detected by Luminex Technology but Complement dependent cytotoxicity/Flow cross match negative at the time of transplant.
Results: Among the cohort of 500 Living donor kidney transplant in last 5 years, 31 patients were pre- Transplant DSA positives either historical ($n = 9$) or currently ($n = 22$) at the time of transplant. Standard induction therapy was used in majority of the patients (Basiliximab: 24, Alemtuzumab:4, Anti Thymocyte globulin:3) followed by either Dual Therapy (DT) i.e Myfortic & Tacrolimus or Triple Therapy (TT) i.e Myfortic, Tacrolimus & Prednisolone dependent on Immunological risk. DSA were checked within 2 years of Post Renal Transplant depending on the clinical indication (none of the patients had DSA checked within first 2 weeks of the transplant) 11 (35%) patients remained DSA +ve, mean age 53 $\pm$ 12 years (m = 3, f = 8), $n = 2$ (18%) on DT & $n = 9$ (82%) on TT. 15 (48%) patients remained DSA –ve, mean age 47 $\pm$ 13 years (m = 9, f = 6), $n = 9$ (60%) on DT & $n = 6$ (40%) on TT. 5 (16%) patients untested for DSA. Majority of the patients in DSA +ve group were on TT than DSA –ve group (82% vs. 40%, $p = 0.03$). An increased incidence of all cause allograft rejection was evident in DSA +ve group within 7 days of transplant than DSA –ve group (57% vs. 0%, $p = 0.01$). Events such as Infections and marrow suppression was found to be high in DSA +ve group as compared to DSA – ve group which led to a reduction in immunosuppression (36% vs. 13%, $p = 0.05$).
Conclusion: There may be a need for a different strategy for both Induction and Maintenance therapy for pre transplant DSA positive patients to reduce the overall load of immunosuppression as trend has shown that increased events like infections & myelosuppression has led to downsizing the immunosuppression that may have led to emergence of DSA.

029 PANCREAS

P542

ONE YEAR OUTCOMES OF SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANTATION: TWELVE YEARS OF THE SCOTTISH NATIONAL SERVICE

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Background: We report outcomes of the assessment process (2002–2013), and patient and organ outcomes at one year post SPK (Simultaneous Pancreas and Kidney transplant) in Scotland.
Methods: Patients referred for SPK since 2002 were identified from the unit data base. Outcomes were determined from the Scottish Renal Registry (SRR) and transplant unit electronic patient records. Follow-up data were collected until 31 December 2014.
Results: 339 Scottish residents were assessed for SPK (2002–2013). 199 (58.7%) were listed for SPK, 75 (22.1%) for kidney transplant, 61 (18%) not listed for either, 4 on-going assessment. 6 patients decided they wanted kidney alone, otherwise the decision was made on clinical grounds.

Patients listed for SPK were younger (mean age 39.4 years SD 8) than those listed for kidney (mean 44.4 years SD 8.5 [$p < 0.001$]). 108 (54%) SPK listed were male versus 45 (60%) of kidney alone.73 (37%) were listed for SPK pre-emptively, ie before starting any RRT. 14 (19%) referred for SPK but listed for kidney were listed pre-emptively.

In the follow-up period 161 (81.9%) of those listed had received an SPK transplant; 150 patients had at least 1 year follow-up post-transplant.

1 Year Outcome post SPK	Number	%
Functioning Kidney and Pancreas	120	80.0
Functioning Kidney/ Failed Pancreas	20	13.3
Functioning Pancreas/ Failed Kidney	1	0.7
Both organs failed	4	2.7
Deceased	4	3.3
	150	

5 (3.4%) died, all within 45 days of surgery, causes of death: haemorrhage associated with surgery (1); infection (3); ischaemic heart disease (1).

22 (15%) patients had a pancreatectomy in the first year, again all within 45 days, reasons: non-viable organ (1), thrombosis/ischaemia (10), haemorrhage (1), duodenal anastomotic breakdown (10).

121 patients had a functioning pancreas transplant at 1 year, HbA1c was available for 118 (97.5%). 98 (83%) had normal HbA1c (≤41 mmol/mol); 115 (97.5%) had HbA1c which would represent good diabetic control (≤48 mmol/mol) and 3 had worse HbA1c control but were not yet on insulin.
Conclusions: Less than 60% of patients referred for SPK were listed, but once listed more than 80% received a SPK transplant. Post SPK one year patient survival was 97%. Survivors had 97% one year kidney survival and 83% one year pancreas survival with good glycaemic control.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P544

DURING ABDOMINAL NORMOTHERMIC OXYGENATION RECIRCULATION IN DONORS DECEASED AFTER CIRCULATORY DEATH THE SUPRA DIAPHRAGMATIC TERRITORY IS NOT REALLY EXCLUDED

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Background: Organs from DCD donors represent an important source of organs but they are more sensitive to ischemia-reperfusion injuries. ANOR is a likely reconditioning method, however lack of understanding of its effects impedes ANOR optimization. The regional nature of the technique is provided by the introduction of an occlusive balloon in the supra diaphragmatic aorta. The goal of this study is to confirm the reality of the SDT exclusion in a porcin model of ANOR.
Methods: In 8 pigs after 30 min of cardiac arrest, ANOR was installed and run for 4 h. To highlight recirculation in SDT oxygen satutration level (SVSDTO2), partial pressure of oxygen (PSDTO2), blood pH (pHSDT) and hemoglobin concentration (HbSDT) in the SDT blood were recorded at 0 min, 30 min after cardiac arrest and each 60 min during ANOR. Hemoglobin concentration of blood circulated in ANOR (HbANOR) was recorded with the same protocole. Concentration of serum and urinary level of the protein S100b, a biomarker of astrocytic lesion, were recorded at 0 min, 30 min after cardiac arrest and each 60 min during ANOR in the in the blood perfused by ANOR for serum and each 60 min during ANOR for urinary sample.
Results: There was no significant change in oxygen transport parameters (pump flow, SaO2, HbANOR) during ANOR. SVSDTO2 and pHSDT decreased during the 30 min of circulation arrest and then returned to their base value after 1 h of ANOR. PS100b level increase in the serum collected in the ANOR reperfusion circuit since 1 h and stayed high during the procedure. In parallel urinary level of PS100b increased since 2 h of ANOR.
Conclusion: Presents data suggest that the SDT considered as a territory excluded of the reperfusion circuit during ANOR is not completely in this preclinical porcin model. Reperfusion of organs with blood saturated with inflammatory soup from the SDT area may explain in part the impact of delayed graft function from DCD.

012 HISTOCOMPATIBILITY

P545

IMPACT OF DE NOVO ANTI-HLA DSA ON ALLOGRAFT SURVIVAL IN A COHORT OF LIVING-DONOR RENAL TRANSPLANT RECIPIENTS: A FOLLOW-UP OF A RETROSPECTIVE STUDY

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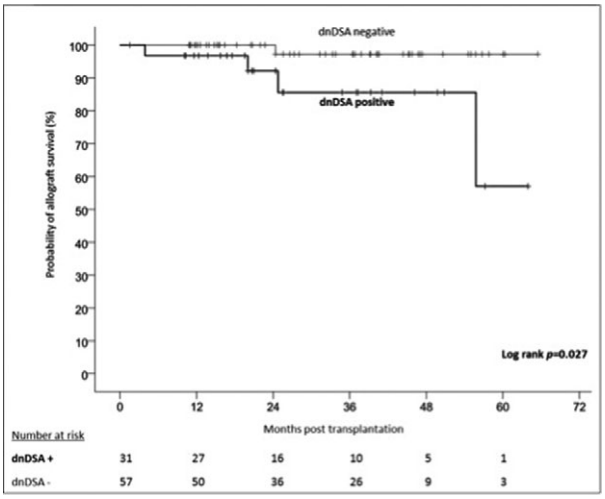
Background: Our previously reported retrospective analysis in a cohort of 88 consecutive living-donor renal transplantations showed a trend for inferior allograft function in patients with de novo donor-specific anti-HLA antibodies (DSA) occurrence particular in the first year post-transplant. Therefore, long-term follow-up was highly anticipated in this group; the findings are described here.

Methods: All patients underwent HLA IgG antibody testing by Luminex solid phase assay pre-transplant and post-transplant minimum once during the first year. All patients were DSA negative at time of transplantation. Graft survival was assessed up to sixty-five months post-transplant. Death-censored allograft survival was compared between groups according to their de novo DSA status using Kaplan-Meier analysis.

Results: As of March 2015, the median follow-up was 26.1 months (range 1.6–65.5) post-transplant. Thirty-one of eighty-eight patients (35%) tested positive for de novo DSA. Figure 1 compares the survival rates from time of transplantation for patients with de novo DSA with those without. De novo DSA positive patients showed significant lower allograft survival (log-rank $p = 0.027$).

Conclusions: The long-term follow-up of our living-donor renal transplantations cohort confirmed the initial trend: despite a generally good allograft survival in the overall cohort, de novo DSA occurrence correlates with lower allograft survival. This finding emphasizes that post-transplant DSA monitoring in living-donor renal transplant recipients may help to identify patients at risk for allograft dysfunction.

Figure 1



007 DONATION/RETRIEVAL

P547

INFLUENCE OF THE KINETIC OF BRAIN DEATH (BD) ON HEMODYNAMIC IN A PRECLINICAL PORCIN MODEL

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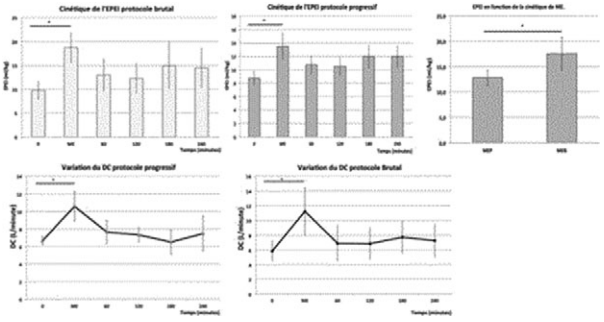
Background: There is little data on the differences between acute brain death donor and progressive brain death donor. To our knowledge, there is no data on the influence of the kinetic of BD on hemodynamic.
Methods: Brain death was induced in 12 pigs (Large white, 35–52 kg) under general anaesthesia. In 6 pigs (acute group : ABDD), BD was induced in 5 min and in 6 pigs (progressive group : PBDD), BD was induced in 60 min. At each pig PICCO® system allowed a hemodynamic monitoring. Readings hemodynamic parameters were: cardiac output (CO), Global End-Diastolic volume Index (GEDI), Extra Vascular Lung Water Index (EVLWI), Mean Arterial Pressure (MAP) and Global Ejection Fraction (GEF). Heart Rythm Disorders (HRD) and diabetes insipidus (DI) were recorded to.
Results: There is no difference for the evolution of CO, MAP, GEF and GEDI between ABDD and PBDD procedure. EVLWI increased more significantly in th ABDD group. In ABDD group, 5 pigs presented DI. Only 1 pig presented DI in PDD group. All the pigs of ABDD group presented HRD and required introduction of norepinephrin. Only 1 pig in PBDD group presented HRD and required norepinephrin.
Conclusion: Kinetic of BD seems influence neurogenic pulmonary edema severity, vasoplegic syndrome and DI development. This could be explain by a more severe sympathetic storm in case of acute brain death. The development of HRD in 100% of pigs of ABDD supports this hypothesis.



023 KIDNEY

P548

THE IMPACT OF EZETIMIBE AS AN ADDITION TO STATIN THERAPY ON EXTENDED LIPID PROFILE IN KIDNEY TRANSPLANT RECIPIENTS

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Background: The prevalence of hypercholesterolemia in kidney transplant recipients is high, primarily as a result of immunosuppressive therapy. Because of potential rhabdomyolysis caused by calcineurin CYP3A4 inhibition, statins are used in reduced doses. Uncontrolled hyperlipidemia can be treated by adding ezetimibe, which effectively lowers LDL cholesterol. The aim of our study was to analyze safety and efficacy of ezetimibe as an add-on to statin therapy on extended lipid profile.

Methods/Materials: Fifty-eight kidney transplant recipients already treated with a statin but having uncontrolled hypercholesterolemia were recruited into a study with a cross-over (A-B-A) study design. All patients were receiving immunosuppression including cyclosporine (CyA) or tacrolimus (Tac). Here we report our interim results three months after adding ezetimibe to a statin.
Results: During the first three months 38% of patients had to be withdrawn from the ezetimibe primarily due to muscle aches. Analysis of the remaining patients showed statistically significant decrease in total serum cholesterol, LDL cholesterol and apolipoprotein B (apoB) levels, and apolipoprotein B/A1 ratio ($p < 0.001$) (Table). There was no statistically significant change in HDL, triglycerides (TAG), Lp(a) and apoA1 levels, as well as in CyA, Tac or serum creatinine. A temporal 20–25% increase in serum creatinine level was noticed in 5/34 patients that was attributed to prerenal causes. CyA level decreased in 11/25 patients. In 4 patients levels decreased more than 20% from the baseline. Tac concentration deceased in 2/9 patients, maximally for 36%. In neither case the dose of CyA or Tac needed to be adjusted.
Conclusion: Ezetimibe is well tolerated in approximately two thirds of kidney transplant recipients treated with statins. In these patients it proves to be an effective lipid-lowering drug.

Parameter	Statin ($n = 34$)	Statin + Ezetimibe ($n = 34$)	Change (%)	p Value
Total cholesterol (mmol/l)	5.75; SD 0.87	4.8; SD 0.86	16.03; SD 13.58	< 0.001
LDL cholesterol (mmol/l)	3.37; SD 0.52	2.65; SD 0.60	20.81; SD 17.78	<0.001
HDL cholesterol (mmol/l)	1.34; SD 0.50	1.36; SD 0.46	4.20; SD 19.13	0.84
TAG (mmol/l)	2.13; SD 0.94	1.84; SD 0.74	7.08; SD 31.09	0.17
Lp(a) (mg/l)	308.32; SD 341.87	309.5; SD 353.67	3.8; SD 16.71	0.98
ApoA1 (g/l)	1.57; SD 0.35	1.57; SD 0.30	0.99; SD 12.40	0.98
ApoB (g/l)	1.09; SD 0.16	0.88; SD 0.16	18.54; SD 14.44	<0.001
Apo B/A1 ratio	0.72; SD 0.17	0.57; SD 0.12	27.50; SD 27.30	<0.001

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P549

REMOTE ISCHEMIC PERCONDITIONING INDUCES PROTECTION AGAINST HEPATIC ISCHEMIA/ REPERFUSION INJURY IN RATS VIA DOWNREGUALTION OF BAX AND CLEAVED CASPASE-3 EXPRESSION

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Purpose: The aim of this study was to determine whether remote ischemic preconditioning (rPeC) method can protect the hepatic IR injury in rat or not and to investigate underlying protective mechanisms.
Materials and Methods: Seventeen SD rats were divided into three groups: group I, the only hepatic IR injury ($n = 5$); (2) group II, the hepatic IR injury with rPeC ($n = 7$); (3) group III, the hepatic IR injury with remote postconditioning (rPoC) ($n = 5$) Three cycles of 5-min ischemia & 5-min reperfusion via occlusion & release of right femoral artery were applied during hepatic ischemia and before reperfusion in group II and after ischemia and right at the reperfusion in group III. The hepatic blood supply was interrupted by occlusion of the portal triad for 30 min followed by reperfusion. The blood samples were drawn from the aorta and liver tissue was obtained at 24 h after the surgery.
Results: ALT level in group III was lower than group I. ($p < 0.05$) The AST and ALT level in group II had the lower tendency compared with group I. However, there was no significant difference. Also we analyzed Bax, Bcl-2, and cleaved Caspase-3 associated with apoptosis via western blot analysis (figure 1). In Bax/β-actin, mean values (±SD) of groups were 1.29 ± 0.26 (group I), 0.89 ± 0.15 (II), and 1.02 ± 0.23 (III), respectively. The level of Bax/β-actin in group II was significantly lower than the group I. (*$p < 0.05$) In cleaved Caspase/β-actin, group I, II, and III were 0.93 ± 0.22, 0.46 ± 0.16, and 0.63 ± 0.22, respectively. The level of cleaved Caspase/β-actin in group II and III were significantly lower than the group I, respectively (**$p < 0.01$, ***$p < 0.05$) In Bcl-2/β-actin, there were no significant difference between group II & III and group I. The IL-1β, IL-6, and TNF-α levels were evaluated for searching the inflammatory markers. However, the differences between all subgroups were not significant.
Conclusions: The rPeC as well as rPoC induce protection against.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P550

TEN YEAR DATA OF THE FIRST EUROPEAN CLINICAL EXPERIENCE WITH ONCE-DAILY TACROLIMUS FORMULATION IN RENAL TRANSPLANT PATIENTS

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Background: Clinical data about long-term use of tacrolimus QD (Advagraf) are lacking.
Methods: Ten-years data were collected from 37 renal transplant recipients participating in a Tacrolimus BID to QD conversion study. They were converted at a median of 4.1 years post-transplant (range 1.5–11.4) with a stable renal function (serum creatinine <264 μmol/l) on tacrolimus based immunosuppression (monotherapy 29, dual therapy 8). Thirty were first transplants and original renal disease was in 16 immunologic, 14 non-immunologic, and 7 unknown. Eleven received their kidney from a living donor,17 from a heartbeating and 9 from a non-heartbeating donor.
Results: There were no acute rejections. Thirty-four recipients were on tacrolimus QD up to end of follow-up. Three patients were censored at 2, 3 and 4 years post-conversion because of switch to sirolimus (skin cancer) and tacrolimus BID (itching and non-compliance). Dose-normalized trough levels increased from 1.6255 (year 1) to 2.1 (year 5) and 2.28 ng/ml/mg (year 10).

Actuarial 5 and 10 years patient survival was 92% and 85%, respectively. Five patients died with a functioning graft 1.2–9.2 years post-conversion. Actuarial 5 and 10 year death-censored graft survival was 100% and 83%, respectively. The 5 graft losses occurred at 8.2–9.0 years post-conversion (3× recurrence IgA, chronic rejection, and renal failure after cardiac surgery). Serum creatinine was 128 μmol/l (range 64–180) at conversion and 141 μmol/l (range 66–304) at 10 years. All patients with a non-immunologic cause of renal failure had a stable creatinine, while the 8 patients with an increase in serum creatinine >20% had an immunological or unknown cause of renal failure.
Conclusion: Patients on tacrolimus QD have excellent 10-year renal function, patient – and graft survival.

023 KIDNEY

P551 **PROTOCOL KIDNEY TRANSPLANT BIOPSIES: A CENTER'S EXPERIENCE**

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Introduction: Acute kidney graft rejection remains a serious risk after transplantation. Early recognition and treatment of subclinical rejection correlates with better graft outcomes. Such early changes are only diagnosed by renal biopsy. Protocol kidney transplant biopsies (PBx) are regarded as a mean to fill this gap and safeguard graft function.
Aim: To compare renal outcome of patients (pts) who were submitted to PBx with those who didn't.
Methods: We evaluated a population of de novo renal transplant (RT) between 2007 and 2010, with maintenance immunosuppression based on Tacrolimus, MMF and Prednisolone, who were discharged after PBx (group A) versus without PBx (group B). We excluded hypersensitized pts, multi-organ transplant, pts that died or lost graft function before discharge, and those who had a clinical reason for renal biopsy. Retrospective descriptive analysis; statistical analysis with STATA.
Results: 52 pts were followed for 63.3 months (3.7–94.7). 32 males (61.5%), 53 $\pm$ 12 years, 10 diabetic (19.3%), median hemodialysis vintage of 66 months (4.3–283.6), median PRA of 0%. Feminine donor gender in 27 (51.9%), average donor age 47 $\pm$ 17 years, average mismatch of 3.8 $\pm$ 1.5 and mean cold ischemia time of 47 $\pm$ 17 h. By the end of follow-up, 5 pts (9.8%) died, and 2 (3.9%) lost graft function. Average final serum creatinine (Scr) was 1.41 $\pm$ 0.4 mg/dl. Of the 32 pts (61.5%) who underwent PBx, immunological changes were detected in 4 (11.8%). Maintenance immunosuppression remained unchanged. Group A had higher mismatch number (4.1 vs. 3.2, $p = 0.03$). We observed a trend towards more maintenance immunosuppression changes in group A (31% vs. 21%, $p = 0.3$). In multiple regression model, independant factors for worse renal function: donor's age ($p = 0.04$), dialysis vintage ($p = 0.05$) and late rejection episodes ($p = 0.01$). PBx was not an independent predictor of better outcome ($p = 0.78$).
Conclusion: In this population, PBx were not correlated with better outcomes.

025 LIVER

P552

COMPARISON OF CRYSTALLOID SOLUTION DURING ADULT LIVER TRANSPLANTATION: ACETATE-BUFFERED BALANCED SOLUTION VERSUS NORMAL SALINE

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Background: During liver transplantation (LT), administration of large amounts of fluid is usually required. Recent studies suggest that balanced crystalloid solution such as acetate-buffered balanced solution (AC) is better than normal saline (NS) in terms of acid-base and electrolyte balance during major abdominal surgery. We hypothesized that AC may offer clinical benefits over NS in terms of acid-base and electrolyte balance in LT recipients.
Methods/Materials: With IRB approval, medical records of adult LT recipients of our hospital were reviewed. Arterial blood gas analysis including electrolytes, glucose, and lactate were performed after induction (P0), 2 h after induction (P2), after portal vein clamping (A0) and 1 h after portal vein clamping (A1). Recipients were divided into NS and AC group according to the maintenance fluid administered until A1. Recipients given blood products before A1 were excluded. Acid-base and electrolyte status were compared between two groups.
Results: 74 recipients were enrolled for this study. There were no significant difference between NS group ($n = 36$) and AC group ($n = 38$) with respect to age, gender, body weight, height and MELD score. Similar amounts of fluid (median: 3000 ml [interquartile range: 2625 to 4075] in NS group versus 2700 ml [2375 to 3600] in AC group, $p = 0.117$) were administered until A1. NS group had lower pH, base excess and bicarbonate concentration compared to AC group. In addition, NS group showed higher chloride concentration than AC group. Sodium, potassium, and glucose concentration were not significantly different between two groups. The AC group showed lower lactate until A0 compared to NS group.
Conclusions: Administration of NS during adult LT was associated with development of hyperchloremic metabolic acidosis compared with AC. AC as intraoperative maintenance fluid may be superior to NS in terms of acid-base in adult LT recipients before reperfusion.

P553

INCREASED MORTALITY AND CHRONIC KIDNEY DISEASE IN PATIENTS RECEIVING RENAL REPLACEMENT THERAPY AFTER LIVER TRANSPLANTATION WITH PRESERVED PRE-TRANSPLANT RENAL FUNCTION

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Renal replacement therapy in liver transplantation (LT) is required in one quarter of patients developing acute kidney injury (AKI) post LT, associated with increased mortality. Concerns are reported that RRT may compromise recovery of renal function.
Methods: Single-centre study of 86 patients with preserved pre-LT renal function that underwent single organ LT and required RRT immediately post-operative (01/2007–11/2011). Our aims were to examine 3 months post-LT survival and to investigate the development of CKD.
Results: Mean age was 56.6 (IQR 49.1–62.4) years, M gender 62.8%. Aetiology of liver disease: alcohol (32.6%), cholestatic (20.9%), hepatitis C (11.6%), NAFLD (15.1%). The mean MELD score prior to transplantation was 14 (IQR 11–18) and the mean serum creatinine 85 (IQR 65–102). 25 patients (26.1%) died within 3-months of transplantation. 60% of nonsurvivors had a recorded indication for RRT of multi-organ dysfunction, compared with 37.9% of survivors ($p = 0.063$). On multivariate analysis adjusting for clinically relevant variables APACHE II score ($p = 0.005$), but not MELD ($p = 0.218$) or donor risk index ($p = 0.961$), was predictive of 3-months death. By 1-year post transplant, 33 of the 60 surviving patients had stage 3–5 CKD (55.0%). The CKD patients were older ($p = 0.004$), but had a comparable prevalence of hepatitis C ($p = 0.526$) and diabetes mellitus ($p = 0.582$). In a multivariate analysis, older age ($p = 0.016$) and a longer duration of RRT ($p = 0.020$) were independently associated with the development of CKD.
Conclusion: Markers of multi-organ dysfunction predict 3-month mortality in patients requiring RRT immediately post-LT. A longer duration of RRT is independently associated with development of CKD. Early multi-organ function assessment in post-LT patients may prevent negative implications for patient outcome.

023 KIDNEY

P554 CYTOMEGALOVIRUS (CMV) STATUS OF KIDNEY TRANSPLANT RECIPIENTS AND CARDIOVASCULAR RISK

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No	Coronary disease before KTx	CV incidents before KTx	CMV status	CV incidents after KTx
1	0	0	D+R+	1 × MI
2	1	1 (1 × MI)	D+R+	2 × stroke
3	1	0	D+R+	2 × stroke
4	0	0	D+R+	TIA
5	0	0	D−R+	1 × MI
6	0	0	D+R−	1 × stroke
7	1	0	D+R−	1 × MI
8	0	0	D+R+	1 × TIA, 1 × stroke **patient suffered from secondary CMV infection

Background: Cytomegalovirus (CMV) infection is associated with an increased risk of cardiac complications in kidney transplant recipients (KTR). Some data suggest that cytomegalovirus (CMV) may be involved in atherogenesis.

The aim of the study was the analysis of CMV medical history in KTR from deceased donor and its influence on cardiovascular (CV) incidents.

Material/Methods: 95 patients (60-M), with mean age 45.6 (range 15–74) years, and mean duration of dialysis before transplantation 26.2 (range 0.5–120) months transplanted in the years 2007–2009 were included into observation study. 14 patients were transplanted preemptively, for 7 it was second transplantation. The mean time of observation lasted 6 (range 5–7) years. KTR suffered from diabetes, hypertension and hyperlipidemia (12/13, 93/98, 54/57%, respectively. 14/15% were smokers. Coronary artery disease was diagnosed in 15/16% patients, 4/4.2% underwent elective coronary surgery operation and 8/8.4% had CV incidents before transplantation. The following CMV D/R viral status was noticed in the study group: D+/R+ 61/64%, D+/R− 22/23.15%, D−/R + 9/9.5%, D−/B− 3 (3.2%) of patients. Only R−/D+ received universal CMV prophylaxis. The rest was under pre-emptive CMV prophylaxis. 32 (34%) patients suffered from CMV infection. 13 were primary CMV infection and 19 secondary. Mean time of developing primary CMV infection 162 days and secondary 73.6 days.

Results: During observation were 8 patients experienced 11 cardiovascular incidents: 8 of them in patients D+/R+, 2 – D+/R−, 1 – D−/R+, but only one (stroke) occurred in patient who suffered from secondary CMV infection. Details are in table 1.

Conclusions: 1. During 6 years of observation 7.4% of KTRs experienced CV incidents.

2. Although 34% of KTRs suffered from CMV infection, it was not a crucial risk factor for CV incidents.

P555 PLASMAPHERESIS IN CHRONIC ANTIBODY MEDIATED REJECTION: A RETROSPECTIVE CASE SERIES OF 7 PATIENTS

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Diskapi Yildirim Beyazit Education and Research Hospital

Background: Antibody mediated rejections are critical clinical issues encountered in short/long-term follow up of kidney transplanted patients. There is paucity of data regarding the efficacy of plasmapheresis in management of patients with chronic antibody mediated rejections (AMR). This study reveals our experiences considering plasmapheresis in chronic AMR patients.

Material and Methods: The data of seven kidney transplanted patients diagnosed as chronic AMR were retrospectively investigated. All had received five session of plasmapheresis (1–2 volume exchange with fresh frozen plasma) on alternate day and 200 mg per kg intravenous immunoglobulin after each session of plasmapheresis upon the biopsy diagnosis. We evaluated renal functions and creatinine clearances at sixth month of the treatment.

Results: Six of the cases have improved renal functions at sixth months of treatment, compared to time of diagnosis (Table 1). One patient (case 6) has lost her allograft and has been put on maintainance hemodialysis therapy.

Conclusions: Our results are encouraging for usage of plasmapheresis as an adjunctive therapy for patients suffering from chronic AMR.

		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	Gender/Age (years)	M, 32	M, 30	F, 40	F, 48	F, 42	F, 38	M, 40
	Dialysis (type, duration)	HD, 1 year	HD, 2 years	HD, 3 years	HD, 2 months	HD, 8 months	HD, 4 months	HD, 8 years
	Transplantation number	1	1	1	1	1	1	1
	HLA missmatch	2	2	3	2	2	4	2
	History of acute rejection	No	No	Yes	No	No	Yes	No
	Chronic AMR time after transplantation (years)	14	12	11	10	16	1.5	15
Creatinie (mg/dl)	Baseline	1.3	2	2.5	2.2	2.2	1.3	1.5
Creatinie (mg/dl)	At time of biopsy	3	4.1	5.2	4.8	4.2	12.9	3.7
Creatinie (mg/dl)	After 6 months	1.6	2.1	3	2.4	2.5	3.9	2
eGFR (ml/min/1.73 m^2)	Baseline	67.99	41.91	22.67	34.12	26.02	48.72	55.09
eGFR (ml/min/1.73 m^2)	At time of biopsy	25.9	18.3	9.74	13.87	12.34	3.45	19.44
eGFR (ml/min/1.73 m^2)	After 6 months	55.93	39.61	18.37	30.86	22.45	13.7	39.53
eGFR (ml/min/1.73 m^2)	Loss in 6 months	14	2.3	4.3	3.26	3.57	35	15.56
Proteinuria (mg/day)	At the time of diagnosis	1485	2214	1852	3278	4700	2950	2900
Proteinuria (mg/day)	After 6 months	1514	1994	1900	1790	2580	2800	2840

025 LIVER

P556

CLINICAL SIGNIFICANCE OF HYPERFIBRINOLYSIS DURING LIVING DONOR LIVER TRANSPLANTATION

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Background: We evaluated the incidence and clinical significance of hyperfibrinolysis during living donor liver transplantation (LDLT) using thromboelastography.
Methods/Materials: With IRB approval, we reviewed adult LDLT recipients of our hospital. Recipients managed by one anesthesiologist who did not use antifibrinolytics were included in the study. Hyperfibrinolysis was diagnosed when clot lysis index ([MA-A60]/MA) was less than 85% where A60 is the clot amplitude at 60 min after maximum clot amplitude (MA) occurred at following five points (T1: immediately after anesthetic induction, T2: end of preanhepatic phase, T3: 1 h after anhepatic phase, T4: 5 min after reperfusion, T5: 1 h after reperfusion, T6: 3 h after reperfusion). Intraoperative blood loss was calculated based on the concept of lost red cell mass.
Results: 110 recipients were included in the final analysis. Hyperfibrinolysis was uncommon in preanhepatic phase; 0% at T1 and 5% at T2. Hyperfibrinolysis was aggravated during anhepatic phase and peaked immediately after reperfusion; 20% at T3 and 76% at T4. However, hyperfibrinolysis nearly disappeared 1 h after reperfusionand did not recur; 0.9% at T5 and 0% at T6. Hyperfibrinolysis were not predicted from preoperative demographics and coagulation profiles. However, coagulation profiles were more deteriorated in hyperfibrinolysis group and intraoperative blood loss were greater in hyperfibrinolysis group.
Conclusion: During LDLT, hyperfibrinolysis was frequently occurred at anhepatic phase and immediately after reperfusion, although spontaneously resolved without recurrence.

023 KIDNEY

P558

ADIPOSE DERIEVED STEM CELLS PROTECT KIDNEY FUNCTION AND HISTOLOGY IN A RAT MODEL OF RENAL ISCHAEMIA REPERFUSION INJURY

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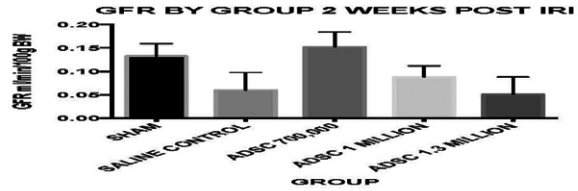
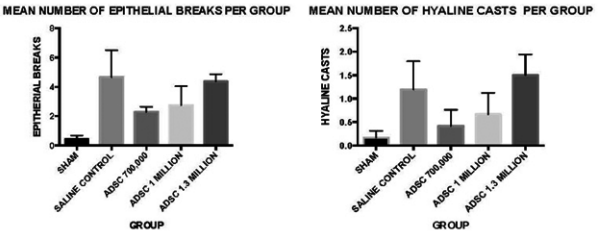
Background: Ischaemia reperfusion injury (IRI) is a major cause of allograft damage during renal transplantation, resulting in long-term transplant dysfunction. No protective or restorative treatments are established in clinical practice. The increasing use of organs from marginal donors makes the development of such therapies a priority. Studies report adipose derived stem cells (ADSC) reduce renal IRI whilst promoting tissue repair and immune tolerance. Herein we report the use of freshly isolated, uncultured ADSC in a rat model of renal IRI.
Methods: Adult male syngeneic Fisher rats were used for ADSC isolation and for IRI experiments. ADSC were cryopreserved prior to use. During IRI, the left renal artery was clamped and transected. Via the renal artery, the left kidney was then perfused with 1 ml saline containing either different doses of ADSCs (treatment groups) or saline only (control group). Anastomosis of the renal artery was performed and clamps removed to provide a total of 120 min warm ischaemia. Animals were recovered for 14 days before undergoing terminal GFR studies by inulin clearance, measuring GFR of each kidney via separate cannulation of each ureter. Groups were compared for GFR and renal histology.
Results:



Kidneys treated with 700,000 ADSC show a significantly higher GFR ($p = 0.037$) compared to saline treated animals. 1.3 million ADSC treated animals have a trend towards a worse GFR. ($p = 0.087$)



Animals treated with 700,000 ADSC show reduced epithelial breaks ($p = 0.036$) and reduce hyaline cast formation ($p = 0.049$) when compared to saline treated animals.

Conclusion: In clinical transplantation, recipient adipose tissue is an assessable source of ADSC from which it is feasible to harvest fresh and autologous cells for immediate use to reduce transplant IRI. Intra-renal artery therapy is the delivery route most likely employed, as the renal artery is easily assessable, achieving a high local concentration of cells without systemic distribution. Our results indicate that ADSC efficacy is highly dose dependent. However the functional and histological benefits observed with an optimized ADSC dose highlight the potential of this therapy to reduce peri-transplant injury and improve allograft outcomes in the long-term.

025 LIVER

P560

EVALUATION OF FACTORS RELATED TO ADHERENCE TO TREATMENT OF CANDIDATES FOR LIVER TRANSPLANTATION

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Epidemiologic, observational, prospective study whose main objective is to identify the factors that affect adherence to treatment of candidates for liver transplantation and to analyze the association between adherence and sociodemographic and clinical characteristics, knowledge and understanding of the disease of liver transplantation in patients candidates for liver transplantation. Participated in the survey 62 candidates for liver transplantation, in 84% of 73 patients who were enrolled in technical records at the Federal University of São Paulo, in the period from November 2012 to May 2014. The patients were evaluated by the multidisciplinary team we applied the tools of data collection consists of a semi-structured interview and knowledge about the liver transplant questionnaire. Regarding the statistical methodology the data were analyzed descriptively and by multivariate logistic regression. Was identified that the profile of the patient for liver transplant candidate is male (64.5%) with mean age of 53.7, the disease is most prevalent base hepatocellular carcinoma (53.2%), average queue time is 5.7 years and the MELD 19. 27.6% were illiterate or had only primary education without completing it; 64.5% are married or living in a stable union. The average income is 2 minimum wages, and 34.3% of the sample were in temporary or remote work. Occupation ($p = 0.038$), understanding of the disease ($p = 0.002$), understanding of transplantation ($p = 0.033$) and the use of laxatives ($p =$ are related adhesion factors that were statistically significant after logistic regression 0.045). It can be argued that the implementation of an educational program can improve adherence by up to 3.48 times in the pre-transplant phase. The research also identified that anxiety and depressive symptoms affect adherence to treatment of candidates for liver transplantation. Therefore, psychological support should be adopted by transplant centers.

037 XENOTRANSPLANTATION

P562

TRACKING THE POSITION OF THE HUMAN PLACENTA CHORIODECIDUAL MEMBRANE-DERIVED MESENCHYMAL STEM CELLS IN PIG'S LUNG USING FLURORESCENT NANODIAMONDS

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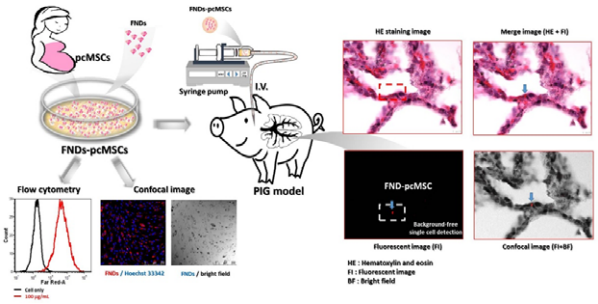
Background and Aims: The placenta choriodecidual membrane-derived mesenchymal stem cells (pcMSCs) from human placental chorionic decidua layer have been proven to significantly suppress the immune response and delay the progression of disease in several *in-vitro* experiments. Fluorescent nanodiamonds (FNDs) has recently emerged as a promising bioimaging agent because this carbon-based nanomaterial is inherently non-toxic, biocompatible, and can be easily taken up by cells. The aims of this study is to track the position of transplanted human pcMSCs in pig lung using the FNDs technique.
Methods: The pcMSCs was isolated into a serum-free culture system, and then was spontaneously labelled with FNDs (FNDs-pcMSCs) by endocytosis. The function of pcMSCs after labelling was tested before transplanted. After intravenous injection of the FNDs-pcMSCs into pig for 1 and 2 days later, the pig was sacrificed and lung was carried out for several histological examinations.
Results: The pcMSCs did not eliminate the cells' properties of self-renewal and immune modulation after FNDs labelling. Time-gated fluorescence imaging and magnetic field modulation of lung tissue both indicates that the FNDs-pcMSCs preferentially reside at terminal bronchioles of pig lungs after intravenous transplantation. The percentage of transplanted pcMSCs stored in pig lung was calculated.
Conclusions: Our study showed that the position of transplanted human pcMSCs in pig's lung could be precisely localized and quantified using the FNDs labelling technique.



003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P563

ADDITIONAL EVEROLIMUS MINIMIZE CALCINEURIN INHIBITOR EXPOSURE IN CORTICOSTEROID MINIMIZATION/EARLY WITHDRAWAL REGIMEN

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Introduction: An mTOR inhibitor (mTORi) has pleiotropic effects other than immunosuppression. Concomitant usage of mTORi can minimize dosage of calcineurin inhibitor, mycophenolate mofetile (MMF) and corticosteroids (CS). Numerous studies have been designed for CNI/MMF minimization or elimination. We had been discontinued CS on tacrolimus (TAC) – based immunosuppression regimen by day 3 in ABO compatible (ABOc) (CSEWD) and minimize CS day 21 (4 mg) in ABO incompatible (ABOi) (CSMIN) transplantation. The outcome was similar with chronic steroid exposure protocol, however; the graft fibrosis on 1 year protocol biopsy was somewhat higher (Miura, Harada et al. Clin Transplant Supple 2009). Then, we add on mTORi everolimus (EVR) with decreased dose of TAC and MMF and investigated the efficacy of the effect.
Methods: Eligible 31 (ABOc 21, ABOi 10) kidney recipients with de novo EVR regimen (EVRR) were compared with 35 (ABOc 24, ABOi 11) control patients with EVR-free previous CS regimen (CSEWD/CSMIN) (Contl). Patient's background were similar except for patient age and follow-up period. EVR were initiated on day-3 with TAC/MMF and maintained among 3–6 ng/ml of C0. Dose of concomitant TAC/MMF were designed to decrease to roughly 70% of previous regimen. We compared chronological change in the graft function (sCr/uProt), and actual TAC/MMF concentration (AUC by total drug monitoring) (2 weeks, 1, 3 and 6 months). We also compared the graft damage using protocol biopsy specimen according to Banff classification.
Result: Patient and graft survival comparable. AUC0-24 of TAC was lower in EVRR in part in 2 weeks post-transplant ($p = 0.0006$) in 1 M post-transplant ($p = 0.0183$). Serum creatinine level and uP/Cr were also comparable. Rejection rate were similar in both groups. There were no histological differences between two groups.
Conclusion: EVR ensured minimization of concomitant IS drugs such as CNI, MMF and CS in ABO compatible and ABO incompatible kidney transplantation as well. It would be result

001 ALLOCATION

P564 FEATURES OF CADAVER KIDNEY TRANSPLANT DONORS

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We retrospectively investigated features of 28 cadaver kidey transplant donors (brain death) performed between 2009–2014 in Eastern Blacksea Region of Turkey. Mean age of donors from which kidneys allocated were 36.82 ± 12.74 years, mean cold ischemia time was 14.90 ± 3.71 h, mean serum creatinine levels were 0.94 ± 0.48 mg/dl, 46.4% of donors were female, 53.6% of them were male. None of the donors had diabetes mellitus, tuberculosis, hepatitis and malign diseases. Three of the donors (all of them were younger than 50 years) had serum creatinine level higher than 1.5 mg/dl. All donors aged over 60, and donors aged 50–59 with at least two of three additional risk factors were considered as marginal. The three additional risk factors identified were cerebrovascular accident as a cause of death, history of hypertension, and serum creatinine above 1.5 mg/dl prior to transplantation. Based on this definition three of the donors were marginal. Herein we have reported the characteristics of deceased donors for kidney transplantation of our center.

Etiology of brain death	Frequency/Percentage (%)
Nonaneurysmal subarachnoid hemorrhage	12 (42.9)
Aneurysmal subarachnoid hemorrhage	1 (3.6)
Intracerebral hemorrhage	3 (10.7)
Head trauma due to Road accident	3 (10.7)
Hypoxia due to cardiopulmonary arrest	2 (7.1)
Firearm injury	4 (14.3)
Fall from height	1 (3.6)
Drowning	2 (7.1)

023 KIDNEY

P565

USING COGNITIVE TASK ANALYSIS TO TEACH LAPAROSCOPIC NEPHRECTOMY FOR LIVING RELATED KIDNEY TRANSPLANTATION

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Background: Using laparoscopic approach for harvesting graft in the field of living related kidney transplantation (LRKT) demands more advanced surgical techniques and longer learning curve for young transplant surgeons. Cognitive task analysis (CTA) is a kind of analytical method to understand tasks that require a lot of and complicated cognitive activity. It focuses on decision making and identifies potential procedural errors. Surgeons can break down surgical procedures into discrete steps for better understanding by trainees. In this study, we described how to using CTA to teach laparoscopic nephrectomy (LN) for LRKT and its effect.
Method: LN for LRKT performed by experts were observed by a kidney transplant surgeon and a surgeon specialized in surgical education. Procedures were fragmented into 7 essential steps and clear descriptions of each step were written. Videos of these procedures were also reviewed and edited as small clips for teaching. Written documents and video clips were packed as a training module. Its training effect was evaluated by self-assessment and direct observation of performance.
Result: 20 LN have been observed and the training module has been validated. One young transplant surgeon and 6 senior surgical trainees who assisted in this procedure were enrolled in this study. The overall satisfaction of this training was 8 (Likert scale 10). The variation of renal vessels was the limitations of this training method and could be improved by providing more video clips.
Conclusion: CTA is a feasible method to get acquainted with LN for LRKT for young surgeons. More video clips from different cases might enrich the database of the teaching module developed based on CTA.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P566

THE EFFECT OF INITIAL MAINTENANCE IMMUNOSUPPRESSIVE REGIMENS ON 1 AND 3 YEAR KIDNEY GRAFT SURVIVAL

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Transplantation department University Hospital Louis Pasteur

According to published data the choice of initial calcineurin inhibitor (CNI) has changed during the last years. The use of tacrolimus as primary CNI has increased from 48% of patients in 2008 to 90% of patients in 2013 in our center. The aim of study was to analyse the impact of initial CNI on kidney graft survival.

320 kidney transplant recipients were included into the retrospective analysis. Tacrolimus (TAC) as initial CNI was administered in 171 patients and cyclosporine A (CsA) in 149 patients transplanted in 2008–2013 period. CNI were combined with corticosteroids and mycophenolate mophetil or mycophenolic acid in all patients. Mean follow up was 201.7 weeks in TAC patients and 186.8 weeks in CsA patients (ns). Statistical analysis was performed using Pearson's χ^2 test, Fisher's exact test and Kaplan-Meier survival analysis.

Graft survival at 1 and 3 years was 95.7% and 94.0% in TAC group and 85.5% and 84.2% in CsA group ($p = 0.006$ and $p = 0.015$). When controlled for age, degree of sensitization and number od HLA mismatches, the type of CNI was independent predictor for graft survival (HR 2.63 for TAC, $p = 0.011$). Early acute rejection was confirmed in 54.6% of patients using TAC and 45.4% of patients on CsA (ns). Mean age of patients using TAC was lower comparing to CsA treated patients (47 vs. 52 years, $p = 0.001$). Overall patient survival was significantly better in TAC group ($p < 0.001$), even when controlled for age (HR 3.45, $p = 0.002$). Interestingly, in a subgroup of patients older than 50 years the graft survival in both treatment groups was not different.

Our kidney transplant recipients in the TAC group had higher 1-year graft survival. Based on the literature one year graft function may predict long term kidney transplant survival; in our study group this has to be proved in further analysis.

023 KIDNEY

P567 FEMORAL NEUROPATHY AFTER RENAL TRANSPLANTATION

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Femoral neuropathy is a rare complication following renal transplantation. We experienced a case of patient who developed a femoral neuropathy following renal transplantation. CASE) A 35 year-old male patient was admitted to our transplantation center for renal transplantation. Before transplantation he was well-nourished, had no evidence of neuropathy. He was suffered from essential hypertension and He underwent a renal transplantation in the right iliac fossa with the graft from his wife. We used self-retaining retractor to exposure operative field. The renal artery was anastomosed to the internal iliac artery and the renal vein to the external iliac vein. The graft function after surgery was excellent but a weakness of right leg was observed one day after transplantation. The patient could not raise and straighten his right leg and had a sensory loss in the distribution of femoral nerve in his right leg. To rule out space occupying lesion, we checked MRI. MRI showed perinephric area hematoma and no gross evidence of abnormal mass along right femoral nerve course and abnormal intensity or size of right femoral nerve. Nerve conduction study showed that right femoral neuropathy and right lateral femoral cutaneous neuropathy. This neuropathy improved over a few weeks, and at 3 months follow-up the patient had regained his nearly normal gait. This femoral neuropathy appeared to be due to compression of the femoral nerve by self-retaining retractors during renal transplantation surgery.

P568 THE SAFETY AND EFFECTIVENESS OF SUPERSELECTIVE EMBOLIZATION FOR BIOPSY INDUCED INJURY IN TRANSPLANTED KIDNEY

Seok Ju Park, Young Jun Cho, Yang Wook Kim
Inje University Busan Paik Hospital

Background: Percutaneous renal biopsy is performed routinely as a valuable tool for the diagnosis of decreased renal function after kidney transplantation. Arteriovenous fistula and pseudoaneurysm are the most common iatrogenic biopsy-related vascular injuries in renal allografts. Superselective embolization is the treatment of choice. The aim of this is to evaluate the safety and effectiveness of transcatheter embolization for iatrogenic injury in kidney transplantation.
Methods: Between February 2007 and October 2013, the medical records, radiologic reports, and corresponding images were retrospectively reviewed to assess the type of lesion, histologic result, interval between biopsy and embolization, embolic materials, complications, and long-term clinical outcomes. We evaluated the technical success, and clinical efficacy at follow-up using t-tests.
Results: 140 biopsies of renal allografts were performed in 296 transplant patients in our hospital. Nine patients (six women and three men; mean age: 47 years, range: 36–61 years) underwent transcatheter embolization for the treatment of iatrogenic vascular complications resulting from percutaneous biopsy of renal transplants. Various imaging modalities revealed six arteriovenous fistulas, one pseudoaneurysm, and two combined presentations. Complete occlusion was achieved in all patients after the initial embolization. Microcoils were used in seven cases, glue in one, microcoils + gelatin sponge particles in four, and microcoils + glue in one case. The technical success rate was 100% (9/9 patients); the clinical success was 66.7% (6/9). In the three without initial success, repeated embolizations were required. The mean serum creatinine level decreased significantly ($p = 0.028$) from before to 7 days after the procedure, 3.65 ± 2.06 and 2.82 ± 1.52, respectively.
Conclusion: Superselective embolization for biopsy induced injury in transplanted kidney seems to be a safe and effective procedure.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P569

COMBINED B-CELL DEPLETION AND ECULIZUMAB FOR TREATMENT OF SEVERE ACUTE ANTIBODY-MEDIATED REJECTION. A CASE REPORT

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Background: Kidney transplant recipients with donor-specific antibodies (DSA) are at high risk of antibody-mediated rejection (AMR). Severe AMR episodes lead to inevitable graft loss if not treated vigorously. Novel rescue protocols advocate use of eculizumab together with emergent splenectomy for treatment of such cases of AMR. Splenectomy reduces CD138+ load and hence production of DSA, however, it is not suitable for every patient.
Methods: We present a single case in which combination of plasmapheresis (PP), rituximab, bortezomib instead of splenectomy to deplete CD138+ and eculizumab was used to treat severe AMR. 30-year old female received a second kidney transplant from a cadaveric donor in our centre. Due to preformed DSA established by Luminex (LMX) pretransplant a desentization protocol consisting of PP and low-dose intravenous immunoglobulins was employed.
Results: The patient had a prompt function of her allograft with serum creatinine 1.35 mg/dl on postoperative day (POD) 6. However, she became anuric in the next 3 days. Percutaneous kidney transplant biopsy (KBx) on POD 9 revealed acute AMR (g2ptc1; C4d+). DSA levels rose tenfold as measured by LMX. Daily PP, rituximab (single dose; 375 mg/m^2) and bortezomib (POD 9, 12, 16, 19; 1.3 mg/m^2) were initiated. On POD 15 the patient was still anuric. KBx was repeated to see ongoing severe AMR (g3ptc2). We considered the rejection to be treatment-resistant and decided to use a rescue therapy with eculizumab (with PP on POD 16, 19, 23; 900 mg). As soon as with the second dose of eculizumab there was a gradual increase in urine output followed by kidney function recovery. On POD 120 the patient had a stable kidney function with serum creatinine 0.85 mg/dl and no proteinuria. There were no infectious complications but a brief episode of asymptomatic cytomegalovirus viremia.
Conclusion: In the presented case, combined B-cell depletion together with eculizumab and PP was safe and efficient in treatment of acute AMR.

P570

LIPID STRATIFICATION IN THE ERA OF EMERGING IMMUNOSUPPRESSANTS AFTER LIVER TRANSPLANTATION

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Background: Renal injury in liver transplant recipient is associated with a high long-term morbidity and mortality. One of the causes of renal dysfunction after liver transplantation is the use of calcineurin inhibiting agents (CNI) based immunosuppressive regimens. Therefore, the search for individualized immunosuppressive regimens to reduce renal toxicity resulted in CNI minimizing protocols by adding whether mycophenolate mofetil or mechanistic target of rapamycin inhibitor (mTOR inhibitors). One of the most described adverse events of mTOR is hyperlipidaemia (HLP).
Methods: Critical review of the literature.
Results: Use of mTOR inhibiting immunosuppressive agents in organ transplant recipients is associated with the development of HLP. Patients receiving mTOR inhibitors mostly develop hypertriglyceridemia. However, further types of HLP such as hypercholesterinaemia can also be observed during the treatment with mTOR inhibiting agents. Despite the fact that mTOR inhibitors favor the development of lipid disorders, patients suffering from a pre-existing HLP can also be treated using mTOR inhibiting agents. An impairment of lipid metabolism does not occur in every case. Furthermore, improvement of renal function due to CNI reduction by using mTOR inhibiting drugs may result in a reduction of lipid levels in some of these patients. In case of elevated triglyceride levels >500 mg/dl despite life style modification and despite usage of lipid lowering drugs, administering of mTOR inhibitors should be terminated to avoid metabolic disorders such as fatty liver disease and pancreatitis. Moreover, mTOR-inhibitors should be avoided in patients with LDL-cholesterol levels exceeding 250 mg/dl despite life style modification and use of lipid lowering medication.
Conclusion: Lipid disorders are common in liver transplant recipients who receive mTOR inhibiting agents. However, dyslipidaemia associated with mTOR inhibitor based therapy regimens responds well to lipid lowering

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P571 **THE EFFECT OF ALLUPORINOL ON RENAL ISCHEMIC REPERFUSION INJURY IN RATS**

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Background: Kidney transplantation is an established treatment modality in patients with end stage renal disease (ESRD) of different etiologies. However, there are several medical and surgical complications threatening graft outcomes after transplantation. Ischemic /reperfusion injury is an inevitable phenomenon after kidney transplantation that may result in delayed graft function (DGF) with negative impact on short term and long term graft survivals. In this study, we aimed to investigate the effects of allopurinol on renal ischemic reperfusion injury caused by clamping of renal artery in rats.

Methods and Materials: Sixteen male rats (ratusnorvegicus), were randomly allocated into two groups each containing 8 rats. Rats were randomly divided to receive allopurinol (case group) and sham feeding (control group) after clamping of left renal artery. Then histologic sections from kidneys were preapared. Histopathologic sections were evaluated by an expert pathologist who was blind to the study for signs of congestion, presence of inflammatory infiltration, severity, type of infiltrated cells (neutrophils, lymphocytes, plasma cells, and macrophages), tubular destruction, fibrosis, and cortical and tubular necrosis.

Results: Histopathological evaluation of kidney tissues showed mild, moderate and severe ischemia in 5 (35.7%), 8 (57.1%) and 1 (7.1%) rats respectively. No slides showed normal kidney tissues. There were no statistically significant difference between case and control groups when compared regarding of mild, moderate and severe renal ischemic damage ($p > 0.05$). In alluporinol group, moderate and severe ischemic damage was occurred in 3 rats while moderate and severe ischemic changes in kidneys were occurred in 6 from 7 rats in control group ($p = 0.133$).

Conclusion: Although not significant statistically, allopurinol attenuated ischemic reperfusion injury caused by clamping of renal artery in rats.

029 PANCREAS

P572

INCIDENCE AND DIFFERENTIAL CHARACTERISTICS OF NONINFECTIOUS FEVER FOLLOWING PANCREAS TRANSPLANTATION WITH ANTITHYMOCYTE INDUCTION

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Background: Limited data are available on the incidence and characteristics of noninfectious fever following pancreas transplantation with antithymocyte globulin (ATG) induction.

Methods: 187 consecutive patients underwent pancreas transplantation atour center from August 1, 2004 through July 31, 2014. Among them, 94 patients were included in this study.

Results: Fever was noninfectious in 35 recipients (37.2%). No patients with noninfectious fever were diagnosed with infiltrates or effusion on chest radiography. Multivariable analysis revealed that fever onset within 10 postoperative days (OR5.36, 95% CI: 1.01–28.42, $p = 0.049$), long cold ischemic time (OR 1.01, 95% CI: 1.00–1.02, $p = 0.042$), small increase in leukocyte count (OR 0.82, 95% CI: 0.68–0.99, $p = 0.043$) and small increase in serum amylase (OR 0.95, 95% CI: 0.91–0.99, $p = 0.012$) are significantly associated with noninfectious fever. Patients with infectious fever required longer hospital stays in comparison with patients with noninfectious fever (34 ± 14 days vs. 29 ± 8 days, $p = 0.031$).

Conclusion: Noninfectious fever develops in a substantial proportion of patients early after pancreas transplantation. To avoid unnecessary treatment with broad-spectrum antibiotics, clinicians should be aware of the possibility of post-transplant noninfectious fever in pancreas transplant recipients, especially following ATG induction and early steroid withdrawal.

023 KIDNEY

P573

A REFLECTION ON THE IMPACT OF EXPANDED RENAL TRANSPLANTATION ON PREVALENT VASCULAR ACCESS MODALITY IN A SCOTTISH RENAL UNIT

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Background: The prevalent renal replacement therapy (RRT) population in the developed world is increasing. Our unit has seen a significant rise in renal transplantation, with an associated fall in the prevalent haemodialysis (HD) population. This study examines the impact increased transplantation has had on the number and proportion of patients in the HD population who use arteriovenous (AV) or central venous catheter (CVC) access, and determines whether changing renal transplantation rates undermines the usefulness of % CVC use in HD populations as a marker of quality.
Method: A retrospective observational study using data from our electronic patient record system (SERPR) and the Scottish Renal Registry (SRR) report, for prevalent RRT patients between 01/01/2011–01/12/2013. We compared the HD vascular access of those transplanted per calendar quarter with the HD vascular access of the HD population on the first day of each quarter.
Results: 349 patients underwent renal transplantation in our unit between 2011–2013. We identified an increase in rate of transplantation with 92 transplanted patients in 2011 rising to 113 in 2013. Data was available for 307/349 (87.4%), of whom 243/307 (79.2%) were on HD. Comparing the AV access prevalence in the transplanted group to the average AV access prevalence in the standard HD group, AV access was significantly more prevalent 182/243 (74.9%) vrs an average of 418/627 (66.7%), ($p = 0.022$).
Conclusion: Patients on HD and then transplanted were more likely to have AV access than those within the general HD population and not transplanted. This, allied to the increasing volume of transplantation performed, supports the hypothesis that increasing access to transplantation may have the indirect effect of decreasing the number of patients in the HD population who use AV access disproportionately. Expanding transplantation services may therefore lead to a reduction in prevalent AV access use as a marker of quality in renal care.

025 LIVER

P574 UNEXPECTED THROMBOTIC OCCLUSION OF SPLENORENAL SHUNT AFTER LIGATION OF LEFT RENAL VEIN IN LDLT

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In order to prevent the steal of portal flow and insufficient portal flow after liver transplantation, a large spontaneous splenorenal shunt (SRS) should be treated. Among the various techniques for this purpose, left renal vein ligation (LRVL) is regarded as one of the most effective procedure for restoring the adequate portal flow without significant impact on renal function. Because renal venous blood can be drained into the large SRS after LRVL, the impact of renal function is minimal. However, if the occlusion of large SRS happens, the influence of renal function still remains unknown.

We performed LDLT for a female recipient with portal vein stenosis and a large SRS. The restoration of an adequate portal inflow was confirmed after left renal vein ligation on operative field. Two weeks after liver transplantation, the unexpected thrombotic occlusion of left renal vein and SRS were identified on the contrast-enhanced abdominal computed tomography and the left renal vein flow was drained into her left ovarian vein. Fortunately, her renal function test was within normal range.

Conclusively, LRVL didn't have an adverse effect on renal function in our case. But, enough discussion will be necessary for the clinical significance of this unexpected thrombotic event, which was developed after LRVL.

P577 DE NOVO MALIGNANCIES AFTER LIVER TRANSPLANTATON

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Introduction: The incidence of de novo malignancy (NM) after Liver transplantation (LT) has been reported to range from 4% to 16%, depending on the length of follow-up, age distribution of the recipients and types of immunosuppressive regimens.
Objectives: The goal of the study was to determine the incidence of de novo malignancy in patients undergoing LT at one single-center, and to identify variables associated with their development.
Material and methods : We conducted a retrospective cohort study of 948 patients from 1990 to 2013. We conducted a database with the variables of patients, excluding those killed in the first month. We analyze survival using the Kaplan-Meier method, comparing results between groups was performed using the log-rank test. The value of less than 0.05 was considered statistically significant.
Results: The mean follow-up in our series was 6.6 years SD: 5.5 years. In 132/839 patients (15.7%) developed de novo malignancy. NM were developed: 106/634 males (16.7%) and 26/202 women (12.8%) Skin tumors (ST) were detected in 12 women and 31 men ($p = 0.67$). Solid organ tumors (SOT) occurred in 14 women and 75 men ($p = 0.054$) Survival in patients with (SOT) to 3, 5 and 10 years was: 80.5%, 73.3 and 49.5%, whereas in liver transplant patients who did not develop tumors was 76.9% 70.6% 60, 8% ($p = 0.000$) Once diagnosed the NM: SOT survival was: 62.3%, 43.6%, 32.6% and 23.9% at 1, 3, 5, and 10 years ST survival was: 96.6%, 92.7%, 87.5%, 82.4% ($p = 0.000$) The more common in women TOS: breast (3), SLPT (3); in men: ORL (17) and lung (15). The different TOS analyzed showed differences in survival. In 60 years: 12 ST (7.2%) and 27 TOS (12.9%) ($p = 0.365$) Survival at 1, 3 and 5 years to 60 years was 81.6%, 69.5%, 61, 6 ($p = 0.000$)
Conclusions: The TP are not a cause of mortality in transplant, however TOS carry a worse prognosis. The diagnosis is made with a mean of 5 years after transplantation.

023 KIDNEY

P578 PROTECTIVE ROLE OF VITAMIN D3 FOR THE PROPER HEART FUNCTION IN PATIENTS AFTER KIDNEY TRANSPLANT

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Background: Vitamin D3 has a proven pleiotropic effect, responsible not only for calcium and phosphate management, but also influencing a correct function of the whole body, including the heart and kidneys. In the overall population, especially in a temperate climate, its chronic deficiency and lack of correct supplementation are observed. The aim of the study was to assess resources of vitamin D3, and its effect on the heart function and glomerular filtration in kidney recipients treated with calcineurin inhibitors (CI).
Material and Methods: In a group of 101 patients (55 women and 56 men, mean age 47.8 $\pm$ 11.6 years), after kidney transplant (KTX) and treated with calcineurin inhibitors (CI), 25-hydroxyvitamin D3 (25 [OH] D3) was determined, and its relationship with the New York Heart Association (NYHA) classification, N-Terminal pro-Brain Natriuretic Peptide (NT-proBNP), and glomerular filtration (eGFR) calculated with the MDRD formula.
Results: The mean 25 (OH) D3 level was 25.9 ng/ml. 96% of patients supplemented vitamin D3 in form 1- alfacalcidol. 30 ng/ml was assumed as a correct minimum level. In the patients in the NYHA class I (73 patients), the 25 (OH) D3 level was statistically higher than in the patients in the NYHA class II (28 patients), in which the vitamin D3 level was below 30 ng/ml ($p = 0.01$). A reversed correlation was obtained for the 25 (OH) D3 and NT-proBNP levels ($p < 0.05$). Reduced eGFR (<30 ml/min) was found in patients with 25 (OH) D3 levels below 30 ng/ml ($p < 0.05$).
Conclusions: Supplementation with vitamin D3 in patients after kidney transplantation and maintain the optimal 25 (OH) D3 blood concentration within 30–70 ng/ml under the control of calcium-phosphate management, fulfills protective role for cardiomyocytes and transplanted kidney nephrons. Maintain the recommended 25 (OH) D3 concentration results in higher cardiovascular efficiency according to the NYHA scale and NT-proBNP lower concentration in blood serum.

P579 HOME DIALYSIS APPLYING TELE-MEDICINE SYSTEMS: AN EXPERIMENTAL STUDY ASSESSING ITS FEASIBILITY FOR A NEW COMPACT SERVICE IN RENAL TRANSPLANT

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Background: In this pilot-study, we search the feasibility of a tele-medicine service based on the combination of home dialysis (HD) and coordination (C) in renal transplant (RT).
Material and Methods: Seven specialists in renal dialysis (RD) participated in a simulating experimental session upon a scenario of a patient applying experimental Tele-medicine System (TS). The latter consisted tele-monitoring, tele-mentoring, tele-consulting capabilities. All participants filled a structured questionnaire which reflected their ability to use mobile TS and their attitude towards the prospect of HD with coordination of RT so that coordinators (CRS) accurately and fairly notify, facilitate and accelerate remotely, the recipient identification and pre-transplant preparation in case of a renal or combined renal and pancreas transplant.
Results: Regarding the preferable mode for HD, all specialists agreed that indicated peritoneal dialysis (PD) is preferable referring to patients who should a: have the ability and motivation to learn to carry out the process and the commitment to maintain treatment, b. be stable on dialysis, c: be free of complications and significant concomitant disease that would render home dialysis unsuitable or unsafe, d:have a carer and e:have suitable space and facilities. Five specialists (5/7 = 71.4%) answered that there should be a dedicated and organized space at home. Regarding the the process of establishing HD related to (C) in RT: a. All agreed that a pre-dialysis education program, a special training for patient and helper, and a multidisciplinary input from nursing staff, dietician, social worker, clinician and dialysis technician must have established before combining the service within (C) in RT, b. the majority found that a transition to HD with community renal nurse assistance (RNA) is preferable (5/7 = 71.4%).
Conclusion: PD seems feasible for a TS based HD service to assist (CRS) to identify and pre-operatively prepare recipients in RT.

P581 A TRIPLE-BIOMARKER APPROACH FOR THE DETECTION OF DELAYED GRAFT FUNCTION AFTER KIDNEY TRANSPLANTATION USING SERUM CREATININE, CYSTATIN C, AND MALONDIALDEHYDE

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Background: Serum creatinine (SCr) alone does not allow for the early diagnosis of delayed graft function (DGF) following kidney transplantation (KTx). The diagnostic utility of urinary neutrophil gelatinase-associated lipocalin (uNGAL), serum leptin, malondialdehyde (MD.A), and cystatin C (CysC) for the early detection of DGF was previously evaluated by our group in a prospective cohort study of 40 consecutive adults undergoing KTx. Because no single biomarker achieved adequate sensitivity or specificity for practical purposes, this study was designed to evaluate the combined use of new markers with SCr. Urine and blood samples were collected 8-to-12 h after KTx (day-1).
Methods: Logistic regression was used to combine the biomarkers, and receiver operating characteristic curves and areas under the curve (AUC-ROC) were generated.
Results: Eighteen recipients developed DGF (dialysis requirement during the first post-transplant week). On day-1, the AUC for SCr to predict DGF was 0.73, 0.88 for uNGAL, 0.90 for MDA, 0.76 for leptin, and 0.91 for CysC. Adding new biomarkers to SCr enhanced the performance of DGF prediction, and the best combination was achieved with SCr, MDA, and CysC (AUC = 0.96, sensitivity = 100%; specificity = 86%).
Conclusion: A combination of graft damage biomarkers outperformed SCr in the early diagnosis of DGF, and the best performance was achieved by a triple-marker approach, using SCr, MDA, and CysC.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P582

ESTIMATED GFR AND KDIGO CATEGORIES MONITORING IN RENAL TRANSPLANT PATIENTS CONVERTED TO ONCE-DAILY TACROLIMUS: STABILITY OF RENAL FUNCTION AND ROLE OF RISK FACTORS IN THE LONG-TERM FOLLOW-UP

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Background: Renal transplant patients (RTP) are at risk of developing and progression of chronic kidney disease (CKD) as reported by KDIGO guidelines. Glomerular filtration rate (GFR) is the stronger CKD progression risk factor, besides classical risk factors (RF). Calcineurin inhibitors are responsible for progression of CKD with reduction of the estimated eGFR. Aim of the study is to evaluate long-term trend of classical risk factors for CKD and eGFR in stable RTP converted from twice-daily (Tac-T) to once-daily (Tac-O) tacrolimus extended formulation.
Methods: From 2008 to 2011, 43 RTP with a history of 3 years of transplantation and stable kidney function were converted from Tac-T toTac-O. We monitored eGFR (MDRD4), eGFR categories (G) according to KDIGO guidelines, serum creatinine, and cardiovascular risk factors at 1 years pre-conversion (T−1), at T0, at 1 (T + 1) and 3 years (T + 3) post-conversion. Tacrolimus plasma levels were maintained within the therapeutic range.
Results: KDIGO eGFR categories at T−1 were: 5% G1, 23% G2, 60% G3and 3% G4. 63% of patients showed stability, 21% improvement and 16% decline of eGFR compared to pre-conversion G at T0.61% and 51%of patients showed stability, 14% and 16%improvement, 25% and 33%decline, respectively at T + 1 and T + 3 ($p = 0.250$; $p = 0.873$). eGFR variations were categorized before and after conversion to Tac-O resulting >−1 ml/min/years in 42% and 51% of patients, between −1 e + 1 ml/min/years in 19% and 23%, >+1 ml/min/years in 39% and 26%, respectively, not significant. Serum glucose, lipid profile and blood pressure remained stable atT + 1 and T + 3.
Conclusion: Conversion to Tac-O formulation is associated with long-term stability of GFR and graft function, in RTP.

025 LIVER

P583 **RISK FACTORS FOR BILIARY COMPLICATION AFTER PEDIATRIC LIVER TRANSPLANTATION**

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Introduction: Biliary complications after Liver transplantation (BCALT) have a high incidence (13% stenosis, 8% biliary leaks), increasing hospital admissions, risk of graft loss and recipient death. These complications are managed by interventional radiology procedures, endoscopic or surgical resolution including re-transplantation.
Objectives: To identify the rate of BCALT in our group, potential risk factors and their resolution.
Materials and Methods: A retrospective, analytical study based in the clinical data of patients transplanted between November 1996 and February 2015.
Results: We performed 207 transplants in 171 patients, 112 reduced-size grafts, 65 living donor grafts, 97 biliary enteric anastomosis in Roux-Y. 39 presented with BCALT (23 anastomotic stenosis [11.1%], 14 leaks [6.8%], 2 multiple intrahepatic strictures [MIHS] [0.9%]) We analyzed various potential risk factors for BCALT with Fisher's test, two-tailed p-value, left lateral segments grafts ($p < 0.005$) and living donor grafts ($p = <0.005$) were statistically significant risk factors. Common bile duct end to end anastomoses vs. biliary enteric anastomoses, recipients weighting <10 kg, arterial complications and pediatric donors were not significant. Management: 9 patients with biliary leak required surgery, 5 were managed with external drainage. In patients with anastomotic stenosis, percutaneous transhepatic or endoscopic dilations were performed (1–3 procedures), 5 patients failed and required re-anastomosis and three patients required re-transplantation because of secondary cirrhosis.
Discussion: In our group, the rate of biliary complications is similar compared with the reports in the adult population. The use of left lateral segments from living or cadaveric donors are of high risk for these complications, new split techniques should be developed to reduced the incidence of biliary complications. Treatment with balloon dilation is the first management option with a high success rate.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P584

LOW DOSE ANTI-THYMOCYTE GLOBULIN INDUCTION THERAPY DIFFERENTIALLY DECREASES THE NUMBERS OF CIRCULATING LYMPHOCYTES AND REGULATORY T CELLS IN ELDERLY BUT NOT IN NON-ELDERLY KIDNEY TRANSPLANT RECIPIENT

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We studied the effect of low dose anti-thymoglobulin (ATG) induction on the numbers of circulating naive, memory and regulatory (reg) T and B cells, in elderly (Eld) (n = 8; 62; 61–71 years) and non-elderly (nEld) (n = 8; 33; 20–44 years) kidney transplant (KTx) recipients, in an early everolimus (EVL) conversion protocol. Blood samples were collected pre-KTx, 1 month post-KTx, and 1 month after EVL conversion. All patients received a single dose ATG (2 mg/Kg), tacrolimus, prednisone and mycophenolate, which was withdrawn after EVL introduction. Total lymphocyte (TL) counts were lower in Eld than nEld, pre-KTx (1225; 700–1700 vs. 2490; 1400–3200 cells/mm^3; $p < 0.05$) and decreased one month post-KTx in Eld (700; 380–1500 cells/mm^3, $p < 0.05$) but not in nEld (2805; 710–3250 cells/mm^3, p = NS) recipients, remaining low in Eld one month after EVRL conversion (885; 370–1030 cells/mm^3). ATG showed a differential impact on the number of T and B cell populations in Eld and nEld, after one month. Only Eld patients showed a decrease in absolute numbers of the CD4+CD25+CD127- FoxP3+ reg T cells (17.62; 6.58–31.85 vs. 7.81; 2.63–19.25 vs. 9.66; 3.68–22.59 cells/mm^3, $p < 0.05$), though both Eld and nEld had a decrease in the % of the CD39+ Treg (CD4+CD25+CD127-CD39+FoxP3+) and of Breg (CD19+CD24hiCD38hi); Eld: (10.8; 1.61–20.1) vs. (7.57; 2.26–11.5) vs. (3.99; 1.27–8.81) % cells, and nEld (7.42; 4.11–14) vs. (4.46; 2.55–6.48) % cells, $p < 0.05$). Only the nEld displayed an increase in total (% and numbers) and naive B cells, and CD8 T cells, one month post-ATG. The Breg/Bmemory (CD19+CD24intCD38- cells) ratio decreased in both Eld (0.78; 0.04–2.02) vs. (0.37; 0.05–1.28) vs. (0.20; 0.03–0.77) $p < 0.05$) and nEld (0.39; 0.15–1.5) vs. (0.19; 0.07–0.4; $p < 0.05$) recipients. Low dose ATG induced a sustained decrease in TL, Tregs and Breg in Eld Ktx recipients, not reconstituted following the use of mTor inhibitor, suggesting excessive dose for this age group and no early recovery effect of EVRL conversion therapy.

007 DONATION/RETRIEVAL

P585 KIDNEY GRAFTS UTILIZATION FROM DONORS WITH HIGH TERMINAL CREATININE

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Background: The number of patients in waiting list for kidney transplantation is increasing progressively. To reduce the gap between donors and recipients we developed the protocol of kidneys utilization from donors with high terminal creatinine (Cr).
Materials and Methods: From 1 January 2013 to 31 December 2014, 98 kidneys were procured and transplanted from 41 brain dead donors (DBD) and 8 donors after cardiac death (DCD) with high terminal Cr (> 115 μmol/l). We present short results of transplantation for 66 kidneys from DBDs and 15 kidneys from DCDs.
Results: Cases of graft loss was only in a group of recipients with DCDs kidneys – 1 case of primary non – functioning transplant, and 1 case of venous thrombosis. The mean ages of DCDs is 38.8 years and DBDs is 42.4 ($p = 0.71$). The mean Cr in DCDs is 186.4 μmol/l and in DBDs group is 198.6 μmol/l ($p = 0.06$). The rate of delayed graft function (DGF) in DBDs is 23/66 (34.8%), in DCDs it consisted 10/15 (66.7%) ($p = 0.026$). We divided all DBDs on four groups by age: 18–30 (9), 31–40 (7), 41–50 (16), 51–60 (9). The mean serum Cr beginning from the group 18–30 are following – 242.8, 233.7, 171.5, 175.3 μmol/l, respectively ($p = 0.21$). We did not received statistically significant difference in DGF rate between groups – 6/14, 2/11, 9/27, 6/14 ($p = 0.51$). We did see the increase in blood urea nitrogen (BUN) and Cr at the time of recipients discharge symmetrically with increase in the donor age in groups. For the means of BUN and Cr in recipients groups the difference is statistically significant $p = 0.002$ and $p = 0.013$, respectively. No statistically significant difference was found in the mean number of hemodyalisis sessions ($p = 0.63$) between recipients groups.
Conclusion: Kidneys from donors with high terminal Cr are suitable for transplantation. Increase in a donor age did not resulted in a significant difference in DGF in recipients, but did resulted in raise in final BUN and Cr at the time of recipients discharge.

P586 EDUCATING FOR DONATION: A PROPOSAL FOR LIFE

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The approach that questions on the donation of organs and tissues is often fraught with taboos, prejudices and especially misinformation. Believing in the educational role of the health professional and social responsibility for education in subjects relevant to the population was this project that aims to health education to be held in primary and secondary education institutions, in order to promote, inform and sensitize students, educators and parents about the donation of organs and tissues. The theme is approached by professionals of the multidisciplinary team through educational lectures and, through play, interaction with partners actors in the project, as the population served. In 2012, 508 students attended the lectures and 36 educators. The age of the students ranged from 10 to 19 years. 62% of participants refeririam who had already thought of donating organs and tissues. For 99% of participants lectures clarified doubts about the donation of organs and tissues. 86% think to donate organs and tissues. 79% reported that they talked with parents, siblings, friends of the lecture. Initiatives to this are fundamental to the disclosure and demystification of the subject donation of organs and tissues and encourage the donation of organs and tissues for transplantation may be included in the pedagogical proposal of educational institutions.

025 LIVER

P587

DEVOLOPING A TRAINING MODULE FOR LIVING REALTED LIVER TRANSPLANTATION BY USING COGNITIVE TASK ANALYSIS METHOD

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Background: Living related liver transplantation (LRLT) is a very complicated procedure for surgical trainees and medical student. In order to improve the teaching of this procedure, we adapted Cognitive task analysis (CTA) method to create a teaching module. CTA is a kind of analytical method to understand tasks that require a lot of and complicated cognitive activity. It focuses on decision making and identifies potential procedural errors. Surgeons can break down surgical procedures into discrete steps for better understanding by trainees. In this study, we described how to using CTA method to create a teaching module of teach LRLT and valid it.

Method: LRLT (Recipient site) performed by experts were observed and video-recorded by a surgeon specialized in transplantation and surgical education. Procedures were separated into two major parts (hepatectomy and reconstruction). CTA method was applied. The agreements were obtained by expert meetings.

Result: 30 recipient site of LRLT have been observed and recorded. 8 essential steps were defined in the hepatectomy part and 5 essential steps were defined in the reconstruction part. Clear descriptions of each step were written and validated by liver transplant surgeons. Videos of these procedures were also reviewed and edited as small clips fitted to each step. Written documents and video clips were packed as a training module. Pilot teaching has been done and shown its feasibility.

Conclusion: We have created a teaching module for recipient site of LRLT by using CTA method and tested its feasibility. Further study will focus on its effectiveness for young surgical trainees and medical students.

023 KIDNEY

P589 **EVALUATION OF PATIENTS WITH ANTIBODY MEDIATED REJECTION AFTER KIDNEY TRANSPLANTATION**

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Introduction: Antibody mediated rejection (AMR) is a major cause of graft loss. The aim is to retrospectively analyze clinical characteristics and outcome of kidney transplant recipients with AMR.
Materials: The kidney transplant recipients who were transplanted in two centers were retrospectively analyzed. Patients who had biopsy-proven AMR were included.
Results: Thirty five patients were enrolled. Twelve patients underwent living related donor kidney transplantation (KTx). Among 17 living unrelated donors, 11 was husband, 1 was son and 1 was father-in-law. 51.6% had history of blood transfusion. Three underwent 2nd transplantation. CDC-XM of all patients was negative and 11 had PRA $\geq$50% before KTx. All patients received induction therapy either with ATG ($n = 31$) or basiliximab ($n = 4$). Maintenance immunosupression was CNI, MMF and corticosteroid. Duration between KTx and diagnosis of AMR was 262.5 $\pm$ 511.9 days. Mean level of serum creatinine was increased to 2.9 $\pm$ 1.46 mg/dl from baseline level of 1.53 $\pm$ 0.58 mg/dl. Mean levels of interstitial infiltration, tubulitis, microvascular injury (sum of glomerulitis and peritubuler capillaritis) and vasculitis were 1.8 $\pm$ 0.9, 1.8 $\pm$ 1.1, 3.0 $\pm$ 1.4 and 0.5 $\pm$ 0.7, respectively. C4d scoring was 2.5 $\pm$ 0.8. Treatment was PMP in 28, ATG in 20, IVIG in 28, rituximab in 1 and PP/IA in 21 patients. Response to treatment was 75%. Graft loss occurred within 6 months after AMR among 3 patients. Two patients who responded lost graft 17.3 and 29.3 months after KTx. One patient who initially responded to treatment died 2.9 months after KTx. Mean follow-up time was 32.7 $\pm$ 18.1 months. At last follow-up, mean serum creatinine was 1.55 $\pm$ 1.02 mg/dl. The three-year graft and patient survival rates were 80% and 97.1%, respectively.
Conclusions: Although AMR cause functional impairment and graft loss, response to treatment may be obtained in majority of patients with early diagnosis and aggressive combination treatment.

025 LIVER

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EVALUATION OF RECURRENCE PREDICTORS AND SURVIVAL PROBABILITY AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: ANALYSIS OF A SINGLE CENTER

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UNICAMP

Background: Liver transplantation is the gold standard treatment for hepatocellular carcinoma but survival rates are lower than when performed by other indications, being the main cause tumor recurrence. We evaluated the factors associated with recurrence and survival after liver transplantation.

Methods: We evaluated 101 patients alpha-fetoprotein levels, Edmondson-Steiner graduation, microvascular invasion, inclusion of tumors in Milan criteria, Up-to-Seven and the University of San Francisco and pre- transplantation treatment. The significance level was 5%.

Results: There was recurrence in 10 cases (9.9%), the average time was 25.28 ± 26.92 months. Microvascular invasion (p = 0.005; HR = 4.94, CI HR [95%] = 1.42–17.12) was an independent factor for recurrence. Microvascular invasion (p = 0.035; HR = 1.87, CI HR [95%] = 1.04 3.25) and tumors outside the criteria of the University of San Francisco (p = 0.046; HR = 1.81, CI HR [95%] = 1.01–3.25) were independent factors to the risk of death. Poorly differentiated tumors have a higher level of alphafetoprotein (p = 0.03), and values 100 ng/ml were associated with poorly differentiated tumors.

Conclusion: Microvascular invasion was associated with recurrence and lower survival after transplantation. Tumors outside the criteria of the University of San Francisco had lower survival. Alpha-fetoprotein levels >100 ng/ml were associated with poorly differentiated tumors.

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THE SENSE OF A NEW STEROID WITHDRAWAL PROTOCOL WITH EVEROLIMUS, MYCOPHENELATE MOFETIL AND MINIMAL CALCINEURIN INHIBITOR IN KIDNEY TRANSPLANTATION

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±±±Our previous four-drug regimen, basiliximab (Bax), calcineurin inhibitor (CNI), mycophenolate mofetil (MMF) and methylprednisolone (MP), for living kidney transplantation has been provided superior result. But it still remains problems, cytomegalovirus (CMV) infection, Cataract, Aseptic necrosis and CNI toxicity. And arteriosclerosis, malignancy and chronic antibody-mediated rejection (CAMR) deteriorate patient and graft survival. From January 2012, we are employing a new steroid withdrawal protocol to improve such adverse effects. From the starting four-drug therapy (Bax+CNI+MMF+MP), Everolimus (EVL) is added and 0.5 g of MMF is reduced around 2 weeks after transplantation. MP is withdrawn and CNI is reduced (the final target trough level is 50 ng/ml/cyclosporine or 5 ng/ml/tacrolimus) within several months. EVL is controlled around 5 ng/ml as the trough level. Thirty cases of adult living kidney transplantation (including 9 cases of ABO-incompatible transplantation) were treated with the new protocol. The clinical results were evaluated and compared to the previous regimen (44 cases, including 8 cases of ABO-incompatible transplantation). All grafts and patients with the new regimen are well survived for the follow-up period (mean; 14.0 months). The steroid withdrawal rate was 93.3%. The mean withdrawal period was 4.7 ± 3.4 months (0.5–15 months). The mean s-Cr level at 3 months after the MP withdrawal didn't show significant difference to the before (1.3 ± 0.4 vs. 1.2 ± 0.3 mg/dl). Borderline or worse of protocol graft biopsy was 18.2% in the new regimen and was 27.3% in the previous. On pulse wave velocity (PWV) examination, there was no deterioration in the new regimen but 34.4% with the previous regimen showed the deterioration. The new protocol safely achieved steroid withdrawal and CNI minimization and it showed the better result of protocol biopsy and anti-arteriosclerotic result on PWV. And we also expect some good results after long follow-up.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P592

HYPOXIA INDUCES EPITHELIAL TO MESENCHIMAL TRANSITION IN THE LIVER FIELD: THE DOUBLE FACE OF EVEROLIMUS *IN VITRO*

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Background: Everolimus (EVE), a mammalian target of rapamicyn inhibitor, has been proposed as liver transplant immunosuppressive drug, gaining interest also for the treatment of cancer. Although an appropriate tolerance, it may induce several adverse effects (fibro-interstitial pneumonitis) due to the acquisition of activated myofibroblasts. The molecular mechanism associated to epithelial to mesenchymal transition (EMT) may be crucial also in the liver context. Ischemia reperfusion injury may represent a crucial event in the development of fibrosis in terms of EMT. This work examines the role and the molecular mediators of EMT in hepatic stellate cell (HSC) and human liver cells under hypoxia condition and the role of EVE to maintain the epithelial phenotype rather than to act as a potential initiators of EMT under hypoxia condition.

Methods: Several biomolecular strategies (Real time-PCR, immunofluorescence, western blot assay) have been used to assess the capability of EVE at low-therapeutic (10 nM) and high (100 nM) dose to induce an *in vitro* EMT in HSC and hepatocytes, under hypoxia condition.

Results: Biomolecular experiments demonstrated that low concentration of EVE (10 nM) did not modify the gene expression of alpha-smooth muscle actin (α-SMA), Vimentin (VIM), Fibronectin (FN) in both HSC and HepG2 cells, whereas EVE at 100 nM induced a significant over-expression of all the three above-mentioned genes and an augmentation of α-SMA and FN protein levels. Additionally, 100 nM of EVE induced a significant phosphorylation of AKT and an up-regulation of TGF-β expression in HSC and HepG2 cells.

Conclusions: Although an *in vitro* model, results revealed that high concentration of EVE may induce EMT in liver. Additionally, they suggested that mTOR-I should be administered at the dose able to maximize therapeutic properties minimizing or avoiding fibrosis-related adverse effects. Our results could be useful for researchers to standardize new therapeutic

007 DONATION/RETRIEVAL

P593 BIO-VIGILANCE ALERTS: ROOM FOR IMPROVEMENT

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Background: In application of the Royal Decree 1723/2012 which makes the notification of bio-surveillance alerts mandatory in donation-transplantation, University hospital Vall d'Hebron developed a step-by-step critical key point check-list.
Methods: In 2013, a new bio-vigilance program was implemented in our center in order to detect all cases of Adverse Events and Reactions related to the donation-transplantation activity. This check-list must be completed by the intervening actors along the different steps of the donation- transplantation process.
Results: A total of 467 organs were transplanted during 2013–14, 153 of which were generated from 58 in-hospital organ donors and 314 came from other hospitals. In 32 cases (6%) a bio-vigilance alert was detected: A total of 24 cases generated an Adverse Event due to infection, in one of which a donor-recipient transmission was demonstrated (tuberculosis). Brain tumor staging of 3 donors (2 meningiomas and 1 giant malignant prolactinoma) increased from WHO grade II to III in the definitive histopathological analysis. Of the 14 organs transplanted in 11 recipients no incidents were registered in the follow-up period (from 3 to 24 months) Three alerts were generated due to poor preservation leading to the discarding of two kidneys in 2 of them. One case of horseshoe kidney transplanted as separated allografts led to the loss of one graft due to local complications and the death of the other recipient due to pneumonia in the post-surgical periodMoreover in 81 of the grafts obtained from other centers, labeling and packaging issues were detected: lack of confidentiality $n = 51$; lack of blood samples $n = 10$; Incomplete documentation $n = 19$, lack of ganglia or blood $n = 1$.
Conclusion: Bio-vigilance related events detection, demonstrates the efficiency of the methodology in place. However, there is room for improvement. Standardization of controls would be advisable.

025 LIVER

P594

AUXILIARY AB0I LEFT LOBE LIVER TRANSPLANTATION IN CASE OF PARACETAMOL INDUCED ACUTE LIVER FAILURE – CASE REPORT

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Introduction: The auxiliary liver transplantation is an option for selected patients with fulminant hepatic failure, where the native liver recovery is expected. AB0-incompatible liver transplantation (LTx) is alternative method which can be used in some of the fulminant liver failure (FLF) cases, in some countries even for elective transplants. For overcoming the blood group barrier various techniques can be used. Combination of the two techniques is unusual, in our case such approach worked well for patient with paracetamol caused fulminant liver failure.

Methods: Czech Republic is country with 10 million inhabitans and some 200 deceased donors per year. At our institution we performed some 119 LTx in 2014 including pediatric, split liver and live-donor cases. Our LTx program counts over 1000 LTx since 1995. To increase the chance for survival, in some of the fulminant liver failure cases we used the AB0i graft, until now in total 10 of such cases. In one of these cases, left lobe from AB0i donor was used as auxiliary graft. The donor: 66 years old female, 4 days on UPV, died from subrachnoideal bleeding, Na 150, bili 12, AST 0.54, ALT 0.37, ALP 0.82, GMT 1.12. The recipient: 31 years old male, ate some 7 grams of paracetamol, diagnosed with fulminant hepatic failure, admitted to ITU, intubated, Procedure: deceased donor graft reduction *in situ*, left hemihepatectomy of the paracetamol pisoned liver in the recipient, auxiliary orthotopic liver transplantation of the left lobe, provisional abdomen closure for severe abdominal organ swelling.
Results: Two days after surgery once the intraabdominal swelling went down, the abdomen was closed with final suture. The graft started to work immediately and well, patient was extubated, smooth recovery followed. There were no complications observed during the postoperative course. The graft function got worse 16 days after the transplantation, in the biopsy humoral rejection was prooven, graft was taken aout the same day.

023 KIDNEY

P596 **THE USE OF DONOR AND RECIPIENT NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN (NGAL) IN THE PREDICTION OF GRAFT FUNCTION. PRELIMINARY REPORT**

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Background: Neutrophil gelatinase-associated lipocalin (NGAL) is a protein that belongs to the lipocalin superfamily initially found in activated neutrophils. NGAL levels predict the future appearance of acute kidney injury. The key advantage of NGAL is that it grows in plasma earlier than others renal function markers. The study was carried out in order to assess the utility of plasma NGAL in both kidney transplant (KTx) recipients and KTx donors to predict the function of the kidney transplant.
Methods: Study population was 38 KTx recipients and 28 kidney donors. The biochemical parameters, serum creatinine and plasma concentration of NGAL were obtained from donor before organ harvesting and from recipients before transplantation (day 0) and all measurements were repeated after 1, 2, 7, 14, 30 and 90 days after transplantation.
Results: Before transplantation KTx recipients plasma NGAL (rNGAL) were higher than donor plasma NGLA (dNGAL) (981 $\pm$ 485 vs. 345 $\pm$ 202 ng/ml; $p < 0.05$). After 30 and 90 days rNGAL significantly decreased (359 $\pm$ 298 ng/ml; $p < 0.05$ and 179 $\pm$ 135 ng/ml; $p < 0.05$, respectively). Serum creatinine significantly decreased on 30 and 90 days (6.2 $\pm$ 1.9 mg/dl, 2.01 $\pm$ 0.89 mg/dl; $p < 0.05$, 1.51 $\pm$ 0.91 mg/dl, $p < 0.05$, respectively). Regression analysis shows that high values of dNGAL predict high values rNGAL, but only after 30 and 90 days after transplantation. Regression analysis for rNGAL in 1, 2, 7 day after kidney transplantation (Tx) shows positive prediction with serum creatinine level only for plasma NGAL sample obtained on 7th day after Tx. High level of rNGAL on 7th day may predict high creatinine concentration on day 14, 30 and 90 day
Conclusion: Plasma rNGAL level seems to be reliable to predict the kidney transplant function. However dNGAL concentration does not predict the function of the kidney transplant.

P597 **KIDNEY TRANSPLANTATION FROM CONTROLLED DCD DONORS – FIRST CZECH EXPERIENCE**

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Background: Donation after cardiac death (DCD) is important fraction of kidney transplant programs in many countries. According to literature such kidneys seem to have similar allograft and patient survival compared with kidney from DBD donors; however the main problem is delayed graft function (DGF), which occurs in 40–50% compared with some 20–25% in an standard-criteria donor kidney transplants. Controlled DCD donation and kidney transplantation we introduced in Czech Republic in 2012.
Methods: In 2012/2013/2014 we performed some 235/282/265 kidney transplants (KTx) at our institution, of those 4/2/6 were from DCD donors. The retrieval with 5 min of no-touch interval we performed in 6 cases, 12 kidneys we transplanted. The donor characteristics were as follows: age 49 (SD 7.32), mean Cr min 80.5 μmol/l (SD 48.8), or 0.9 mg/dl (SD 0.55), mean Cr max 93.5 μmol/l (SD 51), or 1.05 mg/dl (SD 0.58), average cold ischemic time (CIT) was 291 min (SD 148 min).
Results: There was 2 cases of delayed graft function (DGF) observed, all the other 10 patients developed prompt kidney graft function. Mean SCr one month after the KTx was 122 μmol/l (SD 46.8), or 1.57 mg/dl (SD 0.42). Mean hospital stay was 13 days (SD 5.3). The immunosupression protocol was based on TAC/PRED/MMF and induction with Thymoglobulin.
Conclusion: Our initial experience is encouraging as we did not observe any delayed graft function except two cases. There is room for expansion of the program in Czech Republic. Short CIT seems to be the key for DGF prevention in our hands.

025 LIVER

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APPLICATION OF THE SIMPLIFIED VERSION OF DUVOUX AFP MODEL IN ASSESSING RECURRENCE AND SURVIVAL OF HCC AFTER LIVER TRANSPLANTATION: A SINGLE CENTER ANALYSIS

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Background: Adequate post liver transplantation survival rates to HCC has been described in Milan criteria. However they may be too restrtive and could be improved. Duvoux et al generate a model for predicting recurrence that considerates AFP. The aim if this study was valideted the simplified version of Duvoux AFP model in identified patients with high risk of recurrence after liver transplantation to HCC.
Methods: Were examined retrospective 84 patients who underwent liver transplantation to HCC, the AFP model cutoff was 2 points separated low and high risk of recurrence. We examined radiolgy and pathologic tumoral features. Fisher exact test and Cox proportional hazards models were used to evaluate predictors of HCC recurrence. The Kaplan–Meier methos with log-rank test was used for the univariable analyses of posttransplant patient survival.
Results: 5-year post-transplantation survival rate of 45.8% with recurrence rates of 10.8%. In pathologic tumor data group 22.9% has high risk of recurrence and 14.6% in radiology group. By univariate analysis using Fisher's exact test did not find an association between high risk by the simplified model of the AFP and the recurrence in the pathology group (risk ratio [RR] = 0.94, 95% confidence interval [CI] = 0.26 to 10.81, p = 0.62) and radiological (Odds Ratio = 1.56, 95% confidence interval [CI] = 0.16 to 78.76, p = 0.57). In multivariate analysis classification as high-risk group by the model was not predictive of recurrence of HCC after liver transplantation in pathological groups (hazard ratio [HR] = 0.81, 95% confidence interval [CI] = 0.14 to 4 64, p = 0.81) and radiological (HR = 2.28, 95% CI = 0.21 to 23.97, p = 0.49). Survival rates are similar in both groups pathologic (p = 0.58) and radiologic with patients in high and low risk.
Conclusion: The simplified version of AFP model was not predicted survival or tumor recurrence after liver transplantation to CHC in our sample.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P599

TACROLIMUS ASSOCIATED BY EVEROLIMUS OR MYCOPHENOLIC ACID IN ELDERLY RENAL TRANSPLANT RECIPIENTS BY THE UPLC-LCMS/MS

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Introduction: Tacrolimus is indispensable to maintain stable levels of these drugs, avoiding graft rejection. Low lewel or toxicity in high level it is important individual treatment. Everolimus facilitated reduction of Tacrolimus concentrations to levels below those previously investigated, with low rates of biopsy-proven acute rejection (BPAR) and graft loss.

Objective: The aim of this study was to evaluate the analytical performance of Tacrolimus (TAC) UPLC-MS/MS in human whole blood of elderly transplant recipients associated by Everolimus (EVL) or enteric-coated mycophenolate sodium (EC-MPS).
Materials and Methods: Specime collection in EDTA whole blood tubes collection. Sample preparation of Whole blood standards, controls and patient samples (50 μl) were treated with 0.1 M zinc sulphate) in methanol (20 μl) and acetonitrile (500 μl), vortexed for 1 min, centrifuged (5 min at 800 g) and supernatant was injected (20 μl). An initial evaluation was performed on the TAC, EVL and EC-MPS in UPLC-MS/MS method included precision, accuracy and analytical reportable range. We analyses 12 h pharmacokinetics (PK) (0 to 720 min.) of total TAC, EVL and EC-MPS in 38 elderly renal recipients (61–71 years range). They are randomized by group TAC/ EVL and TAC/ EC-MPS. They had a measured after three months of renal transplantation. The analyses of the PK revealed the area under the curve to TAC/EC-MPS group were AUC = 125.9 ± 73.9 ng.h/ml and Cmax were 17.50 ± 12.5 ng/ml and TAC/ EVL group AUC = 102.8 ± 52.99 ng.h/ml and Cmax were 14.27 ± 10.35 ng/ml ($p > 0.05$).
Conclusion: Tacrolimus in the human whole blood is not statically different when associated by Everolimus or MPA in elderly stable recipients.

025 LIVER

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FULL LEFT – FULL RIGHT SPLIT LIVER – SAFE OPTION FOR SELECTED SMALL PATIENTS

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Background: Split liver transplantation can help with organ shortage and serve some of the small adults and pediatric recipients. Full left/full right split liver is technically demanding surgical procedure, There are some 200 DBD donors in Czech every year. Split liver program has been introduced in Czech since January 2013 with aim to treat the pediatric population on the waiting list. Some small adult recipents may also benefit form split liver. The technique is even more complicated, risks must be carefully assessed prior to surgery.

Methods: There were 15 split liver procedures performed since 2013, of those 12 classical for child and adult, 3 full left/full right for 2 adults. The first case of full left/full right was a pair of husband and wife, both poisoned with amanita phalloides. One of the recipients was AB0i, developed bili.ary leak, the original choledocho-choledocho anastomosis was converted to hepaticojejunostomy one week after the transplant. The other two cases were. . . ? Retrospective analysis of 15 split liver procedures performed at our institution. Initial experience with split liver at our institution in 1998 included two classical splits and three transplants, two pediatric recipients died from graft disfunction early after the the transplant, one adult lived for 6 years. One classical split was done in 2009, both recipients are alive. Split liver program has been set up at our unit in 2013, this means compulsory split in case of donor within criteria.
Results: There were 3 full left/full right split liver procedures performed since 2013, followed with 6 successful transplants. The donors were 17/21/33 old, all male, weight of 70/93/110 kg, sodium levels of 136/156/157, bilirubin 7.5/12/33, AST 0.41/0.64/3.67, ALT 0.39/0.42/1.06, ALP 0.31/0.34/0.54, GMT 0.75/0.94/1.88, on UPV for 2/3/8 days. All the split procedures were performed *in situ*, anatomical variations were identified with intraoperative ultrasound. In 2/3 cases bypass t

013 IMMUNOBIOLOGY/BASIC SCIENCE

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ANTIFIBROTIC EFFECT OF FTY720-ANALOGOUS BY STIMULATION OF PP2A IN HEPATIC STELLATE CELLS

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Hepatic stellate cells (HSCs) play a critical role in the liver fibrosis with a mitogenic response upon organ injury. PDGFR's dimerization and autotransphosphorylation by PDGF activates signals promoting fibrogenic mechanism. We demonstrate that tyrosine phosphatases SHP-2 and SHP-1 take part in, and act as crucial regulators of a complex signaling network orchestrated by PDGRF-β activation with different and opposing functions in HSCs. Genetic inhibition of SHPs shows that SHP-2 is committed to cell proliferation. We also find that, in the early steps of HSC proliferation, the inhibitory phosphorylation of SHP-1 at Ser591 is preserved by the inactivation of the serine/threonine phosphatase PP2A by PDGFR-beta activated Src. This inhibitory signaling cascade is disrupted with subsequent blockade of HSC proliferation, by the combination treatment of PDGF-BB-stimulated HSCs with imatinib (tyrosine kinase inhibitor), and FTY720-analogous (an immunosuppressive drug and PP2A activator); these drugs synergistically abolish PDGFR-beta phosphorylation by enhancing SHP-1 activity. Our data suggest that implementing combinations of drugs affecting diverse and multiple levels of control in PDGFR-beta-dependent signaling may help set up multi-drug low-dose regimens in the treatment of liver fibrosis.

023 KIDNEY

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CALCINEURIN INHIBITOR-FREE IMMUNOSUPPRESSION IN DUAL KIDNEY TRANSPLANTATION FROM MARGINAL DONORS – SINGLE CENTRE EXPERIENCE

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Background: To avoid Calcineurin Inhibitor (CI) nephrotoxicity, a CI-free protocol was introduced in our centre, as immunosuppressive therapy (IT) in dual kidney transplantation (DKT) from marginal donors.
Methods: Donor kidneys were histologically evaluated according to Remuzzi score (J Am Soc Nephrol 1999). Fifteen DKT were performed since February 2009 with the following IT: basiliximab, steroids, mycophenolate sodium (1440 mg/die), sirolimus (n = 12) or everolimus (n = 3). Mean age of recipients was 66 years (range 61–71) whereas mean donors age was 68.5 years (range 55–78). All patients were analyzed for donor specific HLA-antibodies (HLA-DSA) by solid phase Luminex Single Antigen bead assay, at 1 and 6 months from KT and then yearly.
Results: Median follow up was 35.7 months (range 1–73). Cumulative incidence of acute rejection (AR) was 33.3% (5/15). ARs were biopsy proven, within 90 postoperative days and responsive to steroids treatment. The median creatinine at last follow-up was 1.5 mg/dl (range 0.8–2.8). Steroids were stopped in 7 recipients due to new onset diabetes. No deaths or graft losses occurred throughout the follow-up. No patient developed HLA-DSA throughout the follow-up.
Discussion/Conclusions: AR episodes occurred when recipients were under-immunosuppressed for IT adverse events: sirolimus/everolimus blood level under 5 ng/ml (n = 3), early steroid withdrawal (n = 1), or during acute tubular necrosis (n = 1). In our experience CI free IT provides good results in DKT, with excellent long term graft function. Special care should be taken in such aged recipients with several comorbidity factors. Dual KT is often performed with low HLA compatibility and adequate IT should be constantly achieved. Hence we recommend sirolimus/everolimus trough levels on the high side of their therapeutic range in the first 6 months post KT.

025 LIVER

P604

RIGHT-SIDED DIAPHRAGMATIC HERNIA AFTER LIVING DONOR RIGHT HEPATECTOMY: A RARE COMPLICATION AFTER LIVING DONOR

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Right-sided diaphragmatic hernia after living donor Right hepatectomy has been very rare complication. We report a Right-sided diaphragmatic hernia in a living donor.

Methods: A 26-year-old man underwent donor right hepatectomy for living donor liver transplantation. At post-operative 7 days, he leaved the hopital and returned to his job without any problem But, three months after liver donation, he presented with upper abdominal pain and vomitting. Computed Tomography revealed a diaphragmatic hernia of the right thorax with stragnulation of incarcerated small bowels.
Results: He underwent laparotomy and a 3 cm defect in the right diaphragm was identified and repaired with interrupted polypropylene suture, and then resection ofincarcerated segment of small bowel and anastomosis was done. After operation, the patient remains well.
Conclusions: Throughout the expansion of living donor liver transplantion, the safety of the donor is most important thing. Diaphragmatic hernia is a rare complication of right donor hepatectomy but may occur. And early diagnosis and prompt management is needed for donor safety.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P606

HYDROGEN GAS AMELIORATES HEPATIC REPERFUSION INJURY AFTER HYPOTHERMIC MACHINE PERFUSION FOR DONOR AFTER CARDIAC DEATH (DCD) IN ISOLATED PERFUSED RAT LIVER

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Background: Hydrogen gas reduces ischemia and reperfusion injury (IRI) in some organs. However, the efficacy in DCD liver remains elusive. The aim of the present study was to assess whether hydrogen gas ameliorated hepatic reperfusion injury after prolonged cold storage (CS) or HMP.
Method: Rats were subjected to 30-min of cardiac arrest and subsequent cold storage in UW solution (CS group) or HMP with cold oxygenated HTK solution (HMP group) for 4 h. Grafts were applied to an isolated perfused rat liver (IPRL) apparatus for 90-min of reperfusion. In HMPH2 group, hydrogen gas saturated perfusate was continuously administered during reperfusion. Normal livers, without cardiac arrest or CS/HMP, were also perfused (control group). Portal resistance, bile production, oxygen consumption rate, and ALT/LDH release in the perfusate were assessed. Liver sample at the end of reperfusion were applied to HE-staining.
Result: In CS group, the highest ALT and LDH leakage, together with the least bile production, and histological damage (vacuolization and denudation of portal vein endothelium) were observed, indicating severe injury and dysfunction, whereas these change were significantly suppressed in HMP and HMPH2 groups. Besides, in HMPH2 group significant improvements were shown by decreased portal flow and augmented oxygen consumption rate (Figs. 1A–D).
Conclusion: Combination of HMP and subsequent hydrogen gas treatment during reperfusion confers protection against IRI of DCD rat liver by maintenance of portal flow and by protecting mitochondrial function.

025 LIVER

P607

AN UNUSUAL CAUSE OF BILIARY OBSTRUCTION AFTER LIVER TRANSPLANTATION: FASCIOLA HEPATICA

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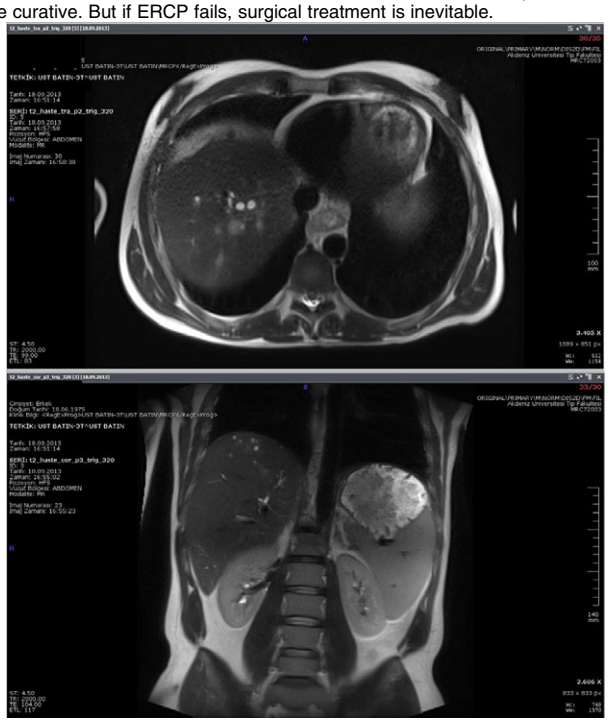
Introduction: Recent studies revealed that, approximately 20% of the patients develop biliary stricture after Living Donor Liver Transplantation (LDLT). Surgical techniques and ischemia of choledoc are blamed for it. Endoscopic retrograde cholangio pancreatography (ERCP) is the choice of treatment in biliary strictures. Humans are accidental hosts for Fasciola hepatica. After ingestion, the metacercariae excyst and pass into the peritoneal cavity, after which they enter the liver parenchyma. They migrate through the liver parenchyma to enter the bile ducts, where they mature and release eggs. The symptoms of this disease are similar to those of liver abscesses, even milder. Eosinophilia is noteworthy in these patients. Serological tests and radiological scans are used for diagnosis. Triclabendazole is the choice of treatment. Here, we will present a patient who developed biliary stricture after liver transplantation and finally diagnosed with fascioliazis.

Case: In May 2013, a 38 years old white male underwent right lobe LDLT due to HBV-related cirrhosis in our clinic. His post-operative (PO) period was uneventful and was discharged on PO day 14. On 3rd month of follow-up, he was admitted to hospital due to biliary obstruction. He had eosinophilia. ERCP revealed a filling defect in choledoc, but a stent could not be placed. Stent could not be placed by percutaneous transhepatic cholangiography, too. MR scan revealed hyperintense lesions in the liver (Figures 1, 2).

Fascioliasis was confirmed by ELISA test. The patient was administered Triclabendazole. But, biliary obstruction persisted and the patient underwent hepaticojejunostomy. The postoperative period was uneventful and he was discharged on PO day 10. In follow-up, eosinophilia was improved.

Conclusion: Fascioliasis must be kept in mind in patients with biliary obstructions after LDLT. If the obstruction is due to fascioliasis, ERCP can be curative. But if ERCP fails, surgical treatment is inevitable.



015 INFECTIONS

P608

STRONGYLOIDIASIS TRANSMITTED IN ORGAN RECIPIENTS FROM A DONOR BORN IN ENDEMIC AREA AND SEROPOSITIVE FOR STRONGYLOIDES STERCOLARIS

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Introduction: In immunocompromised patients, Strongyloides stercoralis (SS) produces an opportunistic infection. Donor to recipient transmission has been reported. We describe 2 cases of strongyloidiasis in organ recipients transmitted by a seropositive donor.
Methodology: Considering donor origin from endemic area, before liver transplantation an IgG serology for SS was performed in donor blood sample, which tested positive 4.49 (positive >1.1). Screening for SS in receptors and their evolution is described.
Results: A 45 year-old female from Paraguay, resident in Spain for 12 years, with previous pulmonary and renal lupus erythematosus was admitted for hemoptysis, bilateral pulmonary infiltrates and acute renal failure. Orientated as LES exacerbation methylprednisolone and cyclofosfamide was started; however, progressively worsened and died of intracranial hemorrhage. Liver was grafted to a 66 years Spanish patient with hepatitis C cirrhosis and heart to a 56 year old Spanish patient with cardiogenic shock secondary to acute myocarditis. 9 days post-transplant, after knowing the serology result, liver recipient received empirical treatment with ivermectin 200 μg/kg/day, for 14 days. The patient developed herpetic hepatitis and abdominal sepsis and finally died on day 34 post-transplantation. SS serology and stool samples were negative. Heart recipient presented on day 5 bilateral alveolar hemorrhage and acute respiratory failure, received empirical therapy with meropenem, linezolid and cotrimoxazole without improvement. Considering positive donor SS serology, a 3 weeks treatment with ivermectin 200 μg/kg/day and albendazole 400 mg/12 h resulted in clinical improvement. SS Serology and stool samples were also negative. However, in both recipients Polymerase Chain Reaction (PCR) for SS were positive in stool sample.
Conclusions: Screening in donors from endemic areas should include SS. PCR in recipients from infected donors allow early SS diagnosis and treatment.

025 LIVER

P609

LIVING DONOR LIVER TRANSPLANTATION IN A JEHOVAH'S WITNESS – THE FIRST ADULT LIVING DONOR LIVER TRANSPLANTATION IN KOREA

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Purpose: Orthotopic liver transplantation is typically associated with large volume blood loss. Technological and pharmacological advances permit liver transplantation in patients who formerly were not candidates for thissurgery because of strict limitations on blood product administration. We describe a liver transplant in a Jehovah's Witness with liver cirrhosis related with HBV infection.

Clinical Features: A 52-year-old Jehovah's Witness with liver cirrhosis related with HBV infection and end stage liver disease presenting with uncontrolled ascites underwent orthotopic liver transplantation. MELD score was 18. Recombinant human erythropoietin (10 000 IU sc every 2 days for 4 weeks, then 10 000 IU sc every day for one week) established a normal hemoglobin concentration preoperatively (>13.1 g/dl compared with 7.3 g/dl baseline). Intraoperatively, strategies for reducing risk of blood product transfusion included avoidance of hypothermia (temperature >35°C), minimal blood sampling (1 ml samples only four times), normovolemic hemodilution (3 units) and return of blood (300 ml) scavenged from the operative field. Estimated blood loss was 800 ml. The preoperative and postoperative hemoglobin concentration was 13.4 g/dl (hematocrit 0.38) and 11.4 g/dl (hematocrit 0.32), respectively. No blood products were required and he was discharged 15 days postoperatively without complication.
Conclusion: Technological and pharmacological advances allow patients to undergo surgery traditionally associated with large volume blood loss with reduced risk of blood product administration.

007 DONATION/RETRIEVAL

P610

MULTIORGAN DONATION THREE MONTHS AFTER THE BRAIN-DEATH. CASE REPORT

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Introduction: The physiologic changes that occur after brain death (BD) affect all organs suitable for transplantation. There is a paucity of data how long the body of a brain-dead person can be maintained.
The Case: 30 years woman suffered subarachnoidal bleeding and became brain dead in the 15. week of her pregnancy. Full support and management was provided to the mother's body in the hope that the baby will survived. This continued up to the 27. week of the pregnancy, when a healthy new-born has been delivered.
Donation: We accepted the donor for abdominal organs retrieval for all the laboratory and the imaging studies provided normal results. At the procurement we found normal macroscopy of the liver and the pancreas, with no vascular variation. A liver biopsy revealed 5% macro- and 20% microvesicular steatosis.
Abdominal Transplantations: The recipient of the liver was a 41 years male patient, having Budd-Chiari syndrome. The initial function was reported as "moderate" and the color as "marbled". The operation was followed by an uneventful postoperative course, and the patient is well at one year follow up. The recipient of the combined pancreas-kidney (SPK) transplant was a 37 years male patient, having diabetes for 20 years. Anti-thymocyte globulin was administered. We observed delayed graft function for about 10 days. Acute rejection occurred and was treated two times. Leukopenia then urinary tract infection required treatment; the patient received 19 units blood cell transfusion. He was discharged on the 47. Postoperative day; he is doing well at one year follow up.
Discussion: In the literature the time, while a brain-dead person can be maintained, is counted rather in hours than days let alone weeks, and we did not find a given longest brain-death period which was followed by successful organ transplantation. In our case the organ donation was performed on the 92. day of mechanical ventilation, which is the longest documented period according to our knowledge.

025 LIVER

P611 USE OF ALEMTUZUMAB IN THE TREATMENT OF CHRONIC LUNG ALLOGRAFT DYSFUNCTION

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Background: Severe rapidly progressive allograft carries a high mortality form progressive respiratory failure. Only effective treatment is re-transplantation. Augmentation of immunosuppression is instituted to halt progression as an initial measure. Augmentation of IS can be done with blockade of CD52 which targets both lysing T and B cells. Effect of this modality on graft preservation and mortality is not well delineated. In addition augmented IS carries risk of reactivation of CMV and EBV virus and increased risk of Malignancy.
Methods: We analyzed data on patients administered Alemtuzumab for severe allograft dysfunction from 2006 to 2012. This included 3 SLT and 11 BOLT. We retrospectively analyzed the outcomes. Primary out come was survival at 1 year. Secondary outcomes included preservation of Lung function (FEV1 not declining more than 15%), Reduction in DSA (Donor Specific antibodies) emergence of CMV, EBV viremia and Malignancy.
Results: 14 patients met criteria. Mean FEVI at the time of administration was 1.13 l. Trans bronchial Biopsy showed organizing pneumonia in 6 patients and interstitial pneumonitis in 1. Survival without re transplantation was 9 (64.2%) patients at 1 year. Death (M) or re-transplantation (RT) at 1 year following administration of Alemtuzumab was 5 (35.7%). 3 patients had DSA at the time of administration and at the end of 1 year 4 patients had DSAs. CMV viremia was detected in 5 patients and EBV viremia in 2 patients. No malignancy was detected during 1 year follow up. FEVI was preserved in 6 out of 9 patients during the first year after treatment.
Conclusion: The use of Alemtuzumab for treatment of lung allograft dysfunction has shown promising results with 64.2% survival at 1 year as well as preservation of FEV1 in majority of survivors.

P612 DIFFERNCE IN DONOR COMPLICATIONS BY TYPES OF SKIN INCISION IN LIVING DONOR LIVER TRANSPLANTATION

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Samsung Medical Center

Background: Because of the shortage of deceased-donor livers for transplantation, living-donor liver transplantation (LDLT) has become an indispensible treatment strategy for end-stage liver disease. The critical prerequisite for LDLT is the maximal safety of healthy donors. But also donors want to get a minimal operation scars.
Methods: From December 2013 to January 2015, a total of 82 completed donor hepatectomies were performed without laparoscopy in our center. We analyzed donor morbidity associated with LDLT by type of skin incision.
Results: Mid-line skin incisions (MS) were given to 49 donors, right subcotal incision with upper mdiline extension (SS) to 31 donors There was no donor mortality. Complications were observed in 4 (8%) donors of MS group and 3 (10%) donos of SS groups. Wound complications were most common, occurring in 2 (4%) donors of MS group and 2 (6.5%) donors of SS groups. According to a modified Clavien classification, grade IIIa complications were experienced in 2 donors of MS groups (4%) and 1 donors of SS groups (3.5%). Interventional management was successful in all grade IIIa.
Conclusions: This study demonstrates the safety of donor hepatectomy by type of skin incision. Regardless of skin incision type, complications were relatively minor and easily controlled.

012 HISTOCOMPATIBILITY

P614

EDTA TREATED SERA: A PROMISING STRATEGY TO ELIMINATE THE PROZONE EFFECT IN ANTI-HLA ANTIBODY DETECTION BY SINGLE ANTIGEN BEAD ASSAY

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The evaluation of the transplantation (Tx) risk for kidney graft candidates is based to anti-HLA antibodies (Ab) presence. Even though single antigen bead (SAB) assay is considered a sensitive method for the identification of anti-HLA Ab, false negative results can occur due to prozone effect (PE). Various serum treatments are proposed to abolish the PE. The aim of this study was to evaluate the EDTA's Ca^{++} chelating effect on the C1 complement in eliminating the PE in HLA Ab identification by SAB.

Eleven patients (pts) were included in the study: Ten kidney transplant candidates either with unexpected high mean fluorescence intensity (MFI) in the C1q assay ($n = 3$) or with PRAs >70% ($n = 7$) and one kidney transplant recipient with clinical evidence of rejection and no circulating HLA DSA. The samples were tested before and after 20:1 dilution with EDTA, using SAB assay (Luminex). An MFI ≥2 fold increase in EDTA treated vs. not treated (NT) sera was considered relevant to PE. The PE was confirmed with 1:10 dilution and with DTT treatment of the sera. Sera with defined PE and new HLA specificities (MFI < 2000 in NT) were further tested with AHG-CDC and T/B flow crossmatches (FXM) against cells expressing the relevant HLA.

PE was found in 6/11 pts concerning either HLA class I (3 pts) or II (3 pts) Ab specificities. More precisely, 41 HLA-class I Ab directed against HLA-A ($n = 31$) and HLA-B ($n = 10$) showed a significant mean MFI value shift from 5872 (266 lower value) to 20 582. Regarding HLA class II Ab, 27 directed against HLA-DQ ($n = 23$) and HLA-DR ($n = 4$) showed a significant shift from MFI 4750 (113 lower value) to 23 842. New HLA class I and II specificities detected after EDTA treatment were confirmed with positive XM either AHG-CDC and/or FXM.

Taking into account that selection of potential recipients pre-Tx and the follow up post-Tx is based to HLA Ab identification, these preliminary results highlight the importance of using EDTA treatment in order to abolish the PE in anti-HLA Ab detection.

015 INFECTIONS

P615

A CASE REPORT OF THE KIDNEY RECIPIENT WITH RECURRENT URINARY TRACT INFECTION (UTI) DUE TO KLEBSIELLA PNEUMONIAE MBL RESISTANT TO COLISTIN

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Background: Multidrug resistance infection in organ recipient becomes a serious problem.
Case Report: A 64 yo male, with end stage renal disease (ESRD), was admitted for renal transplantation. Postoperative course was uneventful with good graft function. Immunosuppression consisted of tacrolimus, mycophenolic acid, steroids. On the 23th day post-transplant the microbiological surveillance showed a *Klebsiella pneumonia* MBL in anal swap. Afterwards he developed fever, leukocyturia, deterioration of graft function. Blood, urine cultures were positive with *K. pneumoniae* MBL+, susceptible for collistin. Patient was put on imipenem, amikacin and colistin treatment. He became afebrile. Urine cultures were negative. Antibiotic treatment was continued for 10 days. Week later leucocyturia recurred, combined with deterioration of graft function. Urine cultures were positive with *K. pneumoniae* MBL+, that became resistant to collistin. New antibiotic regimen consisted of collistin, meropenem and gentamicin for 14 days. Urine cultures were negative during treatment, but the *K. pneumonia* returned after cessation of therapy. At this point the graftectomy was consider to avoid fatal urosepsis, but previous antibiotic regime was reinstituted as last chance option. After a total treatment of 32 days, urine culture was negative. After 100 days posttransplant he was dismissed in good clinical condition. In follow up new urinary graft infection occurred with elevated CRP and fever. Urine culture showed *K. pneumonia* MBL+, again susceptible to colistin. Collistin, meropenem and gentamicin were reintroduced with good clinical and laboratory effect. After 9 months of follow-up, patient is in a good condition with no signs of urinary infection.
Conclusions: *Klebsiella pneumonia* MBL+ UTI in kidney recipient is a menace of fatal urosepsis. Antibiotic regiment is often difficult to establish and can be ineffective. The last hope for saving the patient may be removal of transplanted organ and withdrawal of immunosuppression.

029 PANCREAS

P617

SIMULTANEOUS KIDNEY-PANCREAS TRANSPLANTATION KUWAIT SINGLE CENTER EXPERIENCE

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OTC

Pancreas-kidney transplantation (PKT) is the best therapeutic option for diabetic patients with end-stage renal failure. We aimed to describe early Kuwait experience regarding simultaneous (KPT).
Methods: Data of patients who underwent kidney pancreas transplantation were collected including their demographic and clinic-laboratory parameters. We have paid attention to patient and graft outcome, rejection episodes and associated complication. Rejection of the pancreas was diagnosed by combined clinical and laboratory parameters while kidney rejection was confirmed by biopsy.
Results: From January 2012 to December 2014, 7 SKP transplants (2 women and 5 men) have been performed at OTC of Kuwait. The median age of recipients was 28 years, with a range of 25 to 36 years. One-year patient survival rate was 100% while the graft survival was 86% for the pancreas graft and 100% for the kidney graft. There was one loss in the first 2 weeks due to a graft artery thrombosis. The mean creatinine was 82 μmol/l at 1 year and 126 umg/dl at two years follow up and all of patients are off anti-diabetic medications. We reported biopsy proven rejection in 2 patients which were treated successfully according to our antirejection protocols (pulse steroid for T-cell mediated rejection; and plasmapheresis, IVIG and rituximab for antibody mediated rejection).
Conclusion: A successful pancreas transplant program can be established in Kuwait. However, a meticulous surgical technique and early anticoagulation therapy are required for further improvement in the outcomes.

025 LIVER

P619 ANTI-THYMOCYTE GLOBULIN FOR STEROID RESISTANT ACUTE REJECTION AFTER LIVER TRANSPLANTATION

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Yonsei University

Background: Acute cellular rejection after liver transplantation can be treated with steroid pulse therapy. But there is no treatment of choice in Steroid resistant rejection. (SRR) Anti-thymocyte globulin (ATG) is used to SRR in kidney transplantation or heart transplantation. The issue of ATG for SRR after liver transplantation LT) has not been widely studied.
Methods: A retrospective database review was performed to know feasible of ATG to SRR after LT. Between Jan. 2008 and Dec. 2013, the patients who underwent ATG therapy fowling liver transplantation was included. Median ATG dose is 2.5 mg/Kg for 5–10 days.
Results: 5 male and 5 female patients were included. Underlying liver diseases included HBV (6 = 7), HCV (n = 1), alcoholic liver disease (n = 1), biliary atresia (n = 1) and drug induced hepatitis (n = 1). ATG therapy is successful in 9 of 10 patients and one patient did not respond to therapy. Median AST declined from 127 to 50 IU/l, median ALT from 188 to 68 IU/l and median total bilirubin 5.9 to 2.8 mg/dl. Advance effects included HCV reactivation (n = 1) and fungemia (n = 1). After a median follow up of 7.1 (range 0.2–26.7) months post ATG and median 15.4 (range 1.87–30.6) months post LT. 8 Patients are alive with well liver function, one died from traffic accident, and one from graft-versus-host disease.
Conclusion: ATG can be considered as good therapeutic option in steroid resistance rejection or severe rejection with acceptable complication.

	Before ATG	After ATG	p Value
Total bilirubin (mg/dl)	5.9 (1.6–29.9)	2.8 (1.0–36.9)	0.838
Direct bilirubin (mg/dl)	5.0 (1.1–24.6)	2.3 (0.7–30.4)	1.000
AST (IU/l)	127 (45–236)	50 (15–152)	0.028
ALT (IU/l)	188 (47–430)	68 (32–233)	0.017
ALP (IU/l)	207 (97–1471)	147 (94–1082)	0.594
GGT (IU/l)	370 (141–1901)	268 (171–2049)	0.953
Actual lymphocyte count	340 (200–900)	115 (40–540)	0.050
Proportion of Lymphocyte (%)	6.95 (3.0–23.8)	3.4 (0.8–16.1)	0.185
Proportion of CD3 (%)	81.2 (47.7–87.2)	7.4 (0.0–93.4)	0.011

P620 INFERIOR HEPATIC VEINS ARE INHERITED TO OFFSPRINGS DOMINANTLY-LESSONS LEARNED FROM DONOR VOLUMETRY

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Introduction: Anatomic variants of the hepatic vasculature are common, so precise preoperative donor evaluation, including variations in the vasculature, is essential. We analyzed the anatomic similarity according to the donor-recipient relationship.
Methods: From September 2011 to January 2015 we selected 50 families that were over 3 members of family to have a computed tomography (CT) angiogrm of liver. And we reviewed the CT to find any type of anatomic similarity.
Result: There were no significant inhertence of portal vein or hepatic artery. But, in all cases if children had IHV indentified on CT, one of the their parents' CT showed definite inferior hepatic vein.
Conclusion: There was no inheritence in the anatomic variations of the hepatic artery and portal vein, but inferior hepatic veins were inherited to offsprings dominantly

023 KIDNEY

P622

ACUTE REJECTION OF KIDNEY TRANSPLANT AFTER BREAST IMPLANTS SURGERY

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Background: Immunosuppressed renal transplant patients have a higher incidence of carcinomas than the general population. The treatment of breast cancer in the transplant population is complicated by factors such as determining the correct dose of immunosuppressant, survival of transplant grafts, and doses of adjuvant chemotherapy.
Methods: Case report study.
Results: Female patient, 49 years old, with CKD (chronic kidney disease) diagnosed 14 years ago, with chronic glomerulonephritis. She developed ESRD (end stage renal disease) and was treated with hemodialysis for three months. Six years ago she was treated with kidney transplantation from deceased donor. After kidney transplantation she was on immunosuppressive protocol with cyclosporin (CsA), mycophenolate mofetil and prednisolone. Three years ago she was diagnosed with breast carcinoma. She was treated with right mastectomy, chemo and radiotherapy. Graft function remained good. Half of a year ago she was diagnosed with left breast carcinoma. She was treated with left mastectomy and with reconstructive surgery by bilateral breast implants surgery on her demand. In early postoperative period she developed an episode of acute graft rejection. She got fever with signs of implants inflammation and infection, sepsis, increased serum creatinine level, oliguria, anemia with echosonography signs of acute graft rejection. Patient was removed on nephrology department for further treatment. The patient was treated with pulse corticosteroid therapy with correction of immunosuppressive regimen, with wide spectrum antibiotics and other polysymptomatic therapy and with intensive therapy and nursing treatment. After 2 weeks of intensive therapy she recovered graft function.
Conclusion: All patients with kidney transplantation should be carefully prepared for all surgical procedures with adequate preparation with immunosuppressant dose regimen and monitored after surgical procedures.

025 LIVER

P624

RENAL FUNCTION DIFFERENCE BETWEEN ANTI-HEPATITIS B IMMUNOGLOBULIN (HBIG) MONOTHERAPY AND HBIG COMBINED WITH ENTECAVIR

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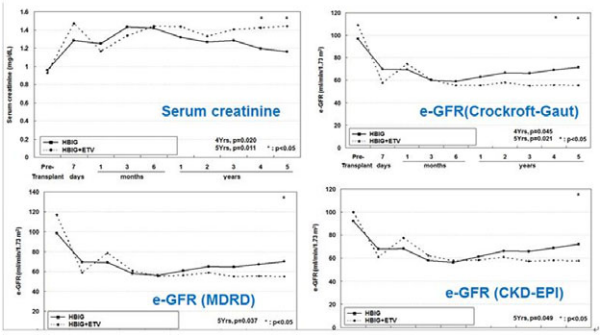
Background: To reduce the HBV reinfection after liver transplantation, anti-hepatitis B immunoglobulin (HBIG) alone or combination with antiviral nucleotide analogues are usually used regimen. However, antiviral nucleotide analogues have nephrotoxicity, which is a critical issue because renal dysfunction frequently happens after liver transplantation.
Method: Medical records of 191 liver recipients with HBV who underwent liver transplantation between Sep 2005 and Dec 2012 were retrospectively reviewed. The difference of renal function of HBIG mono-therapy group (HBIG) and HBIG combined with Entecavir group (HBIG + ETV) were analyzed.
Results: There was no significant difference in age, gender, body mass index, intraoperative blood loss, and MELD score between the two groups. But the patients who had preoperative ascites, mean preoperative AST level, preoperative GFR level, and the applying event of CRRT were significantly different between the groups. The GFR by calculated Crockroft-Gaut, MDRD and CKD-EPI were significantly more decreased in HBIG + ETV group than HBIG mono group at 5 years after LT.
Conclusion: There was no difference of recurrence rate of HBV. However, HBIG + ETV combination regimen showed more declination of eGFR in long-term period after liver transplantation than HBIG alone.

Figure1. ANCOVA (Analysis of Covariance) by baseline values and Tacrolimus level



023 KIDNEY

P625 THE LONG-TERM OUTCOME OF MICROSURGICAL END-TO-SIDE ANASTOMOSIS TECHNIQUE IN THE MANAGEMENT OF RENAL GRAFTS WITH MULTIPLE ARTERIES

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Aim: We aimed to analyse the long-term outcome of renal transplantation in renal grafts with multiple arteries which are managed by microsurgical techniques.
Methods: We reviwed retrospectively the medical records of 82 renal transplant recipients including 52 males 30 females whose grafts from living ($n = 78$) or deceased ($n = 4$) between 2008–2015. Multislice computed tomography (CT) is used to evaluate the anatomy of donor kidney. Diameters of the arteries was measured based on CT findings. Zeiss vario S88 microscope was used for microsurgery. 8/0 or 9/0 ethilone suture material was used for end-to-side anastomosis. Peroperative Doppler ultrasound was performed after reperfusion. Doppler ultrasound was used for early follow-up at day 1, 4 and 7. Magnetic resonance angiography performed at month 12. Vascular and urological complications were reviewed.
Results: Of 82 patients, 69 had 2 and 13 had ≥3 renal arteries. Microsurgical end-to-side anastomosis technique was used to create a single renal artery for anastomosing to common or external iliac artery. Reperfusion was uneventfull in all patients but one. Anastomotic dehiscence occurred in 1 patient. Delayed graft function was detected in 1 patient who had deceased renal transplantation wheras Doppler ultrasonography detected intact perfusion of the graft during the follow up period. No graft loss occurred due to vascular complications. Ureteral stricture occurred in 2 patients one of whom reoperated due to failure of percutaneous balloon dilation.
Conclusion: Microsurgery for multiple renal arteries in renal grafts is a safe surgical technique. Living renal donors with multiple arteries can donate kidney with comparable results as those with single renal artery.

P626 POSTOPERATIVE CRP IS A POOR PREDICTOR OF SURGICALLY RELEVANT COMPLICATIONS IN KIDNEY DONORS

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Introduction: Patients undergoing donor nephrectomy are fit and well individuals. Despite this, 1 in 5 will suffer a perioperative complication. Thus far clinical and surgical factors have been poor at predicting those at risk of complications. Recent published data has highlighted the importance of the predictive value of early postoperative C reactive protein (CRP) rises for complications in similar abdominal surgical procedures. We therefore assessed the predictive value of CRP (and other associated markers of inflammatory response to surgery) in clinically significant postoperative complications in a unique but growing patient cohort in transplantation.
Methods: 746 patients undergoing laparoscopic donor nephrectomy between 2003 and 2013 were analysed. Data was collected on 30 day perioperative complications stratified by the Clavien-Dindo classification and then separately for the common infective complications of wound, urine and respiratory infections. Predictive values of days 1, 2, 3 CRP levels and white cell count (WCC) were evaluated by receiver operating characteristic (ROC) curves.
Results: 147 clinically significant surgical complications occurred in 746 patients. 142 were of an infective aetiology. Early CRP was not a sensitive marker of postoperative infections (AUC 0.59, 95% CI 0.5–0.65). WCC was also an inaccurate predictor (AUC 0.60, 95% 0.53–0.66). When stratified by the Clavien class 3 or 4 (serious) complications the predictive value of Day 1 WCC rose to AUC 0.7 (95% CI 0.5–0.87). To further increase accuracy; the neutrophil:lymphocyte ratio (NLR) subset was evaluated as a predictor for Clavien 3/4 complications. This generated an AUC of 0.75 (95% CI 0.69–0.88).
Conclusions: Early postoperative CRP is a poor predictor of surgically relevant complications in patients undergoing donor nephrectomy.

P627 MINIMIZING EXPOSURE TO CALCINEURIN INHIBITORS: STILL AN OPTION?

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Although the use of calcineurin inhibitors (CNI) decreased the rate of acute rejections, long-term graft survival didn't improved over time. Efforts have been made to minimize the CNI nephrotoxicity.

Observational retrospective study including 152 transplants performed between 2010 and 2012, in our center. Eighty-two candidates received basiliximab and maintenance with standard dose of CNI, mycophenolate mofetil (MMF) and prednisolone (PDN) (group 1), 70 received basiliximab and maintenance with low dose of CNI (through levels: tacrolimus 3–7 ng/ml; cyclosporine 50–100 ng/ml), MMF and PDN (group 2). We evaluated renal function estimated by CKD-EPI at discharge, 1 year after transplant and at the end of the follow-up (F/U); proven-biopsy rejection rate; opportunistic infections, cancer and new-onset diabetes post-transplant (NODAT).

The mean (F/U) time was 39.8 ± 11.8 months. There was male predominance, but no differences between groups concerning sex, age, cause of end-stage renal disease, time in dialysis. Group 1 had more HLA mismatches (mean 4.42 ± 1.33; $p = 0.001$); group 2 had more expanded criteria donors (ECD) ($p = 0.023$), albeit similar rate of delayed graft function ($p = 0.136$). Three patients had primary failure due to thrombosis. Renal function at discharge, 1 year after transplant and in the end of the F/U was similar ($p = 0.339$) but recipients of ECD in group 2 had better renal function at discharge than group 1 (40.2 vs. 32.8 ml/min/m^2, $p = 0.149$). Global rate of rejection was similar (19.5% vs. 18.6%; $p = 0.883$), including humoral rejection, though a greater rate of borderline changes (53.8% vs. 18.8%) in group 2. The incidence of CMV and BK virus infection, and NODAT were similar ($p = 0.95$; $p = 0.907$; $p = 0.717$). Cancer was diagnosed in 12 patients (5 vs. 7). Allograft survival was 94.9% vs. 87.1% ($p = 0.094$); death was mainly due to cardiovascular events.

In conclusion, CNI minimization wasn't inferior to standard regimen and it could be useful in ECD allograft recipients.

P628 OUTCOME OF HLA INCOMPATIBLE KIDNEY TRANSPLANTS WHO RECIEVED DESENSITIZATION PROTOCOLS IN A SINGLE CENTER IN KSA

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Increasing number of potential kidney transplant recipients is sensitized to HLA antigens. Many of them have potential living donors ready but excluded because of +ve cross-match.

Expansion of donor pool by overcoming HLA incompatibility (HLAi) barrier is important to offer more ESRD sufferers the chance of getting kidney transplantation.

We studied 30 HLAi and 189 HLA compatible kidney transplants recipients from Jun '11 to Aug '13 with a median follow-up of 16 (3–27) months. We used desensitization protocol for HLAi recipients. All HLAi patients received ATG as induction while HLA compatible patients received either ATG or basiliximab.

We looked at the incidence rate of rejection (AMR and ACR), as the primary end point. We compared primary end point for HLAi patients with those of HLA compatible living related transplants recipients (deceased donor transplants were excluded). Incidence of ACR was 23.3% in HLAi group compared to 14.8% in HLA compatible group ($p > 05$). Whereas, incidence of AMR was 16.6% in HLAi group compared to 1.5% in HLA compatible group ($p = 0.1$). Incidence of BK virus infection was comparable (3.3% in HLAi group and 3.1% in HLA compatible group, $p = 0.7$). During the follow-up period, there was no patient/graft loss in any HLAi recipients. Multivariable analysis showed that the HLAi transplant is a significant risk factors for both ACR and AMR when adjusted for age, gender, DGF, and biologic induction therapy kept into the model ($p < 0.05$).

These results support the fact that living-related HLAi kidney transplantation after desensitization is a risk factor for both incidence of ACR and AMR. With a short term graft and patient survival comparable to HLA compatible transplants.

P629 PSYCHOSOCIAL ASSESSMENT IN A LIVING DONOR KIDNEY TRANSPLANTATION PROGRAM: WHO ARE THE DONORS AND HOW ARE THEY EVALUATED?

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Background: Psychosocial assessment of donors have been an issue of growing importance in Living Donors Kidney Transplantation Programs (LDKTP). Since 2003, psychological and psychiatric assessment are regularly performed in candidates for kidney donation, at our hospital.
Aims: To describe methodology of assessment/intervention in our program. To describe demographic characteristics of candidates for donation and how they were related to recipients, and to evaluate differences after 2008, when the law allowed unrelated donors in our country. Methods: Since 2003 a list of candidates for donation has been elaborated; social demographic questionnaire and psychological instruments were applied and registered; clinical interviews were performed.
Results: 365 psychosocial evaluations were performed; 159 living donor transplantations were concluded. The reasons why candidates did not made donation were:incompatibility, medical reasons, choice of other donor, deceased transplantation, psychosocial issues. Psychosocial aspects, transplant perceptions, donor's motivations, quality of life and ethical issues were

evaluated. Candidates had 2 moments of psychological evaluation and a psychiatric interview. The protocol included the sociodemographic questionnaire, HADS, SF-36, transplant perceptions and motivation questionnaire. Donors were mostly women (71.1%) with mean age of 46 (min 20 – max 67 years.). Before 2008 36.4% were parents, 47.7% were siblings, 7.5% were children. After 2008, donors relation to recipients were: parents (28.8%), siblings (23.3%), children (4.3%), other family members (4.7%); unrelated donors represented 38.4%. These are mostly spouses, also husbands, friends, in laws; one donor was motivated by altruistic reasons.

Conclusions: Although most candidates for LDKT continue to be related, unrelated donors are more than 1/3 of donations and represent special needs for psychosocial evaluation respecting whether psychological or motivational/ethical issues.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P630

METABOLIC SYNDROME IN MORBID OBESE PATIENTS IS ASSOCIATED WITH T-CELL TELOMERE SHORTENING

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Introduction: Obesity (Body Mass Index (BMI) ≥30) and especially morbid obesity (BMI ≥ 40) adversely affect health. A higher BMI is related to worse outcome in kidney transplant recipients, possibly due to the production of inflammatory (adipo) cytokines resulting in a state of chronic subclinical inflammation. This phenotype could also be linked to accelerated ageing of the immune system. A key marker for cellular and biological ageing is the length of telomeres, the end structures of chromosomes shortening with each cell division. To examine the effects of obesity on T-cell ageing, we measured telomere lengths in circulating T-cells in morbidly obese patients with and without the metabolic syndrome (MetS).
Methods: Forty patients with morbid obesity were included: 30 had no MetS, 10 had MetS. Relative telomere length was measured in CD4+ and CD8+ T-cells via flowcytometry (FL-FISH), relating to a control cell-line with very long telomeres. RTL was compared in age groups ≤50 and >50 years, with and without the presence of MetS, age-matched healthy controls (healthy volunteers and live kidney donors), and with and withouth the cytomegalovirus.
Results: No age differences were seen in RTL of CD4+ and CD8+ T-lymphocytes in between study groups. Patients ≤50 years with MetS had significant lower CD4+ RTL than the groups ≤50 years without MetS as well as healthy controls. The total group did not show a significant correlation of MetS in both CD4+ and CD8+ RTL. Dividing by CMV, CD4+ T-cells of CMV-seronegative morbid obese patients with MetS were shorter than those without MetS. This difference was not observed in the CD8+ T-cells.
Conclusions: Both MetS and a CMV-seronegative status result in a decrease in relative telomere length in CD4+ T-cells. These data suggest that morbid obesity with the presence of MetS is a risk factor for accelerated ageing of the immune system, which could be related to worse outcome in obese kidney transplant recipients.

015 INFECTIONS

P632

LONG-TERM IMPACT OF DIFFERENT TYPES OF CYTOMEGALOVIRUS DNAEMIA AFTER RENAL TRANSPLANTATION

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Background: Cytomegalovirus (CMV) disease and early-onset asymptomatic CMV infection not treated by antiviral agents are both a risk factors for long-term graft loss or death after renal transplantation. Although occurring very often the role of CMV DNAemia in patients managed by preemptive therapy or by universal antiviral prophylaxis is not established. The aim of the study was to determine the impact of CMV DNAemia on patient and graft survival during 3 years after transplantation.

Methods: A total of 180 consecutive renal transplant recipients at risk for CMV (donor and/or recipient CMV seropositive) were included and followed prospectively. Universal prophylaxis for 3 months was given to 132 (high-dose valacyclovir, $n = 87$; valganciclovir $n = 45$) patients, 48 patients were managed by preemptive therapy. Based on CMV DNAemia during the first year after transplantation patients were stratified to 1) no DNAemia, 2) early-onset (<3 months) DNAemia, late-onset (≥ 3 months) DNAemia, and 4) combined early+late-onset DNAemia groups, respectively.

Results: Early-onset, late-onset, and combined early+late-onset CMV DNAemia occurred in 18%, 25%, and 13% of the patients being asymptomatic in majority (91%) of cases. Graft survival at 3 years was inferior in patients with late-onset CMV DNAemia compared to patients without CMV DNAemia (82% vs. 95%, $p = 0.026$) while no significant differences were observed in patients with early-onset (88%, $p = 0.180$) or combined early+late-onset CMV DNAemia (96%, $p = 0.851$). Patient survival was comparable in all groups.

Conclusion: Late-onset CMV DNAemia is a risk factor for graft loss after renal transplantation.

031 PEDIATRIC TRANSPLANTATION

P633

COMPARATIVE ANALYSIS OF LONG TERM SURVIVAL OF PEDIATRIC AND ADULT LIVING DONOR RENAL TRANSPLANTATION: SINGLE CENTER 10 YEARS EXPERIENCE

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Background: Our objective was to highlight the results of comparative analysis of pediatric and adults living donor renal transplantation in a single center experience extended for more than 30 years.

Material & Methods: The study comprised of 1902 adults and 338 children aging 18 years or younger. Male sex was dominant among recipients of both groups in contrary to female sex that constituted for 75.9% for adults and 63.6% for pediatrics. No statistical difference was encountered for patient survival at 5 and 10 years for both groups.

Results: A significant differences was observed between pediatrics and adults 10 years graft survival. Moreover comparable patients are living enjoying good graft function for both groups at last follow up. The significant outcome predictors for graft survival for pediatrics were primary immunosuppression, acute rejection and post transplant hypertension while the corresponding factors for adults included donor age >40 years, primary immunosuppression, acute rejection, and post transplant hypertension. Multivariate analysis revealed that acute rejection sustained its impact for pediatrics while donor age >40 years, primary immunosuppression, acute rejection and post transplant hypertension still had a significant effect on outcome for the adults.

Conclusion: In spite of improved long-term graft survival more efforts must be directed toward management of risk factors that hinder further achievements.

023 KIDNEY

P634

INCIDENCE, DEMOGRAPHICS AND OUTCOME OF POST RENAL TRANSPLANT MALIGNANCIES. A SINGLE CENTRE STUDY OF 2346 RENAL TRANSPLANTS

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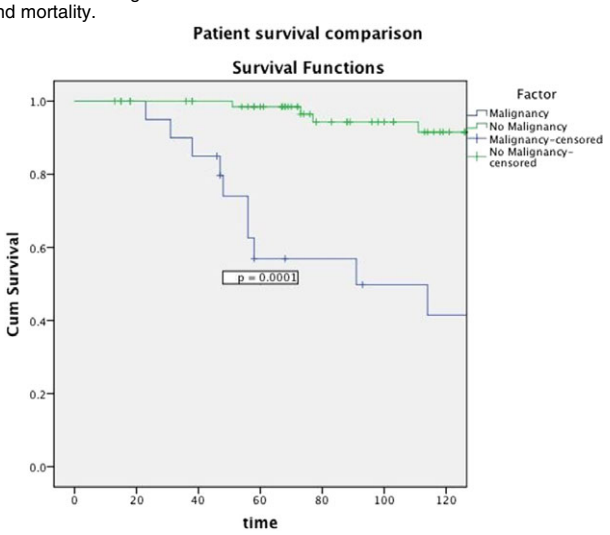
Background: In the current era of renal transplantation (RTx) the patient and graft survival are continuously improving. However there are some factors that are counterbalancing the effect of such success. One such factor is post renal transplant malignancies (PRTxM). In this present study we describes our experience of PRTxM among 2346 renal transplants performed in our centre.
Material and Methods: We performed retrospective analysis of 2346 renal transplant performed at King Faisal Specialist Hospital and Research Centre KSA between 1981 and 2013 with a median follow-up period of 153 months. We studied incidence and outcome of PRTxM among these patients. Statistical analysis was carried out using the Statistical Package for the Social Sciences (SPSS 21).
Results: Overall there was 4.5% (n = 106) incidence of post renal transplant malignancies recorded in our patients with equal distribution among paediatric and adult recipients (RR 1.0106; 95% CI 0.5927 to 1.7231; p = 0.9692). The median time from transplant to malignancy was 53 months. Non-cutaneous carcinomas (n = 42) were the commonest malignancy followed by PTLD (n = 33). The incidence of PTLD was higher in paediatric group as compared to adults (RR 3.4667; 95% CI 1.2050 to 2.4504; p < 0.0001). Likewise the incidence of non-cutaneous carcinoma was higher in adult as compared with paediatric population (RR 2.343; 95% CI 1.2204 to 2.042; p < 0.0001). The over all mortality was 7.45% during the median follow-up period of 153 months. Patients with malignancy had higher mortality rate of 29.24% as compared to 6.64% in non-malignancy group (p = <0.0001). Death with functioning graft (DWFG) was significantly more in malignant group (p = <0.0001).

Malignancy	Paediatric (329)	Adult (2017)	Adult (2017) Total (n = 2346)
Non skin carcinoma	2 (0.6%)	40 (1.9%)	42 (1.7%)
PTLD	12 (3.6%)	21 (1%)	33 (1.4%)
Skin carcinoma	0	10 (0.4%)	10 (4.2%)
Kaposi sarcoma	0	18 (0.8%)	18 (0.7%)
Sarcoma	1 (0.3%)	2 (0.09%)	3 (0.1%)
Plasmocytoma	0	1 (0.04%)	1 (0.04%)

Conclusion: Patient with renal transpants requires regular follow-up care to identify and treat potential malignancies. Early identification and treatment is associated with higher success rate with better outcomes in terms of morbidity and mortality.



025 LIVER

P635

QUALITY OF LIFE AND PSYCHOSOCIAL ASPECTS IN LIVER TRANSPLANTATION: A LONGITUDINAL SURVEY

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Background: Quality of life (QoL) is an outcome measure after liver transplantation (LT). Important improvements in QoL after LT have been reported in many studies, but fewer studies include transplanted patients with Hereditary Transthyretin Amyloidosis (hA-TTR).

Aims: To evaluate and compare QoL and Psychosocial items in 2 moments, after transplantation. Data were collected 7 years apart. Methods: 107 patients were evaluated in 2005 and 2013. A Sociodemographic questionnaire, EuroQoL, and HADS were applied. In 2006, subjects had been transplanted for more than 1 year and less than 9. Three groups were made according this. **Results:** 73 subjects (68%) had hA-TTR, 34 (32/%) had been transplanted due to other diseases. 51% were female, 73% married. In the second moment, mean age was 50 years old (min 23–max 79). When we compare evaluations, in the 2nd moment more patients were depressed (HADS: $p = 0.011$), in EuroQoL, results were better for pain and anxiety/depression (p 14 years: $p = 0.045$, $p = 0.008$) and were more depressed ($p = 0.008$).
Conclusions: Depression is a relevant psychosocial issue as time passes by transplant. Considering QoL, there are no significant changes for patients with other diseases other than hA-TTR patients. These, gradually notice a worsening of their QoL as time goes by, mainly after 11 years of transplant.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P636

THE USE OF DOUBLE LAYERED BOWLS DURING BACKTABLE INSPECTION OF ORGANS LEADS TO IMPROVED ORGAN COOLING

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Introduction: Organs that are inspected on the backtable prior to transplantation are stored in single layered stainless steel bowls and submerged in precooled UW solution with icepacks. The loss of heat causes organ temperature to rise to undesired temperatures, with upregulated cellular metabolism and thus ischemic damage. Improved isolation of the bowls might lead to improved organ preservation on the back table.

Methods: Two bowls (single layered stainless steel, commonly used in operating theatre [bowl 1] vs. commercially available double layered stainless steel dough bowl [bowl 2]) were compared for their ability to lower or maintain it's contents temperature. Water temperature (tap water as well as 4–6°C at T0) and core temperature of chicken breast filet (12 and 5°C at T0) were measured simultaneously in both bowls. Volume of water is similar in both groups. Precooled icepacks were added to simulate backtable procedure. Temperature was measured at 30 min intervals for at least 2 h.

Results: Room temperature was 22°C during experiments. Seven measurements were performed per bowl. In all simultaneous experiments, both water and chicken breast core temperature were consistently lower at each timepoint in bowl 2. Mean overall increase in temperature per 30 min was 0.96°C in bowl 1 vs. 0.19°C in bowl 2. Core temperature increased by 0.16°C each 30 min in bowl 1, whereas it decreased 0.33°C each 30 min in bowl 2.

Conclusion: Even though this is small study, there is evidence that the use of double layered bowls might improve organ preservation on the backtable. This simple intervention might prevent some ischemic damage to organs.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P637 **TWO YEARS OF KIDNEY TRANSPLANTATION PROGRAM IN MONTENEGRO**

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Background: Preparation of all neccessary conditions for the beginning of transplantation program in Montenegro started in 2006 with different activities including public, legal, medical, educational and international cooperation aspects. The first kidney transplantations from living donors in Montenegro were preformed on 25th and 26th September 2012.
Methods: Data refering to the outcome of kidney transplantation program in Montenegro.
Results: In the period from 2012 until now 21 kidney transplantations from living related donor were performed and one kidney transplantation from deceased donor in Clinical Center of Montenegro. In the period of two years of follow up, all patinets to whom kidney transplantation was performed are in good condition and without serious complication in posttransplant period. There was complication in two kidney recipient in perioperative period who had delayed graft function. In one recipient there was urinoma; in one patient deep venous thrombosis; and in one patint epizode of acute pancreatitis after sirolimus introduction in immunosuppressive tehrapy protocol. Serum creatinin level in the follow up period was in referent level in recipients as well as in donors. There was no epizodes of hyperacute and acute rejection and there were no epizodes of complications of immunosuppressive therapy. All kidney donors are followed up carefully in our center; their serum creatinine level was in reference level and there was no evidence of impaired residual kidney function.
Conclusion: The development of transplantation system improved many medical fields and continuous education of medical staff. Our next steps are improvement of deceased organ donor transplantation and achievement of higher rate of deceased donor kidney transplantation and kidney transplantation program with incompatible blood groups.

023 KIDNEY

P638

NGAL IS A PREDICTOR OF GRAFT FUNCTION ONE YEAR AFTER KIDNEY TRANSPLANTATION?

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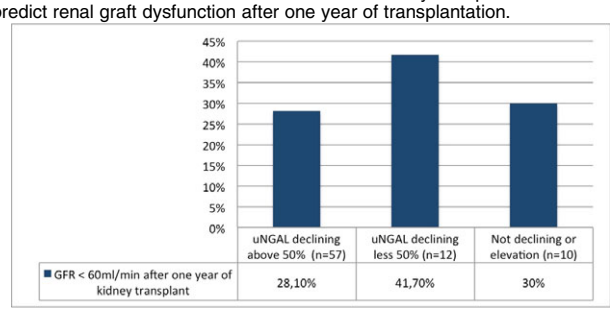
Urinary neutrophil gelatinase-associated lipocalin (uNGAL) has been suggested as early predictor of delay graft function; however, a few studies have evaluated its performance in predicting graft function after one year; in this study we explored the utility of NGALu to predict poor long term graft function defined with glomerular filtration rate (GFR) less 60 ml/min/1.73 in kidney transplant patients of Pablo Tobón Uribe's Hospital.

Methodology: This was a prospective cohort study, in which NGALu levels were assessed at 1, 12, 24 and 48 h after renal transplantation and were compared with one year GFR after transplantation.

Results: 79 kidneys transplant patients, demographic characteristics are show in Table 1, there were not differences between the values of uNGAL and GFR one year of renal transplantation. We did not find a correlation between uNGAL and GFR by CKD EPI after one year of transplantation (Pearson's correlation uNGAL 1, 12, 24 and 48 h was 0.205, 0.66, 0.61 and 0.34 respectively). The AUC in the ROC curve between GFR less than 60 ml/min/1.73 and the uNGAL 1, 12, 24 and 48 h after kidney transplantation was 0.431, 0.46, 0.45 and 0.45 respectively. Comparing the percentage of patients with a GFR less than 60 ml/min/1.73 after one year of renal transplantation and declining values uNGAL was not found no statistically significant differences ($p = 0.65$) (figure 1).

Baseline characteristics	GFR ≤ 60 ml/min ($n = 24$)	GFR > 60 ml/min ($n = 55$)	p
Sex man *n* (%)	8 (33.3%)	36 (65.5)	0.01
Age at the moment of kidney transplatation (mean ± SD)	40.67 (15.07)	39.07 (13.88)	0.65
Cold ischemia (h), (mean ± DE)	14.54 (6.08)	15.13 (5.80)	0.68
thymoglobuline induction *n* (%)	19 (79.2)	35 (63.5)	0.2
Basiliximab induction *n* (%)	5 (20.8)	20 (36.4)	0.2
NGALu (ng/ml) 1 h after kidney transplantation (median p25–75)	301.5 (131–1180.4)	677 (270–1203)	0.33
NGALu (ng/ml) 12 h after kidney transplantation (median p25–75	185.9 (74.6–546.5)	279.9 (87.1–686.9)	0.56
NGALu (ng/ml) 24 h after kidney transplantation (median p25–75)	115.3 (24.65–494.3)	212 (60.6–446.3)	0.51
NGALu (ng/ml) 48 h after kidney transplantation (median p25–75	47.65 (14.35–189.6)	59 (22.3–215.8)	0.5

Conclusion: uNGAL levels measured at 48 h kidney transplantation does not predict renal graft dysfunction after one year of transplantation.



013 IMMUNOBIOLOGY/BASIC SCIENCE

P639

ASSOCIATION OF T CELL HYPORESPONSIVENESS WITH AGEING OF KIDNEY TRANSPLANT IN PATIENTS ATTENDING INKOSI ALBERT LUTHULI CENTRAL HOSPITAL (DURBAN, SOUTH AFRICA)

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[2]*University of KwaZulu-Natal*

Background: We and others have previously reported a significant reduction in the proliferation of peripheral blood mononuclear cells (PBMC) from transplant patients treated by cyclosporin, tacrolimus or sirolimus based immunosuppressive regimens. Despite the reduction in immunosuppressive dose transplant patients are still subject to infections and malignancies.

Objective: To assess T cell response of kidney transplant recipients according to transplant age.
Method: PBMC were obtained from 38 transplant patients (transplant age from 0–20 years) by means of density gradient centrifugation of blood samples. Fifty thousand PBMC per well, were incubated overnight (15–18 h) in triplicate with 5 μg/ml of a mitogen, Phytohemagglutinin (PHA). The Promega CellTitre-Glo Luminescent Cell Viability assay which signals the presence of intracellular ATP by means of the luciferin/luciferase. Turner Biosystem luminometer were used to measure ATP in relative lights units (RLU). Data were analysed according to the age of the transplant.
Results: The Chi-square test was employed to assess group differences. As shown in the table below, T cells from transplant patients were less responsive to PHA stimulation as transplant age increased, p = 0.0107.
Conclusion: T cell response of our transplant recipients decreased with the ageing of kidney transplant. This may correspond to a progression toward an immune tolerance state.

	All patients (n = 38)	0–5 years transp (n = 8)	6–10 years transp (n = 18)	11–15 years transp (n = 7)	16–20 years transp (n = 5)	p Value
Mean (ATP) ± SEM (ng/ml)	265.74 ± 25.75	386.25 ± 79.14	228.72 ± 30.44	259.57 ± 47.97	214.80 ± 48.60	p = 0.0107

021 ISLET/CELL TRANSPLANT

P640

THERAPEUTIC ANGIOGENESIS WITH MESENCHYMAL STEM CELLS ISOLATED FROM CRITICAL LIMB ISCHEMIA PATIENTS IN RAT'S MODEL OF ISCHEMIA

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Background: Critical limb ischemia (CLI) is the most severe stage of chronic occlusive arterial disease. Conventional management of CLI is associated with an increased risk of amputation and mortality. The main objective of the study was to establish an experimental model of critical hind limb ischemia, viable for assessing the therapeutic effects of mesenchymal stem cells (MSCs).
Methods/Materials: The experimental model of rat's hind limb ischemia was obtained by excision of the femoral and iliac arteries. MSCs were harvested from rats and from human patients with CLI.
Results: We compared *in vitro* and *in vivo* pro-angiogenic ability of MSCs from patients with CLI and MSCs from healthy rats using gene expression profiling and functional assays.
Conclusions: Our study revealed that the experimental model of rat's critical ischemia model is a feasible model for further research. After cell therapy both cell lines presented pro-angiogenetic ability, thus these cells could be used for regenerative therapy.

023 KIDNEY

P641 SIMULTANEOUS ADRENALECTOMY AND IPSILATERAL DONOR NEPHRECTOMY FOR PATIENTS WITH NON-FUNCTIONAL ADRENAL INCIDENTALOMAS

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	Donors without AI	Donors with AI	p Value
Age	46 ± 13.2	56 ± 11.7	0.009
Gender (M/F)	375/461	4/9	0.31
BMI	27.4 ± 4.8	30 ± 2.7	0.016
Operative time (min)	82 ± 23.1	97.6 ± 20.4	0.021
Postop. stay (days)	2.35 ± 0.79	2.6 ± 1.64	0.82
Peroperative comp.	21/836	1/13	0.24
Postop early comp.	61/836	1/13	0.24
Postop late comp.	12/836	1/13	0.68
Conversion (min)	7/836	0/13	0.74

The prevalence of adrenal incidentalomas (AI) is reported to be between 0.8 and 5%. Majority of the AI was found to be benign nonfunctional lesions, leaving a small but important proportion of malignant or functioning masses. Especially, metastatic lesions of the adrenal gland should be ruled out which could be the only manifastation of a metastatic cancer in a living kidney donor. There is a paucity of data regarding the management of adrenal AI in the living kidney donor. We performed a single center, retrospective study of consecutive living kidney donors who underwent laparoscopic donor nephrectomy (LDN) for transplantation, with or without simultaneous ipsilateral adrenalectomy. In the study period, 849 consecutive patients were identified. All patients with AI were detected by CT scan during routine preoperative donor evaluation. The functionality of AI was determined. All AI were found to be nonfunctioning masses. Adrenalectomy was performed in all patients prior to LDN, concomitantly. After the benignity of the masses was shown by frozen section the operations were resumed with LDN. 13 donors (1.5%) underwent simultaneous adrenalectomy and nephrectomy. There were no differences in complication rate between the two groups. There were no cases of malignancy in the donor or the recipients. Adrenalectomy and simultaneous nephrectomy was associated with increased operative time. Conclusions: Simultaneous adrenalectomy and ipsilateral nephrectomy is technically safe and confers no identifiable increased risk of malignancy for the kidney transplant donor or recipient. Although, the primary malignancy incidence of AI less than 4 cm in diameter is less than 2%, a small adrenal mass could be the only manifestation of a metastatic tumor in a living donor. Therefore, LDN should follow an adrenalectomy with frozen section examination in living donors with AI.

P643 BELATACEPT (BELA) USE IN ACUTE NEPHROCALCINOSIS (NC) IN KIDNEY TRANSPLANT PATIENT (KTP)

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Background: Early NC in kidney transplant (KT) is sometimes associated with hyperparathyroidism (1). Calcineurin inhibitors (CNI) can lead to hypocitraturia, hypercalciuria and hyperphosphaturia, findings which can increase the risk of NC (2). BELA is a selective T-cell co-stimulation blocker and a non-nephrotoxic immunosupressor.
Aim: To present a KTP who developed acute NC in the 1st month post-transplant (PTx) so Tacrolimus was switched to BELA. Case report. A 46-year-old man received a 2nd K T from a deceased donor in December 2014. The patient previously had severe secondary hyperparathyroidism. He received Thymoglobulin, Micophenolate Mofetil, Tacrolimus and steroids. Haemodialysis was necessary. On day 7 a renal biopsy (RB) was made, showing acute tubular necrosis (ATN). As he did not recover RF on day 15 PTx a new RB revealed acute rejection Type IA and ATN. He received 3 pulses of methylprednisolone. His RF began to improve but on day 35PTx the serum creatinine rose and the urine output decreased. A 3rd RB displayed calcium deposits in the interstitium. Tacrolimus was switched to BELA. The BELA regimen was: 10 mg/kg doses on days 36, 50, 78 and 106. After that, it was reduced to 5 mg/kg every 28 days. When Tacrolimus was discontinued the RF began to improve reaching a glomerular filtration rate of 55 ml/min at 3 months PTx.
Conclusion: As we did not performed any test to prove CNI toxicity we cannot support that it was produced by the CNI. Belatacept as a non-nephrotoxic immunosupressor may be useful in case of acute RF deterioration due to nephrocalcinosis by CNI toxicity or when its aetiology cannot be immediately defined.

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2. L Stapenhorst et al Pediatric Nephrol, 20:652–656.2005.

P644 PREDICTION OF LONG TERM LIVING DONOR KIDNEY GRAFT OUTCOME: COMPARISON BETWEEN DIFFERENT ARTIFICIAL INTELLIGENCE MODELS

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Background: Predicting the clinical outcome of a renal transplanted graft with high level of accuracy is a challenging task. Emerging hospital based patient computerized systems lighted the focus on the importance of Data Mining role to answer challenge. The goal of this study was to compare the performances and features of different neural networks models namely Decision Tree and Rule Based Classifiers to Logistic multivariate regression model to predict graft long term outcome.
Materials & Methods: A prospective validated dataset of living renal transplant recipients from the Urology and Nephrology Center, Mansoura, Egypt was utilized. Data classifiers were developed using the WEKA machine learning software workbench by applying Rule Based Classifiers (RIPPER, DTNB), Decision Tree Classifiers (BF, J48) and Logistic Regression.
Results: We found that rule based NN model outperformed (Accuracy 94%, recall speed: 5.6 s) the logistic multivariate regression model (Accuracy: 74%, recall speed: 7449.5 s).
Conclusion: Neural networks high performance does not need emphasis, rule based classifiers has better performance for predicting long term clinical outcome.

031 PEDIATRIC TRANSPLANTATION

P645

THE SURGICAL TECHNIQUE IN PEDIATRIC KIDNEY TRANSPLANTATION: ABOUT 20 CASES

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Introduction: Pediatric Kidney transplantation (KT) has several features from the KT in adults, especially the surgical technique which is one of the major difficulties of this graft.

Objectives: Describe the two surgical techniques used in children during a kidney transplant from a living donor in our hospital and compare them.

Methods: Descriptive retrospective study comparing the 2 techniques with a graft placed intra or extra peritoneal in 2 groups of children under the age of 16 with a follow-up period of 3 months to 5 years.

Results: The Surgery intraperitoneal (IP) was performed in 9 children while the extra peritoneal (EP) was adopted in 11 children. The average age was younger if IP route (10.4 $\pm$ 3 years against 14.36 $\pm$ 2 years) with an average weight (22.32 $\pm$ 3.33 36.73 $\pm$ 12.06 against) and a lower body surface, but not significantly. Vascular anastomoses were performed on the iliac vessels (6 cases) or external (3 cases) if surgery IP and the external iliac vessels (5 cases), primitive iliac vessels (4 cases) and the inferior vena cava in 2 cases in case of EP surgery. The average length of the IP surgery (280 min) was unlike a little shorter than the duration of the surgery EP (307 min) with a duration of IC also slightly shorter (49 vs. 51 min), with no difference significant. IP had required surgery two early reoperations. However, the EP technique is complicated more hematoma, lymphocele and cystitis. A patient's loss had occurred in the IP surgical group and 2 losses grafts were noted in the other group.

Conclusions: By the IP route surgery offers more security in terms of graft survival by decreasing vascular and urological complications with respect to the EP surgery. However, one of its major drawbacks is the inability to biopsy the graft required.

025 LIVER

P646

USE OF OLD LIVER GRAFTS FOR LIVER TRANSPLANTATION. THE EXPERIENCE OF SINGLE TRANSPLANTATION CENTRE

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Background: One of the key challenges of current transplantology is lack of sufficient number of organs used for liver transplantation on one side, and the continuously increasing number of patients waiting for the surgery. This paper discusses the results of studies on the age of the donors as a criterion to expand the donor pool for acceptable grafts.
Aim of the Study: The objective of this study is to present the results which confirm the hypothesis that age of the donor does not negatively impact transplantation outcome within the group of 60 to 70 years olds compared to younger group.
Material and Methods: From January 2011 to December 2013 in the Department of General, Transplant and Liver Surgery we analysed all 78 patients who received grafts >60 years (75.6% for the group 60–65 years, 23.1% for the group 65–70 years and 1.3% for the group above 70 years of age), in comparison to grafts <60 years. We compared patient and graft survival at 1 year and function of the graft evaluated by parameters such as level of AST, ALT, bilirubin and prothrombin time, and also by echo- Doppler ultrasound on liver vascular patency in 1, 10 and 30 days.
Results: We analyzed the use of older grafts (>60 years) and did not find significant differences in patient and graft survival at 1 year, compared to younger group of donors.
Conclusions: The conclusion of this study is that the donors' age >60 years – when without any additional risk factors – should not be a contraindication to liver transplantation, because research shows that the results are comparable with the use of grafts from the younger donors.

023 KIDNEY

P647

THE EFFECT OF COLD ISCHEMIA TIME ON ALLOGRAFT FUNCTION AND SURVIVAL

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Background: Cold ischemia time (CIT) may amplify immune response and lead to delayed graft function (DGF), chronic allograft injury and poorer allograft survival. The aim was to examine the effects of CIT on allograft function and survival.
Matherial/Methods: Retrospective analysis of the medical records of paired kidney recipients transplanted from January 2008 to December 2013 at our kidney transplant center. Groups were formed depending on whether patients were the first (Group 1) or the second transplanted recipient (Group 2). Data on demographics, degree of HLA mismatches, CIT, donor characteristics, induction and maintenance of immunosuppressive therapy, allograft function and proteinuria values, DGF incidence, acute rejection (AR) and infections rate were collected.
Results: During the study period 112 kidney recipients were analyzed. Mean donor age was 49.9 $\pm$ 13.6 years and they were male in 53.6%. Induction therapy included antithymocyte globulin (9 mg/kg of BW), while maintenance immunosuppression consisted of tacrolimus, mycophenolic acid (2 g or 1440 mg per day) and prednisolone. Valganciclovir prophylaxis of CMV infection was conducted in all patients. CIT was significantly longer in Group 2 (21.6 $\pm$ 3.5 vs. 18.1 $\pm$ 2.9 h; $p < 0.01$). Mean age of the recipients, number of HLA mismatches, rate of AR, level of cytotoxic antibodies before and after transplantation and bacterial and CMV infections rates were similar in both groups. Although DGF was more frequent in Group 2, no statisticaly significant difference was found. Allograft function in terms of serum creatinine levels and creatinine clearance during the first year following transplantation was better in Group 1, but withouth statistical significance. Allograft survival was significantly better in Group 1.
Conclusion: According to our data allograft function and survival rate are better in cases of shorter CIT. Limiting CIT should remain one of the main goals in kidney transplantation.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P648

ONCE-DAILY PROLONGED-RELEASE TACROLIMUS IN DE-NOVO LIVER TRANSPLANTATION: A CASE MATCH ANALYSIS WITH TWICE-DAILY TACROLIMUS FORMULATION

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Background: Few data are available on de-novo use of once-daily (QD) prolonged-release tacrolimus (Advagraf®) in liver transplant (LT).
Methods: One-hundred LT immunosuppressed with Advagraf® were matched with 189 LT treated with twice-daily (BID) tacrolimus. Follow-up analysis stopped at 6th month. Adjunct immunosuppression was micofenolate mofetil and steroids for both groups. Tacrolimus target trough levels were the same in two groups: 8–10 ng/ml in the first month,6–8 ng/ml up to the 6th month. The start dose was 0.15 mg/Kg for QD and 0.06 mg/Kg for BID.
Results: The two groups were similar for donor (age, macrovesicular steatosis), recipient (HCC prevalence, MELD, BMI, pre-LT GFR-MDRD), and donor-recipient features (D-MELD), except for a significant prevalence of HCV-positive patients in QD (33% vs. 6%, $p < 0.0001$), due to prevalence of Cyclosporine immunosuppressive regimen in HCV recipients up to the 2013. The median tacrolimus given dose (mg/kg) was significantly higher in QD up to 3 months ($p < 0.01$). Trough level was significantly higher in BID at day 2 ($p < 0.0001$); from day 5 trough level was significantly higher in QD up to the 30th day ($p < 0.05$). In QD, renal function up to the 10th day and biopsy-proven acute rejection rate were respectively better ($p < 0.05$) and lower ($p < 0.02$). No differences between groups were observed about side effects (de-novo diabetes, hypertension, neurological complication). Early graft dysfunction was significantly higher in BID group (46% vs. 21%, $p < 0.01$). BID was a risk factor for development of early post-LT renal impairment (OR [CI 95%]:1.7 [1.0–2.7], $p = 0.047$) and acute rejection (OR [CI 95%]:3.8 [1.3–11.3], $p = 0.008$), confirmed at logistic regression. Excluding early graft loss (<30 days), 6-month graft survival was similar in the two groups (98% in QD, 95% in BID, $p = 0.27$).
Conclusions: De novo use of Advagraf® in LT seems to achieve BID standard profiles of safety and efficacy. A potential favorable outcome in terms of renal function and rejection rate need to be investigated.

011 HEART

P649 **BELATACEPT IN HEART TRANSPLANT PATIENT (HTP) WITH RENAL DYSFUNCTION (RD)**

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Chronic renal failure has an incidence of 10.9% at 5 years in HTP. Risk factors have been identified such as calcineurin inhibitors (CNI), pre-transplant renal function (RF) and deteriorating RF during the first 3 months post-transplant (PTx) (1). Belatacept is a selective T-cell co-stimulation blocker as well as a non-nephrotoxic immunosuppressor. Therefore its use would be helpful in HTP with previous RD. Currently there is only 1 report about off label use in heart transplantation (2).

Aim: To present a HTP with previous RD, who developed PTx non oliguric acute renal failure and received Belatacept as primary immunosuppression in a CNI free regimen.
Case Report: A 65-year-old man received an orthotopic heart transplant in September 2014. Immunosupression: Thymoglobulin for 5 days, Micophenolate Mofetil 2 gr/day from the first day and steroids. As he developed non oliguric acute renal failure and he had a pre-transplant RF of 45 ml/min- 2 important risk factors- so it was decided to use Belatacept instead of tacrolimus. Belatacept was initiated at 10 mg/kg dose on day 6 PTx (to be considered as the 1st dose). The same doses were given on days 14, 28, 56 and 84. From day 112 on he has been receiving 5 mg/kg of Belatacept every 28 days. 6 months PTx his RF is of 80 ml/min. Acute rejection (AR) has not been observed in the 6 myocardial biopsies made.
Summary: This is the 1st case, to our knowledge, of de novo Belatacept use in HTP who had never received CNI. Up to now he has not developed AR episodes with improvement in his RF.

Clinical trials are necessary to evaluate Belatacept efficacy and safety in HTP.

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023 KIDNEY

P650

INTERSTITIAL FIBROSIS AND TUBULAR ATROPHY ON PROTOCOL BIOPSIES AT 1 YEAR AFTER THE TRANSPLANTATION

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Introduction: Interstitial fibrosis and tubular atrophy is a main histological pattern for progressive allograft damage. Protocol biopsies in renal transplant recipients are useful method for follow up of renal histology and can predict long term graft survival. We examined tubulointerstitial changes 12 months after kidney transplantation focusing on interstitial fibrosis and/or tubular atrophy (IF/TA).

Methods: Using the Banff 07 classification, we assessed the histological findings 12 months after the surgery in 30 patients transplanted between 2012 and 2013. The graft biopsy was performed using a standard procedure and the histological findings were analysed by one skilled pathologist. The scores ci $>$ 1 and ct $>$ 1 are taken in consideration for analysis. According to the data obtained we classified the patients in two groups, namely pts with ci and ct score $>$1 (group 1) and pts below score 1 (group 2). The serum creatinine, GFR-MDRD, rejection episodes and proteinuria were compared.

Results: The significant ct and ci score ($>$1) was confirmed in 11 pts (36.6%) while 19 pts (63.4%) the same score was less than 1. The serum creatinine was 131 and 128 μmole/l (n.s.) while GFR 51.3 vs. 63.05 ml/min in the group 1 and 2, respectively ($p < 0.05$). A total of 5 acute rejection episodes (3 borderlines and two grades IA) were registered for whole group of pts (3 in group 1 and 2 in group 2). No any difference in proteinuria was observed.

Conclusion: IF/TA is a crucial evidence of progressive allograft lost. The authors emphasise the importance of protocol biopsies in clinically stable renal allograft recipients. The high percentage of chronic changes alert us for more careful patients and graft monitoring during the transplant procedures and follow up.

031 PEDIATRIC TRANSPLANTATION

P651

PORCINE DERMAL COLLAGEN GRAFTS FOR ABDOMINAL CLOSURE IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS ≤2 YEARS OF AGE WITH BILIARY ATRESIA

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Background: Primary wound closure after pediatric liver transplantation cannot always be achieved due to lack of intraabdominal space. At worst, excessive pressure from post-anhepatic small bowel edema or oversized grafts can lead to a compartment syndrome, which ultimately culminates in impaired graft perfusion and graft loss. Synthetic materials used for wound closure are frequently fertile soil for infections. Here we describe our experience of abdominal wound closure in pediatric liver transplant recipients using a biodegradable porcine dermal collagen graft (PDCG).

Patients and Methods: We performed a retrospective review of our pediatric liver transplant database targeting patients under ≤2 years and with previous Kasai portoenterostomies that received a PDCG for abdominal closure after liver transplantation.

Results: Between 2011 and 2013 seven patients with previous Kasai portoenterostomies received a PSCG for wound closure following liver transplantation. Recipient's age at time of transplantation was 9.08 (±5.49) month. Mean body weight and height were 6.6 (±1.1) kg and 63.1 (±7.8) cm respectively. 71.43% (5/7) received a living donor liver allograft (Seg. II, III) and 14.29% (1/7) received a deceased donor split (Seg. II, III) or a full size liver allogaft respectively. Mortality and re-transplantation rate was 0%. One (14.29%) patient with intestinal perforation required reoperation and one PDCG hat to be removed due to superinfection. No intraabdominal compartment syndrome, bile leakage and portal or hepatic artery thrombosis occurred.

Conclusion: PDCGs are key to successful abdominal closure in pediatric liver transplant recipients where primary wound closure cannot be achieved.

015 INFECTIONS

P652

H1N1 INFECTION AMONG EGYPTIAN RENAL TRANSPLANT RECIPIENTS

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Background: Pandemic H1N1 infection has been associated with significant morbidity in general population. Immunocompromized transplanted patients are one of at risk groups. Handling of immunosuppressive drugs in such population was not discussed in details in literatures.
Patients & Methods: 52 renal transplants (RTR) started oseltamivir upon clinical suspicion. 25/52 of them were proved to suffer from H1N1. Nasopharyngeal swabs were subjected to specific testing for H1N1 by standard methodology using real-time reverse transcriptase polymerase chain reaction (RT-PCR).
Results: Of the confirmed cases; 21 patients were admitted and isolated due to pneumonia, bronchitis, gastroenteritis and or shock while the other 4 patients treated on outpatient basis.
Results: 12 cases suffered from respiratory symptoms; six cases suffered from H1N1 pneumonia, while other 6 cases suffered from acute bronchitis. The other 13 admitted patients suffered from gastroenteritis, high fever and or shock. 23 out of 25 RTR showed dramatic response to oseltamivir, high grade fever resolved 1–2 days after initiation of the antiviral drug. Most of patients discharged to home 4–6 days after admission.
Conclusions: Early clinical suspicion and starting oseltamivir immediately upon clinical suspicion is to decrease the morbidity and mortality. Doubling the dose, extension of duration of treatment and reduction of immunosuppressive drugs (when indicated) are the keys for successful management of H1N1 infection in RTR.

031 PEDIATRIC TRANSPLANTATION

P653 **GROWTH AFTER PEDIATRIC RENAL TRANSPLANTATION**

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Background: Growth retardation is a common problem for children with chronic kidney disease. Although renal transplantation (RT) resolves endocrine metabolic and uremic disturbances, growth continues to be suboptimal. This study aims to describe changes in height after kidney transplant in children renal allograft recipients.

Methods: We retrospectively reviewed 20 renal allograft recipients who underwent RT at 6 months afterwards. Pre- and post-RT growth was analyzed by height Z scores (Ht_Z) at RT, 2, 3 and 4 years follow-up.

Results: Severe growth retardation <-3 DS was noted before graft in 80% of cases. The mean baseline Ht_Z at RT was -2.80. Among these children recovery of a normal height for age was observed in 43% of patients at 1 year post transplant. For those who had reached 2 years of transplantation, the majority of children also kept short stature. At 3-year graft, only three among 8 children still had short stature. The change in Ht_Z at 1 and 4 years after transplantation was 0.05 and 0.80 respectively.

Conclusions: Growth after RT is not sufficient and better clinical and nutritional support before onset of end-stage renal disease is necessary, addional to limiting the duration of dialysis treatment

025 LIVER

P654

ENDOSCOPIC TREATMENT OF EARLY BILIARY END TO END STRICTURES IN LIVER TRANSPLANT RECIPIENTS

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Introduction: One of the potential early complications of liver transplantation are strictures of end to end anastomosis of the bile duct. In this retrospective cohort study we analyzed endoscopic treatment of bile duct strictures in liver transplant recipients.
Method: Between 2011–2013 475 patients underwent liver transplants (LT). During this period 34 (7.16%) LT recipients presented early signs (1–10 weeks) of jaundice and elevated bilirubin levels due to end to end bile duct anastomosis strictures. Methods of balloon dilation (BD) and use of plastic stents (PS) and covered self-expandable metal stents (SEMS) were applied.
Results: Overall 51 ERCPs were performed in 34 pts in this period. BD was conducted in 10 (29.4%) patients, followed by implantation of PS, with consecutive re-stenting after 3–4 months. SEMS was applied in 9 patients. 15 (44.1%) patients were treated with PS. 2 (5.9%) patients died from reasons unrelated to the analyzed complications during the course of endoscopic treatment. 7 (20.6%) patients were successfully treated through 2 ERCP. 25 (73.5%) patients had ongoing treatment of 3 or more ERCPs during the analyzed period.
Conclusion: For early biliary duct to duct anastomosis strictures endoscopic retrograde cholangiopancreatography is the primary treatment. In our data, 20% of liver transplant recipients with early bile duct end to end strictures, are successfully treated with ERCP during the first stenting reducing the number of surgical interventions and prolonging graft survival.

P655

INTRAOPERATIVE DECISION OF RIGHT POSTERIOR SECTOR UTILISATION IN THE SETTING OF LIVER DONOR HEPATOSTEATOSIS

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Introduction: Right posterior sector (RPS) grafts have been used in living donor liver transplantation (LDLT) under certain anatomical and technical conditions with careful preoperative planning. Here we report a case, that our plan of right lobe graft harvest was changed to RPS graft intraoperatively due to unexpected steatosis.
Case: Nineteen year-old woman was referred with end stage liver disease resulted from Wilson's disease. She weighted 53 kilograms. Patient had grade I-II hepatic encephalopathy and jaundice with bilirubin levels up to 41 mg/dl necessitating several sessions of plasmapheresis. Preoperative MELD score was 26. Donor was the patient's 50 year-old father with a body mass index of 30 kg/m^2. Total, right and left lobe volumes were 1877, 1314, and 563 ml respectively. Left lobe to total liver volume ratio was 30%. Preoperative donor liver biopsy was reported as 10% macrovesicular hepatosteatosis. Donor intraoperative liver biopsy revealed 30% macrovesicular steatosis. Right lobe graft was considered unsafe for donor and left lobe graft could be insufficient for recipient. Hence a RPS graft harvest was decided despite lack of any anatomical arterial or portal variation favouring this type of graft. Postoperatively recipient liver functions and clinical condition returned to normal after the first week. She experienced a cut surface bile leak which stopped spontaneously. Before discharge she experienced a severe diarrhea leading to acute renal insufficiency. She underwent dialysis treatment. She consequently developed respiratory failure due to pneumonia and died on postoperative day 65.
Conclusion: RPS grafts could be an alternative graft type due to unexpected intraoperative findings which could be transplanted successfully.

011 HEART

P656

HEART TRANSPLANTATION FOLLOWED BY AUTOLOGOUS STEM CELL TRANSPLANTATION FOR PATIENTS AFFECTED BY CARDIAC AMYLOIDOSIS

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Background: Patients affected by amyloidosis with severe cardiac involvement have poor prognosis at mid-term. Heart transplantation (HT) is contentious because of the multisystem involvement and risk of recurrence.
Methods: Among 17 patients affected by amyloidosis, 7 presented severe cardiac involvement. Five patients (3 males, median age 53 ± 7 years) underwent HT because of restrictive cardiomyopathy due to AL amyloidosis in 4 and senile amyloidosis in 1, 1 patient was refused because of advanced multiorgan involvement and 1 is on waiting list. In 3 of transplanted patients the heart was the only organ affected, 1 had renal involvement while 1 showed macroglossia. All AL patients had evidence of plasma cell clonality and serum lambda light chains. Two cases received bortezomib-based induction before HT, while in the other 2 cases chemotherapy was contraindicated due to the severe heart failure. Three of these patients underwent autologous stem cell transplantation after a median of 8 ± 2 months after HT.
Results: After HT 1 patient needed temporary IABP support and 1 pericardiocentesis. Three patients developed severe systemic infection and one of them died because of sepsis. At a median follow-up of 40 months (1–53 months) after HT, two patients had an acute rejection >2R. Three patients engrafted after stem cell transplantation without any grade 3–4 extrahematological complications and complete hematologic remission. One patient developed an haematological relapse and was treated with 6 cycles of bortezomib-dexamethasone- cyclophosphamide but died because of amyloidosis progression at 15 months. Three patients are asymptomatic with no organ impairment
Conclusions: Our limited experience demonstrates that HT followed by autologous stem cell transplantation is feasible in selected patients with amyloidosis and heart failure, and that such a strategy may lead to improved overall survival.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P657

COELIAC DISEASE SECONDARY TO TACROLIMUS IN KIDNEY TRANSPLANT RECIPIENT: CASE REPORT

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Introduction: Calcineurin inhibitors such as tacrolimus are known to cause neurological, haematological disorders, and nephrotoxicity as classical side effects. Although bowel complications are rare; coeliac disease is a possible side effect of Tacrolimus used in kidney transplantation.
Materiels and Methods: We report a case of coeliac disease occurred in a transplant kidney recipient receiving Tacrolimus, Mycophénolate Acid and. We will analyze this case through a literature review
Observation: A woman aged 34 years with the history of chronic renal failure of unknown aetiology; she was on Hemodialysis since 2006 until the date of her transplantation the 26th of May 2010 from a cadaveric donor. She had as an induction therapy with polyclonal antibodies Solumedrol and for maintenance, she underwent tri-therapy with oral corticosteroids, Tacrolimus and Mycophenolate Mofetil (MMF). She was released after 15 days of transplantation with a creatinine level of 96 μmol/l. Several complications had occurred after transplantation: graft pyelonephritis at J7 of graft, hypertension at J5 of graft. And chronic diarrhea with weight loss unimproved despite the switch from MMF to Azathioprine. She had many explorations which are normal (abdominal ultrasound, gastroscopy, bowel MRI). We decide to repeat gastroscopy because of the importance of the weight loss; it was in favor of coeliac disease and celiac serology was positive. She underwent gluten-free diet but diarrhea was not stopped. After stopping Tacrolimus and its switch to Ciclosporine A (Néoral), the diarrhea disappeared and we note an increasing of her weight.
Conclusion: Tacrolimus is known for its use in therapy of human autoimmune disorders, but this case has showed that it can be the cause of autoimmune disease such as coeliac disease.

015 INFECTIONS

P658

CALCIPHYLAXIS FOLLOWING KIDNEY TRANSPLANTATION: A CASE REPORT

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Cutaneous calciphylaxis can occur early or late after kidney transplantation. We report a 43-year-old female with end stage renal failure (ESRD) secondary to unknown cause, who was on dialysis for 15 years and received deceased kidney transplant 3 years ago. She had cutaneous calciphylaxis lesions confirmed by biopsy, involving the medial aspect of the thighs bilaterally and a large necrotic ulcer on the posterior aspect of the left thigh. The patient had no classic risk factors. She had subtotal parathyroidectomy but have normal serum calcium, phosphate and parathyroid hormone level. The clinical outcome of this case was not favorable as expected and highlights some fundamental issues relating to management.

029 PANCREAS

P659

SUCCESSFUL PANCREAS TRANSPLANTATION FROM A NON-DIABETIC DONOR VOLUNTARILY INTOXICATED WITH SULFONYLUREAS

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Introduction: Simultaneous kidney-pancreas transplant is the treatment for patients with longstanding Type 1 Diabetes Mellitus and ESRD. It is unusual to use a pancreas from a donor who dies from acute drug intoxication with oral hypoglycemic agents (OHA) given that this could suggest pancreatic disorder. We reported a case of pancreas transplant from a Brain Death donor caused by cerebral edema secondary to severe hypoglycemia after heavy intake of sulfonylureas (glibenclamide).
Methodology: A 48 year old non-diabetic female patient, was admitted after an intentional heavy OHA intake who developed severe blood hypoglycaemia of 20 mg/dl, signs of diffuse cerebral edema on cerebral CT scan and evolution to brain death after 4 days. The patient was evaluated as a potential donor for abdominal and thoracic organs. The following organs were successfully transplanted: kidneys, liver, lungs and pancreas. During abdominal retrieval, the pancreas showed a proper macroscopic appearance, with no signs of edema and adequate organ perfusion with IGL-1. After a cold ischemia time of 9 h, pancreatic graft implantation was performed using the venous anastomosis between the graft portal vein and right primitive iliac vein of the receptor; and arterial anastomosis between the superior mesenteric artery from the graft and the recipient's primitive right iliac artery; objectifying correct graft reperfusion without intraoperative incidents.
Results: The pancreatic graft function was monitored using biochemical parameters (initial peak amylase/lipase: 527/542, with progressive normalization) and abdominal ultrasonography (pancreas of normal size and homogeneous echostructure and permeable arterial and venous anastomosis). The patient presented normalization of blood glucose levels immediately after surgery, and proper postoperative course.
Conclusion: Acute intoxication with sulfonylureas, in non-diabetic donors, is not a reason to reject a pancreas for transplantation.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P660

IL2R MONOCLONAL ANTIBODY (BASILIXIMAB) AS INDUCTION THERAPY IN IMMUNOSUPPRESSION FOR LIVER TRANSPLANT PATIENTS: A RETROSPECTIVE STUDY FOR RENAL DYSFUNCTION AND ACUTE CELLULAR REJECTION

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Background: Liver transplantation is a successful treatment for end-stage liver disease. Despite the deleterious side effects of immunosuppression it is required to prevent acute cellular rejection. The objective was to evaluate the frequency of acute renal failure dialysis and acute cellular rejection in liver transplant patients using monoclonal antibody IL2R as induction therapy.
Material and Methods: We retrospectively evaluated, 34 patients undergoing liver transplantation between the years 2012 and 2013. All them used IL2R in the first and fourth postoperative day delaying the introduction of calcineurin inhibitors for the fourth day of postoperatively. Were studied for a period of six months after transplantation categorical and continuous variables with respect to requiring hemodialysis or not postoperatively using the chi-square test and Student's t test. Survival was assessed by Kaplan-Meier method (log-rank test).
Results: 20 patients developed renal failure in the postoperative period (58.8%), and 60% of these required no permanent hemodialysis. There was an association of real MELD, length of stay in intensive care unit, use of >6 packets red blood cells and lower creatinine clearance preoperatively with hemodialysis ($p < 0.05$). There was a tendency to lower survival in patients with renal failure ($p = 0.083$). Patients who did not dialyzed had a higher survival rate ($p = 0.008$). The incidence of acute cellular rejection was 2.9%. In patients without pulmonary congestion, pneumonia or neurological complication was less need for hemodialysis ($p < 0.05$). We just had one case of CMV confirmed.
Conclusion: We found only one case of acute cellular rejection and despite the incidence of acute renal failure 40% of patients presented this diagnosis before transplantation and little is known about the effectiveness of ILR2 this context. The induction therapy with ILR2 was promising for liver transplantation in this study.

025 LIVER

P661

TRANSPLANTATION AND 6 MONTH FOLLOW-UP OF AN INITIALLY UNTRANSPLANTABLE HUMAN LIVER RECONDITIONED USING NORMOTHERMIC MACHINE LIVER PERFUSION – A CASE REPORT

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Background: Normothermic machine liver perfusion (NMLP) could increase organ utilisation by reducing ischaemia-reperfusion injury, enabling viability testing and reconditioning livers deemed not suitable for transplantation. Here we report the first case of NMLP of an initially discarded donor liver followed by transplantation in to a human with 6 months of follow-up.
Methods: A liver from a 29 year old male DCD donor with a warm ischaemic time of 1 h 49 min and cold ischaemic time of 7 h 2 min was rejected for transplantation by all UK centres. The liver was subjected to NMLP with the Liver Assist device (Organ Assist, NL) using a red cell based fluid at 37°C. Hepatic arterial and portal venous flow parameters, blood gas analysis and bile production were recorded at 30 min intervals. After 2 h of NMLP, suitability for transplantation was independently assessed by two liver transplant surgeons and an anaesthetist.
Results: At the end of NMLP (6 h 56 min), hepatic arterial and portal venous flow rates were 531 and 1070 ml/min respectively. Lactate levels decreased from 13.4 to 0.4 mmol/l, glucose was utilised by the liver and 27 g of bile was produced. Informed consent was obtained from a 47 year old male recipient. The liver was transplanted using a modified piggyback technique and there was no demonstrable reperfusion syndrome. There were no immediate complications. The initial post-operative ALT of 1215 IU/l continuously decreased, halved by day 3 and normalised by day 27. Bilirubin peaked at day 5 (110 μmol/l) and normalised by day 34. There was no evidence of renal impairment or allograft rejection during the first 6 months of follow-up. At 6 months post-operatively, magnetic resonance cholangiopancreatography demonstrated normal intrahepatic bile ducts.
Conclusion: NMLP can be used to assess viability of grafts deemed unsuitable for transplantation. The technology may contribute to utilisation of marginal grafts.

023 KIDNEY

P662 KAPOSI SARCOMA IN AFRICAN POPULATION: IS IT HIGHER THAN IN OTHER ETHNIC GROUPS?

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Background: Kaposi sarcoma (KS) is a well known non-melanoma skin malignancy which occurs after renal transplantation. The true incidence of KS in African renal transplant patients is unknown and the reported figures are highly variable ranging between 1.1% and 13.4% whereas in Western population it stands at 2.4%.
Aim: The aim of this study is to examine the incidence of KS in Sudanese renal transplant patients and to compare that with the published literature for Caucasians.
Methods: This a retrospective review of prospectively collected data of 108 patients who underwent living related kidney transplant operations in a single transplant centre in Sudan during the Period Nov 2011 till Nov 2013. All patients received triple immunsuppressive regime consisting of Tacrolimus, Azathioprine and Prednisolone. Induction therapy was not given. Patients were followed-up for a mean of 2 years (range 12–35 months).
Results: During the study period, only one patient developed KS. This represents approximately one percent of the study group. There was no other skin cancer detected in the study group.
Discussion: Although this is a small study, the results show that the incidence of KS in Sudanese patients is rather low. This is in line with the lower figures reported in the literature and comparable to the incidence of KS in Caucasians. This low incidence of KS may be related to the fact that our study group did not receive induction therapy. However, studies with bigger numbers and longer duration of follow-up are needed to detect the true incidence of KS in transplant patients.

P663 THE IMPORTANCE OF EARLY ANEMIA AFTER KIDNEY TRANSPLANTATION

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Background: The pathogenesis of posttransplant anemia (PTA) is well studied, but its effects on the kidney allograft function are poorly understood. The aim was to examine the incidence and the effects of PTA on the allograft function early after transplantation.
Methods: A retrospective analysis of patients transplanted from January 2008 to December 2013. Data on demographics, HLA MM, immunosuppression, allograft function, Hb, DGF, AR and infections were collected.
Results: During the study period 211 patients were analyzed. Induction therapy consisted of antithymocyte globulin in 208 and basiliximab in 3 patients, and the maintenance immunossuppresion of CNIs, mycophenolic acid and prednisolone. According to the Hb level in the first month after transplantation, patients were divided into two groups. Group 1 included 139 patients, mean age 43.3 $\pm$ 11.8 years, with Hb from 70 to 89 g/l, and Group 2, 72 patients, mean age 41.7 $\pm$ 10.9 years, with Hb from 90 to 109 g/l. The studied groups did not differ in terms of age of recipients and donors, Hb before transplantation, number of HLA mismatches and the frequency of surgical complications after transplantation. The degree of PTA was associated significantly with the incidence of DGF and infections following transplantation. Patients in Group 1 received greater amount of blood in the first month after transplantation, but withouth statistical significance. Amount of transfused blood did not correlate with PRA apperance. One year after transplantation, patients in Group 2 had significantly lower values of serum creatinine, creatinine clearance and proteinuria. Allograft survival was better in Group 2, but withouth statistical significance.
Conclusion: According to our results PTA had significant effect on the allograft function in the first year after transplantation. Researches on a larger number of patients are necessary for making relevant conclusions about long term effects of PTA on patient and allograft survival.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P665

GENETIC POLYMORPHISMS THAT INFLUENCE THE PHARMACOKINETICS OF IMMUNOSUPPRESSION, THEIR DISTRIBTUTION IN A HEALTHY SCOTTISH POPULATION AND ACROSS LIVER, KIDNEY AND PANCREAS TRANSPLANT PATIENTS

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Introduction: Polymorphisms (SNPs) of cytochrome P450 isoenzymes CYP3A5 and 3A4, along with SNPs of ABCB1 influence drug pharmacokinetics in transplant patients. The aim of this study was to examine the distribution of these genotypes across a healthy Scottish population, transplant recipients (liver, kidney and SPK) as well as a cohort of deceased organ donors.
Methods: Generation Scotland (GS) is a bioresource of DNA from healthy blood donors in Scotland. 4899 GS subjects, 605 transplant recipients (305 kidney, 252 liver, 48 SPK transplant recipients) and 385 organ donors were genotyped for SNPs of ABCB1 exon 26 (3435C>T), CYP3A5 (6986A>G) and CYP3A4 intron 6 (CYP3A4*22) using a Taqman® drug metabolism genotyping assay and an RT-PCR technique. Basic demographic data including age group, sex and ethnic group were also collected.
Results: 86.0% of the White – Scottish ethnic group were of the GG (*3/*3) genotype for CYP3A5, 11.6% GA (*3/*1) and 0.4% AA (*1/*1), similar between GS and transplant groups and comparable with the overall Caucasian distribution of 85.7% GG (*3/*3), 11.8% GA (*3/*1), 0.4% AA (*1/*1). G allele frequency was 0.934 overall. 20.4% of the White – Scottish group were of the CC genotype for ABCB1, 47.4% CT and 28.8% TT, similar between GS and transplant groups and comparable with the overall Caucasian distribution of 20.1% CC, 47.5% CT and 28.9% TT. T allele frequency was 0.546 overall. 88.1% of the White – Scottish group were of the CC genotype for CYP3A4*22, 9.4% CT and 0.2% TT, similar between the transplant groups and comparable with the overall Caucasian distribution of 88.0% CC, 9.4% CT and 0.2% TT. The T allele frequency was 0.051.
Discussion: This study is the largest single Caucasian population studied to date. Scotland has a fairly homogeneous population and the distribution of SNPs of the three genotypes are similar to previously studied Caucasian groups. GS and transplant groups had similar genotype distributions of the 3 SNPs.

027 LUNG

P666

EARLY OR LATE ONSET OF POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDER AFTER LUNG TRANSPLANTATION: ROLE OF INDUCTION IMMUNOSUPPRESSIVE REGIMEN

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CHU Mont-Godinne Université Catholique de Louvain

Background: Post-transplant lymphoproliferative disorder (PTLD) is a life-threatening complication of organ transplantation. The risk of developing PTLD varies depending on a number of factors, including the organ transplanted and the degree of immunosuppression used.
Methods: Between January 2008 and December 2014, 126 consecutive patients received lung allografts in our center and 9 (7.1%) developed PTLD. We report a retrospective analysis of 3 successive eras of induction immunosuppressive therapy. Basiliximab (*n*: 33, Bas group) was used first, rabbit antithymocyte globulin ATG (*n*: 26, ATG group) in the second period and horse antithymocyte globulin Thymoglobulin (*n*:66, Thymo group) in the more recent period.
Results: PTLD involved the allograft in 7 (78%) of our patients and also the gastrointestinal (GI) tract lumen in 1, but was limited to lymph nodes in the 2 others. All the tumors were of B cell origin. During these consecutive periods, 3 patients (9%) developed PTLD in Bas, 1 (4%) in ATG and 5 (7%) in Thym group with a mean age at transplant of 53, 65 and 62 years respectively. The time to disease presentation defined the type of induction therapy. All Sim patients developed "late" PTLD with a delay of more than 33 months and an average of 5.4 years. "Early" PTLD occurred in both antithymocyte groups with a delay of less than 15 months. The mean delay was 8.5 months in Thym and 7.1 months in ATG group.
Conclusions: PTLD is an uncommon complication after lung transplantation, and its delay of presentation seemed related to the type of induction therapy. We suggest that patients older than 60 years at time of transplantation should not be induced with antithymocyte globulin.

015 INFECTIONS

P667

HBV PROPHYLAXIS WITH HUMAN IMMUNOGLOBULINS IN LIVER TRANSPLANTED PATIENTS. RELIABLE AND EASY SWITCH FROM INTRAMUSCULAR TO SUBCUTANEUS ROUTE

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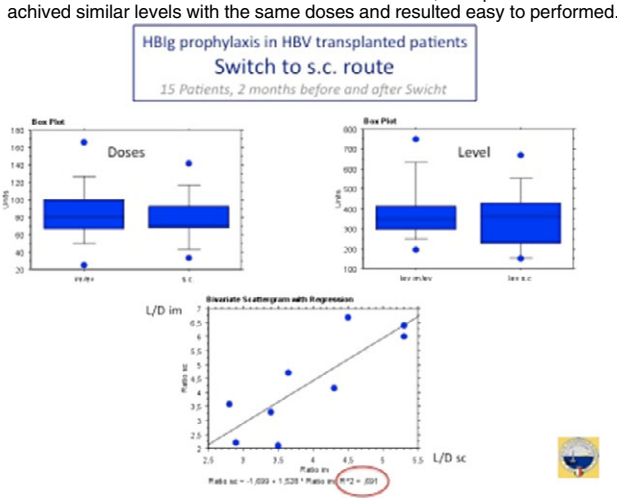
Human HBV Immunoglobulins (HBIG) and antivirus drugs are adopted in the prophylaxis of HBV infection recurrence post liver transplatation (LTx). HBIG are usually administered by intra-muscular (im) or intra-venous (iv) route. A subcutaneus (sc) formulation is now available and few studies addressed the results of the switch.

Aim: To evaluate the switch of HBIG from im/ev to sc administration in terms of clinical outcome, level/dose ratio, and quality of life (QoL) in a cohort of stable HBV liver transplanted patients.

Patients and Methods: A selected population of HBV-DNA/HBsAg negative patients trasplated with non-HBcAb/HBeAb/HBsAg donor liver, with at list 6 months of HBsAb stable levels at 1 year after transplant, were switched from im/iv to a sc injection, according to a "on demand" scheme to keep the pre-switch level. Written consent was obteined. Doses/Time and serum levels of HBAb were determined at 1 and 2 months before and at 15 days, 1, 2, 3 and 6 months after the switch. Data were compared by Wilcoxon test; correlation was cheked between level/dose ratio before and after the switch.

Results: No recurrence occured. No difference were observed between the dose required and the target levels before and after the switch: 80 (20–170) vs. 70 (30–150) UI and 350 (200–750) vs. 350 (150–650). Fig 1. A linear regression was found between the level/dose ratio before and afer switch, $R^2 = 0.69$. No complications related to injection occurred.

Conclusions: Subcutaneous administration of HBIG, compared to the im/iv, achived similar levels with the same doses and resulted easy to performed.



023 KIDNEY

P668 **LIVE DONOR KIDNEY WITH NUTCRACKER SYNDROME: TECHNIQUE AND RESULTS**

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Introduction: The highly complex embryological development of the left renal vein compared to its right counterpart results in greater variations which are clinically and surgically significant especially in live kidney donor with Nutcracker syndrome.
Objective: To identify these vascular variations, to document its incidence and To evaluate the feasibility and complications of nephrectomy in live donor kidney with Nutcracker syndrome.
Material and Method: Since FEBRUARY 2009, all related live donor and transplanted kidney from live donor kidney with Nutcracker syndrome were evaluated.
Results: Twenty-two left nephrectomy in live donor kidney with Nutcracker syndrome were performed. - Three types of Nutcracker syndrome were identified: in sixteen cases the syndrome was anterior, in FIVE cases was posterior and in one case was mixed. -Concerning the posterior nutcracker syndrome, a short vein was noted with minimal difficulty of anastomosis.- concerning the mixed type, the retroaortic branch was simply ligated without incidence.- Dissection demonstrated an evidence of Anomalies of the left renal venous drainage system occurred in all patients. -The multiple lumbar and gonadal veins abnormally dilated, in all patients was the principle constatation and difficulty during the nephrectomy. -The other anomalies included bifurcation of the gonadal vein, bifurcation of the suprarenal vein, the inferior phrenic vein draining into the left renal vein distal to the superior mesenteric artery. - Complications in donors were: Intra-operative blood losses were minimal. Prolonged lymphorrhoea was the most frequent complication seen in 8 cases.
Conclusion: The anatomy of the left renal vein, especially knowledge of collateral flow, is extremely important to ensure intraoperative security dissection and best preservation of the anatomical structure of the kidney; and allows rapid extraction of the kidney.

007 DONATION/RETRIEVAL

P669

IN-HOSPITAL ORGAN DONATION PROJECT: COSTS-EFFECTIVENESS AND SOCIAL BENEFITS

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Objective: To verify differences in organ donation and hospital revenues after the entrance of the professional expert; identify payment per hour of doctors/nurses; discuss whether the amount collected would allow to hire human resources on CIHDOTT. Calculate the ROI (Return on Investment) and TROI (Term for Return on Investment).

Methods: Epidemiological, retrospective and transversal study (2003–2011 and 2008–2012), conducted with data from organ donation in the State of São Paulo submitted to logistic regression to identify differences after the specialist professional input in CIHDOTT; calculating the payment per hour as legislation, return on investment (ROI) and term return on investment (TROI).

Results: There was statistically significant ($p < 0.05$) increase in reports of brain death (RBD) and effective donors (ED) after the entry of the nurse in the hospital 2 (4.17 and 1.52 NME DE), as well as the 7 hospital, an increase of 1.54 ED. Increase of 187% in the hospital revenues and ranged from 40% to 1955% in the hospitals. The wage per hour medical and nursing was calculated and the monthly cost for 20 h of nurses is R $ 940.00 and the doctor at $8330.00. The ROI was 275%, with low term for return on investment (PRI = 0.36 years period shorter than 1 year).

Conclusions: In conclusion, the objectives were achieved, but due to lack of economic studies in the area create the need for further research to examine the background such aspects of organ donation to contribute to an efficient public policy implementation of this organ harvesting model.

012 HISTOCOMPATIBILITY

P670

IMPROVEMENT OF THE SENSITIVITY OF THE C1Q-LUMINEX<REGISTERED> ASSAY

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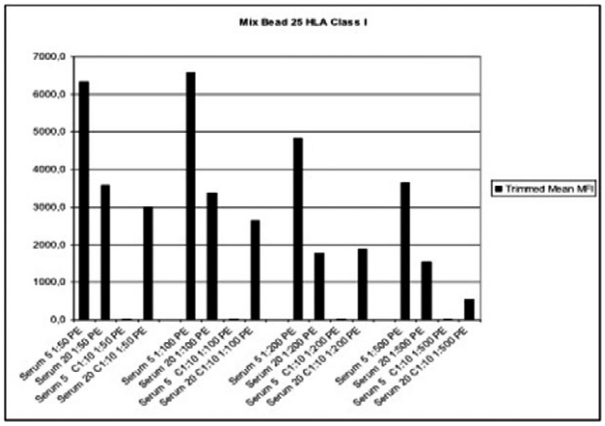
Background: Immunological factors, in particular HLA-antibodies (HLAab), contribute to long-term kidney allograft loss. Identification of de novo donor specific antibodies (dnDSA) by Luminex® technology is currently used for assessment of humoral rejection. Recently a C1q-Luminex® assay has been developed to identify complement binding HLA antibodies with highest sensitivity. The main aims of this study were to improve the sensitivity and the reproducibility of the C1q-Luminex® assay, and to reduce the inter assay variability (e.g. with different volumes tested) until the point where the test is still affordable.
Methods: Our starting point was the established in-house protocol for the C1q-Luminex® assay. Herein, we identified three critical steps that could be potentially adjustable: (1) increase the C1q volume by a 1:10 dilution with LABScreen washing buffer, (2) increase the serum volume from 5 to 20 μl, and (3) increase the concentration of the secondary detection antibody. To improve the C1q assay, we adjusted three steps of the in-house protocol in 2 cross titration tests using C1q-Luminex® MIX beads.
Results: Increasing the serum volume to 20 μl did not improve sensitivity of the assay. Diluting C1q resulted in decreased sensitivity. In contrast, by increasing the concentration of the detection antibody IgG-PE from a dilution of 1:500 to 1:100, we were able to increase five fold the MFI value. To confirm this result we performed a dilution assay using a serum with identified IgG HLAab: the modified C1q protocol showed a higher sensitivity with regard to the established in-house protocol (Figure 1).
Conclusions: This test format has led to the modification of the in-house protocol for C1q-Luminex®, where the sensitivity has increased and the test is still affordable.



013 IMMUNOBIOLOGY/BASIC SCIENCE

P671 ROLE AND BEHAVIOUR OF T CELL SUBPOPULATIONS IN A TUMOUR TRANSPLANT MODEL WITH DIFFERENT IMMUNOSUPPRESSIVE AGENTS

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Background: We previously analysed the behaviour of transplanted tumour cells and role of rejection and different immunosuppressive agents in eliminating the tumour load. The aim was to assess the best immunosuppressive agent for the patients receiving the renal allografts after ex vivo resection of small renal tumours. We found that Sirolimus was best immunosuppressive agent perhaps due to its anti neoplastic properties for eliminating any tumour load. This abstract reports specifically the flowcytometric analysis of T cell subpopulations under these experimental conditions to try to explain the reasons behind successful tumour rejection.
Methods: Wistar and Lewis rats were transplanted with Wistar renal tumour cells under cyclosporine, sirolimus (low and high doses) and leflunomide immunosuppression. The treatment was continued for 4 weeks, by the end of which the splenic cells were harvested and T cell subpopulation studied with Flowcytometry. We stained and studied CD4+ (naïve and activated), CD8+ (naïve and activated), T regulatory (Treg) and natural Killer (NK cells).
Results: The T cell population was very different between Wistar and Lewis strains. But when compared with the same strain of rats, CD4+, T regs and Natural killer cell populations were not significantly different. The most consistent results were of rats treated with low dose Sirolimus immunosuppression where the percentage of activated CD8+ cell was significantly ($p < 0.05$) higher than any other population.
Conclusion: Despite the limitation of the study (small number of animals per group), these results are in line of the findings of our previous experiments where tumour rejection was strongest among the sirolimus treated animals. This could be due to high percentage of activated CD8+ cells, which are one of the body's main defences against tumour cells.

P672 THE DEVELOPMENT OF GRAFT TOLERANCE IN RAT ORTHOTOPIC LIVER TRANSPLANTATION

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Background: A major goal of organ transplantation has been an induction of the donor-specific tolerance. The present study examined the characterization of infiltrating cells in accepting liver grafts without immunosuppression, in order to clarify the mechanism of graft tolerance in liver transplantation.
Methods: Orthotopic liver transplantation was performed from DA (RT1a) to PVG (RT1c) rats without immunosspression (tolerance group; mean survival >100 days). We studied the pathology and cytokine milieu in DA liver grafts,.
Results: In DA-to-PVG liver transplantation, the status of donor-specific tolerance was confirmed by donor type and 3rd party type skin transplantation. Even in DA liver grafted into PVG, T-cell and macrophage infiltrate by day 7 and day 21 with endothelialitis and cholangitis, which resembles acute cellular rejection. However, the features of cell infiltration resolved by day 21 with mild cellular infiltration, and grafts were survived more than 100 days. The infiltrates in accepting grafts differed from that in rejecting grafts, including less infiltration by CD3+ T cells and macrophages, less T-cell proliferation (PCNA+), abundant T-cell apoptosis (TUNEL+), less degree of cellular rejection in portal areas and lobules, and less levels of Th1 (IL-12, IFN-γ, TNF-α) and Th2 (IL-4, IL-10) cytokines. Infiltration of CD3+ T cells and ED-1+ macrophages between day 7 and day 21 resembled acute cellular rejection, but many Foxp3+ regulatory T (Treg) cells were evident in accepting grafts.
Conclusion: The development of tolerance of liver graft is characterized pathologically by the progressively diminished infiltrating cell proliferation and cell-mediated graft cell injury (T cell anergy), as well as persistence of infiltrating cell apotosis (T cell deletion) in less production of Th1 and Th2 cytokines. In addition, Treg cells were also involved in the development of transplant tolerance.

023 KIDNEY

P673

RECURRENCE OF FOCAL SEGMENTAL SCLEROSIS AFTER KIDNEY TRANSPLANTATION FROM DECEASED AND LIVING RELATED DONOR

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Background: In focal segmental glomerular sclerosis (FSGS), the success of renal transplantation may be impaired by the frequent risk of recurrence of the disease on the allograft. In the first kidney allograft, 20 to 30% of patients develop recurrence of FSGS. Second grafts, in those who have had recurrence in their first graft, are generally accompanied by a further recurrence.
Methods: Case report study.
Results: Male patient, 32 years old, was diagnosed nephrotic syndrome and CKD in 27th year. He is from family with ADPKD. In the same year he developed ESRD and started with hemodialysis treatment. In 29th year he was treated with kidney transplantation from deceased donor. He developed multiple complications afterwards: delayed graft function, proteinuria, vein graft stenosis and ureteral obstruction treated with ureteral stent and ureteroneocystostomy. He was treated with plasmapheresis without success. He underwent 4 graft biopsies with recurrent FSGS findings with elements of acute rejection and acute tubular necrosis. He was also treated with rituximab and intravenous immunoglobulins. Due to many infection episodes and complications in the next period he underwent graftectomy one year after. He was treated with kidney transplantation from living related donor in 2014 without complications in postoperative period. Four months after transplantation he presented with proteinuria of 30 grams per day. After biopsy of transplanted kidney recurrent FSGS was pathologically confirmed. Patient was treated with plasmapheresis, corticosteroids, intravenous immunoglobulins and rituximab. Proteinuria was reduced to 0.4 grams per day and graft function is preserved.
Conclusion: Recurrence of FSGS after transplantation is relatively frequent in patients who lost a previous transplant from recurrence. In the case of living donation, the possibility of recurrence and its consequences should be clearly exposed to and discussed with the donor and the recipient.

025 LIVER

P674 **MICRORNA IN ACUTE GRAFT REJECTION IN RAT ORTHOTOPIC LIVER TRANSPLANTATION**

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Background: microRNAs (miRNAs) are short noncoding 21–24 nucleotide sequences that inhibits protein synthesis by targeting messenger RNAs in a sequence specific manner. It has been known that gene specific translational silencing by miRNAs regulates various inflammatory responses. In the present study, we clarified the involvment of miRNAs in the acute liver graft rejection in DA to Lewis rat orthotopic liver transplantation.
Method: Orthotopic liver transplantation was performed from DA (RT1a) to Lewis (RT1 l) rats without immunosspression. We studied liver grafts on day 0, day 5, dan7, and day 11, focuing on the degree of acute liver graft rejection, and alteration of miRNA profile during the development of rejection in rat liver grafts. miRNAs in the liver grafts were examined by microRNA array, and analyzed by GeneSpring (Agilent Technologies).
Results: In DA-to-Lewis rat liver transplantation, the progressive acute T cell-mediated and antibody-mediated rejection occurred from day 5 and developed by day 11 with irreversible graft failure. During the development of liver graft rejection between day 5 and day 11, 193 microRNAs were up-regulated or down-regulated in rejecting grafts when compared with those in normal DA liver. These miRNAs were included the up-regulation of miR-146b, miR-223, miR-181, miR-34a, miR-326, miR-21, and the down-regulation of miR-150, miR-125b, miR-20a, all which are known as the pathways for various inflammatory responses, immune cells differentiation and signaling, development of immunity and molecular pathways for allograft rejection.
Conclusion: miRNAs may be involved in various immunological processes including development of innate and acquired immunity, inflammation, T-cell and B-cell mediated immune responses in transplant liver graft rejection. miRNAs in transplant immunobiology will provide an exciting framework for developing new biomarkers as well as new therapeutic interventions in transplantation.

007 DONATION/RETRIEVAL

P676 **DONOR OUTCOME AFTER LIVING UTERUS DONATION- ONE YEAR PROSPECTIVE FOLLOW UP**

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The purpose of the uteri transplantations was to provide a treatment for the previously untreatable condition, absolute uterine factor infertility. This is the first follow-up report of a series of live uterus donors.

The potential donors underwent a medical evaluation based on the national recommended test and analyses for living kidney donors. The donors were also evaluated by a psychologist and a social worker. Only donors considered to be fully healthy were accepted to participate in the trial. All donors were monitored at baseline and at fixed follow-up times (month 3, 6 and 12), with SF-36 and the Hospital Anxiety and Depression Scale (HADS). In addition the lengths of operative time, hospital stay and sick leave were recorded. Surgical complications were registered with the use of the Clavien-Dindo classification.

Nine donor-recipient pairs were selected. The majority of the donors were mothers of the recipients. The SF-36 Physical Components Summery scale returned to baseline. No mental illness was detected with HADS. One Clavien-Dindo grade IIIb complication occurred. The donor had to re-implant one ureter (day 134) after which recovery was uneventful. The median sick leave of the donors was 56 days (range 14–132 days) where after they all returned to their previous occupations. A few potentially stressful life events were reported among the donors. Additionally in 2/9 recipients the uterine grafts were removed due to complications (day 3 and 105).

Knowledge on individual circumstances is of importance when trying to interpret our results. In one case we suspect that the outcome of the transplantation and donation had a negative effect on the mental health of the donor, however all donors, within a year, seemed to return to their pre-donation physical health. The results support that it is possible to retrieve the uterus safely from living donors, if the assessment is done according to living kidney donor protocol and thorough psychological evaluation.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P677

EVEROLIMUS (EVE) ASSOCIACTED TO TACROLIMUS (TAC) IN MAINTENANCE RENAL TRANSPLANT RECIPIENTS AS IMMUNOSUPPRESSION TREATMENT

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Introduction: Everolimus is a proliferation signal inhibitor utilized as immunosupressant in combination with CNI in renal transplantation. This approach resulted in excellent efficacy but could affect renal function outcomes due to potentiation of CNI nephrotoxicity. However, when Everolimus is combined with reduced exposure to CNI have yielded good renal function whilst maintaining efficacy. The present paper reports our experience with renal grafted patients treated with TAC and Mycophenolate (MP) who were switched to EVE.

Patients and Methods: From october 2012, 30 deceased kidney grafted patients (20 men and 10 women), were switched from TAC+MP to TAC+EVE. The age of patients was 51 $\pm$ 10 years, with 9 $\pm$ 4 years follow-up period. The immunosuppression treatment was based on Prednisone, MP and TAC. MP was stopped according to an abrupt conversion protocol. EVE was started at 1.0 mg day divided in two doses and blood concentration was maintained between 3–5 ng/ml and TAC between 4–5 ng/ml.

Results: After EVE renal function improved in 80% of patients, with serum creatinine of 1.9 mg/dl, 20% remained without changes No proteinuria was developped. No significant changes were observed in lipid metabolism or the necessity of statins, erythropoietin and ACE inhibitors doses.

Conclusion: Immunosuppressive therapy as maintenanceTAC+EVE, replacing TAC+MP based immunosuppressive regimen in renal transplantation is safe and with no impact on graft function.

025 LIVER

P678 **RECURRENCE OF HEPATOCELLULAR CARCINOMA AFTER LIVER TRANSPLANT: RISK FACTORS**

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This study aims to determine rates of recurrence of HCC in patients transplanted for such aetiology according to the histological grade of the explant in relation with criteria of Edmonson-Steiner, alpha-fetoprotein levels of pretransplant study the relationship between meeting the Milan criteria and recurrence.

We performed a retrospective study of 960 liver transplant patients at our unit from 1990 to 2012. We selected 178 patients transplanted for HCC and excluded 19 patients with lower adherence than 1 month. We established two groups: (explant met, or not, Milan criteria) and have determined the rates of early and late recurrence. A database where we analyze is performed 80 items of each patientContinuous data are presented as the range. Actuarial curves were constructed to describe mortality and the incidence of valve-related complications using the Kaplan-Meier technique, and differences between the two groups were compared with the log rank test. A p-value <0.05 was considered statistically significant for all used tests.

In the analysis of recurrence, according to etiology, were no significant differences ($p = 0.95$). Mean levels of alpha-fetoprotein in transplant patients with a recurrence of 1228.6 UL/ml compared to that of patients without recurrence corresponding to 143.3 IU/ml remained significant with a $p = 0.007$.19% of patients meeting Milan criteria developed recurrences and 56% of those who exceeded ($p = 0.005$). For CHC with vascular or capsular invasion results were also significant. The preTH treatment showed no statistical significance.

HCC recurrence determines the survival of patients transplanted for this etiology. We found no differences in viral etiology or cirrhosis nor in patients with or without prior treatment waiting list. In our series, recurrence occurs more frequently in patients with high levels of alpha-fetoprotein, in the explant exceeding the Milan criteria and having capsular infiltration or vascular invasion.

023 KIDNEY

P679

TREATMENT OF PERSISTENT HYPERCALCEMIA AND HYPERPARATHYROIDISM WITH CINACALCET AFTER A SUCCESSFUL KIDNEY TRANSPLANT

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Hypercalcemia caused by persistent hyperparathyroidism (pHPT) after a kidney transplant (KT) is a common problem and may negatively affect graft function, bone metabolism and the cardiovascular system.

Aim: To examine the efficacy of cinacalcet in lowering Ca^{2+} in KT pts with persistent hypercalcemia after KT. W analysed 30 pts (M16/F14; adenoma formation in 22 pts) with persistent hypercalcemia >10.8 mg/dl and intact parathyroid hormone (iPTH) concentration >164 pg/dl. The mean time after KT, when hypercalcemia was detected (Ca^{2+} >10.2 mg/dl) was 28 $\pm$ 27 months. All pts were started on cinacalcet at different points after KT (mean time 43 $\pm$ 37 months). The initial dose of 30 mg/day was progressively adapted according to serum Ca^{2+}level to maximum 90 mg $n = 3$, 60 mg $n = 5$, 45 mg $n = 1$. In 4 pts it was reduced to 15 mg. One patient was lost to follow-up.

The graft function in all pts was stable (creatinine concentration 1.26 $\pm$ 0.4 mg/dl, eGFR CKD-EPI 64 $\pm$ 25 ml/min/1.73 m^2). The treatment time was 17 $\pm$ 22 months. The baseline Ca^{2+} was 11.9 mg/dl $\pm$ 0.7, iPTH 490 pg/ml $\pm$ 228 and phosphorous concentration 2.2 mg/dl $\pm$ 0.5. Treatment with cinacalcet resulted in a significant decrease in serum Ca^{2+} levels (mean 9.9 mg/dl $\pm$ 0.7; $p < 0.001$) and a reduction in iPTH (308 pg/dl $\pm$ 199; $p < 0.001$); phosphatemia significantly increased (mean 2.8 mg/dl $\pm$ 0.6; $p < 0.001$). In a subgroup of 9 patients cinacalcet was stopped due to 1. parathyroidectomy (PT) ($n = 5$) or 2. at least 6 mths of normocalcemia ($n = 4$). In the PT subgroup 3 and 6 mths after stopping cinacalcet Ca^{2+} level was 10.3 $\pm$ 0.6 ($n = 4$) and 9.6 $\pm$ 0.5 ($n = 3$). In the cinacalcet discontinuing subgroup it was 10.6 $\pm$ 0.9 ($n = 4$) and 10.4 $\pm$ 0.9 ($n = 3$), respectively. In 5 females gastrointestinal side effects were observed (withdrawal in one case).

Cinacalcet administered after KT seems to be an effective option for the management of hypercalcemia due to pHPT with satisfactory tolerability and may be considered as a therapeutic alternative to surgical PT or a bridging therapy to PT.

007 DONATION/RETRIEVAL

P680

IN-HOUSE COORDINATION PROJECT FOR ORGAN AND TISSUE PROCUREMENT: SOCIAL RESPONSIBILITY AND PROMISING RESULTS

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Objectives: To investigate the changes in the number of notifications of brain death and effective donors, and the conversion rates before and after the introduction of the Organ Harvesting Nucleus project, which implements a specialist nurse as an in-house coordinator, in nine public hospitals.

Methods: Analysis data from organ donation from the hospitals that have had exclusive professional for in-house coordination belonging to the project. The information was matched in relation to the number of Potential Donor after Brain Death notifications and Actual Donor after Brain Death and compared using nonparametric statistical Mann-Whitney test, and the Student's t-test, considering a significance level of 5% ($p < 0.05$).

Results: There were statistically significant differences ($p < 0.05$), before and after the implementation of the project on the number of Potential Donor notification/month (3.05–4.7), number of Actual Donor/month (0.78 to 1.60) and rate of conversion (24.7 to 34.8%). The hospitals 1, 2, 7 and 8 had significant results in Potential Donor, Actual Donor or conversion rate.

Conclusion: The presence of an in-house coordinator is promising and beneficial, the specialist is important to change the indicators of efficiency, which consequently reduces the waiting lists for organ transplants.

023 KIDNEY

P681 **PREVENTIVE CMV STRATEGIES: A CENTER'S EXPERIENCE**

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Introduction: CMV infection is the most important post-renal transplant infection due to its high frequency and impact on patient and graft survival. Several preventive strategies are available, none being clearly superior.
Aim: To characterize CMV preventive strategies and related outcomes.
Methods: We evaluated a population of patients (pts) submitted to renal transplant (RT) between 2010 and 2014, who had one or more positive CMV results. Retrospective descriptive analysis; statistical analysis with STATA.
Results: During this period, 256 pts were submitted to RT in our center. During a follow-up (FUP) of 39.4 months (3–60), 83 pts (32.8%) had a positive CMV result: 52 males (62.6%), 49.5 ± 12.5 years, 55 caucasians (71%), HD vintage of 62.9 months. 8 were submitted to multi-organ transplant (2 liver-kidney; 6 pancreas-kidney). 6 pts grafts from live donors. Average mismatch was 4, induction immunosuppression with timoglobulin in 45.8% (up to 59% during FUP).42 pts (52.5%) underwent prophylactic therapy, for a median duration of 0.8 months (0–8), with Valganciclovir (average 220 mg) – 18 pts standard adjusted dosing, 24 mini-dosing. Breakthrough infection occurred in 19 cases (45.2%).7 pts were treated with ganciclovir and 70 with valganciclovir, for 1 month. 7 pts (8.4%) developed CMV disease –5 under prophylaxis versus 2 without. 16 pts (20.8%) had CMV infection relapse – 9 under prophylaxis versus 7 without. 2 pts (2.4%) died, and 8 (9.6%) lost graft function. With higher viremia, we observed worse renal function ($p = 0.005$). Higher viral replication was found in caucasians ($p = 0.02$), cadaveric donor ($p = 0.03$) and basilix-imab induction ($p = 0.04$). Multivariate model ($p = 0.002$, ROC 80%) showed that relapse was negatively associated with cadaveric donor (OR 0.22, $p = 0.007$ [0.001–0.35]) and treatment duration (OR 0.43, $p = 0.056$ [0.18–1.02]).
Conclusion: In this population, CMV infection was frequent. Mini-dosing was not inferior to standard dosing.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P682

NEUROTOXICITY OF TACROLIMUS IN RENAL TRANSPLANT PATIENTS: RELATIONSHIP BETWEEN TREMOR AND EXPOSURE TO TACROLIMUS

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Background: In renal transplantation, studies investigating the relationship between neurotoxicity and tacrolimus exposure are lacking. Our objective was to evaluate the relationship between tremor and tacrolimus exposure in renal transplant patients.
Methods: This retrospective study was conducted in 185 renal transplant patients on tacrolimus included in two French cohorts (EPIGREN and EPHEGREN) between 2007 and 2014 and followed-up for up to 7 years post-transplantation. Patients benefited from therapeutic drug monitoring (TDM) based on the area under the curve (AUC_{0-12}). Socio-demographical data, tremor reported by the clinicians ($tremor_{clin}$) and the patients in dedicated self-questionnaires ($tremor_{pat}$) and TDM data were collected. Tacrolimus AUC_{0-12} and maximum concentration (C_{max}) were determined by Bayesian estimation using our Internet-based ABIS software (https://www.pharmaco-limoges.fr). The influence of covariates on tremor was investigated using a time-dependent Cox proportionnal hazard model using R software.
Results: Tremor was reported by 49 patients and by clinicians in 10 patients. Median (min-max) AUC_{0-12} was 152 h.μg/l (19–364) and C_{max} was 22 μg/l (2.5–77). Median tremor occurrence delay was 3 months (19 days–6 years). No association was found between $tremor_{clin}$ and AUC_{0-12} or C_{max}. Multivariate analysis evidenced an association between $tremor_{pat}$ and AUC (HR = 1.006, p = 0.03); there was a 6% increase of the risk of $tremor_{pat}$ for each AUC_{0-12} increase of 10 h.μg/l.
Conclusion: Tremor was declared by 27% of the patients and by the clinicians in <6% patients, showing a perception discrepancy between clinicians and patients. Higher tacrolimus exposure was associated with an increased risk of tremor reported by the patients. This suggests that a stronger attention should be given to tremor felt by the patients, in order to adjust tacrolimus doses and prevent low-adherence due to side effects.

012 HISTOCOMPATIBILITY

P683

CLINICAL OUTCOME IN KIDNEY TRANSPLANTATION OF SENSITIZED PATIENTS: A SINGLE CENTER EXPERIENCE IN NORTHERN GREECE

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HLA antibodies and the degree of HLA incompatibility represent one of the most significant impediments to transplantation. The purpose of this study was to analyze how pre-sensitization influence the kidney transplant outcome. Outcome analysis was performed in 53 deceased or living donor renal transplant, 2011–2012. Three patients where excluded due to death with functioning graft. Patients (n = 50) were grouped by %HLA antibody reaction frequency (%PRA): 0–20% (group A, n = 26) and 21–95% (group B, n = 24). The levels of HLA ABDR mismatches were taken into account and patients divided in 2 groups, those with 1–3 incompatibilities (group C, n = 32) and those with 4–6 incompatibilities (group D, n = 18). Serum creatinine levels and 24 h urine protein levels in 1st, 2nd and 3rd year post-transplantation were measured as well as the acute rejection episodes. There was a comparison of the above indices values between the groups A and B, and also C and D. Statistical analysis was performed using t-test, chi-square test and Fisher's exact test at a level of $p < 0.05$. Graft survival was same in all groups (3 rejections: 1 in A group and 2 in B group). Serum creatinine (mg/dl) in 1st, 2nd and 3rd year post-transplantation were superior 1.158 ± 0.23, 1.18 ± 0.21 and 1.17 ± 0.23 in group A versus 1.32 ± 0.26, 1.32 ± 0.31 and 1.35 ± 0.24 in group B ($p = <0.05$). Also, 24 h urine protein (mg/24 h) in 1st, 2nd year was 155.8 ± 62 and 154.1 ± 57.1 in group A versus 527.8 ± 620.1 and 388.1 ± 292.8 in group B ($p < 0.05$). Acute rejection episodes incidense was 12.5% in group B versus 7.5% in group A (p = N.S.). There were no statistical significant differences between groups C and D of low and high HLA incompatibility. Even though the graft survival 3 years post-transplantation is very good, the analysis of the study's shows that graft function in sensitized patients is generally inferior to that in unsensitized. This demonstrates an important function of national kidney allocation schemes in providing well-matched kidneys.

017 INTESTINE

P684

INTESTINAL AND MULTIVISCERAL TRANSPLANTATION – THE FIRST CZECH EXPERIENCE

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Introduction: The small bowel (SBT) and/or multivisceral transplantation (MVT) is the treatment option for selected patients with short bowel syndrome as well as some other diseases. The SBT is linked with high rate of rejection and infectious complitations and also few possible technical difficulties, mainly related to recipients previous surgeries. Although the SBT/MVT will serve only few pateints per year, such patients may not have other treatment options. Is is worth starting the program, as long as there is good balance of risks and benefits for each patient.
Methods: Two mutliviceral transplants were performed in Dec. 2014, one in 60 years old male with autoimmune cirrhosis with diffuse portomesenteric thrombosis. This patient received stomach, pancreas, spleen, liver and small bowel from 26 years old male. Second case was 27 years old female with large desmoid tumour who received same sort of mutlivisceral graft from 48 years old male. Immunosupressive regime based on alemtuzumab induction followed with tacrolimus and steroids was used. MVT retrieval on site was performed. After MVT small bowel was scoped and biopsied twice weekly.
Results: There were no surgical complications observed in both cases, the first case had one episode of mild small bowel rejection, which was treated successfully with steroids, patient was discharged 34 days after surgery, the ileostoma was closed 39 days after the MVTx. Patient is doing well with all the transplanted organs well functioning. The second patient developed steroid resistant small bowel rejection 17 days after the MVT, it was successfully treated with combination of immunosupressants, small bowel mucosa started to grow again. Unfortunately the patient died 68 days after the MVT from pneumonia and sepsis.
Conclusion: Risks from SBT/MVT should be carefruly balanced with potential benefits. The program will continue, there are some more patients including pediatric cases to be listed shortly.

023 KIDNEY

P685

DONOR AGE- A KEY FACTOR OF LONG-TERM KIDNEY TRANSPLANTATION OUTCOMES IN THE ELDERLY RECIPIENT?

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Background: The increasing incidence of end stage renal failure in the elderly is associated with growing rate of kidney transplantation in this population. Despite of lower patient and graft survival compared to younger recipients, elderly recipients unambiguously benefit from kidney transplantation in comparison to age-matched dialyzed or listed patients. The aim of this study was to evaluate the long-term outcomes of kidney transplants performed in recipients older than 65 years in our center.

Methods: We retrospectively analyzed a group of 149 renal recipients older than 65 years who underwent a transplant surgery between 2008 and 2012 in IKEM. For detailed analysis the recipients were divided in three subgroups based on kidney donors' age: donors younger than 60 years (D60), donors 60–65 years (D60–65), donors older than 65 years (D65).

Results: The subgroups did not differ in the number of performed first transplantations and retransplantations, the level of immunological risk, the maintenance immunosuppression, the incidence of DGF and rejections, the rate of internal/surgical complications. Except in one case, all dual transplantations were performed in D65 recipients (38.46%; $p < 0.001$). Compared to other donors' groups, the D65 recipients received the depleting induction in 73.08% ($p < 0.001$), no induction only in 15.38% ($p = 0.009$). No rejection episode was registered in 63.74% of D60 recipients compared to 31.25% D60–65 recipients ($p = 0.006$). We found no differences in patient and graft survival among groups, however the D60 recipients exhibit better renal function (D60–65 $p = 0.02$, D65 $p = 0.1942$).

Conclusions: Kidney transplant recipients older than 65 years show similar long-term outcomes irrespective of donor age.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P686

SCOTTISH RENAL TRANSPLANT PATIENTS CONVERTED TO ONCE-DAILY TACROLIMUS AND THE INFLUENCE OF GENETIC POLYMORPHISMS OF CYP3A5, CY3A4*22 AND ABCB1 ON DOSE, TROUGH LEVELS AND CLINICAL OUTCOMES

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Introduction: Polymorphisms (SNPs) of CYP3A5, CYP3A4 and ABCB1 (P-gp) have been shown to influence tacrolimus pharmacokinetics in renal transplant patients taking twice daily tacrolimus (Prograf®). The newer once-daily preparation of tacrolimus (Advagraf®) has different pharmacokinetics and is absorbed more distally in the gut. Data is limited on what effect these SNPs have on Advagraf® pharmacokinetics.
Methods: 43 patients who were converted to Advagraf® between Sep 2008 and Dec 2011, and where stored DNA was available, were included in this study. DNA samples were genotyped for SNPs of ABCB1 exon 26 (3435C>T), CYP3A5 (6986A>G) and CYP3A4 intron 6 (CYP3A4*22) using a Taqman® drug metabolism genotyping assay and real-time PCR technique. Tac dose/trough levels were evaluated at the time of conversion and 1, 2, 3, 6 and 12 months and correlated with clinical outcome data (acute rejection, creatinine, adverse events).
Results: Patients were converted from Prograf® to Advagraf® at a median of 5 months (0–72 months) from transplantation. Expressers of CYP3A5 (*1/*3 or *1/*1 alleles) required significantly higher doses of Prograf® than non-expressers (*3/*3) 15.00 $\pm$ 6.30 vs. 5.85 $\pm$ 2.91 mg, $p < 0.0001$. The dose of Advagraf® was similarly higher at conversion (16.00 $\pm$ 6.08 vs. 6.17 $\pm$ 3.62 mg, $p < 0.0001$) and at every time point up to and including 12 months post conversion. There was no significant difference in the Tac levels between CYP3A5 expressers and non-expressers. The dose-corrected Tac level was significantly lower at every time point in CYP3A5 expressers. Creatinine did not differ between CYP3A5 expressers/non-expressers. There was no difference in acute rejection between CYP3A5 expressers/non-expressers. ABCB1 and CYP3A4 SNPs did not significantly affect tacrolimus pharmacokinetics of Advagraf® or clinical outcome.
Conclusion: Expression of CYP3A5 in renal transplant patients taking Advagraf® requires higher doses to achieve therapeutic tac levels with no impact on outcomes.

023 KIDNEY

P687

OUTCOME OF CORTICOSTEROIDS WITHDRAWAL IN STABLE MAINTENANCE RENAL TRANSPLANT PATIENTS

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Corticosteroids are powerful antiinflamatory with immunosuppressant effects utilized in maintenance therapy following kidney transplantation and are associated with a higher rate of side events in comparison with protocols involving early corticosteroid withdrawl. The present paper reports the outcome of cessation of steroids in stable maintenance renal transplant patients. Patients and methods: One hundred fifty seven deceased kidney grafted patients (51% men), aged 56.5_12.4 years, with follow-up of 72 months (and steroids withdrawl period of 60 months follow-up steroid free were studied. Etiology of end stage renal disease was secondary to Glomerulonephritis 31%, Diabetes 22%, Policystic disease 14%, Tubulointerstitial nephropathy 13%, Vascular 5%, Unknown 17%. The patients were on Prednisone 5–10 mg dairy combined with Cyclosporine 50–150 mg/Tacrolimus 0.5–6 mg, associate to Mycophenolate Mophetyl 250-2.000 mg, Sodium Micophenolate, 360–900 mg or Azatioprine 50–75 mg, and Everolimus 1–4 mg. Steroids were diminished gradually in three months period and some patients receibe monotherapy only. Results: Basal serum creatinine was 1.54_0.6 mg/dl and after five years followup 1.4_0.5 mg/dl. Basal blood glucose concentration was 130_12 mg/dl and after five years 109_0.8 mg/dl. Weight was maintained. At 5 years, graft and patient survival were 100%. There was no acute rejection after steroids withdrawl. After withdrawl blood pressure control was achieved with less antihypertensive drugs. Lipids diminished slightly with less cholesterol-lowering drugs. Conclusion: Corticosteroids could be withdrawn safely in stable renal transplant patients and avoid morbidity and adverse events related to chronic utilization improving survival and quality of life.

031 PEDIATRIC TRANSPLANTATION

P688

TRANSPLANTATION OF ADULT LIVING DONOR KIDNEYS IN SMALL CHILDREN; A SINGLE CENTER EXPERIENCE

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Radboud UMC

Purpose: Post-mortal paediatric donor-kidneys are scarce, but most parents are willing to donate. However, RTx of adult kidneys in small children is a major challenge. We evaluate our program for adult living-related RTx in children under the age of 4 years. Eight children are included since October 2012.
Material and Methods: Donor and recipient characteristics, surgical technique, ischaemia times and outcome measurements (serum creatinine, GFR, graft/patient survival) were analyzed. Mean age of 8 recipients (6 boys, 2 girls) was 2.6 (range: 1.5–4.1) years, length 87.1 (72.5–97) cm, and weight 13.5 (10.0–17.9) kg. All had congenital ESRD (PUV, polycystic kidney disease, reflux-nephropathy, nephronophtisis, renal dysplasia). Three were on haemodialysis, 5 had pre-emptive RTx. All donors were parents (3M, 5F), age 36.8 (24–45) years. Graft length was 11.2 (10–12.1) cm. Following laparoscopic donornephrectomies all recipients underwent transverse laparotomy with vascular anastomoses on the abdominal aorta and inferior caval vein.
Results: Warm (combined 1st and 2nd) and cold ischemic times were 37.8 (16.9–51) min and 3.5 (2.5–3.9) h, respectively. All children received immunosuppression (TWIST-protocol: Basiliximab/ Tacrolimus/ Mycophenolate). There were no cases of delayed graft-function. Patient and graft survival are both 100% (mean follow-up 12.5 month.) Early complications were drug-induced delirium (2), septicaemia (1), and early postoperative haemorrhage, necessitating re-operation (1). In the nephronophtisis patient (with pre-existent liver fibrosis) excessive postoperative ascites and lymphe leakage was encountered. Mean PICU-stay was 10 (5–17) days. Mean serum creatinine at 3 month was 45.6 μmol/l. Mean GFR was 6.7 (before RTx), 106 (at 1 month) and 84 ml/min/1.73 m^2 at 3 month after RTx.
Conclusion: (pre-emptive) RTx of adult living-donor kidneys in small children is challenging but feasible, with good graft survival and function.

025 LIVER

P689

DONOR'S AGE AND BODY MASS INDEX ARE INDEPENDENT FACTORS FOR ESTIMATION OF LIVER WEIGHT IN DECEASED DONOR LIVER TRANSPLANTATION

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Background: The weight of liver graft is important factor for deceased donor liver transplantation. Sometimes too large grafts make severe problem to recipients for relatively narrow abdominal cavity. So, to predict the size or weight of the liver graft is important and then usually we can estimate donor liver volume with diverse equation for standard liver volume. Body surface area (BSA) is decisive factor for standard liver volume. In this study, we try to find for other independent factors to decide the liver graft volume.
Methods: From January 2010 to March 2014, we reviewed 106 cases deceased donor liver transplantation except split graft in single center. To find independent factors to weight of liver graft, data were analyzed about donor's age, weight, body mass index (BMI), body surface area (BSA), measured graft weight (MGW).
Results: Data for donor were shown that mean age were 48 year old (10–72), MGW mean 1.49 kg (0.96–2.4 kg) and average BSA 1.69 (1.4–2.32 m^2). MGW to BSA ratio was 0.86. In correlation analysis, MGWs were correlated to donor's BSA ($r = 0.538$) and we can get a strongly correlation between MGWs to BSA by exclusion of data with old age (>60) and high BMI (>23 kg/m^2). In old age group, relatively low MGW to BSA ratio was shown (0.78), and high BMI group relatively high MGW to BSA ratio was shown (0.91).
Conclusion: To estimate graft weight, donor's body surface area is most decisive factors but, in donors with old age or high BMI, we have to decide more carefully to choose the donors.

023 KIDNEY

P690 **HORSESHOE KIDNEY GRADT SEPARATION: CASE REPORT**

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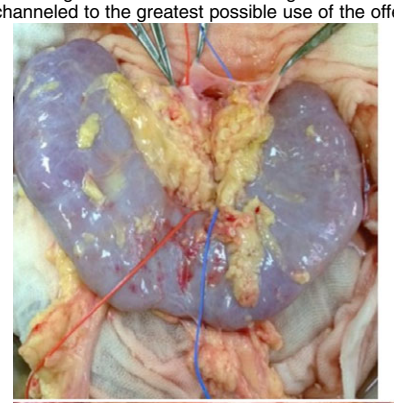
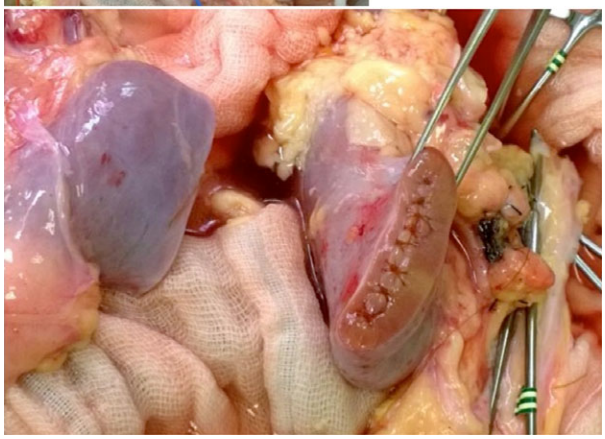
Introduction: The horseshoe kidney use for transplantation allows to enlarge the organs offer. This congenital disorder affects about 1 in 400 people. A horseshoe kidney can be transplanted en bloc or it can be divided; define the best way of implant will depend on the graft anatomy and on the service experience gap between supply and demand.
Objective: We present a case of horseshoe kidney transplantation; discuss the found difficulties and the alternatives to the use of this organ.
Case Report: A 21-years -old man brain dead, initial creatinine of 0.7 mg/dl, donated liver, pancreas, heart and kidney. The horseshoe kidney was removed en bloc, preserving the vena cava and aorta integrity. The kidney was divided on the isthmus, the left side was implanted and the right side was discarded. A 67-years -old man presented delayed graft function for 2 days, requiring only one dialysis. Remained hospitalized for 28 days because had presented acute cellular rejection on 21st transplantation day, being treated with methylprednisolone for 3 days, with good response to treatment. By the discharge from the hospital, the creatinine was 3.84 mg/dl. We didn't observe any surgical complication like urinary fistula or graft thrombosis.
Conclusions: The use of functionally viable grafts must be analyzed observing the anatomical challenges. However, the efforts have to be channeled to the greatest possible use of the offered organs.





019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P691

FRIEND OR FOE? – T-TUBES DECREASING BILIARY COMPLICATIONS AFTER ORTHOTOPIC LIVER TRANSPLANTATION! AN ANALYSIS OF 1463 CONSECUTIVE PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION

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Introduction: The application of T–Tubes for biliary tract reconstruction in orthotopic liver transplantation (OLT) still remains controversial. The aim of this study was to evaluate the impact of T-Tube placement during biliary tract reconstruction in orthotopic liver transplants on postoperative biliary complications (e.g. stenosis and leakage) and overall outcome.

Methods: A retrospective analysis of 1463 consecutive adult liver transplants with side-to-side choledocho-choledochostomy was performed using specific statistical regression tests on donor and recipient data obtained from a prospectively collected database.

Results: Biliary tract reconstruction with a T-Tube was performed in 89.6% ($n = 1311$) of all patients. Overall biliary complication rate was 16.6% (stenosis: 13%, [$n = 190$]; leakage: 3.6%, [$n = 52$]). The incidence for both stenosis and leakage were significantly higher in patients without T-tubes ($p < 0.001$). Multivariate regression analysis revealed presence of T-Tube, donor age and preservation solution (UW) as significant independent prognostic factors/predictors for development of both biliary stenosis and leakage (all $p < 0.001$).

Conclusion: Our data demonstrate favorable outcomes for the use of T-Tubes for biliary tract reconstruction in orthotopic liver transplantation. A standardized utilization of T-Tubes should therefore be considered to further decrease the incidence of postoperative biliary complications.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P692

DEEP VENOUS THROMBOSIS AND ACUTE PANCREATITIS PROMOTED BY RAPAMYCIN

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Background: Recently, evidence indicate that rapamycin may contribute to an increased risk of thrombosis. Researchers found that endothelial membrane remodeling induced by rapamycin is crucial for the adhesion of platelets to endothelial cells and thereby for thrombosis. Many investigations showed that rapamycin induces autophagy of pancreatic cells.
Methods: Case report study.
Results: Male patient, 26 years old, was treated with preemptive kidney transplantation from living related donor. He was treated with thymoglobulin in induction therapy because of donor specific antibodies detected prior to transplantation. He received 100 mg of thymoglobulin. Due to surgical complications, he had reperfusion graft injury and delayed graft function. Initial immunosuppressive protocol with thymoglobulin and tacrolimus was converted to rapamycin and dismissal of thymoglobulin. Patient was treated with LMWH (low-molecular-weight heparin) regular in preparation and after intervention. One month after rapamycin treatment he developed deep venous thrombosis of right leg. He was treated with intravenous heparin and symptomatic therapy with successful recanalization of venous vessels. Twenty days after rapamycin usage he developed abdominal pain typical for acute pancreatitis followed by increased serum concentrations of amylase and lipase and urine amylase concentrations. Patient was treated with polysymptomatic therapy with recovery of pancreas function and normalization of serum and urine concentrations of amylase and lipase. Finally, rapamycin was removed from the immunosuppressive therapy. Patient is with stabile graft function in the next year of follow up period without thrombosis episodes or episodes of pancreatitis.
Conclusion: All patients treated with rapamycin after kidney transplantation should be carefully monitored for venous thrombosis and pancreatitis events.

023 KIDNEY

P693

FOLLOWUP AND OUTCOME OF RENAL TRANSPLANT PATIENTS WITH DECEASED AFTER CARDIAC DEATH DONORS (DCD)

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Introduction: Prior to the introduction, in the mid 1970s of legislation defining the diagnosis of brain-stem death, transplant organs were removed from DCD. Despite renewed interest in DCD kidney transplantation, very few clinical programs have been developed this type of grafting. Renal transplantation is the best cost effective treatment for end-stage renal failure and improves quality of life, when compared with dialysis. We analyzed the function and outcome of kidney transplants performed from DCD in our hospital.
Patients and Methods: From 1999 until January 2015, 50 patients were grafted with kidneys from DCD. This group was compared with recipients of standard criteria donors (SCD) matched for age, sex, number of transplants and HLA. Immunosupression was performed with Basiliximab, Predinisone, Tacrolimus and Micophenolate (Sodium/Micophenolate). Acute rejection episodes were treated with Methylprednisolone boluses, and ATG-FRESENIUS® when necessary.
Results: The delayed graft function rate was higher on DCD transplants than in SCD graft. Serum creatinine levels was significantly better in the DCD, 1.6 vs. 1.8 mg/dl in SCD. Graft survival at 5 year was 84% in DCD and 85% in SCD. Patient survival in both groups was 100%. Patients grafted with DCD were hospitalized longer and needed more dialysis. Acute rejection episodes were more frequent in DCD.
Conclusion: This source of kidneys has evidence of equivalent graft function and survival, compared with SCD and may contribute to expand the donor pool.

015 INFECTIONS

P694

SATISFACTORY LONG-TERM RESULTS OF KIDNEY TRANSPLANTATION IN HCV-INFECTED PATIENTS

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The long-term outcome of kidney transplantation in HCV-infected ESRD patients is uncertain due to the scarcity of systematic results. This study is a single center analysis of clinical outcomes of 68 kidney transplantations in 65 patients (14 received 2nd transplant) determined to be HCV-infected using nuclear acid testing and followed in our center (median 9.5 years, range 0.9 to 29.7). Maintenance immunosuppression included cyclosporine (43 pts), tacrolimus (25 pts) azatioprine/MMF and low steroids (2.5–5 mg).

Results: Death-censored kidney graft failure occurred in 51.5% (35/68). Renal biopsies were performed in 39pts. The reason was a non-nephrotic proteinuria (22 pts) and/or deterioration in serum creatinine. Biopsy-proven early acute rejection (AR) occurred in 8/68 pts and late AR in 38% (26/68 pts); median time to AR was 53 (range 0.3 to 162) months. Puls steroid therapy was implemented. Of the patients with late AR, 21/26 (81%) developed graft failure. Median time-to-graft failure was 15 (2 to 96) months. Glomerular lesion was found in 14 pts, nephrotic range proteinuria was observed in 17pts who quickly progressed to graft failure (median 11 months, range 2 to 25). Deterioration of liver function was found in 4 pts. Death with a functioning graft occurred in 4 patients, 2.9 to 14 years after transplant (causes: cardiovascular −2, liver failure-1, unknown-1). Mean level of CsA was 105 ± 12 ng/ml, tacrolimus 6.2 ± 0.9 ng/ml, MMF dose 0.8 g/d. No change in HCV viral was noticed. Five and 10 years actual graft survival are 84.5% and 59.6%, respectively. Proteinuria at the time of biopsy, 2nd transplant and late rejection were associated with a poorer graft survival by univariate analysis.

Conclusions: Despite harmful impact of HCV infection on the survival of kidney transplants the careful and skillful team is able to secure satisfactory long term results. High incidence of AR may be explained by low strength of immunosupression at a price of low incidence of death and liver failure.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P695

COMPLIANCE DURING THE FIRST 12 MONTHS FOLLOWING THE IMPLEMENTATION OF A NOVEL TRANSPLANT-SPECIFIC WHO CHECKLIST

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Introduction: The WHO Safe Surgery Checklist was introduced to reinforce safety practices and foster better communication and teamwork between clinical disciplines. Transplantation presents specific concerns that are not covered by this checklist. ABO blood group incompatibility, HLA cross match result, protocol immunosuppression and patient-specific desensitisation must all be addressed prior to safe contemporary transplantation. To improve transplant patient safety, these factors were incorporated into a novel transplant-specific WHO checklist. We examined the uptake and compliance with this checklist following its introduction.

Methods: All patients who received a transplant (including kidney and kidney-pancreas) at our centre after formal introduction of the new checklist were included. A retrospective analysis was made of patients' notes and the electronic patient record (EPR). The endpoint was the presence of the new completed checklist in the notes or on EPR. Results were collected and audited after three successive periods of 4 months. Within each audit cycle, members of the surgical and theatre teams were educated about use of the checklist using short presentations to small groups.

Results: 185 patients were transplanted at our centre over 12 calendar months following introduction of the transplant-specific WHO checklist. Overall, at the end of the 12 months, the new checklist could be identified in 118 patients' records (67%). Audits after each successive 4 month period revealed the checklist to be present in 53% (Sep–Dec), 69% (Jan–Apr) and finally 80% (May–Aug) of patients' notes. There were no adverse events reported.

Conclusions: The suboptimal overall compliance with the new checklist reflects poor understanding and uptake in the early stages. However, significant improvements have been demonstrated following the process of audit and re-audit with regular education of surgical and theatre staff as the key intervention following each cycle.

012 HISTOCOMPATIBILITY

P696 **DE NOVO DSA FORMATION – A POSSIBLE TRIGGER FOR ITBL IN LIVER ALLOGRAFTS**

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Introduction: In time of an actual lack of grafts and the wider use of marginal organs, we have to meet the challenge of performing a liver transplantation by going of without a hitch. We have to consider long-term problems a how we could avoid them. Biliary complications still remain a severe clinical problem not only in the early postoperative course, but also in clinical follow-up. In particular the development of ITBL with a high morbidity and mortality rates requires complex therapeutich concepts.

Patients and Methods: We performed a retrospective analysis with collected consecutive database from 2008 to 2012 in 395 patients. The solid-phase Luminex® assay was used. We performed an examination of recipient blood at special time points.

Results: We made an analysis of patients after OLT, which developed allograft complications due to a ITBL. We picked out patients in this population for de novo DSA, which were detected by standardized Luminex® assays at several time points after transplantation. We revealed 15 patients with ITBL out of the population group of 395 patients. Here 47% of 15 patients with ITBL provably developed de novo DSAs. We made matched pair analysis of these patients to patients, who developed no ITBL specific problems. The 15 patients with ITBL revealed a significant ($p = 0.03$) higher amount of de novo donor-specific Anti-HLA antibodies after OLT. In regard of the postoperative course concerning the endoscopic interventions after OLT there were high significant differences in the ITBL versus the control group: ERC ($p = 0.000$) and stenting (0.001).

Conclusion: This study demonstrates that an early de novo formation of donor-specific Anti-HLA antibodies after orthotopic liver transplantation results in increased development of ITBL. A founding prospective study for pre- and postoperative screening methods should be one of the new challenges in avoiding this complications in future patients.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P697

DONATION AFTER CIRCULATORY DEATH: AN INQUIRY TO ICU NURSES AFTER IMPLEMENTATION OF LOCAL COORDINATION FUNCTION IN BELGIUM

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Introduction: Demand for organs for transplantation continues to be greater than supply. Donation after Circulatory Death (DCD) has been reintroduced to reverse this trend. Patients requested for euthanasia can also be considered for a potential source of donor. Since 2010 local coordinator has been implanted in hospital to detect any potential donor but also to educate nursing staff. We describe the findings of a questionnaire that determined the attitudes and feelings of nursing staff in department of intensive care (ICU) from university (U) and non-university (NU) hospitals and ICU student nurse (St) after the implementation of this local coordinating function.

Material and Methods: All the student nurses (46) who specialized in emergency and intensive care completed their questionnaire. The ICU nurses from U (61) and NU (64) hospitals completed 45% and 49% of the questionnaire respectively.

Results: Only 19% U and 9% NU nurses thought they were adequately informed about DCD. This should be compared to the St group who didn't received these ministry of health educational sessions with only 2% of agreement to this question. Only 37% NU and 58% U nurses thought they were equally comfortable with DCD and Donation after Brain Death (DBD) compared to 61% St nurses. Still 19% NU and 4% St nurses remained uncomfortable with organ donation in general whereas any U nurses. In case of organ donation after euthanasia 80% of St, 66% NU and 48% U nurses had any problem but 22% of both NU and U nurses considered an ethical issue.

Conclusion: The educational sessions organised by the ministry of health improved the feeling of the ICU nurses compared to the ICU student nurses regarding DCD. Euthansia remained an ethically controversial area. Adequate education and full transparency are needed in ICU to improve organ availability for transplantation.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P698 **NORMOTHERMIC MACHINE LIVER PERFUSION: A TOOL TO ASSESS THE VIABILITY OF HUMAN DONOR LIVERS**

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Background: There is increasing reliance on extended criteria donors to meet demand for transplantation. Despite the organ shortage many grafts are discarded and this decision making is based on subjective assessment. Normothermic machine liver perfusion (NMLP) might enable viability testing of such organs. The aim of this study was to test the feasibility of NMLP on untransplantable human donor livers.

Methods: Between July 2013 and February 2015, ten untransplantable human livers were transported from the donor on static cold storage before being subjected to NMLP using the Liver Assist device (Organ Assist, NL). Livers were perfused with a packed red cell based fluid at 37°C. Hepatic arterial and portal venous flow parameters, blood gas analysis and bile output were recorded. Liver biopsies were performed at the start and every 3 h of NMLP.

Results: Two groups of liver, viable and non-viable ($n = 5$ each), were observed based on lactate levels and bile production. Donor ages were similar (median viable 57 [29–70] years, non-viable 60 [46–76] years). Seven were male (viable 4/5, non-viable 3/5) and the majority DCD (viable 3/5, non-viable 4/5). Cold ischaemic times were similar (median viable 08:16 h [07:06–10:07] h, non-viable 08:13 h [05:50–13:17] h). Median NMLP time in the viable group was 06:28 h and in the non-viable group 08:36 h. More marked decreases in lactate were observed in the viable group at the end of NMLP (median viable 2.8 mmol/l, non-viable 15.3 mmol/l, $p = 0.004$). Cumulative bile production was higher in the viable group at 6 h (median viable 12.6 g, non-viable 2.6 g). At the end of NMLP, portal venous flow increased more in the viable group (median viable 1.25 l/min change +860 ml/min, non-viable 1.04 l/min change +460 ml/min, $p = 0.016$). One viable liver was transplanted.

Conclusion: We present NMLP as an objective tool for the assessment of marginal donor livers, which may increase safe utilisation.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P699

IMMUNOSUPPRESSION WITH EVEROLIMUS POST LIVER TRANSPLANTATION IN FAMILIAL AMYLOIDOTIC POLYNEUROPATHY

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Background and Aims: Familial amyloidoitic polyneuropathy (FAP) is a progressive, multivisceral and life-threatening polyneuropathy affecting the peripheral and autonomic nervous system. There are multiple organs severely involved by amyloidosis, specially kidneys, heart, nervous system. Our aim was to evaluate the results of immunosuppression in FAP patients and outcomes with everolimus.

Methods: Data from FAP patients transplanted between 1992 and 2012 in one Portuguese LT centre were analyzed, including immunosuppression response with everolimus, renal function, neurological syndrome de novo and tumors de novo.

Results: Renal function is stable in most patients after LT, but cases of deterioration requiring hemodialysis have been reported. Chronic renal failure (34%), including 5% terminal end-stage disease after LT, is also possible. Neurological syndrome de novo is diagnosed in 22% of FAP patients. These data are significantly improved when patients are immunossupressed with everolimus.

Conclusions: Use of everolimus did not compromise efficacy in liver transplant FAP recipients. Moreover, significantly better renal function and less neurological syndrome de novo are seen with everolimus than with calcineurin inhibitor.

023 KIDNEY

P700 **OUTCOME OF KIDNEY TRANSPLANTATION FROM DONORS AFTER CARDIAC DEATH WITH EXPANDED CRITERIA DONORS STATUS**

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Introduction: The outcomes of kidney transplants that simultaneously exhibit donation after cardiac death (DCD) and expanded criteria donor (ECD) characteristics have not been well studied. Donation after circulatory determination of death, has been re-introduced into clinical practice in many countries as a potential solution to organ shortage, but this kidney transplantation programs are not popular yet, mainly because of logistical concerns and uncertainty about the long-term warm ischaemia impact on transplanted kidneys. We present preliminary results with DCD with ECD.
Patients and Methods: We have performed 2 kidney transplantations from uncontrolled Maastricht Category II donors, aged 75 and 76 years, with arterial hypertension, type II diabetes mellitus and proteinuria, with serum creatinine of 0.9 mg/dl. Kidneys were harvested in another hospital with 60 min of warm ischemia and 2.30 h of hypotermic extracorporeal circulation. Recipients were a 65 year woman and a 76 year male. Mean cold ischaemia time was 18 h (16–20). The immunosuppression was performed with polyclonal antibodies (ATG-Fresenius), steroids and sodium micophenolate as induction protocol. Tacrolimus was introduced one week after transplantation. Both cases had delayed graft function. There was no acute rejection. Serum creatinine was 1.6 mg/dl at 36 Months follow-up. Patient and graft survival was 100% respectively.
Conclusions: The use of ECD/DCD donor kidneys may be an appropriate strategy to expand the donor pool. Our results show encouraging outcomes, which give rise to further interest in this donor pool.

P701 **IMPAIRED FASTING GLUCOSE (IFG) IN KIDNEY TRANSPLANT PATIENTS**

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CUCAIBA- CRAI Sur – Organ Transplant Unit

Introduction: An alteration in the metabolism of carbohydrates is frequently observed after kidney transplant. Diabetes has been widely studied, while there are no reports of the characteristics and frequency of impaired fasting glucose.
Materials and Methods: We evaluated all trasplant patients in our unit with more than one year follow-up. We considered that a patient presented IFG when he met ADA and/or OMS criteria, having less than 20 mg meprednisone. We excluded values obteined during hospitalization or a month after treatment with steroid pulses. Average values were considered.
Results: We included 514 patients in the study. Of them, 72.32% ($n = 324$) and 38.29% ($n = 170$) met ADA and OMS criteria, respectively, for IFG. 9.8% began with diabetes without previous altered values of fasting. Mean time between transplant and IFG was between 19 and 30.36 months, according to the considered rule. 9.68% met diabetes criteria without having suffered IFG, while 17.9% ($n = 58$) of the patients went to diabetes from IFG.
Conclusions: IFG is very common in transplant patients. Although only a minority evolves to diabetes, they are a risk group for cardiovascular disease, for which preventive measures should be applied.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P702

HYPOTHERMIC MACHINE PERFUSION OF KIDNEYS FROM LIVING DONORS

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Introduction: Hypothermic machine perfusion (MP) has been shown to improve kidney graft preservation. Paired exchange programs create a need for donors or kidneys to travel. As some adverse experience occurs, we explore the use of MP in this setting.
Methods: All our kidneys were retrieved via the laparoscopic donor nephrectomy technique. A gel-sealed hand-assist access device permitted the rapid extraction of the graft. From November 2013, 24 kidneys from living donor underwent MP using the LifePort Kidney Transporter (Organ Recovery Systems) using Belzer's machine perfusion solution. Seven kidneys travelled to a pediatric transplantation center.
Results: The mean first ischemic time was 2 min. No delayed graft function, nor primary nonfunction were encountered, as well as no graft loss and no death. RR = renovascular resistance in mmHg/ ml/min, T0 = at the start of machine perfusion, Te = at the end of machine perfusion, Perfusion flow in ml/ min.

In several cases, very high renovascular resistances were noted, unexpectedly in living donation. No pre- or intraoperative conditions could explain this phenomenon.
Conclusions: As renovascular resistance at the start of machine perfusion was independently associated with primary nonfunction of kidneys retrieved after cardiac death, high values were unexpected for living donor kidneys. Those results reflect probably the impact of warm ischemia on the graft. Especially in pediatric kidney transplantation, high renovascular resistance may have a deleterious effect that MP may prevent.

	RR T0	Perfusion Flow T0	Temperature T0	Duration MP	RR Te	Perfusion Flow Te	Temperature Te
Mean	1.03	28	7.4°C	2 h 21	0.31	89	6.0°C
Range	0.34–3.12	8–81	5.9–8.5	1 h 10–3 h 06	0.10–0.49	30–228	5–7.5

015 INFECTIONS

P703

BK VIRUS (BKV) AND JC VIRUS (JCV) REPLICATION AFTER KIDNEY TRANSPLANTATION: A PROSPECTIVE SINGLE CENTER REPORT

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JCV infection and BKV infection were studied prospectively during the first year after renal transplantation in 216 recipients who were treated with tacrolimus-based triple drug immunosuppression. Quantitative real-time PCR was used to assess JCV and BKV in blood. Viral loads were measured 1, 2, 3, 6, 9 and 12 months after transplantation. By one year, exclusive JCV and BKV was detected in 20, 3% and in 27, 7% of the patients, respectively. Both JCV and BKV were found in 1, 8% of the patients. JCV viremia was sustained in 17 (7, 8%) patients compared to 43 (19, 9%) patients positive for BKV. Onset of BK viremia was noted in the first trimester in 65% of the cases as JCV replication started in the second trimester in 56% of the JCV positive patients. Relation of JCV and BKV replication to patients' transplant data was evaluated in a univariate analysis. No differences in age at transplant, sex, living donor graft use, donor age, previous graft number, pre-transplant diabetes, CMV infection, urinary tract infection, rejection episodes existed between patients with BKV or patients with JCV. During the study period, 82% of the recipients underwent allograft biopsy, mainly as part of routine clinical follow-up. Polyomavirus nephropathy (PN) was documented in 7 BKV positive subjects. Forty-three patients with BKV viremia $\geq$10 000 copies/ml and/or PN had reduction of immunosuppression with use of leflunomide. JCV positive patients were asymptomatic and received no specific treatment for their JCV replication. At 12 months, MDRD estimated glomerular filtration rate was 57.78 $\pm$ 17.6 ml/min in JCV positive group, 57.27 $\pm$ 17.4 ml/min in BKV positive patients and 56.02 $\pm$ 17.01 ml/min in polyomavirus negative recipients (p = NS) In conclusion, incidences of BKV and JCV replications in blood were not quite different in the first year after kidney transplantation. However compared to BKV, JCV was detected later. It was more often transient and was not symptomatic.

007 DONATION/RETRIEVAL

P704 **PERSPECTIVE OF THE COMNUNITY ON ORGAN DONATION**

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Objective: We investigated the education level, income status and perspectives in case organ transplantation would be necessary for themselves or their relatives in groups including dialysis patients (group 1), relatives of dialysis patients (group 2) and patients hospitalized for different reasons (group 3)
Methodology: We have surveyed group 1 patients (*n*:99), group 2 (*n*:17) and group 3 (*n*:95); about their opinions for organ donation, their educational and economical status. Their educational status has been categorized according to educational parameters as; illiterate, be illiterate, elementary, middle, high school graduates and having a college degree; as economical parameters 5 groups of categorization were made with intervals of 1000TL
Findigs: The educational status of group 3 was concluded to be lower than the others. The educational status of the group 1 patients tended to be higher compared to the rest ($p < 0.001$). The educational status of the group 2 was found to be evenly distributed compared to the other groups. The answers to the question on accepting a cadaveric organ were positive in 79.8% of the group 3, 74.7% in group 1 patients and 82.3% among group 2 ($p = 0.081$). The answers for the question on whether to donate their organs in case of occurrence of brain death were "yes" 63.64% in the group 3 patients, 62.1% in the group 1 patients and 58.21% in the group 2 ($p = 0.170$). The answers to the question about donating a relative's organs came out to be positive 55.5% in the group 3 patients, 48.4% in group 1 patients and 64.7% among the group 2 ($p = 0.382$). The answer to the question about accepting an organ donation in case of necessity came out to be "Yes" 55.5% in the illiterate group; while this rate tended to increase as the level of education went higher
Conclusion: There was no significant differences about the perspective on organ donation among the three goups. This perspective tended to be positive in percentage as the level of education went higher

025 LIVER

P705 AUXILIARY PARTIAL ORTHOTOPIC LIVER TRANSPLANTATION (APOLT) FOR METHYLMALONIC ACIDEMIA IN PEDIATRIC PATIENT: A REPORT OF FIRST CASE IN SOUTH KOREA

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Methylmalonic academia (MMA) is a rare autosomal recessive genetic disorder caused by complete (mut0) or partial (mut-) deficiency of methylmalonyl-CoA mutase or by defects in the synthesis of adenosylcobalamin (cblA, cblB). Recently published report showed that the Early LT might be recommended, because it could reduce the magnitude of progressive neurological disability. There are very few cases of MMA patients in South Korea and the patients didn't put into consideration LT as the treatment of MMA. We introduce our first case of Auxiliary partial orthotopic liver transplantation (APOLT) for methylmalonic acidemia with photos of operation field. The patient was 13 year old girl. Her body weight was 31 kg and she was 131 cm tall. The patient has no renal insufficiency but she had mild neurological disability at the time of LT. She underwent several times of metabolic decompensation before LT. Donor was her 19-year-old brother. In living donor operation, left lateral segment was procured. The weight of graft was 240 g and the diameter of left hepatic vein (LHV) was 18 mm. The diameter of portal vein (PV) was 14 mm and the number of hepatic artery was 2. In bench operation, we enlarged the size of LHV of graft to 25 mm with vein patch. In recipient operation, we performed left hepatectomy and the venoplasty of LHV and middle hepatic vein (MHV). We made 2 cm incision from right side of LHV to MHV for augmentation of the size of hepatic vein outflow. Also we performed the venoplasty of PV with vein patch to make enough inflow of PV. These operations were performed without total clamping of inferior vena cava. The patient is well without any surgical complication and we will get the long term outcome from the patient. We hope that our LT program for MMA patients will be expanded in South Korea.

P706 INCIDENCE OF CHRONIC KIDNEY DISEASE IN LIVER TRANSPLANT PATIENTS AT PABLO TOBON URIBE'S HOSPITAL 2005–2013

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Advances in immunosuppression have revolutionized liver transplantation (Ltx) outcomes. However, this had increased prevalence of chronic Kidney disease (CKD), there are several risk factor associated like the calcineurins inhibitors, diabetes and hypertension. The aim of this study is to determine the incidence of CKD in liver transplant patients Pablo Tobón Uribe Hospital during the years 2005–2013 and assess the associated complications.

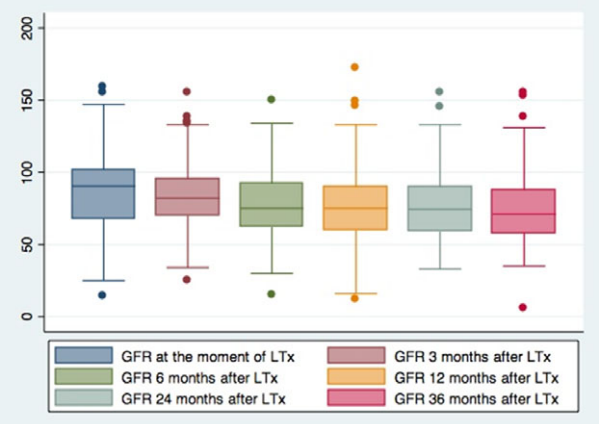
Methodology: Retrospective cohort.

Results: 2015 Ltx were performed, the mean age was 50.37 years (SD ± 12.6), 42.8% were female; 3.3% of the patients need renal replacement therapy during the first month of transplantation; cyclosporine was used in 90.7% of the patients. The mean glomerular filtration rate (GFR) at 1 and 2 years after Ltx were 86.2 ml/min/1.73 m^2 (SD ± 25.9) and 74.2 ml/min/1.73 m^2 (SD ± 24.5) respectively (Figure 1).

The rate of deterioration of GFR by generalized estimating equations model was 3.5 ml/year (95% CI 2.44 to 4.74, p = 0.000). At the moment of Ltx 16.3% of the patients had a GFR less than 60 ml/min and three-year follow-up was 29.6%, The patients were grouped according to the presence of poor kidney function (GFR < 60 ml/min/1.73 m^2) after one year of Ltx, except for death, the presence of cerebrovascular and coronary disease was similar in both groups (see Table 1).

Complications grouped according to presence or absence of poor kidney function at the end of follow up.	GFR > 60 ml/min (143)	GFR ≤ 60 ml/min (83)	p
Cardiovascular Disease *n* (%)	4 (2.8%)	4 (5.7%)	0.440
Cerebrovascular Disease *n* (%)	3 (2.1%)	1 (1.4%)	0.730
Death *n* (%)	9 (6.2%)	14 (20%)	0.004

Conclusion: CKD is a common complication in liver transplant patients, frequent monitoring of renal damage markers are recommended.



023 KIDNEY

P707

LACK OF ASSOCIATION BETWEEN ELEVATED URINARY LEVELS OF IL-10 AND INFA WITH THE PRESENCE OF INFLAMMATION IN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: The only effective treatment for terminal chronic renal disease it is kidney transplant, having an average graft survival 10–15 years, being the main cause of malfunction of the active rejection. The gold standard for diagnosis is renal biopsy, which involves minimal risk of complications for its realization. A lot of evidence has demonstrated the importance of different cytokines in acute renal rejection. Previous studies have examined the presence or absence of IL 10 in rejected grafts level related immunopathological as well as other interleukins. Studies in human transplantation show elevated levels of IL-10 and IP-10 in inflammation and rejection.
Objective: To demonstrate the lack of association of elevated urinary levels of IL 10 and interferon in the presence of active inflammation. Material and Methods: An observational, descriptive, cross-sectional study conducted in transplant patients at 12 months follow-up after renal transplantation. Those who were held biopsy after renal transplantation protocol and determination in urine IL-10 and IP-10. It is considered as variables: age, BMI, gender, transplant type, no. Haplotypes, -creatinine, renal function MDRD, BANFF Classification, levels of IL-10 and IP-10. Statistical analysis was performed calculating a sample size of 54 patients, with an alpha bias 0.05%, yielding measures of central tendency and determining association between levels of IL-10 and IP-l0 with the presence of rejection using SPSS 21.0 program.
Results: See table 1.
Conclusions: No significant differences were observed in patients with and without inflammation the level of interleukins, denoting an adequate immunosuppression in most of these, to have higher average levels of a control group. Determination of inflammatory cytokines in urine could be used as a determinant of a right wing attachment to immunosuppression rather than as an early marker of rejection.

			$p < 0.05$
Sex male	13	4	
Sex female	3	8	0.019
Age	29.26 + 9.00	35.17 + 11.74	0.129
Weight	67.09 + 14.87	61.43 + 11.86	0.264
Height	1.637 + 0.09	1.528 + 0.065	0.009
BMI	24.764 + 3.80	26.398 + 5.35	0.380
LDKT	13 (81.3%)	10 (83.3%)	
DDKT	3 (18.8%)	2 (16.7%)	0.886
Time from transplantation	19.44 + 11.80	20.42 + 12.071	0.754
Induction IL 2 Blocker	12 (57.1%)	9 (42.9%)	
Thymoglobulin	4 (57.1%)	3 (42.9%)	0.67
CMP Immunosuppression	2 (28.6%)	5 (71.4%)	
TMP Immunosuppression	14 (66.7%)	7 (33.3%)	0.093
Level immunosuppression normal	10	7	
Level immunosuppression low	5	4	
Level Immunosuppression high	1	1	0.071
Proteinuria	5 (62.5%)	3 (37.5%)	
Without proteinuria	11 (55%)	9 (45%)	0.528
MDRD	67.21 + 1 9.93	58.34 + 21.11	0.263
CKD-EPI	76.32 + 20.58	67.53 + 24.04	0.322
Nankivell	68.10 + 17.30	57.40 + 19.44	0.152
Creatinine	1.30 + 0.31	1.47 + 0.96	0.571
Urea	39.12 + 21.33	42.16 + 20.23	0.717
UN	13.38 + 6.15	14.90 + 8.15	0.563
Albumin	4.45 + 0.28	4.09 + 0.33	0.831
Interleukin Levels			
IL 2	8.00 + 4.74	9.69 + 7.83	0.837
IL 4	6.13 + 4.038	7.82 + 6.08	0.837
IL 5	6.80 + 2.53	11.49 + 12.08	0.767
IL 6	7.64 + 3.50	9.82 + 6.33	0.507
IL 10	9.96 + 8.67	11.06 + 9.71	0.945
IL 12	6.96 + 2.90	7.61 + 4.97	0.909
IL 13	7.51 + 3.77	9.65 + 7.45	0.664
IL 17	8.56 + 7.44	10.87 + 9.36	0.631
γINT	8.39 + 2.49	10.76 + 8.20	0.837
TNF	9.16 + 3.55	12.57 + 10.13	0.371
GCSF	10.67 + 9.22	10.46 + 9.56	0.397
TGFβ	11.28 + 6.26	10.66 + 3.91	0.909

025 LIVER

P708 TWO-STAGE LIVER TRANSPLANTATION WITH TOTAL HEPATECTOMY AND PORTOCAVAL SHUNT

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Background: Patients waiting for allocation of liver graft may meet with advanced coma, cardiovascular shock, renal and respiratory failure which defined as "toxic liver syndrome" or exsanguinating hemorrhage. Total hepatectomy with portocaval shunt and subsequent liver transplantation could be the only life-saving procedure in this situation. Here we report our experiences of two-stage liver transplantation using total hepatectomy with portocaval shunt.
Methods/Materials: We performed 195 cases of liver transplantation from 2010 to 2014. We have experienced five cases of two-stage liver transplantation. We retrospectively reviewed each cases.
Results: Among 5 cases, 4 patients had toxic liver syndrome and one patient had hemodynamic instability due to uncontrolled hemorrhage as a result of primary nonfunction after liver transplantation. Only 2 patients survived by subsequent liver transplantation. Shortest anhepatic time was 17 h and longest one was 110 h. In most cases, laboratory abnormality and mental status were improved gradually after total hepatectomy. Continuous venovenous hemodialysis was applied to all patients.
Conclusion: Two-stage liver transplantation with total hepatectomy and portocaval shunt could be a life-saving procedure for selected candidates for liver transplantation.

P709 KAPOSI'S SARCOMA AFTER LIVER TRANSPLANTATION

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Background: Kaposi's sarcoma (KS) represents a significant complication after solid organ transplantation as a result of immunosuppressive therapy. KS is a malignancy arising from endothelial cells and HHV8 infection is a key pathogenic determinant for the KS development. Unfortuately, there are no standard criteria to treat KS in immunosuppressed patients. We report a case of KS ocurred after liver transplantation in our institute.
Case: 50-year-old female patient suffered from chronic hepatitis B related liver cirrhosis underwent deceased donor liver transplantation on December 2012. Tacrolimus, mycophenolate mofetil and steroid were used for immunosuppression. Post-transplant clinical course was uneventful until 8 months after transplantation. During outpatient follow-up period, her laboratory findings showed pancytopenia and she was admitted for the evaluation. Abdominal computed tomography revealed multiple enlarged lymph nodes in abdominal cavity and post-transplantation lymphoproliferative disorder was suspected. From endoscopic findings, there were multiple hematomas on oral cavity, stomach and duodenum and biopsy was performed. In pathologic findings, KS was confirmed finally. The patient was treated by mTOR inhibitor with discontinuation of tacrolimus. However, progressive renal and pulmonary insufficiency were occurred and she expired with multi-organ failure 11 month after transplantation.
Conclusion: After organ transplantation, there are increased risk of KS compared with the general population. For patient without cutaneous involvement of KS, diagnosis is difficult. Every effort for early diagnosis of KS should be made during surveillance after liver transplantation.

023 KIDNEY

P710

CAN WE MINIMIZE CALCINEURIN INHIBITOR AND/OR STEROID EFFECTIVELY AND SAFELY USING DE NOVO MAMMALIAN TARGET OF REPAMYCIN INHIBITOR?

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Background: One of the most important problems after kidney transplantation (KTP) is how to prevent from falling into the death with functioning graft (DWFG). To avoid DWFG, we have to give attention not only immunologic but also non-immunologic problems which means malignant tumors, infections, and the metabolic problems. For the long time, we performed immunosuppressant (IS) combination therapy with calcineurin inhibitor (CNI), mycophenolate mofetil (MMF), steroid, and basiliximab (BXM). CNI contributed to decrease the frequency of acute rejection after KTP, but it has been found that we have to decrease the dose of CNI as soon as possible to avoid drug induced adverse events (AE). On the other hand, steroid induce new onset diabetes, cataract, and osteoporosis. Especially in these days, these are big problems because the average of recipient age gradually increased. Therefore we changed IS regimen to new one with mammalian target of rapamycin inhibitor (mTORi) for minimizing CNI and steroid.
Materials/Methods: From September 2012 to December 2014, new immunosuppressant regimen which consists of low dose CNI, MMF, steroid, BXM, and mTORi was employed for 35 cases. If the pathological finding of graft biopsy 3 months after KTP was normal, steroid was withdrew or minimized in some cases. We compared these cases with conventional cases without mTORi about graft survival, renal function and AE.
Results: Graft survival rate is 100% in both groups. There was not significant difference between these groups about renal function and AE. Though we reduced the dose of CNI, the frequency of rejection was not increased.
Conclusion: The short-term result with mTORi was sufficient at the point of graft function and AE. But the purpose of this regimen is to reduce the rates of rejection, IF/TA, and DWFG. To evaluate the effect for malignant tumors, metabolic problems, and long term graft survival, we have to continue to observe for long time.

007 DONATION/RETRIEVAL

P711

EFFICACY OF SYMPATHOMIMETIC AMINES IN MAINTAINING BLOOD PRESSURE IN BRAIN-DEAD PATIENTS WHO ARE ORGAN DONORS

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Brain-dead patients, potential organ donors, have accentuated hemodynamic instability, different degrees of electrolyte, metabolic and endocrine imbalance, hypothermia and alterations of the fluid-coagulant imbalance. Studies show that over 81% of the organ donors have severe hypotension. This study tries to identify which of the available vasoconstrictor amines more effectively increases blood pressure and implicitly tissue perfusion and oxygenation in these patients. The study was done on 42 patients, all brain-dead (following hemorrhagic stroke (78%), or cranial trauma by road accidents (22%) in Intensive Care Department of the Emergency County Hospital of Oradea, between January 2013 and December 2014. The age of the patients was between 10 and 55. The patients were separated in two groups: A-group (20 patients) and B-group (22 patients). The patients in A-group were given 3–5 mcg/kg/min dopamine concomitant with 5–10 mcg/kg/min dobutamine, while those in B-group were given 3–10 mcg/ min norepinephrine intravenously through an automatic syringe. Hemodynamic stability was better in B-group patients than in A-group patients. All patients were under both invasive cardiac monitoring (central venous catheter, arterial catheter) and non-invasive cardiac monitoring (ECG, SpO2, capnography), hourly diuresis. The following parameters were measured: BP, CVP, SVO2, DO2, IC. In patients who were given 10 mcg/min norepinephrine intravenously, the values of TAM were over 75 mmHg as opposed to those who were given dopamine 3–5 mcg/kg/min plus dobutamine 5–10 mcg/kg/min, the values of TAM were over 65–70 mmHg. These results encourage us to recommend norepinephrine as first-line treatment for the management of severe hypotension in brain-dead patients who are potential organ donors. Key words: hypotension, norepinephrine, organ donors.

023 KIDNEY

P713

CROSS-MATCH COMBINATIONS AND IMPACT ON SINGLE DONOR SEQUENTIAL RENAL TRANSPLANTATION

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Method: Cold ischaemic time (CIT) is a modifiable risk factor for deceased donor renal transplantation. Despite efforts to reduce this e.g. virtual cross-matching (VXM), it is inevitable that when sequentially transplanting both kidneys from a single donor, the second transplant will have a longer CIT. The aim of this study was to determine if specific combination of cross-match types impacted on the outcome of either transplant.
Method: All 33 paired renal transplants from a single donor, sequentially transplanted, were identified over a 5-year period (2009–2014). Patients were allocated to three groups: Group 1- VXM in both transplants (V^1V^2); Group 2- VXM for the first and FXM for the second (V^1T^2); Group 3- FXM for both (T^1T^2). First and second transplants from each group were compared for recipient demographics, operative parameters and one-year outcomes including serum creatinine, biopsy proven rejection (BPAR) and delayed graft function (DGF).
Results: Ten pairs were performed in Group 1 (V^1V^2), 10 pairs in Group 2 (V^1T^2), and 13 in Group 3 (T^1T^2). All second kidneys endured significantly longer CIT's (8.5 vs. 14.1 h, 10.1 vs. 15.2 h & 13.5 vs. 18.0 h, $p < 0.05$). There was no significant difference in mean creatinine level (3, 6 and 12 months) between the first and second transplants in each group, nor was there any difference between kidneys across each group. The BPAR rates were independent of kidney order and CIT (V^1V^2 25%, V^1T^2 5%, T^1T^2 33%). Group 3 (T^1T^2) had the greatest rates of immediate graft function (10%, 40%, 46%). Higher incidences of DGF were observed with DCD transplants but this was independent of kidney order or cross-match. The highest DGF rates were in Group 1 (V^1V^2) (90% vs. 60% vs. 46%) and affected both DCD and DBD's transplants (100% vs. 75%). However, this did not translate into poorer one year outcomes.
Conclusion: The cross-match combinations and differing CIT's do not impact on the outcomes of sequential single donor transplants.

029 PANCREAS

P715

INSULIN AND ZINC CONTENT IN B-CELLS OF NEONATAL RATS AND RABBITS

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Aim: To investigate insulin and Zn+2 content in pancreatic B-cells of neonatal rats and rabbits.
Methods: Pieces of pancreas from 5 rats and 4 rabbits 4 days old were used. Pre-cultivation in media 199 + 5.5 mM Glucose + embrional bovine serum within 9 h (Group 1),16 h (Group 2) and 24 h (Group 3). Fixation in Bouin 14 h and in ethanol enriched by H_2S. Staining of sections for insulin by fluorescent Diethylpseudoisocyanine method and for Zn+2 by 8-para (toluenesulphonylaminoquinoline), a fluorescent high specific reagent for Zn+2. Insulin and Zn+2 content in B-cells was calculated as parameter K = I1/I2 (I1-intensity of fluorescence of B-cells of neonatal animals; I2 – intensity of fluorescence of B-cells of adult animals).
Results: Group 1. Insulin content in B-cells of rats and rabbits: Krats = 0.58 ± 0.04 (adult:1.00 ± 0.04) and in rabbits Krabb. = 0.67 ± 0.07 (adult: 1.00 ± 0.05). Zn+2 content in B-cel- ls of rats and rabbits: Krats = 0.49 ± 0.07 (adult:1.00 ± 0.03) and in rabbits Krabb. = 0.54 ± 0.05 (adult: 1.00 ± 0.04). Visually: de- creasing of insulin and Zn+2 content in B-cells of both types of animals. Group 2. Insulin content in B-cells of rats and rabbits: Krats = 0.62 ± 0.04 (adult:1.00 ± 0.02) and in rabbits Krabb. = 0.69 ± 0.07 (adult: 1.00 ± 0.04); Zn+2 content in B-cells of rats and rabbits: Krats = 0.52 ± 0.03 (adult: 1.00 ± 0.04) and in rabbits Krabb. = 0.58 ± 0.04 (adult: 1.00 ± 0.05). Visually: evident decreasing as of insulin as of Zn+2 content in B-cells of rats and rabbits. Group 3. Insulin content in B-cells of rats and rabbits: Krats = 0.66 ± 0.04 (adult:1.00 ± 0.02) and in rabbits Krabb. = 0.75 ± 0.06 (adult: 1.00 ± 0.04); Zn+2 content in B-cells of rats and rabbits: Krats = 0.58 ± 0.03 (adult: 1.00 ± 0.04) and in rabbits Krabb. = 0.64 ± 0.04 (adult: 1.00 ± 0.05). Visually: increa- sing of Insulin and Zn+2 content in B-cells in compared with Group 1.
Conclusions: Prolongation of pre-cultivation of islets for 24 h accompanied by increasing of insulin and Zn+2 in B-cells for 13–18% comparatively with pre-cultivation within 9 h.

021 ISLET/CELL TRANSPLANT

P716

STATE OF HISTOSTRUCTURE AND INSULIN CONTENT IN B-CELLS OF HUMAN EMBRYO PANCREATIC ISLETS

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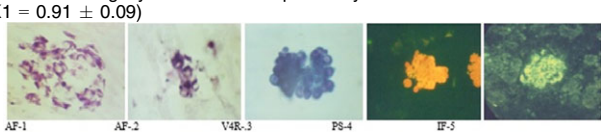
Aim of Work: To investigate state of histostructure and insulin content in pancreatic islets of 8–9 weeks old Human Embrio.
Methods: Pancreas tissue from 3 Human Embryo 8.5–9 weeks old obtained as abortive material were used. Pre-cultivation of pancreas in media RPMI-1640 + 5.5 mM of Glucose+bovine serum within 6 h. Fixation in Bouin 18 h. Paraffin sections were stained for insulin by Immunofluotescent method (IF), Diethylpseudoisocyanine fluorescent method (PS), Aldehyde-fucshine (AF) and Victoria 4R (V4R) methods. Insulin content was calculated as parameter K = I1/I2 for fluorescent methods (I1 – intensity of fluorescence of Human B-cells; I2 – of adult rat's B-cells; for two other methods as parameter K1 = AB1/AB2 (AB1- density of staining of intact rat's B-cells and AB2-of Human B-cells).
Results: AF method:Intact embryo islets contains not compact groups of oval or polygonal on average 11–26 B-cells not completed formation of islet; insulin content is reduced comparatively with B-cells of adult rats; there are very small groups and single B-cells (K = 0.48 ± 0.05). V4R method: A compact groups of 6–27 oval form B-cells not completely formed islet; insulin content is reduced comparatively with B-cells of adult rats (K = 0.74 ± 0.07). PS method: Small com- pact groups of B-cells or disseminated cells contains a few B-cells not completed formation of islet; number of cells is 3–4 times less in compared with islets of adult rats and rabbits; insulin content is slightly reduced comparatively with B-cells of adult rats (K1 = 0.87 ± 0.12). IF method. Compact small groups contains 12–31 B-cells visually almost completed forming of small islet; insulin content is slightly reduced comparatively with B-cells of adult rats (K1 = 0.91 ± 0.09)



023 KIDNEY

P717

ASSESSMENT OF PATIENTS' EXPECTATIONS, STRESSORS AND OBJECTIVES IN A PRETRANSPLANT EDUCATION PROGRAM ESPAIR

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In 2011, we created a pretransplant therapeutic education program in the Department of Nephrology and Organ Transplantation (Toulouse Hospital). Each month, we hold a meeting and invite ~12 patients to participate in various workshops focusing on social, medical, psychological and health behaviors. This provides regular feedback on our practice. We conducted an exploratory study to ensure that the workshops fulfil both the medical-team's and patient's needs. Our study sample includes 30 women and 30 men, aged 23–74 years (median age: 54). Of the total, 35% were not yet on dialysis, 30% had a failed kidney transplant, and 35% were waiting for transplant from a living donor. From the 60 interviews conducted, we classified the pretransplant patients' expectations regarding this educational meeting. Frequencies patient's expectations were calculated and revealed if the content of our workshops was adapted. We also listed the future goals of patients at the end of the meeting and requested patients to complete a questionnaire on potential stressors. This questionnaire was completed before and after the meeting. This exploratory study enabled us to assess the adequacy of our workshops with regards to patients' expectations, which will enable us to adapt our support and to provide a better inter-coordination structure. We found that completion of the same questionnaire after the meeting did not accurately reflect the patients' overall response to stressors: indeed, attending the meeting itself may have had a transient soothing effect. Therefore, it seemed more appropriate to conduct the follow-up questionnaire at three months after the meeting. We await these first results.

025 LIVER

P718

ANASTOMOSIS OF TYPE 2 PORTAL VEIN VARIATION AND LOW-LYING RIGHT POSTERIOR DUCT ANOMALY IN LIVING DONOR LIVER TRANSPLANTATION

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We report our experiences of type 2 portal vein and bile duct anastomosis during living donor liver transplantation

Forty-four years old man was admitted for generalized weakness. He suffered from CVH-B for 20 years and 2 years ago diagnosed LC with HCC. Primary HCC was treated by percutaneous RFA and recurred HCC was by TACE twice. After TACE generalized weakness, ascites were progressed. Hepatic encephalopathy was developed. Living donor liver transplantation was decided. Donor was 27-year-old son. GRWR was 1.48. Preoperative donor abdomen CT scan was revealed trifurcation of portal vein and low-lying right posterior hepatic duct. Middle hepatic vein branches were double in S5 and single in S8 level. Donor hepatectomy was performed as modified extended right hepatectomy (weight = 850 g). During bench operation neo-middle hepatic vein was reconstructed by use of iliac vein allograft. Lumens of graft portal vein were double. So left saphenous vein autograft patch was fenced to the graft portal veins for making single lumen. Graft was transplanted to recipient from right hepatic vein, portal vein, neo-middle hepatic vein and then right hepatic artery. Bile ducts were make common cannel in manner of V-shaped plasty then anastomosed to recipient bile duct. Total operation time was 632 min cold ischemic time was 40 min for bench operation. Maximal AST/ALT was 230/207 IU/ml at POD #1 then normalized at POD #5 and #15 each. Postoperative abdomen CT revealed patent portal vein, neo-middle hepatic vein and hepatic artery. There was no congestion area in the transplanted liver. Patient was discharged at POD #34. There was no stricture or stenosis in anastomosis site in veins, artery and bile duct.

In the living donor liver transplantation, there were many anatomical difficulties in anastomosis due to anatomical variation especially in portal vein and bile duct. Portal vein fencing and bile-ductoplasty can be a good choice.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P720

SHORT- AND LONG-TERM EFFECTS OF A SUPERVISED CYCLE EXERCISE PROGRAM ON PHYSICAL FITNESS AND DAILY PHYSICAL ACTIVITY IN SOLID ORGAN TRANSPLANT RECIPIENTS

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Background: Reduced physical fitness, muscle weakness, decreased daily physical activity are prevalent among all solid organ transplant (Tx)-recipients calling for interventional approaches to enhance physical fitness. This study aimed to evaluate the impact of a supervised 6-month intensive cycle exercise program on physical fitness and daily physical activity from baseline to 6-month follow-up.

Methods/Materials: We selected 36 stable Tx-recipients (27 males/9 females; age: 45 ± 10 years; time post-Tx: 3.5 years [1.8–7.3 years]; 14 kidneyTx, 6 lungTx, 6 heartTx, 7 liverTx, 1 heart/lungTx, 1 heart/liverTx and 1 liver/kidneyTx. All patients participated in a 6-month cycle exercise program supervised by a physiotherapist. Before (pre-intervention), immediately after (post-intervention) and 6-month after intervention (6 months follow-up) physical fitness was assessed by maximal ergospirometry to determine maximal oxygen uptake (VO_2 max), %predicted VO_2 max and maximal power (Wmax). Daily physical activity was assessed by an accelerometer (SenseWear Pro2 Armband) for 7 days to determine daily steps as well as the time spent in activities above 3 metabolic equivalents (METs) per day. Statistical analysis was done using one-way ANOVA (parametric data) and Kruskal-Wallis one-way ANOVA (non-parametric data).

Results: VO_2 max, %pred VO_2 max and Wmax were increased post-intervention (+17%, +16% and 12% respectively, $p < 0.05$, table). Thereafter, VO_2 max, %pred VO_2max and Wmax decreased at 6 months follow-up with no significant differences as compared to pre-intervention. Physical activity was increased post-intervention as evidenced by increased time spent in activities >3 METs per day (+34%, $p < 0.05$), however, this increase was not sustained at 6 months follow-up. No effect on daily steps was found post-intervention or at 6 months.

Conclusion: A supervised cycle exercise program results in an improvement in physical fitness and daily physical activity in Tx-recipients immediately after intervention. These improvements are not sustained at 6 month follow-up suggesting the need for continuous support or counseling.

		Pre-intervention	Post-intervention	6 months follow-up
Physical fitness	$(VO)_2$ max (ml/min/kg)	30.3 ± 8.8	35.3 ± 9.3*	31.1 ± 9.4#
	%pred VO_2 max	96.6 ± 24.1	112.1 ± 24.3*	101.6 ± 26.5#
	Wmax	199.5 ± 59.3	223.7 ± 60.0*	209.0 ± 62.8
Daily physical activity	Time spent in activities >3 METs per day (min/day)	128 ± 70	171 ± 54*	146 ± 70
	Steps per day	8423 ± 3030	8559 ± 3175	8373 ± 2737

*$p < 0.05$ versus pre-intervention, #$p < 0.05$ versus post-intervention.

025 LIVER

P721

HOW TO MAKE LIVING DONOR LIVER TRANSPLANTATION SAFE IN PATIENTS WITH HIGH MELD SCORES

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Living donor liver transplantation (LDLT) provides a unique opportunity to manage the patients preoperatively for optimal clinical conditions. Recent multivariate analyses have shown that, a high MELD score was independently associated with reduced graft survival in LDLT. We hypothesized that, in patients with raw MELD score ≥20, pre-transplant hospitalization with intent to reduce the MELD score would improve post-transplant outcome.

Between January 2011 and December 2014, 390 primary right lobe LDLT procedures were performed in our institution. The median time from listing to LDLT was 32.5 (17.0–67.0) days and the median MELD score at the time of LDLT was 16.0 (12.0–20.0). A total of 100 (25.6%) patients had MELD score ≥20 at the time of pre-transplant hospitalization (high MELD group).

In the high MELD group, 35 patients whose initial MELD score improved during pre-transplant hospitalization (responders) had a significantly lower rate of perioperative mortality than the remaining 65 patients, whose MELD score remained the same or further increased (non-responders) (5.8% vs. 21.5%, $p = 0.04$). Responders had a significantly longer pre-transplant hospital stay than non-responders (12.2 ± 10.2 vs. 7.4 ± 8.3, $p = 0.01$).

The length of pre-transplant hospital stay showed a significant positive correlation with improvement in the MELD score ($p < 0.001$, Spearman's coefficient = 0.324). Overall, patients with MELD score at the time of LDLT ≥20 had a significantly higher rate of perioperative mortality (16.2% vs. 3.4%, $p < 0.001$, OR = 5.4 [2.3–12.1, 95% CI]).

In conclusion, a MELD score ≥20 is a significant risk factor for perioperative mortality after LDLT. In high MELD patients undergoing LDLT, an extended pre-transplant hospitalization for reducing the MELD score is an effective strategy to improve post-transplant outcome.

	Low-MELD group ($n = 290$)		High-MELD group ($n = 100$)		
	Responder ($n = 43$)	Non-responder ($n = 247$)	Responder ($n = 35$)	Non-responder ($n = 65$)	p
MELD score at hospitalization	15.2 ± 2.6	13.2 ± 3.0	25.5 ± 5.9	24.6 ± 4.8	<0.001
MELD score at the time of LDLT	13.3 ± 2.8	13.7 ± 3.4	22.0 ± 5.4	26.1 ± 6.0	<0.001
Pre-transplant hospital stay (days)	8.1 ± 6.0	4.9 ± 5.4	12.2 ± 10.2	7.4 ± 8.3	<0.001
Perioperative mortality	4.7%	3.2%	5.7%	21.5%	<0.001
1-year survival	95.3%	91.1%	87.7%	69.8%	<0.001

023 KIDNEY

P722 UTILITY OF THE JAPANESE GLOMERULAR FILTRATION RATE EQUATION IN ESTIMATING DONOR KIDNEY

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Objectives: Many living kidney transplants are currently performed in Japan. To minimize the risk of donor, it is important to precisely evaluate the donor's renal function. An equation for the estimated glomerular filtration rate (eGFR) is typically used for this purpose in Japan. Therefore, we assessed the accuracy of the preoperative eGFR for estimating the donor's measured kidney function (mGFR).
Methods: Between April 2009 and August 2014, 100 kidney transplantations were performed at our institution, and 91 donors were evaluable. The eGFR was calculated as: eGFR = 194× Scr-1.094× Age-0.287 (and ×0.739 for women), and the mGFR was evaluated using inulin clearance. The preoperative eGFR was then compared with the mGFR.
Results: The patients included 27 men and 64 women, with a mean age of 56.8 ± 9.5 years (range, 36–79 years), a mean body surface area of 1.56 ± 0.14 m^2 (range, 1.27–1.92 m^2), a mean body mass index of 22.3 ± 2.3 kg/m^2 (range, 14.0–27.0 kg/m^2), and a mean serum creatinine level of 0.66 ± 0.14 mg/dl (range, 0.39–0.97 mg/dl). The mean eGFR was 81.3 ± 14.2 ml/min/1.73 m^2 (range, 45.5–125.9 ml/min/1.73 m^2) and the mean mGFR was 89.0 ± 15.5 ml/min/1.73 m^2 (range, 45.4–130.7 ml/min/1.73 m^2). The eGFR was significantly lower than the mGFR ($p < 0.001$). The correlation coefficient for the relationship between the eGFR and mGFR values was 0.503, and the mean difference between the two values was −7.8 (8.7%), with a root-mean-square error of 12.4.
Conclusions: Although the eGFR correlated with the mGFR, the eGFR values did not accurately estimate the mGFR in Japanese living kidney donors. Therefore, it is necessary to evaluate the mGFR in marginal donors.

P723 ANTIBODY-MEDIATED REJECTION IN KIDNEY TRANSPLANTATION; SINGLE CENTER EXPERIENCE

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Background: Antibody-mediated rejection (AMR) is diagnosed by typical pathological finding in biopsy in combination with detecting donor-specific antibodies (DSA) in the blood. AMR is the main cause of graft loss. We evaluated the clinical course of the case of AMR retrospectively.
Methods: Data from 100 living kidney transplantations performed between April 2009 and August 2014 at Ohkubo Hospital were retrospectively studied. The immunosuppressive protocol, consisting of tacrolimus, mycophenolate mofetil and methylprednisolone, was started 1 week prior to the operation. All the patients received induction with basiliximab. Only ABO-incompatible recipients and/or DSA positive recipients underwent desensitization including with plasmapheresis and a single dose of rituximab.
Results: AMR was diagnosed with allograft biopsy in eight recipients. Five recipients of them had preformed donor specific antibody (DSA) and received desensitization. Four of eight recipients showed AMR within 3 months after the transplantation, and three recipients of them showed acute AMR accompanying clinical allograft dysfunction. The other four recipients showed chronic AMR one year later after the transplantation, however their allograft function was stable except for presenting with proteinuria. Rituximab was administered for all recipients. Six recipients received IVIG therapy. Only two recipients who showed acute-AMR were treated by combination therapy including rituximab, IVIG and plasmapheresis. Allograft function is stable in all recipients, and the mean current serum creatinine is 1.5 mg/dl. The recipients who presented proteinuria showed decrease of proteinuria. A reduction of MFI was observed in six recipients and AMR disappeared in two cases.
Conclusions: A combination of rituximab, IVIG and plasmapheresis has been shown to be useful in the cases of AMR. Routine DSA monitoring is warranted for early detection of AMR.

P724 IRREVERSIBLE LOSS OF RENAL FUNCTION THROUGH SEVERE CYTOMEGALOVIRUS INFECTION IN THE FIRST THREE MONTHS POST-TRANSPLANTATION

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Despite improvements over the years, still only 70% of renal transplants remains functional ten years later. High Human cytomegalovirus (HCMV)-seroprevalence means that many transplant recipients are prone to infection post-transplantation (post-Tx). However, the debate on the role of HCMV in decreased renal graft function and survival is ongoing. The aim of this study was to assess the effects of HCMV infection on renal transplant function.

264 (age 51 [17–79]; male 55%) renal transplantation patients (Groningen, 2010–2011) were retrospectively categorized based on full blood HCMV DNA peak viral load (PVL) in first 3 months post-TX; PVL0 (0 cp/ml), PVLlow ($0 \leq PVL \leq 2000$) and PVLhi (high; $PVL > 2000$). None of the patients received prophylactic antiviral therapy. Renal function was measured using eGFR at 3 (eGFR03), 6, 12, 24, and 36 months post-Tx and analyzed using Kruskal-Wallis 1-way ANOVA and Mann-Whitney U. Correlations between variables were modelled using multiple linear regression.

114 (43%) recipients (PVLhi: $n = 46$, PVLlow: $n = 68$) underwent HCMV infection within 34 [6–87] days post-Tx. PVL0 and PVLlow had similar eGFRs and were pooled into PVL0/low. PVLhi patients had decreased eGFR compared to PVL0/low at 3 (median 46 and 38 ml/min/1.73 m^2, $p = 0.01$) till 36 months post-TX ($p < 0.05$ each), but the difference remained stable. Using multiple linear regression, PVLhi was significantly associated with reduced eGFR06. This was independent of donor and recipient characteristics, cold ischemia time, delayed graft function and acute rejection (unstandardized $B = -5.887$, standardized $\beta = -0.152$, $p = 0.034$, $R^2 = 0.142$).

PVLhi was independently associated with reduced renal function both short and longer post-Tx, but not with the slope of decrease, in our population of patients not receiving prophylaxis. This suggests that the severity of infection (high PVL early post-Tx), more than the infection an sich, induces a sharp and irreversible loss of renal function.

P725 PARVOVIRUS B19 INFECTION CAUSING CHRONIC ANEMIA AFTER RENAL TRANSPLANTATION: EXPERIENCE OF SINGLE CENTER

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Background: In renal transplant recipients Parvovirus B19 (PVB19) infection can lead to severe anemia. In this study, we investigate the incidence and characteristics of the renal transplant recipients with the PVB19 induced anemia, defined as a Hb < 9 mg/dl.
Methods: Between 2000 to 2014, 644 recipients with anemia defined as Hb < 9 mg/dl were screened for post-transplantation PVB19 infection at Asan Medical Center by PCR. Hb, reticulocyte count, PCR results for PVB19, dose and frequency of IVIG therapy, immunosuppression regimen and dosing, coincident viral infection and occurrence of acute rejection were analyzed.
Result: Forty recipients diagnosed with PVB19 infection with anemia (6.21%). The mean time to the onset of PBV19 –related anemia was 9.11 (0.43–103.4) months. The mean of the lowest Hb and reticulocyte were 5.49 ± 0.94 mg/dl and 0.43 ± 0.59 (0.05–2.24)%. Thirty recipients (75%) received IVIG and most patients are treated with 400 mg/kg/day for 5 days. After IVIG treatment, 9 recipients (22.5%) were retreated with IVIG, but Hb levels were still subnormal in 6 patients who were under tacrolimus. In these patients, the anemia was improved without recurrence after switched to cyclosporine. The lowest reticulocyte at the time of PBV19 infection of recurrence group was significantly lower than those of non-recurrence group (0.10 ± 0.05% vs. 0.51 ± 0.64%, $p = 0.002$). CMV infection and BPAR after treatment during the follow-up periods occurred more frequently in recurrence group (12.9% vs. 55.6%, $p = 0.007$ and 16.1% vs. 33.3%, $p = 0.032$, respectively).
Conclusion: PVB19 is a rare but clinically significant infection that can cause refractory anemia. The use of PCR for diagnosis is particularly helpful and IVIG with or without antimetabolites reduction can be an effective treatment modality. If the patients had relapse of anemia despite retreating with IVIG, conversion of immunosuppressive agent from tacrolimus to cyclosporine also can be a part of the treatment in PVB19 induced anemia.

031 PEDIATRIC TRANSPLANTATION

P726

SINGLE CENTER EXPERIENCE OF ABO-INCOMPATIBLE PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION

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Background: Despite the risk of antibody-mediated rejection, ABO-incompatible (ABO-I) living donor liver transplantation (LDLT) has been performed in Japan because of the organ shortage. Some studies reported that ABO-I liver transplantation (LT) in children was relatively safety. We made original protocol for ABO-I LT according to the age of the recipients and herein report the outcomes.
Patients and Methods: Between 2005 and 2014, 47 children (under 18 years old) underwent ABO-I LDLT in our institute. In our ABO-I protocol, patients younger than 2 years old (<2; $n = 38$) had the standard immunosuppressive therapy consisting of tacrolimus and steroids, and patients 2 years old or older and younger than 18 (≥2–<18; $n = 9$) had additional immunosuppressions using rituximab, plasma exchange and mycophenolate mofetil. Portal vein infusion therapy had been performed for patients ≥2–<18 until 2009. The mean follow up periods (mean ± standard deviation) were 3.4 ± 2.5 years in <2, 2.7 ± 3.1 years in ≥2–<18.
Results: 5-year survival rate were 92.1% in <2, 88.9% in ≥2–<18. The mean values of Pre- and Post-transplantation antidonor blood-type antibody peak titer (IgM/IgG) were 39/30 and 12/6 in <2, 55/25 and 67/44 in ≥2–<18. Acute cellular rejection occurred in 31.5% of <2, 22.2% of ≥2–<18. AMR occurred in 0% of <2, 22.2% of ≥2–<18. The rate of blood culture-positive were 34.2% in <2, 33.3% in ≥2–<18. The rate of cytomegalovirus infection were 34.2% in <2, 66.7% in ≥2–<18. The rate of Epstein-Barr virus infection were 15.8% in <2, 0% in ≥2–<18.
Conclusion: In patients <2 years old, ABO-I LDLT could be performed safely without additional immunosuppressive therapy. Patients ≥2–<18 years old had a risk of AMR and the additional immunosuppression strategy, such as rituximab, should be implemented.

012 HISTOCOMPATIBILITY

P727

ASSOCIATION OF HLA-DQ ANTIBODIES WITH ANTIBODY-MEDIATED REJECTION IN RENAL TRANSPLANTATION

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Background: The role of human leukocyte antigen (HLA) – DQ antibodies (Abs) in renal allograft damage has been recently highlighted. The aim of this study was to investigate the HLA-DQ Abs in association with post-renal transplantation statues including acute antibody-mediated rejection (AMR).
Methods: We retrospectively analyzed 429 sera from post-renal transplant patients at a single center. HLA Abs were detected using LAB Screen Single Antigen (One Lambda, USA) and the median fluorescence intensity (MFI) of HLA-Abs were classified as weak (1000–5000) and strong (>5000) groups.
Results: DQ-Abs were detected in 142 (33.1%) post-renal transplant patients (52 (36.6%) with acute AMR, 24 (16.9%) acute T cell mediated rejection, 21 (14.8%) acute rejection episode, 45 (31.7%) stable status). AMR was more frequently found in strong DQ-Abs MFI groups (34/74, 45.9%) compared with weak MFI groups (18/68, 26.5%) ($p < 0.05$). In 61 AMR patients, DQ-Abs detected 52/61 (85.2%) patients and concerning DQ chain (α & β) Ab specificities, patients with both HLA-DQB1* and HLA-DQA1* were the most represented category (44.2%), HLA-DQB1* Abs alone were found in 42.3%, HLA-DQA1* alone were found in 13.5%. Based on Korean DR-DQB linkage disequilibrium patterns, DSA against HLA-DQB (DQ-DSA) was determined. Of 61 AMR patients, 25 (40.9%) patients had only DQ-DSA, 9 (14.8%) had only non-DQ-DSA (+), 11 (18.0%) had both DQ-DSA (+) & non-DQ-DSA (+). DR-DSAs were most accompanied type of DSA in patients with DQ-DSA (+) (10/11, 90.9%). DQ-Abs showing strong MFI were detected 69.4% (25/36) DQ-DSA (+) AMR patients.
Conclusion: In post-transplant patients, AMR was associated with DQ-Abs showing strong MFI. Our findings support the previous reports suggesting the importance of DQ-Abs test to assess the immunologic risk of renal allograft.

007 DONATION/RETRIEVAL

P728

CASE SERIES OF DONOR-DERIVED CARBAPENEM-RESISTANT KLEBSIELLA PNEUMONIAE INFECTION IN KIDNEY TRANSPLANTATION

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Background: The incidence of Carbapenem-resistant Klebsiella pneumoniae (CR-KP) infection in transplanted patients is progressively increasing and is associated with higher morbidity and mortality. Multi-organ donors represent an high risk category for CR-KP transmission, potentially leading to recipients donor-derived infection.
Methods: We report a case series of donor-derived CR-KP infection in 3 transplant patients (2 kidney, 1 combined kidney- pancreas).
Results: Patient 1 (kidney): On post-operative day (POD) 2, episode of sepsis caused by colistin-sensitive CR-KP infection. Always asymptomatic, after 2 weeks of therapy (meropenem, tigecycline, colistin) he was discharged in healthy condition with normal graft function. Blood cultures and rectal swabs remained always negative for CR-KP during follow-up. Patient 2 (kidney-pancreas): on POD 7 pancreatic graft explantation due to a leak from the duodeno-ileal anastomosis. Subsequent recurrent episodes of abdominal infection and sepsis caused by colistin-sensitive CR-KP. On POD 195 patient's death for MOF. Patient 3 (kidney): On POD 10 episode of urinary infection caused by colistin-resistant CR-KP. After 2 weeks of therapy (meropenem and gentamicin) he was discharged in healthy condition with normal graft function. He remained colonized for CR-KP during follow-up. In all 3 cases, on POD 3 we appraised that the donors were CR-KP carriers. All of 3 recipients were CR-KP negative before transplant. Electrophoretic examination of the donor and recipient isolates revealed an identical profile, confirming the donor-derived infection.
Conclusions: Donor-derived CR-KP infections can impact with different clinical pictures on the outcome of kidney transplant recipients. It seems to be crucial a revaluation of the screening for infections in multi-organ donors and a prompt inter-institutional communication of the donor CR-KP positivity for a correct recipient selection and for an adequate prophylaxis and therapy.

023 KIDNEY

P729 **NEPHRON SPARING SURGERY FOR DE-NOVO TUMORS IN KIDNEY ALLOGRAFTS**

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Background: De-novo malignant tumors affecting kidney allografts have rarely been reported. Nephron-sparing surgery (NSS) has been successfully advocated, but no standardized treatment has been established for these neoplasms.

Methods: Here we report our experience of five cases of NSS for malignancies in transplanted kidneys.

Results: Mean time lapse after transplant was 15.6 years. We found 2 clear cell carcinomas (T1), 2 papillary carcinomas (T1), and 1 malignant solitary fibrous tumor. Mean creatinine levels before surgery and one month after surgery were 1.28 and 1.32 mg/dl, respectively (p = NS). Graft and patient survival were both 100% after 1 year of follow-up. No cases of tumor recurrence were diagnosed during the follow-up in any of the 5 patients.

Conclusions: Our findings confirm that NSS is a safe and effective procedure that we believe should be considered the best therapeutic option for small malignant neoplasms occurring in kidney allografts. Some aspects of the management of these tumors, such as the role of pre-operative biopsy and immunosuppression modifications, remain controversial.

025 LIVER

P730

EARLY EXPERIENCE OF LIVING DONOR LIVER TRANSPLANTATION IN DONG-A UNIVERSITY HOSPITAL: INITIAL 13 CASES

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Background : Living donor liver transplantation has progressed dramatically in Asia due to the scarcity of cadaver donors. We present the initial experience of living donor liver transplantation (LDLT) at Dong-A university hospital during 16 months.
Materials and Methods: From November 2013 to March 2015, 13 LDLTs were performed at our hospital. There were 11 cases of modified right lobe graft (MRL), 1 case of extended right lobe graft and 1 case of dual grafts (two left lobe grafts). Middle hepatic vein in 11 cases of modified right lobe grafts were reconstructed using cryopreserved iliac vessels (4 cases) and expanded Polytetrafluoroethylene (ePTFE, GORE-TEX) grafts (7 cases).
Results: There were no serious donor complication and mortality, but one donor experienced large amount biloma that was treated by percutaneous drainage. In recipient, 10 of 13 recipients were HCC and within Milan. Mean MELD score were 11.3 and mean hospital stay were 20.1 days. There were no in hospital mortality, but 13th patient expired due to acute GVHD at 2 months after liver transplantation despite intensive care. Four recipients (30.7%) experienced major complications; Three biliary stricture (23.0%) and one right hepatic vein stenosis that was managed by hepatic vein stenting. Primary tumor recurrence occurred in two recipients (15.3%) that are all alive. There were no specific complications related using PTFE graft and cryopreserved iliac vessels.
Conclusion: LDLT has gained acceptance to overcome the organ shortage. Although small cases, Early result of our experience of LDLT was acceptable. Careful donor and recipient evaluation, meticulous operation, proper postoperative management are guarantee forthe safety of donor and recipient in LDLT.

007 DONATION/RETRIEVAL

P732

IMPACT OF TRANSFER PROCESS OF BRAIN DEAD POTENTIAL DONORS ON HEMODYNAMIC STABILITY AND OXYGENATION

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Objectives: Transfer process of critically ill patients has been shown to cause alterations in hemodynamics and lung oxygenation quality. In this study we decided to assess hemodynamic alterations and need for vasopressor and fluids administration before, during and after the transfer process of brain dead donors and check the possible factors for any associations.
Materials and Methods: This observational study assessed 23 deceased donors in February and March 2014. Hemodynamic indices such as mean arterial pressure, vasopressor needs to maintain stability, central venous pressure and transfer time were recorded. Lung oxygenation marker (PaO2/FIO2 ratio) also was measured before and after transfer and a p-Value < 0.05 was considered significant.
Results: Mean donors age was 37.3 $\pm$ 15.5 (range of 6–66) and 14 (60.8%) of them were male. Cause of brain death in 14 (60%) donors was trauma. Mean arterial blood pressure before and after the transfer were not significantly different. (91.7 vs. 89.9 mmHg, $p = 0.61$) But vasopressor dosage was significantly higher both while transferring and also after it. (8.8 $\pm$ 6.6 and 9.36 $\pm$ 6.38 μg/kg vs. 6.44 $\pm$ 5.39 μg/kg, $p = 0.002$ and 0.01) there were no correlation between the vasopressor need and age, sex, cause of brain death, intubation period and amount of fluid administration. The latent finding was noticeable because we figured that PaO2/FIO2 ratio significantly decreased after transfer of donors (From 302.1 $\pm$ 119.4 to 259 $\pm$ 115.8 mmHg, $p < 001$) and the drop was correlated positively with amount of administered IV-fluids during transfer. ($p = 0.02$ and correlation coefficient = 0.54).
Conclusions: Increased need for vasopressor and amount of administered fluids are two independent variables. But higher amounts of fluids may cause a higher reduction in lungs oxygenation capacity while lacking any effects on hemodynamics. So less administration of IV-fluids at the time of transfer process of brain dead donors is recommended.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P733

COMPARISON OF TWO STEROID FREE IMMUNOSUPPRESSIVE REGIMENS IN LIVE DONOR RENAL ALLOTRANSPLANT RECIPIENTS: A PROSPECTIVE STUDY

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Objectives: This prospective randomized open-labeled study was designed to compare steroid and calcineurin inhibitor-free regimen using sirolimus and mycophenolate mofetil (MMF) with steroid free using tacrolimus and MMF for kidney transplants with basiliximab induction.

Patients and Methods: Forty low immunologic risk patients received basiliximab induction were maintained on steroids for minimum 5 days till achieving satisfactory level of tacrolimus. All patients were maintained on tacrolimus and MMF in the first 3 months. Protocol biopsies were done for all patients after 3 months of transplantation. Patients with normal protocol biopsies were randomized into 2 groups; the tacrolimus (n = 20) and the sirolimus groups (n = 20). After one year of renal transplantation, protocol biopsies were done again. All patients were subjected to follow-up clinically and laboratory for 2 years after transplantation

Results: In sirolimus group, we recorded 3 patients resumed tacrolimus, one patient because of thrombocytopenia, one patient due to De novo FSGS, one patient due to acute cellular rejection. After 1 year protocol biopsy, one patient experienced subclinical acute rejection.

In tacrolimus group, we had one patient with new onset posttransplant diabetes.

We had two patients with severe intractable diarrhea that were thoroughly investigated and necessitated shifting to azathioprine and steroid for one patient and change tacrolimus to cyclosporine for another.

Patients and graft survival were comparable in both groups during follow up period. Moreover, post transplant complications as regard infections were also comparable

Conclusions: This clinical trial provides a good insight into a potentially effective steroid and calcineurin inhibitor-free protocol with the use of sirolimus and mycophenolate mofetil in basiliximab induction, however we are dealing with low risk patients; we recommend longer time for follow up after living donor renal transplantations.

023 KIDNEY

P734

ERYTHROCYTOSIS AFTER RENAL TRANSPLANTATION AT CHO RAY HOSPITAL

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Introduction: Erythrocytosis, a common complication after kidney transplantation associated with hypertention and thrombosis, is considered when hematocrit level equal to or greater than 51%, or a hemoglobin level equal to or greater than 16 g/l, or both, without other causes. The aims of the sudy was to define the prevalence of erythrocytosis after kidney transplantation at Cho Ray hospital as well as the efficacy of treatment with angiotensin converting enzyme inhibitors (ACEI) and angiotensin (AT) receptor antagonists.

Methods: A cross-sectional descriptive study on 550 patients after kidney transplantation evaluated from January 2004 to January 2015 at Cho Ray hospital.

Results: The prevalence of posttransplant erythrocytosis at Cho Ray hospital was 9.63% (5 female [9%], 48 male [91%]), appeared at an average of 16.3 months (range, 2.8–67.4 months) after transplant. Before treatment, mean red blood cell count (RBC), hemoglobin (Hb) and hematocrit (Hct) were: 6.08.106/mm^3, 172.8 g/l, 54.5%, respectively. These patients underwent ACEI and AT receptor antagonists therapy in the average time of 9.35 weeks to decrease these erythrocyte indices to normal values (Hct $<$ 51%, Hb $<$ 160 g/l). At the time of last follow up, the mean RBC, Hb and Hct were 5.4.106/mm^3, 149.8 g/l, 47.4%, respectively.

Conclusion: Erythrocytosis, a benign phenomenon occurring mostly in male patients, is usually encountered within 1–2 years of post renal transplant period and can be treated effectively and safely with ACEI and AT receptor antagonists.

Keywords: Erythrocytosis, renal transplant, angiotensin converting enzyme inhibitors and angiotensin receptor antagonists.

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P735

CLINICAL RESULTS IN HEART TRANSPLANT RECIPIENTS RECEIVING EVEROLIMUS PLUS DOSAGE REDUCTION OF TACROLIMUS: A 5-YEAR FOLLOW UP

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Objectives: It is currently not known whether in heart transplant (HTx) recipients the combination of everolimus (EVL) plus dosage reduction of tacrolimus (TAC) is superior to the regular TAC dosage regimen regarding clinical outcomes.
Methods: We compared 5-year survival and kidney function in 67 maintenance HTx patients receiving EVL plus dosage reduction of TAC (EVL group) with 67 patients matched for age, sex and transplantation date receiving the regular TAC regimen (TAC group). Statistical analyses were performed using Kaplan–Meier survival estimates and 2-factor ANOVA.
Results: Initial estimated glomerular filtration rate (eGFR) was significantly lower and blood leucocyte counts were significantly higher in the EVL group compared with the TAC group (GFR: 38.5 ± 13.2 vs. 67.3 ± 29.5 ml/min/1.732;respectively, $p < 0.001$, blood leucocyte counts: 8.4 ± 2.9 vs. 7.0 ± 2.1109/l, respectively, $p = 0.002$). Five-year mortality did not differ between groups (19.4% vs. 17.9%; $p = 0.766$). There were however significant time $\times$ treatment effects with respect to eGFR values ($p < 0.001$). In detail, eGFR decreased on average by 10 ml/min/1.73 m^2 during follow up in the TAC group but increased by 8 ml/min/1.73 m^2 in the EVL group. Blood leucocyte counts improved significantly in the EVL group but not in the TAC group ($p = 0.008$). Parameters of liver function did not change significantly, either in the EVL group or in the TAC group.
Conclusions: EVL plus dosage reduction of TAC improved kidney function compared with the regular TAC dosage regimen. Despite poorer initial kidney function and higher blood leucocyte counts in the EVL group, 5-year survival was comparable between the two groups. In our opinion further prospective randomizel investigations are reuired to assess the clinical benefit for htx recipients receiving the combination of everolimus and tacrolimus.

015 INFECTIONS

P736

TREATMENT OF ASYMPTOMATIC CMV DNA POSITIVE INFECTIONS IN HEART TRANSPLANT RECIPIENTS WITH CMV HYPERIMMUNOGLOBULIN MONOTHERAPY (CYTOTECT©): A ONE YEAR FOLLOW – UP

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Background: Heart transplant (HTX) recipients often develop CMV infection with positive CMV DNA. Antiviral medication induces complications such as renal failure and neutropenia. The aim of our study was it to analyze the value of CMV-hyperimmunoglobuline (IVIG) (Cytotect©) monotherapy in HTX recipients with positive CMV DNA proof without clinical symptoms.
Methods: In 01 – 12/ 2012 15 HTX recipients transplanted 2008–2012 with positive baseline DNA without clinical symptoms where initially treated with IVIG monotherapy (50 ml/1 i. v. infusion initially). The follow up intervall was 12 months.
Results: Nine patients (60%) developed a negative CMV DNA test without further recurrence. 5 patients (33%) initially had a negative result of CMV DNA but developed a recurrence of positive CMV DNA within 6 weeks. One patient required –IVIG- therapy three times to reach a stable negative result of CMV DNA. No patient died on year and only one patient (6,/%) died two year after initiation of Cytotect therapy. The course of creatinine, BUN, GFR, bilirubine, GOT, GPT, AP, blood count and CRP was similar to baseline laboratory results. Only one adverse event (Allergy) occurred during follow up.
Conclusion: IVIG therapy, is efficient to achieve CMV DNA negative results in initially CMV DNA positive patients without the use of valgancyclovir/ganciclovir especially in patients with neutropenia or renal dysfunction. Repeated treatment in case of recurrence is possible. The safety profile is acceptable with very low adverse event rate and stability of laboratory values during follow up. Projected prospective investigations will evaluate this treatment strategy further.

023 KIDNEY

P737 PREVALENCE AND DISTRIBUTION OF BK VIRUS SUBTYPES IN RENAL TRANSPLANT RECIPIENTS REFERRED TO GOLESTAN HOSPITAL IN AHVAZ, IRAN

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Background: BK virus (BKV) belongs to the human Polyomaviridae and the primary BKV infection is occurred during childhood then the virus could be latent through life, especially in the kidneys and urinary system. It became reactive after an immunocompromised status, such as pregnancy or transplantation. Isolated BKV from different locations of the world is grouped into four subtypes using serological and genotyping methods. The BKV subtype I is the dominant one and has worldwide distribution. According to our knowledge, there are no data about the BKV prevalence and its genotypes in southwest part of Iran. Considering the high prevalence of renal failure and kidney transplant patients in this part, and the role of BKV in graft rejection, this study aimed to determine the prevalence of BKV infection in renal transplant recipients referred to Golestan Hospital in Ahvaz City, Iran.
Materials and Methods: Urine samples were collected from 122 kidney transplant recipients referred to Golestan Hospital in Ahvaz, southwest of Iran. The extracted DNA was amplified by Polymerase Chain Reaction, and subtype of each positive sample was determined using Restriction Fragment Length Polymorphism (RFLP) and sequencing methods.
Results: From all study population, 51/122 (41.8%) urine samples were positive for BKV DNA and the other samples were negative (71/122). Forty-eight cases (94.11%) were subtype I and 3 others (5.89%) were subtype IV using the RFLP method. None of the patient's urine samples were positive for subtypes II and III.
Conclusions: Our work is the second study in Iran and considering huge numbers of transplantation in Iran and Khuzestan Province, south western of Iran, in addition to the role of this virus in kidney transplant rejection, routine evaluation of BKV positivity is recommended both for graft recipient and donors. This helps better transplantation result and may prevent graft rejection.

P738 RENAL ARTERY STENOSIS AFTER TRANSPLANTATION: EXTERNAL ILIAC ARTERY VERSUS INTERNAL ILIAC ARTERY

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Background: Renal artery stenosis is a rare but serious complication after renal transplantation; the reported rate is up to 23% but in studies with small group of patients. If ocurred it may lead to graft loss or poor function. We report the outcome of external versus internal iliac artery anastomosis after renal transplant in a single centre.
Method: A retrospective cohort study of 579 patients underwent renal transplant at our institution between 2007 and 2014, forty nine patient transplanted elsewhere were excluded. All patients with suspected transpalnt renal artery stenosis (TRAS) underwent doppler ultrasound scan of transplant renal artery followed up with angiogram if confirmed on initial investigation.
Result: There were 308 male and 222 female patients. External iliac artery anastomosis (n = 413) and internal iliac artery anastomosis (n = 117). Median follow up was 43.5 months (range 3–100); the mean value of creatinine after internal iliac artery anstomosis at 3 months was 126.5 μmol/l (95% CI 117.9–135.06) and 12 months was 120.7 μmol/l (95% CI 113.7–127.7) compared to external iliac artery anastomosis at 3 months 144.7 μmol/l (95% CI 137.6–151.9) and 12 months 136.8 μmol/l (95% CI 129.3–144.4). There was no graft loss secondary to TRAS, graft survival at 12 months after transplant with internal iliac artery anastomosis was 100% and external iliac artery anastomosis was 98.2%. The perecentage of renal arterty stenosis was 6.8% vs. 4.6% in internal and external iliac artery anastomosis respectively (p = 0.33).
Conclusion: The prevalence of TRAS in our centre among all cohort is 5%. There is no statistical difference in renal artery stenosis between the two groups.

025 LIVER

P739

SUCCESSFUL MODULATION OF PORTAL INFLOW BY SOMATOSTATIN IN A PORCINE MODEL OF SMALL-FOR-SIZE SYNDROME

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Background: Patients undergoing partial liver transplantation or extended hepatectomy are exposed to small-for-size syndrome (SFSS) and subsequent postoperative liver failure. Somatostatin may limit this risk by decreasing portal pressure. The purpose of this study was to assess the intraoperative effects of somatostatin on splanchnic hemodynamics after extended hepatectomy in swine.

Methods: Twenty female pigs were divided in 3 groups: 7 animals underwent 70% hepatectomy (H70 group), 7 underwent 90% hepatectomy (H90 group), and 6 underwent sham laparotomy (control group). Intraoperative infusion of somatostatin was performed in all three groups. Splanchnic hemodynamics variations were assessed.

Results: The portal vein flow normalized to liver weight (PVF/LW) increased in both H70 and H90 groups (from 125 $\pm$ 42 to 342 $\pm$ 82 ml/min/100 g, $p = 0.031$ and from 140 $\pm$ 46 to 530 $\pm$ 241, $p = 0.016$, respectively), while the hepatic venous pressure gradient (HVPG) increased only in the H90 group (from 5.5 $\pm$ 5.8 to 13 $\pm$ 4.9 mmHg, $p = 0.004$). Somatostatin decreased PVF/LW in both H70 and H90 groups (from 408 $\pm$ 224 to 360 $\pm$ 227 ml/min/100 g, $p = 0.031$ and from 560 $\pm$ 190 to 466 $\pm$ 189 ml/min/100 g, $p = 0.016$), while it restored a normal HVPG value in the H90 group (from 14.3 $\pm$ 4.8 to 7.7 $\pm$ 6.1 mmHg, $p = 0.047$). In all 3 groups, neither hepatectomy nor somatostatin induced a variation in hepatic artery flow.

Conclusions: By reducing portal inflow and restoring a normal HVPG below critical values in the setting of SFSS, somatostatin can be considered as an effective pharmaceutical modality of portal inflow modulation that may limit the risk of SFSS after partial liver transplantation or extended hepatectomy.

035 TOLERANCE

P740

RENAL FUNCTION AND REGULATORY T-CELL ASSESSMENT IN KIDNEY TRANSPLANTED PATIENTS RECEIVING CYCLOSPORINE A VERSUS SIROLIMUS AFTER 2 YEARS

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Objectives: It has been shown that mammalian target of rapamycin (mTOR) inhibitors are not nephrotoxic and cause better tolerogenic properties in organ transplantation. This study evaluated the conversion effects of cyclosporine A (CsA) with sirolimus (SRL) on GFR and T-regulatory (Treg) cell numbers 2 years after kidney transplantation.
Materials and Methods: 88 primary kidney recipients, all receiving clinically adjusted doses of MMF plus steroids, were randomized through adaptive method to remain on CsA or to switch to SRL ($n = 29$) after early phase of 3–6 months post-transplant. GFR and 2 subsets of Tregs, CD4+CD25+FoxP3+ and CD8+CD28- cells were counted by flow cytometry before conversion and at year 2 after transplantation.
Results: 2 years after transplantation GFR decreased in CsA group ($p = 0.002$). In CsA and SRL groups, 2 years after transplantation the frequency of CD4+CD25+FoxP3+ ($p < 0.001$, $p = 0.018$; respectively) and CD8+CD28- ($p = 0.028$, $p < 0.001$; respectively) Tregs were significantly increased. At year 2 after transplantation, there was no correlation between the frequency of Treg subpopulations and different variables including GFR, Cr, ALT, AST, LDL, Cholesterol, biopsy proven acute rejection episodes, UTI, respiratory infection, CMV and BK infection in each drug group. In both drug groups, the changes of CD8+CD28- Tregs remained significant after controlling the likely confounding effects of GFR changes, acute rejection episodes, urinary tract infection, respiratory infection, CMV and BK infection ($p = 0.006$).
Conclusions: Our study suggests that stable kidney recipients on maintenance SRL therapy have a high circulatory percentage of CD4+CD25+FOXP3+ and CD8+CD28- Treg as well as a better graft function compared with recipients on CsA. In the long run, if it be tolerated by the patient, the CNI may be replaced by an mTOR inhibitor which has been demonstrated to prevent both acute and chronic rejection and to play a pivotal role in tolerance induction.

023 KIDNEY

P741

TREATMENT SELECTION FOR A VESICOURETERAL REFLUX CASE FOLLOWING RENAL TRANSPLANTATION

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Aim: The vast majority of renal transplant patients suffer from urological complications. These urological complications account for the most important causes of morbidity and mortality cases such as delay in graft functions and graft loss following transplantation.

Case: 57-year-old male patient contracted vesicoureteral reflux (VUR) following cadaveric renal transplantation. Initially subureteric injection was tried because of recurrent urinary tract infection and impairment of graft functions but open procedure ureteroneocystostomy was repeated since the injection failed to produce results. The patient is currently in his post-op month 10 and his follow-ups revealed no problems thus far.

Result: While less invasive methods such as endoscopic procedures can primarily be selected for the treatment of VUR, which leads to urinary tract infections and impairment in graft functions subsequently, open surgical procedures are considered to be an appropriate approach for failed injection or advanced stage cases.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P742

ATTITUDES, PERCEPTIONS AND KNOWLEDGE OF SPANISH MEDICAL STUDENTS ON ORGAN DONATION AND TRASPLANTATION

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Background: Current medical students will be tomorrow's doctors. However, specific training in organ donation and transplantation process is not included in their academic curricula.
Objective: To assess the medical students' attitudes, perceptions and knowledge about organ donation.
Methods: An on-line survey about organ and tissue donation was distributed through social networks during a 10 day period to medical students from Barcelona universities.
Results: A total of 382 medical students (female 70.7%, mean age 21.3 $\pm$ 2.8 years old) from all courses (1 year 23.2%; 2nd year 19.8%; 3rd year 10.4%; 4th year 25.9%; 5th year 9.1%; 6th year 11.2%) of four different universities of Barcelona responded to the survey. Most of them would consent to donation of their own organs (86%) or of those from their relatives (77%) being the main reason for opposition of the latter the lack of knowledge (54.2%) of their relatives' wishes. A positive attitude towards donation was observed in 97.4% of the students who described the process using positive adjectives, with solidarity (85.6%), altruism (73.0%) and opportunity (66.7%) the most frequently used. Most students (88.7%) rated their knowledge on the topic as good. However, more than one third of them did not agree (25%) or were not sure (12%) about the statement "brain death equals death". Forty-two percent of the surveyed students were not aware of the current Spanish law on donation and transplantation. Only 26.1% of the students correctly identified all organs suitable for transplantation.
Conclusions: Medical students from Barcelona universities show a positive attitude towards organ donation and transplantation. Although they perceive their knowledge on this issue as good, major shortfalls have been identified. The implementation of specific educational undergraduate programs on donation and transplantation should be considered.

025 LIVER

P743 GETTING ON THE WAITING LIST AS THE FIRST HURDLE IN LIVER TRANSPLANTATION PROCESS: A SINGLE CENTRE INTENTION TO TREAT PERFORMANCE ANALYSIS

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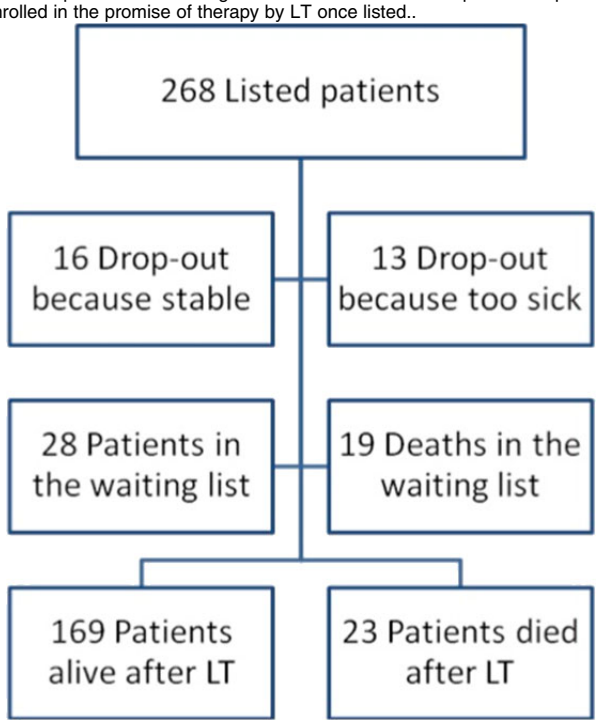
Survival analyses from the time of the waiting list (WL) admission to post-liver transplant (LT) outcome depict both the overall LT proces efficacy and the LT centre efficiency. We retrospectively analysed our prospective database from 2011 to 2014 to define the intention-to-treat (ITT) WL satisfaction (LT/WL), the overall ITT survival (survival rate considering all WL admissions), and the LT-ITT survival (survival rate excluding de-listed patients). WL admissions were 268, with a 18% of drop-out (DO) rate: 16 clinical improvements, 13 too sick for LT patients, and 19 deaths (mean listing time of 266 and 160 days, respectively in the last two groups). Among candidates de-listed after improvement 13 were alive, 1 died for other than liver disease, and 2 were lost at follow-up (f-u). Only three candidates who dropped-out being too sick for LT were alive, after a mean after-DO f-u of 237 days. Patients remaining in the WL were 28 after a mean f-u of 106 days. Patients who received LT were 192 after a mean WL time of 93 days, with a survival of 88% after a mean of 620 post-LT days. ITT WL satisfaction, overall ITT survival, and LT-ITT survival rates were 77.4%, 75.3%, and 80.6%, respectively. Our ITT performance indexes showed homogeneous results in the whole LT process. These kinds of ITT evaluations should improve the knowledge of the overall outcome expected for patients enrolled in the promise of therapy by LT once listed..



P744 THE IMPACT OF BACTERIAL DNA IN ASCITES ON CLINICAL PRESENTATION AND OUTCOME OF PATIENTS WITH LIVER CIRRHOSIS

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Background: Spontaneous bacterial peritonitis (SBP) represents a serious complication in patients with liver cirrhosis that jeopardizes liver transplantation. Culture-independent 16S rRNA-gene based amplification methods allowed for the detection of bacterial DNA (bactDNA) in AF but the significance of this novel tool is still debated. In the current study the impact of bactDNA quantification in ascites on the clinical outcome of patients with cirrhosis was evaluated.
Material and Methods: AF samples of 173 cirrhotic patients were collected between February 2011 and December 2012. BactDNA was quantified by using real-time PCR with broad range primers targeting the V3 and V4 variable region of 16S rRNA-Gene. Positive AF-samples were sequenced and chromatograms were identified using RipSeq. The detection of bactDNA in AF was correlated with routinely recorded clinical parameters and survival.
Results: BactDNA was detected in 57/144 (39.6%) non-leukocytic AF and 10/23 (43.5%) of leukocytic AF ($p = 0.724$). The median level of bactDNA was significantly lower in non-leukocytic than in leukocytic AF (5.7×102 copies/ml vs. 1.2×104 copies/ml, $p = 0.008$). The detection of a bactDNA level above the quantification limit of the assay but not the presence of leukocytic AF was significantly associated with a reduced 180-day survival (180-day survival rate 42.6% vs. 60.9% [$p = 0.030$]). The bacterial spectrum detected by molecular methods was dominated by gram-positive strains such as Staphylococcus spp., Streptococcus spp. and Enterococcus spp.
Conclusion: The presence of quantifiable concentrations of bacterial DNA in patients with non-leucocytic ascites fluid samples using culture-independent 16S rRNA-gene based methods may help to define a new risk group with reduced survival. This cohort is potentially of high risk for complications during transplantation and may therefor benefit from pre-emptive antibiotic therapy.

P745 LOW ASCITES LEVELS OF CELL MEMBRANE-DERIVED MICROPARTICLES INDICATE WORSE SHORT-TERM PROGNOSIS IN PATIENTS WITH DECOMPENSATED CIRRHOSIS

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Background: Microparticles (MP) are small vesicles (<1 μm) that are derived from cells after stress or cellular activation. Plasma MP levels have recently been associated with disease severity and outcome of patients with liver failure. We here retrospectively evaluated the prognostic value and clinical relevance of MP levels in the ascites fluid (AF) of patients with decompensated liver cirrhosis.
Methods: AF samples of 163 cirrhotic patients (index paracentesis $n = 163$, follow up paracentesis within 30 days after index paracentesis $n = 75$) were collected between February 2011 and December 2012 and stored at 20°C. MP were isolated from AF samples of index paracentesis by 2-step ultracentrifugation and identified according to their size using fluorescence activated cell sorting (FACS). MP levels were correlated with clinical and laboratory parameters. Bacterial DNA in ascites was detected by using a quantitative 16S-rRNA gene based PCR method.
Results: MP could be detected in all ascites samples with a median quantification of 281.5 MP/μl (range 17.5–32557.1). High ascites MP levels (>500/μl; $n = 103$) were associated with a significantly better 30-day survival in decompensated liver cirrhosis, when compared to low ascites MP levels (500 MP/μl; $p = 0.034$). Interestingly, patients with bactDNA positive AF at index paracentesis and high level MP quantification (>500/μl) were characterized by a decreased ability for bactDNA clearance at follow-up paracentesis (>500 MP/μl 100% vs. <500 MP/μl 45.5%, $p = 0.012$). However, clinically evident infections such as spontaneous bacterial peritonitis did not correlate with ascites MP levels.
Conclusion: Ascites levels of cell membrane-derived microparticles are suitable to identify patients with cirrhosis and poor short-term prognosis. We propose ascites MP as an easily detectable biomarker with a considerable impact on patients' management especially with regard to the indication for transplantation. Related pathomechanisms accounting for low-level ascites MP with increasing disease severity might include particle consumption or complex formation and need to be addressed in further studies.

023 KIDNEY

P746

KIDNEY TRANSPLANTATION IN THE DEVELOPING WORLD: SHORT TERM OUTCOMES AT GROOTE SCHUUR HOSPITAL, SOUTH AFRICA

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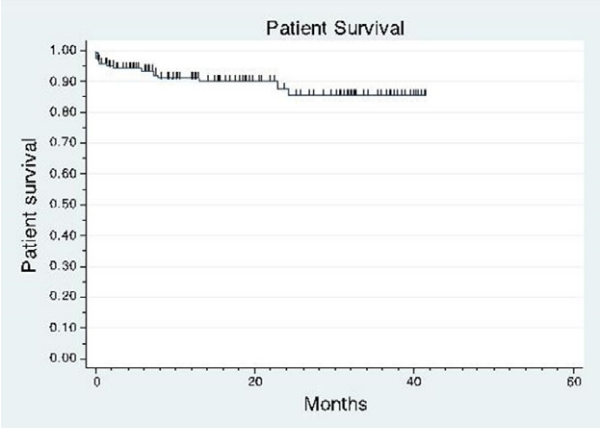
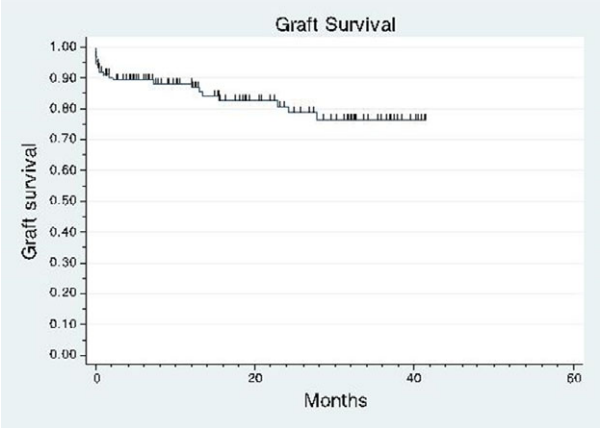
Background: Optimising renal allograft survival is essential in the developing world, where access to dialysis and transplantation remains limited. In order to improve the service we provide, it is essential to identify factors associated with outcome.
Methods: We performed a retrospective cohort analysis of renal transplant patients from January 2011 to June 2014. We analysed the influence of baseline variables on graft and patient survival. These variables included demographic characteristics, transplant related factors as well as post-transplant events. We performed Kaplan-Meier analysis and Cox proportional hazards model regression to assess graft and patient survival as well as predictors of outcome.
Results: We transplanted 138 patients, of whom 5 were lost to follow up. Characteristics of our cohort are as follows: mean (SD) age 40.12 $\pm$ 10.9 years, female gender (39%), and ethnicity (42% African, 48% mixed ancestry and 11% white). Frequent causes for underlying end-stage renal disease were hypertension (42%) and chronic glomerulonephritis (37%). In our cohort 93% of patients received their first transplant during the study period. Cadaveric donors contributed 64% of donors, the vast majority of these being donation after brain death (92%). The most frequent HLA mismatches were 4–7 (69%), the median cold ischaemic time was 5 h (IQR 4–12). 1- year graft survival outcomes and patient survival was 88% and 91%, respectively. Delayed graft function (HR 8.90, 95% CI 3.40–22.73; p = 0.00) on univariate cox regression analysis was the only significant predictor of graft failure in our study. Cold ischaemic time, donor age, HLA mismatches, rejection and cadaveric donor type were not found to be statistically significant.
Conclusions: This study result is encouraging and suggests that short-term transplant outcomes in a developing African country, is compareable to other third world countries, despite the high burden of infectious disease in our setting.





019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P747

WHAT IS THE TEMPERATURE O THE ABDOMINAL ORGANS DURING DCD AND DBD PROCUREMENT AND DO THE TEMPERATURE DURING MULTI-ORGAN PROCUREMENT INTERFERE LIVER AND KIDNEYS TRANSPLANT OUTCOME?

Dimitri Mikhalski[1], Alexis Buggenhout[2], Vincent Donckier[2], Georgios Katsanos[2], Patrizia Lol[2], Valerio Lucidl[2], Desislava Germanova[2], Alain Lemoine[3]

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The procurement of the organs in now days is well established procedure. Nevertheless, the critical main stone as the recommended organ/solution temperature for the organ conservation in practice is still the matter of the evaluation.

Aim: The aim of this study was to reveal the influence of the organ temperature alteration during multi-organ procurement in DCD and DBD on kidney and liver graft function.

Methods: The thoracic and abdominal was examined versus only abdominal procurements (control). The central temperature of the donor, temperature of liver and kidneys surface were dynamically measured during thoracic and abdominal organ procurement using rectal temperature probe, temperature probe situated the vein cava drainage and infrared organ surface temperature registration. The time points of the temperature registration were the same in case of DBD and DCD procedures. The volume, speed of the abdominal organ and the temperature of the reservation solutions (HTK) was measured. The retrospective data analysis's of the kidney and liver grafts accordingly to the thorax organ procurement was studied.

Results: The re-heating from the start of the aortic perfusion till beginning liver dissection was more than 10°C (K 1.2°C per 15 min) on each hour in 2 groups versus control. The volume of the perfusion during DBD was 8 (SD $\pm$ 2) L and 10 (SD $\pm$ 4) L in DCD donors had no difference compared to only abdominal procurements. The injection solution temperature (from 4.8 to 5.1°C) and the speed of the abdominal perfusion had no difference in two groups. Temperature of the cava drainage was DBD 18.5 $\pm$ 2.5°C DCD 20.0 $\pm$ 3°C at the end of perfusion.

Conclusion: The mean temperature of the harvested organs was extremely high. The thoracic organ harvesting dramatically increase the abdominal organ temperature. The DGF was observed after thoracic DCD procurement in case of 2 kidney liver transplantations versus 0 in control group.

023 KIDNEY

P748 LONG TERM OUTCOMES OF HIGHLY SENSITIZED KIDNEY TRANSPLANT RECIPIENTS

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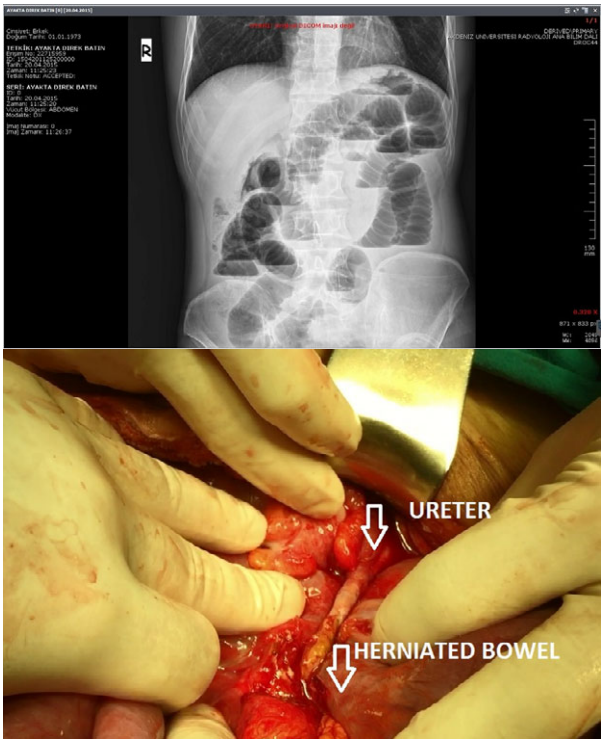
Aim: To follow the clinical outcomes of 45 highly sensitized patients who had undergone a desensitization protocol prior to kidney transplantation, and report the incidence of complications, allograft survival, and patient survival.
Methods: We conducted a retrospective review of 45 kidney transplant recipients transplanted between 9/2002 and 10/2011, who had a positive T or B cell complement dependent cytotoxic (CDC) crossmatch assay. B cell CDC crossmatches were confirmed with a solid-phase assay to determine presence of class II anti-HLA antibodies.
Results: All subjects completed a desensitization protocol of plasmapheresis, intravenous immunoglobulin, +/- rituximab to render a negative T cell crossmatch or A negative or weak titer B cell crossmatch 24 h prior to transplantation. Post-transplant all recipients received antibacterial and antiviral prophylaxis; allograft biopsies were performed when clinically indicated. The mean and median follow-up was 5 years. Thirty-three subjects (73%) suffered acute rejection of the allograft, 30 (67%) occurred in the first year post-transplant, and 27 (60%) occurred in the first month post-transplant. There was 1 case of hyperacute rejection necessitating transplant nephrectomy. Twenty-nine of the 33 (88%) were cases of acute antibody mediated rejection. BK viremia occurred in 7 patients (15.5%), leading to graft loss in 3. there were 5 patients that suffered multiple pneumonias, 5 cases (11%) of bacteremia, 1 case of fungemia, and 4 patients (8.8%) with cytomegalovirus infection. There were no cases of lymphoproliferative disease, although 1 patient developed an aggressive cutaneous angiosarcoma and died. There was also one case of renal cell carcinoma, and 4 cases (9%) of skin malignancies.
Conclusion: Patient and graft survival rate in the desensitized group is comparable to the 1, 3, 5 years patient and graft survival of repeat transpalants from living donors.



P750 RETRO-URETERAL INTERNAL HERNIA AFTER SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION: A VERY RARE CASE

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Introduction: Renal paratransplant hernias are rare internal hernias, because kidney is placed retroperitoneally in classical transplantation procedures. But, both pancreas and kidney are transplanted intraperitoneally in simultaneous pancreas-kidney (SPK) transplantation. Internal hernias after pancreas transplantation have been previously reported, but internal hernia due to intra-abdominal placed transplant kidney has not been reported before. In this study we present a retro-ureteral internal herniation in a patient who underwent SPK.
Case: A 33 years old male patient with Type 1 diabetes mellitus and end stage renal disease underwent SPK from a deceased donor in 2006 in our hospital. On postoperative 3rd day, graft pancreas was resected due to arterial trombosis. The postoperative period was uneventful and the patient was discharged on postoperative 18th day. Renal functions were normal in follow up. 9 years after transplantation, the patient was admitted to our hospital with distention, nausea, vomiting and oliguria. Abdominal tenderness was found in physicial examination. Abdominal X-ray revealed air fluid levels, and renal doppler ultrasound revealed grade 4 pelvicaliceal dilatation in transplanted kidney. A nasogastric tube was placed for suction drainage and a double j stent was placed in ureter. In follow-up, the patients was still distended and oliguric. Than, a nephrostomy catheter was placed. Kidney functions came back to normal after this attempt, but abdominal distention remained. We decided to perform a laparotomy to the patient. The operation revealed a strangulated retro-ureteral internal hernia. A segmental ileum resection and end to end anasthomosis was performed. The postoperative period was uneventful. The patient was discharged on postperative 12th day.
Conclusion: Retro-ureteral internal herniation is rare and is difficult to diagnose. It should be kept in mind after SPK transplantation.

P751 EXPRESSION OF HLA-G TRANSCRIPTS IN GRAFT BIOPSY SAMPLES OF RENAL TRANSPLANT RECIPIENTS

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Background: The HLA-G molecule has a high potential to modulate immune response towards the improvement of graft survival after transplantation. In this work, we have analysed in more details the total HLA-G mRNA expression in graft tissues of transplanted kidneys.
Material and Methods: We examined 84 kidney biopsy samples obtained from 65 renal transplant recipients with dysfunctional graft. 52 specimens were with signs of acute rejection (AR) and 32 without any rejection (glomerulonephritis, ATN, IFTA). Patients with AR were divided into those with antobody-mediated rejection (AMR; $n = 23$), T cell-mediated rejection (TCMR; $n = 16$) and combined AMR+TCMR ($n = 13$). The biopsy samples were taken because of a dysfunction of the graft at a different time after transplantation – period up to 3 months and beyond. The relative expression of tHLA-G mRNA was determined by real time RT-PCR. The correlation between HLA-G mRNA expression and dysfunctional graft state was investigated.
Results: We have found that the levels of HLA-G transcripts in kidneys with rejection were higher than those in nonrejected grafts ($p = 0.0003$). The highest levels of HLA-G mRNA were detected at combined AMR+TCMR rejection ($p = 0.005$). In both dysfunctional graft groups the lower levels of HLA-G transcripts were detected during early posttransplant period, however a substantial increase of HLA-G mRNA expression was observed after an extended period of time. It was also revealed that antibody induction therapy may reduce HLA-G expression ($p = 0.0004$) and in female samples were noticed higher levels of HLA-G transcripts than in those in male ($p = 0.003$).
Conclusions: We have demonstrated that the expression of HLA-G mRNA in renal grafts can be influenced by different factors such as clinical state of transplanted kidney, elapsed time after transplantation, gender and antibody induction therapy. We have proved that HLA-G mRNA expression was significantly higher in rejected group in comparison to nonrejeted group.

025 LIVER

P752 DONOR SAFETY AND RECIPIENT LIVER FUNCTION FOLLOWING RIGHT-LOBE LIVER TRANSPLANTATION FROM DONOR WITH GILBERT SYNDROME

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Asan Medical Center

Backgoround: Donor safety is the most important point of living donor liver trasnplantation (LDLT). Gilbert syndrome is an autosomal recessive condition that is a common cause of non-hemolytic unconjugated hyperbilirubinemia, and its prevalence is not negligibly low in healthy population. Gilbert syndrome can be classified as a minor inborn error of metabolism. This study intended to assess donor safety and recipient liver function following right-lobe LDLT from donor with Gilbert syndrome.
Methods: Among 2140 right-lobe graft donors performed between 2002 and 2011, we identified 12 donors (0.6%) who showed serum total bilirubin level >2 mg/dl. They were clinically diagnosed of Gilbert syndrome, but genetic mutation study was not performed.
Results: Mean donor age was 24.6 years (range:18–44) and 11 were male. All met the preopeative evaluation conditions of right liver donation except for unconjugated hyperbilirubinemia. Serum total bilirubin level of donors was 2.3 mg/dl (range:2.0–2.5) before surgery and 2.2 mg/dl (range:1.6–4.7) at 1 year after surgery. Preoperative direct bilirubin level was 0.4 mg/dl (range: 0.2–0.7) Preoperative indocyanine green retention rate at 15 min was 8.3% (range:0.2–15.8). All donors recovered uneventfully following right-lobe graft donation. All recipients recovered uneventfully and are alive to date with serum total bilirubin level of normal limit except one recipient.
Conclusions: LDLT with donors of Gilbert syndrome can be safely performed, but special attention should be paid for meticulous preopeative evaluation.

P754 THE EFFICACY OF SHEAR WAVE ELASTOGRAPHY FOR THE DETECTION OF OUTFLOW BLOCK

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Kobe University Graduate School of Medicine HBP Surgery

Background: Real-time shear wave elastography (SWE) is a novel, noninvasive method to assess liver fibrosis by measuring liver stiffness. Recently several studies have been performed to evaluate the rejection or graft function after liver transplantation.
Methods: The stiffness of the graft liver was measured over time with a patient after liver transplantation using SWE.
Results: A 44-year-old- female was performed deceased liver transplantation (DDLT). She was diagnosed as collagen storage disease type Ia by liver biopsy at the age of 1. Esophageal varices were treated endoscopic ally once a year since 2007. Massive ascites was detected since 2014, which was uncontrollable by medication. In 2015, sudden hematemesis resulted in rapid deterioration of liver function and renal function. She was listed for DDLT. Preoperative problem list was growth disturbance. Although SLV was 902 ml, actual liver volume by CT volumetry was 2225 ml. Graft volume was 1500 g. After the anastomosis of hepatic artery, graft congestion was observed and outflow block was suspected. Anastomosis of IVC was re-performed with larger new orifice. Intraoperative SWE was measured as 93.9 kPa. Postoperative course was complicated with massive ascites and low nutrition started from 3 weeks after DDLT. CT images revealed the enlargement of the graft, and ascites was around 4 l/day. Although outflow block was suspected, hepatic vein flow was triphasic wave measured by ultrasound exam. SWE was measured simultaneously to detect the extent of congestion; 37 kPa from the beginning, and started to decrease gradually down to 13.3 kPa. Graft volume measured by CT images has also decreased from 131% graft volume to 108%. The patient was managed conservatively, and she discharged from the hospital 4 months after DDLT.
Discussion: For the detection of outflow block, angiography is the golden standard. Our case illustrated the possibility to detect outflow block noninvasively by measuring SWE.

007 DONATION/RETRIEVAL

P756

IRODAT, THE INTERNATIONAL REGISTRY IN ORGAN DONATION AND TRANSPLANTATION

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[1]DTI Foundation; [2]Donation and Transplantation Institute; [3]Transplant Procurement Management; [4]Hospital Clinic Barcelona

Purpose: IRODaT is the first worldwide registry in the organ donation and transplantation field, which contains statistics of deceased/living donors and transplants since 1998. This information is compiled following the nomenclature established in the document "The Critical Pathway of Deceased Donation", ensuring uniformity throughout the registry and aiding correct interpretation of the data by the scientific community. Out of the 114 countries with organ donation or transplantation activity, 93 national reporters submit data to the registry, and these are available on IRODaT's website.

Methods: IRODaT is a friendly and easy to use database. Each region is represented by an Official Reporter who registers the figures for donation and transplant activity in the previous year directly to the webpage. IRODaT counts with experts in donation and transplant who revise thoroughly the data. Specialized reports required for specific investigations, studies or for general consultation to meet users' needs and requirements may be request by contacting the IRODaT team. Information on deceased and living organ donation and also on kidney, liver, heart, lung and pancreas is registered.

Results: An improvement of the actual deceased donor rates in some countries around the world was recorded in 2014. The preliminary data in Europe showed an increased in the deceased donation rates in Denmark from 10.1 to 13.9 donors pmp, and Finland, from 17.7 in 2013 to 22.1 donors pmp. In the area of Asia-Oceania, New Zealand increased from 8.1 to 10.2 donors pmp and South Korea from 8.4 to 9.0 donors pmp. In the region of Africa and Middle East, Saudi Arabia registered 3.4 donors pmp on 2014. Finally in the area of South America, Uruguay registered 20.7 donors pmp and Argentina 13.0 donors pmp.

Conclusions: IRODaT is able to provide statistics within a short timeframe, based on a worldwide network of experts involved in organ donation and transplantation.

021 ISLET/CELL TRANSPLANT

P758

IMPROVED ISLET FUNCTION AND REVASCULARIZATION BY CO-TRANSPLANTATION OF HUMAN MULTIPOTENT ADULT PROGENITOR CELLS IN DIABETES MOUSE MODEL

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Background: Commonly used islet transplantation protocols experience significant islet injury and graft loss; therefore new methods to support the long-term benefits of this treatment are needed. Recent studies have shown that non-endothelial bone marrow-derived multipotent adult progenitor cells (MAPC) possess significant immune-modulating abilities and can secrete angiogenic molecules, which could make them ideal in islet transplantation procedures to improve graft outcome.
Methods: Islets (150) were co-transplanted with or without human MAPC (250 000), as separate or composite pellets, under the kidney capsule of syngeneic alloxan-induced diabetic C57BL/6 mice. Blood glucose levels were frequently monitored and intraperitoneal glucose tolerance tests were carried out. Grafts and serum were harvested at 2 and 5 weeks after transplantation.
Results: Human MAPC were able to produce several angiogenic growth factors, among which vascular endothelial growth factor (VEGF) is one of the most important, and to induce angiogenesis in the *in vivo* chorioallantoic membrane (CAM) assay. Islet-human MAPC co-transplantation particularly as a composite pellet significantly improved the outcome of islet transplantation as measured by the initial glycemic control, diabetes reversal rate, glucose tolerance, and serum C-peptide concentration compared with transplantation of islets alone. Likewise islet-human MAPC recipients had increased intra-graft CD31 gene expression levels compared to islet alone recipients, suggesting stable blood vessel formation. Indeed, significantly more blood vessel area and density in addition to higher vessel/islet ratio were detected with islets-human MAPC composites, which suggests that direct contact with human MAPC is more beneficial than indirect contact for mouse islets.
Conclusions: The present data encourage the use of human MAPC in islet transplantation protocols. Our results demonstrate the improvement of islet graft function.

005 COMPOSITE TISSUES

P759

THE EVOLUTION OF RESEARCH IN VASCULARIZED COMPOSITE ALLOTRANSPLANTATION

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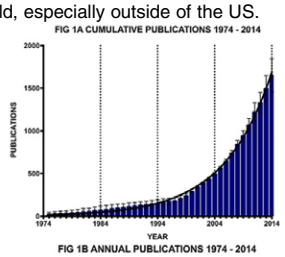
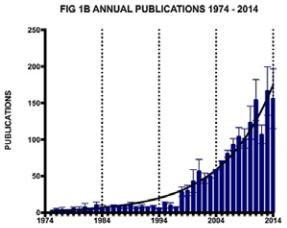
Background: With successful transplants of the face, limbs, abdominal wall, larynx and uterus, vascularized composite allotransplantation (VCA) has emerged as a highly promising reconstructive modality. The increasing numbers of clinical cases have been supported by clinical and basic science research innovations. Here, we aimed to objectively quantify the rate of expansion of VCA research.

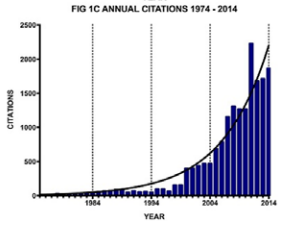
Methods: We searched for all publications indexed in Web of Science (WoS) and Scopus. Search phrases were generated by using appropriate anatomical descriptors, such as "hand" and "face", with field-specific descriptors including "allograft", and "transplantation". This was further supplemented by reviewing relevant Medical Subject Headings (MeSH) terms, such as "vascularized composite allograft", and "composite tissue allograft". Citations and publications were calculated for the last 40 years, and nonlinear regression performed.

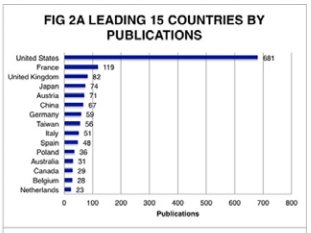
Results: 54 search phrases were generated from 9 anatomical and 6 field-specific descriptors. A simultaneous search employing all phrases yielded 1804 and 1522 total VCA publications from WoS and Scopus, respectively. Analysis of the cumulative publications and annual citations revealed an exponential rate of growth (fig 1) primarily led by centres in the US (fig 2). A breakdown of subject area revealed medicine/surgery and immunology as the largest research areas (fig 3).

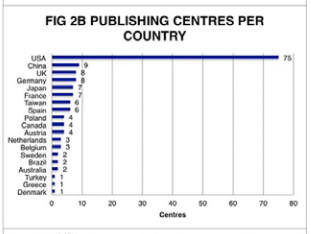
Conclusion: Scientific research within the field of VCA is being conducted at an exponentially increasing rate. This growing body of work will support further advancements and improved clinical outcomes of VCA. This work demonstrates that VCA is a rapidly expanding field within transplantation and substantiates the impetus for increasing designated funding for this research field, especially outside of the US.

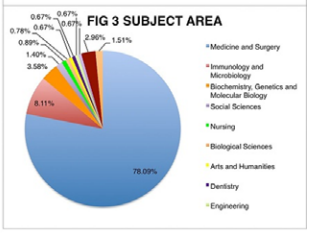












023 KIDNEY

P761

MESENCHYMAL STEM CELLS IN MACHINE PERFUSION- THE PERFECT COMBINATION TO ATTENUATE ISCHEMIA- REPERFUSION INJURY IN SOLID ORGAN TRANSPLANTATION?

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Imperial College London

In renal transplantation, machine perfusion (MP) has been shown to be superior to static cold storage (SCS) as a preservation method. Advantages of MP include pretransplant assessment as well as graft optimization by infusion of different drugs or cells, such as mesenchymal stem cells (MSCs). MSCs are multipotent, self renewing cells which possess immunomodulatory as well as antiinflammatory capacities. Pretransplant perfusion of, marginal' grafts with these cells could therefore lead to an attenuation of ischemia-reperfusion injury. However, a distinction between preexisting MSCs and delivered MSCs is necessary. The aim of this study was to investigate, whether MSCs from transgeneic Wistar Kyoto (WKY) rats, positive for GFP could be extracted and to evaluate the use of green fluorescence as a tool for localizing delivered MSCs. Furthermore, possible differences in immunomodulatory capacities between the passages were investigated in order to define the ideal therapeutic MSC phenotype. Wild-type as well as transgeneic GFP+ MSCs were extracted from femurs and tibias of male Wistar Kyoto (WKY) rats. Cells were cultured and supernatants as well as the cells from passage 0–10 were investigated for differences in immunomodulatory properties as well as for their maintenance of the green fluorescence in case of GFP+ cells. MSCs from WKY-wildtype, as well as from WKY-GFP+ rats could be successfully differentiated in culture. They were shown to be plastic adherent, to express CD44 and CD90 and to lack expression of CD45 and CD34. Furthermore, the cells could be differentiated into adipocytes and osteocytes. Interestingly, the expression of GFP in cells from GFP+ rats was strong and green fluorscence was present up to passage 10. We can conclude, that MSC application in an experimental setting of machine perfusion in a rodent kidney transplant model has potential to reveal possible beneficial effects of these cells in organ preconditioning in solid organ transplantation.

015 INFECTIONS

P763

LABORATORY DIAGNOSIS OF CMV INFECTION – RAPID PP65 ANTIGENEMIA ASSAY

Simona Luscalov[1], Luminita Ioana Loga[2], Adrian Luscalov Dan[2], Mihai Lucan[2], Lucia Dican[1]

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Introduction: The CMVpp65 antigenemia assay has proven efficacy in the detection and monitoring of CMV infection in renal transplant recipients, therefore early and rapid diagnosis of CMV infection and prompt therapy is useful to prevent graft dysfunction and graft injury.

Purpose: Qualitative detection and identification of lower matrix protein pp65 of human CMV in peripheral blood leukocytes using immunofluorescence technique (antigenemia) for rapid and early diagnosis of CMV infection comparatively with anti – CMV IgM antibody in serum using chemiluminescence technique – 2 years experience in our laboratory

Methods and Results: 685 consecutive blood samples from 224 receiving renal transplants with clinical and biological manifestations of infection and CMV disease were tested for detection of CMV pp65 antigenemia and for CMV IgM antibody. 241 (35.18%) out of 685 samples derived from 75 (33.48%) transplanted patients showed positive pp65 antigenemia in blood leukocytes. Anti CMV IgM antibodies were detected in serum from 7 patients (3.12%).

Conclusions: The presence of clinical and biological symptoms was associated with positive pp65 and with higher pp65 antigenemia levels. The number of infected leukocytes are correlated with the severity of infection. The advantage of this test is that it is a sensitive method for detection of CMV in isolated leukocytes for early diagnosis of CMV infection, fast enough (<3 h), the cost /test is low and also it is used in monitoring of transplant recipients.

012 HISTOCOMPATIBILITY

P765

VIRTUAL CROSSMATCH AND CALCULATED PANEL REACTIVE ANTIBODY: TWO SIDES OF THE SAME COIN

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The Luminex Single-Antigen Beads (LSA) assay allows an accurate detection and characterization of pre-existing anti-human leukocyte antigen (HLA) donor-specific antibodies (DSA) in kidney transplant candidates. HLA specificities are determined against which the patient has circulating alloantibodies that are expected to harm a transplanted organ. With this characterization, it is possible to reliably predict crossmatch results for a given donor, the so called virtual crossmatch (vXM). The vXM is commonly used by many transplantation centers in the selection of potential candidates for kidney transplant from a deceased donor and transplantation of candidates with preformed anti-HLA-DSA is usually avoided. Before the introduction of the LSA technique those antibodies were determined using the complement-dependent cytotoxicity (CDC) methodology which have a lot lower sensitivity to detect clinically relevant anti-HLA antibodies. Panel reactive antibody (PRA) determined by CDC gives us a perceptual value used to estimate the percentage of future donors to which a candidate will have a positive CDC crossmatch. As an alternative to this PRA-CDC some transplantation centers use the so called calculated PRA (cPRA) representing the percentage of actual organ donors that express 1 or more of unacceptable HLA antigens. The cPRA measure more accurately reflects the probability of a candidate to not receive a transplant and can assist in the selection of the best transplant approach. Phenotype frequencies used for the cPRA calculation must be in accordance (as much as possible) to those from future donors for kidney transplantation, in order to be useful for sensitization measurements and organ-allocation algorithms. The cPRA, rather than PRA by CDC (an inaccurate measure), should be used simultaneously with vXM to seek and increase accessibility and promote equity to all patients awaiting kidney transplantation.

015 INFECTIONS

P766

ASSOCIATION OF HUMAN LEUKOCYTE ANTIGEN AND CYTOMEGALOVIRUS INFECTION IN ALLOGENIC KIDNEY TRANSPLANTATION

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Introduction: Most of the kidney transplant recipients are already CMV-seropositive before allografting, and the majority of active CMV infection after transplantation are secondary CMV infections caused by the suppression of host's cellular immunity after institution of immunosuppressive therapy. Better understanding of host-associated factors for the outcome of secondary CMV infections might contribute to the prevention of serious CMV recurrences after transplantation.

The aim of our study was to analyze the association of HLA alleles and the occurrence of CMV antigenemia in kidney transplantation Romanian recipients.
Methods: The HLA types were performed in 113 patients by polymerase chain reaction with the sequence specific primer method by low resolution Olerup SSP kit. DNA was extracted from whole blood using innuPREP Blood DNA Mini kit. The CMV antigenemia test was performed by immunofluorescence assay for detection of CMV pp65 antigen in circulating peripherial blood leukocytes. 24 recipients were CMV antigenic positive.
Results: Of the all investigated 113 kidney transplanted patients, 20.83% were females and 79.17% were males; the mean age at the time of transplantation was 41.5 $\pm$ 11.7 years.24 recipients were CMV antigenic positive. Some alleles were associated with occurrance and extent of CMV antigenemia ($p < 0.05$). The HLA types were compared between the patients who had undergone antigenemia and those who had not antigenemia. As a results, the frequency of HLA –A32 was high in patients with antigenemia. The OR value was 5.24 ($p < 0.05$). Also, in our study, the HLA –DQ8 antigen was more frequent in patients with antigenemia compared to patient without CMV antigenemia ($p = 0.046$, OR = 4.25, CI = 1.21–18.47).
Conclusions: Our data reveals that HLA-A32 and DQ8 might be a potential risk for CMV infection which also leads to acute deterioration in graft function.

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PARICALCITOL FOR PREVENTION AND REDUCTION OF ALBUMINURIA IN THE GENERAL RENAL TRANSPLANT RECIPIENT

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Background/Aims: Proteinuria is a negative prognostic factor for graft and patient survival after kidney transplantation. In CKD-patients and patients with type 2 diabetes, paricalcitol was found to reduce level of proteinuria. In stable renal transplant recipients (RTRs) with persistent hyperparathyroidism, 6 months' treatment with paricalcitol reduced proteinuria and PTH, but a significant reduction in eGFR was of note. Potential effects of treatment with paricalcitol early after TX in less selected groups of RTRs have not been studied.
Methods: In this prospective, randomized open label trial of 77 newly transplanted RTRs irrespective of PTH-level, treatment with paricalcitol 2 μg/day for 44 weeks was compared with no treatment. Primary endpoint was albuminuria, expressed as albumine-to-creatinine (a/c) ratio in morning spot urine. Secondary endpoints included serum PTH, measured GFR, bone mineral density (BMD) and body composition (including fat distribution).
Results: There were no differences in demographic characteristics between treatment arms. There was merely a non-significant trend indicating higher reduction of albuminuria in the treatment group (−2.1 mg/mmol) compared with the no treatment group (−1.1 mg/mmol). The treatment arm experienced significant reductions in PTH ($p = 0.008$), significant increase in total bone mass ($p = 0.026$), and a significant increase in lumbar spine BMD ($p = 0.035$). There was a strong trend towards paricalcitol reducing visceral fat ($p = 0.187$). We found no effect of paricalcitol on GFR (absolute values at study end + change from baseline investigated). Moderate hypercalcemia led to reductions in dosage in 22% patients.
Conclusions: The study was underpowered for the primary endpoint, as very low levels of baseline proteinuria was the rule. However, paricalcitol had positive effects on parameters of bone/mineral balance and may possibly reduce visceral fat in RTRs. Paricalcitol did not compromise renal function in our study population.

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IS MACHINE PERFUSION A REAL ALTERNATIVE TO STATIC HYPOTHERMIA?

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Introduction: Static hypothermia on ice (SH) is the standard preservation technique for kidney transplantation. Due to shortage of donors, the increasing proportion of marginal donors and the early graft function requires: faster and safer transportation, improved kidney preservation solutions (Custodiol, Wisconsin) and longer duration of preservation. Since the 60's, some transplant centers tried to use MP in order to increase the cold ischemia time "ex vivo". Many researchers consider that MP helps to utilize more marginal cadaver donors and improves the graft quality. So, we started to use the hypothermic machine perfusion (MP) which has seemed to be a promising alternative to SH.
Objectives: This study analyzes the efficacy of MP versus simple SH in regard with the early graft function after transplantation.
Material şi Method: 400 consecutive cadaveric donors meaning 778 kidneys divided in two groups: Group A – 358 grafts preserved on the SH Group B – 420 grafts preserved on the MP. We have recorded every 15 min. flow flow-resistance Temperature range: 2–8°C Both groups were similar in terms of: mean donor weight cause of death warm and cold ischemia time. All grafts were transplanted using similar surgery and immunosuppressive agents.
Rezults: Renal function restarted:Grup A 279 (77.93%), Group B 380 (90.48%) Delayed: group A 85 (23.74%), group B 29 (6.90%); never functioned: – Grup A: 14 (3.91%), Grup B: 11 (2.61%). Perfusion machine reduce the duration of delayed graft function. Flux rezistance: – immediate renal function – 0.27 mmHg – delayed renal function – 0.42 mmHg – no renal function – 0.71 mmHg.
Conclusions: Renal machine perfusion: gives reliable informations for graft viability allows better selection for marginal donors significantly reduce the frequency of the delayed graft function allows long preservation times, more than 24 h, allows monitoring and management of microcirculation.

025 LIVER

P769

ANALYSIS OF EARLY REOPERATION FOLLOWING LIVING DONOR LIVER TRANSPLANTATION

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Background: We retrospectively analyzed the causes, risk factors and impact on the survival rate of early reoperation after adult-to-adult living donor liver transplantation (LDLT).
Methods: Adult recipients who underwent primary LDLT at our institute between August 1997 and May 2015 ($n = 194$) were included in this study. Early reoperation was defined as surgical treatment within one month after LDLT.
Results: Reoperation was performed 66 times in 51 recipients (a maximum of 4 times in one patient). The reasons for reoperation comprised postoperative bleeding ($n = 26$), vascular problems ($n = 17$), suspicion of abdominal sepsis or biliary leakage ($n = 17$), early graft loss resulting in re-transplantation ($n = 2$) and others ($n = 4$). ABO incompatible ($p = 0.03$), intraoperative blood loss (median 5550 vs. 7550 ml, $p = 0.02$) and operative time (median 808 vs. 870 min, $p < 0.01$) were demonstrated to be potential risk factors for early reoperation. The survival rates in the reoperation group (1-year: 70.4% and 5-year: 65.5%) were lower than that of in the non-reoperation group (1-year: 87.1% and 5-year: 68.7%), although the result was not significantly different. A similar result was observed in the graft survival ($p = 0.24$). When patients underwent two or more reoperations, their outcome became significantly worse than that of the non-reoperation group ($p < 0.01$). In a subgroup analysis according to the cause of reoperation, the survival rate of the postoperative bleeding group was better than that of the vascular problem group ($p = 0.05$) and abdominal sepsis group ($p = 0.11$).
Conclusion: Although the outcomes of the reoperation group were worse than that of the non-reoperation group, a favorable result was observed in the recipients who underwent reoperation for postoperative bleeding.

023 KIDNEY

P770

IS NEW ONSET DIABETES AFTER TRANSPLANTATION REALLY ASSOCIATED WITH ACUTE REJECTION IN KIDNEY ONLY TRANSPLANTATION?

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Background: Literature review reports an association with New Onset Diabetes After Transplantation (NODAT) and rejection however it is unclear whether this effect is secondary to hyperglycaemia or as a result of previous episodes of treated rejection. This observational study aims to determine the association between acute rejection (AR) and NODAT.

Methods: 381 consecutive renal transplant recipients (RTR) recruited from the KALIBRE study were analysed in this observational study. Clinical details and laboratory results were collected in this cohort from 2010–2014. Episodes of AR were identified by renal transplant biopsies Banff 2009 Categories 2 & 4 and 3 that were treatment responsive. NODAT was defined as HbA1C >6.5% 3 months post renal transplant. Cox's regression proportional hazards was used for survival analysis.

Results: 381 RTRs (39% female, 64% white, 36% non-white, Age at transplant range: 17–75). 47 patients were diagnosed with NODAT (13.1%) and 93 (24.4%) with AR. 17/47 (36.2%) patients with NODAT had AR. Rejection free survival in NODAT group was significantly lower than patients without NODAT ($p = 0.036$ HR 1.75). Mean tacrolimus levels between rejectors and non-rejectors were not significantly different (10.1 and 10.3 ng/ml means, respectively). T1DM and T2DM combined did not increase the rates of rejection in the cohort.

Conclusion: An association between NODAT and AR has been observed that was independent of tacrolimus levels. RTRs with diabetes mellitus did not have the same effect on AR rates suggesting a different underlying mechanism specific to NODAT rather than just hyperglycaemia.

012 HISTOCOMPATIBILITY

P771

INTERNATIONAL COLLABORATION ON PROVIDING THE CHANCE FOR A TRANSPLANT OF HIGHLY SENSITIZED PATIENS – THE EUROSTAM PROJECT

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Among all patients on the waiting list (WL) for deceased kidney transplantation, highly sensitized (HS) patients have the least chance to receive an organ offer. Within Eurotransplant countries, the Acceptable Mismatch (AM) Program has been therefore introduced since 1985 and patients transplanted according to this allocation algorithm have benefitted from excellent graft survival. The main goal of the Eurostam project is to evaluate the implementation of a Europe-wide AM program with the aim to facilitate transplantation of HS patients (with PRA >85%). The participation of the Czech group in the project included definition of acceptable HLA mismatches of the HS patients on the WL by the Luminex technique. Furthermore, for the need of simulation studies in different European populations, the HLA phenotypes of all deceased organ donors for the years 2012–2013 (330 individuals) were submitted to the Eurostam database. The project also included proficiency testing exercises between participating laboratories (6 serum samples for definition of HLA specificities and acceptable HLA antigens were provided). Moreover, efforts for standardization of the endothelial crossmatch assay were made with the intention of its wider application into clinical practice.

Conclusion: The Eurostam project is an important approach for the finding of organ donors for otherwise untransplantable patients. The simulation studies performed using data of the HLA phenotypes in various European populations will show the advantage of the introduction of a Europe-wide AM program. The Czech Republic is a small country, therefore, participation in this initiative gives important information whether Czech HS patients may benefit from a Europe-wide collaboration which is an integral step to consider about joining this program in the future.

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025 LIVER

P772

LIVING RELATED ADULT DONOR HEPATECTOMY FOR PEDIATRIC LIVER TRANSPLANTATION: RESULTS OF THE USE OF AN ANAESTHETIC PROTOCOL FOR THE PREVENTION OF POSTOPERATIVE PAIN

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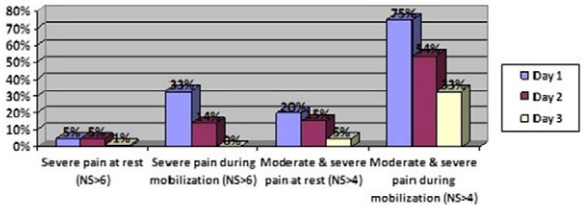
Background: Living related adult donor hepatectomy for pediatric liver transplantation (LRADHPLT) has important consequences in terms of acute and chronic pain. Based on this observation, made in 2012 by Bonnet & al on postoperative pain (POP) after this surgery in our institution (Clinique Universitaire Saint-Luc – CUSL), we revised our anaesthetic protocol based on the best available evidence. We report the results of the application of this protocol.
Patients & Methods: We performed a retrospective descriptive study of medical records of 100 consecutive patients operated between the 06/09/2010 and the 02/26/2014 for LRADHPLT at CUSL. The anaesthetic protocol included standardized information provided by the referent anaesthetist, a pharmacological anxiolysis and maximal hyperalgesia prevention (inhalational induction, epidural analgesia, drugs). The postoperative follow-up was conducted by the anaesthetist of the PostOperative Pain Service who used an eleven-point numeric scale (NS). Datas are showed as median (25–75 IQR) and percentages.
Results: This analysis included 100 patients (53 women, 47 men). The median age was 32.7 years old (28.4–37.3). There were 90 left lobectomies (segments II-III), 6 left hepatectomies (II to IV), 3 resections of segments I to IV and 1 right hepatectomy. The incision was a xypho-umbilical laparotomy. The pharmacological protocol for prevention of pain and hyperalgesia was applied as follows:

Premedication with pregabalin	75%
Opioid-Free Anaesthesia	78%
Total IntraVenous Anaesthesia	82%
Thoracic epidural analgesia	77%
Epidural clonidine	69%
Intravenous clonidine	86%
Ketamine: bolus dose	92%
ketamine: continuous infusion	82%
Non-Steroid Anti-Inflammatory Drugs (ketorolac)	77%

POP distribution:
Two months after the surgery, 7 out of the 27 patients still followed by surgeons had chronic postsurgical pain. According to Dindo-Clavien classification, we found 29 grade 1, 8 grade 2 and 3 grade 3a complications during the follow-up. 64 patients didn't present any early postoperative complication.
Discussion: LRAPHPLT remains a surgery that causes severe acute pain, which frequently becomes chronic. The application of a multimodal, maximal and evidence-based protocol for pain prevention is feasible and well-accepted.



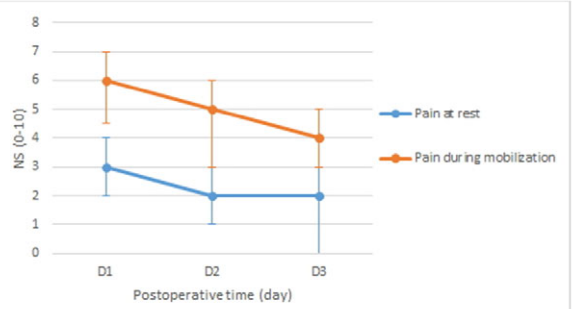


Fig. 1 - Postoperative pain evolution at rest and during mobilization
Eleven-point numeric scale - Median [25-75 IQR]

023 KIDNEY

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EVALUATION OF PHARMACOKINETIC AND CLINICAL OUTCOMES WITH TACROLIMUS HEXAL® VERSUS PROGRAF® BASED REGIMEN IN DE NOVO RENAL TRANSPLANT PATIENTS: RESULTS FROM A RANDOMISED, MULTICENTRE STUDY (SPARTACUS)

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Background: Studies evaluating pharmacokinetic (PK) data and clinical responses with generic tacrolimus versus the reference drug in transplant (Tx) setting are sparse. The SparTacus (NCT01649427) study was designed to evaluate the PK profile and clinical data of tacrolimus hexal® versus prograf® in *de novo* renal Tx recipients (RTxR).

Methods: A total of 76 *de novo* RTxR were randomised in this prospective, two-phase open-label study to receive either tacrolimus hexal® ($n = 35$) or prograf® ($n = 41$), both in combination with enteric-coated mycophenolate sodium + corticosteroids + basiliximab induction therapy. Starting dose of tacrolimus was 0.15 mg/kg/day, adjusted to target plasma levels (C0) of 8–12 ng/ml from Tx to month 1; 5–10 ng/ml up to M3; and 5–8 ng/ml up to M6. Primary objective (phase I) was to demonstrate comparable PK of tacrolimus hexal® versus prograf® as assessed by the ratio of the $AUC_{0-12\ h}$ over a period of 1-month post-Tx, and (phase II) to demonstrate non-inferiority of renal function (GFR; Nankivell formula) at M6 post-Tx. Additional PK-MPA results were analysed as well. Here we present the PK results of the first month along with efficacy and safety data.

Results: Of 76 patients, 44 patients had an evaluable PK profile on Day 3, 10 and M1 and were included in PK analysis (tacrolimus hexal®, $n = 23$; prograf®, $n = 21$). A total of 73 patients were included in safety analysis (tacrolimus hexal®, $n = 35$; prograf®, $n = 38$). At M1, PK parameters: dose-normalised tacrolimus 12-h-AUC, Cmax, and mean 12-h tacrolimus C0 were comparable between the treatment arms (table). At M6, tacrolimus hexal® versus prograf® had comparable incidence of composite events and its individual components (BPAR, graft loss, or death). There were no difference in the MPA PK data. Incidence of adverse events (AEs) and serious AEs were comparable between the treatment groups.

Conclusion: Tacrolimus hexal® and prograf® in *de novo* RTxR had a similar PK profile with comparable efficacy and safety.

Table: Pharmacokinetic data and clinical outcomes with tacrolimus hexal® and prograf®

Variables	Tacrolimus hexal®	Prograf®	
Pharmacokinetic data at Month 1	**N=23**	**N=20**	
12-h-AUC ($h/10^3xL$)[a], LS-mean			
Adjusted, log-transformed estimates	2.9	3.0	Diff: 0.076 90% CI: -0.169 to 0.321 P=0.605
Adjusted, back-transformed estimates	19.0	20.5	Ratio: 1.079 90% CI: 0.844 to 1.378 P=0.605
Cmax ($1/10^3xL$)[a], LS-mean			
Adjusted, log-transformed estimates	1.1	1.2	Diff: 0.150 90% CI: -0.134 to 0.435 P=0.377
Adjusted, back-transformed estimates	3.0	3.5	Ratio: 1.162 90% CI: 0.875 to 1.544 P=0.377
	N=23	**N=21**	
12-h plasma concentration (µg/L), mean	12.2	11.1	-
Clinical outcomes, n (%)	**N=35**	**N=41**	
Composite: BPAR, graft loss or death	2 (5.7)	4 (9.8)	Diff: -4.04 95% CI: -15.94 to 7.86 P=0.681
BPAR	2 (5.7)	3 (7.3)	Diff: -1.60 95% CI: -12.68 to 9.47 P=1.000
Graft loss	0 (0.0)	1 (2.4)	Diff: -2.44 95% CI: -7.16 to 2.28 P=1.000
Death	0 (0.0)	1 (2.4)	Diff: -2.44 95% CI: -7.16 to 2.28 P=1.000
	N=35	**N=38**	
Any AE	34 (97.1)	38 (100.0)	-
Any serious AE	13 (37.1)	16 (42.1)	-

[a]ANOVA model includes treatment group, centre and stratum (living vs deceased) as fixed factors

AE, adverse events; BPAR, biopsy-proven acute rejection

007 Donation/Retrieval:

P775 USE OF PORTABLE AXIAL PUMP PERFUSION DEVICE FOR EMERGENCY BLOOD RECIRCULATION IN ORGAN DONORS WITH IRREVERSIBLE CARDIAC ARREST

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Background: The crucial problem in program of donation from donors with cardiac death is the warm ischemic time (WIT), especially in donors with sudden irreversible cardiac arrest, or, uncontrolled donors (uDCD). The promising perspectives of use this kind of donors are restricted by technical obstacles for routinely and fast initiating extracorporeal membrane oxygenation following priming procedure in ICUs. In order to reduce the time for the start of perfusion *in situ* for organ resuscitation we use the new specially developed portable axial pump perfusion device.
Material and Methods: In our clinical practice, the new portable perfusion system (PPS) based on axial pump has been used in 2 cases (uDCD). Donors were two women: №1 – aged – 27 years old, the cause of death – brain damage (BD), and № 2–48 years old, the cause of death – CVD (cerebral-vascular diseases). The distance to donor's hospitals were 9 and 12 kilometers (20 min and 17 min – arrival time team OPO). The time for the set-up the system was 10–15 min (including priming perfusion contour time). Primary WIT was 55 and 63 min, respectively. Extracorporeal normothermic hemoperfusion of abdominal donor organs *in situ* was using the axial pump with removing leukocytes and modified donor's blood. The times of perfusion were 140 and 142 min, respectively. The PPS provides 5 l/min. flow perfusion rate that excluded to need to use a double-balloon catheter. The flow oxygen was set constant 350 ml/min. The level of hemoglobin and hematocrit was 34.1 g/l and 37.2–0.30 g/l – 0.32, respectively. The kidney transplantations were performed by four recipients on renal replacement therapy hemodialysis (3 women, 1 man). The average age of the patients was 46.75 (0.75) years.
Results: Immediate graft function was observed in all of 4 cases. 1-year outcomes of graft transplantation obtained from donors after irreversible cardiac arrest with using the

P776 NON-STOP NORMOTHERMIC PERFUSION APPROACH FOR RESUSCITATION ISCHEMICALLY DAMAGED KIDNEY

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Background: Transplantation is an effective method of treating patients with end stage renal disease. The global critical organ shortage leads to utilization of kidneys from donors after sudden cardiac death, or uncontrolled donors (uDCD). Inevitable ischemic injury of organs due to cessation of blood circulation remains the crucial problem that limits wide acceptance of the practice of uncontrolled organ donation. The purpose of our clinical investigation was to define the clinical applicability of kidneys obtained from uDCDs and resuscitated by normothermic extracorporeal perfusion with leukocyte depletion (NEP with LD) technology *in situ* and ex vivo which lead to avoiding the cold storage period.
Methods: In 2011, organ procurement service of St. Petersburg, Russia, performed the transplantation of kidneys obtained from two uDCD.

Characteristic	Donor №1	Donor №2
Age, years	27	48
Gender:	Female	Female
Couse of death:	Brain injury	Cerebrovascular disease
Dopamine dose, mg/kg/min	6	6
Creatinine, before cardiac arrest, mmol/l	53	69
Diuresis during the last hour, l	1.2	2.0
Warm ischemia, min	55	63

Warm ischemia periods were 55 and 63 min respectively. Duration of NEP with LD *in situ* with modified autologous donor's blood were 140 and 142 min.

Variable	Donor №1	Donor №2
Hemoglobin, g/l	34.1	37.2
Hematocrit, %	0.30	0.32
pH of perfusate	7.1	7.3
Perfusion flow, initial, ml/min	500	500
Perfusion flow, final, ml/min	2000	2000
Initial oxygen supply, ml/min	150	150
Final oxygen supply, ml/min	350	350
Average pO_2 in perfusate, mmHg	297.8	270.3
Average pCO_2 in perfusate, mmHg	99.8	92.4
Duration of NEP with LD, min	140.0	142.0
Leukocyte count in perfusate, initial, ×109/l	16.68	15.35
Leukocyte count in perfusate, final, ×109/l	0.78	0.66

After that two grafts were set in device for isolated NEP with LD ex vivo. Clinical parameters of perfusion procedure are shown at Table 3.

Variable	Normothermic perfusion (two grafts)
Temperature, °C	27–32
Perfusion flow (initial-final), ml/min	25–200
Pressure in the loop, mmHg	60–100
Resistive index (RI)	50–25 (estimated)
Average pO_2 in perfusate, mmHg	246
Average pCO_2 in perfusate, mmHg	94
Hemoglobin, g/l	28 ± 3.03
Hematocrit, %	14

Recipients were two patients on renal replacement therapy with hemodialysis (the average age – 46.75 ± 0.75).
Results: In all cases of kidney transplantation immediate graft function recovery was observed. There were no episodes of rejection. The 1-year graft survival rate was 100% in uDCD group. The mean creatinine levels at the end of the first year of observation were 0.073 and 0.082 mmol/l, respectively.

Variable	Normothermic perfusion (graft №1)	Normothermic perfusion (graft №2)
Perfusion time, h	3.20	3.40
Age, years	36	46
Gender:	Female	Female
Type of dialysis:	Hemodialysis	Hemodialysis
Years on dialysis prior to Tx	16	11
Graft function:	immediate graft function	immediate graft function
Creatinine at 90 days, mmol/l	0.082	0.066
Creatinine at 1 year, mmol/l	0.073	0.082
The 1-year graft survival	100%	100%
Early and late acute rejection of kidney	-	-
Surgical complications	-	-
Duration of hospitalization, days	21	16

Conclusions: Kidneys from uDCDs with critically expanded warm ischemic time could be successfully used for transplantation if the resuscitation perfusion procedure *in situ* is included in organ procurement protocol. Devices for INEP with LD ex vivo could be used for kidney grafts monitoring and improve their condition. In our opinion, this practice could substantially expand the pool of the organ donors.

015 INFECTIONS

P777

CONCOMITANT CYTOMEGALOVIRUS AND PARVOVIRUS B19 INFECTION AFTER RENAL TRANSPLANTATION

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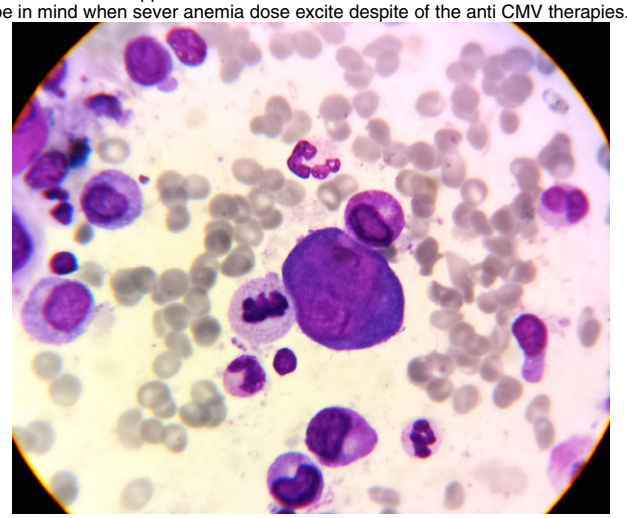
Background: While post renal transplant isolated cytomegalovirus (CMV) and parvovirus (PV) B19 are well described in literature, concomitant CMV and PV B19 infection makes the clinical picture more difficult.
Case: A 19 years old boy presented with easy fatigability, exertional dyspnea and low grade fever three months after successful living unrelated renal transplantation. Both recipient and donor were CMV IgG antibody positive, but neither had positive serology for anti CMV IgM antibody. On admission serum creatinine was 1 mg/dl, white blood cell 3900 /μl, platelet 244 000 /μl, hemoglobin 7 g/dl, MCV 88 fl. Reticulocyte count was 0.5%. Polymerase chain reaction study for detection of CMV DNA in the blood was positive. The patient was given intravenous Ganciclovir. White blood cell count returned to normal and fever disappeared. While hemoglobin continued it's decline and dropped to 4 g/dl, and it was resistant to erythropoietin and multiple blood transfusion. We did not find any sites of blood lose. PV B19 IgG and IgM were negative, but bone marrow examination revealed giant pronormoblasts compatible with PV B19 infection (fig. 1). Patient received Intravenous Immunoglobulin 20 gram/day/5 days. Patient's condition improved and hemoglobin level dramatically increased.

Conclusion: Immunosuppressive state is an area of unusual presentation of a combination of opportunistic infections. Concomitant PV B19 infection should be in mind when sever anemia dose excite despite of the anti CMV therapies.



023 KIDNEY

P778

DONATION AFTER CIRCULATORY DEATH IS A SIGNIFICANT RISK FACTOR FOR URETERIC COMPLICATIONS FOLLOWING KIDNEY TRANSPLANTATION

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Background: Heightened demand for donor organs has prompted expansion of the deceased donor pool by using increasing number of kidneys from donors after circulatory death (DCD). Our DCD transplant programme is one of the largest in the world and we now perform twice as many DCD as donation after brain death (DBD) kidney transplants. We determined the impact of donor type on the incidence of ureteric complications (UCs; ureteric stenosis/obstruction, urinary leak) after transplantation.

Methods: We studied 1072 consecutive kidney transplants (DCD $n = 494$, live-donor [LD] $n = 273$, DBD $n = 305$) performed from 09/2008 to 12/2014. An ureteroneocystostomy over a double pigtail ureteric stent was performed in all transplants and stents were removed 4–6 weeks post-operatively.

Results: There was a significantly higher incidence of UCs in DCD ($n = 22$, 4.5%) compared to LD ($n = 10$, 3.7%) and DBD ($n = 5$, 1.6%) kidney transplants (hazard ratio: 2.33, $p = 0.033$ for DCD kidneys; Figure 1). There was no association with cold ischaemia time; donor and recipient age and gender; BK virus infection; renal artery multiplicity; HLA mismatch; and no difference was noted in the incidence of delayed graft function between patients with and without UCs. Urinary tract infection and biopsy-proven acute rejection prior to UC were not significant risk factors. Management in all cases involved surgical implantation of the native ureter onto the transplant renal pelvis or proximal ureter, or re-implantation of the transplant ureter onto the bladder. 30 procedures were performed in total, with re-stenosis in 2.7% requiring re-operation. No grafts were lost as a consequence of UCs.

Conclusion: DCD kidneys are associated with a higher risk of UCs than DBD and LD kidneys. Further study is warranted to elucidate the underlying mechanism and the need for any technical modifications at implantation.

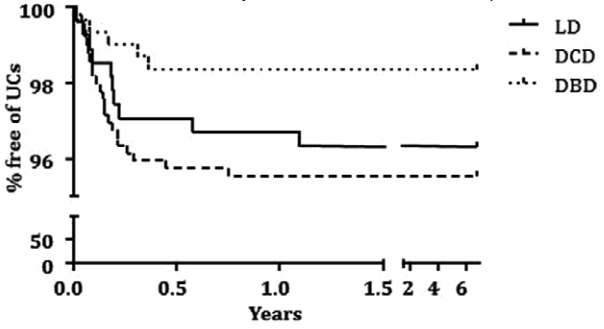

Figure 1: Incidence of UCs according to donor type
DCD vs DBD p=0.033, hazard ratio = 2.33

023 KIDNEY

P779

WARM RECURCULATION *IN SITU* FOR DONORS AFTER CARDIAC DEATH WITH 60-MINUTES ASYSTOLE: 5-YEARS OUTCOMES OF KIDNEY TRANSPLANTATION

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Background: Kidney transplantation (KTx) is an effective way of treatment patients with end-stage renal failure. However, this kind of surgery is limited by the growing organ shortage. To solve this problem partly we used to the donors after sudden irreversible cardiac arrest (uDCDs) with *in situ* kidney resuscitation protocol (thrombolytic therapy, extracorporeal membrane oxygenation [ECMO], and leukocytes depletion [LD]). The purpose of our clinical investigation was to define the clinical applicability and potential of this resource for KTx.
Methods: In 2009–2014, St Petersburg OPO obtained kidneys from 29 uDCD with critically expanded warm ischemic time (WIT – 58.1 [19.39] min). The design of this study were approved by the Scientific Board and Ethics Committee of the St Petersburg State Research Institute for Emergency (Decision 7/0615/09). The procedures were established by the authorized OPO team which had arrived with perfusion equipment in 30–40 min after declaration of donor's death. The outcomes of transplantation of resuscitated kidneys (58 KTx) were compared to outcomes of 112 KTx from 115 brain death donors (BDDs).
Results: IGF were observed in 28 (48.3%) cases. There were 4 cases of PNFT. The actuarial 5-year graft survival rate was 82.8% ($n = 48$) in uDCD group, and 87.5% ($n = 98$) in BDD group ($p > 0.05$). Creatinine levels at the end of the five year were 0.094 (0.06) and 0.103 (0.07) mmol/l in uDCD and BDD, respectively ($p > 0.05$). There was an acute rejection rate (one year) of 12.1% ($n = 9$) in the uDCD versus 23.2% ($n = 26$) in the BDD ($p < 0.05$).
Conclusions: Kidneys from uDCDs with critically expanded WIT could be successfully used for transplantation if *in situ* organ "resuscitation" perfusion procedures are included into procurement protocol. The 5-years outcomes meet the generally accepted criteria for grafts and recipients rates of survival and functioning. This approach could substantially expand the organ donor's pool.

P780

LOW REJECTION AND HIGH PREVALENCE OF POST-TRANSPLANT DIABETES MELLITUS AMONG ADULT POLYCYSTIC KIDNEY DISEASE AFTER LIVE DONOR-RENAL TRANSPLANTATION

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Objectives: Autosomal dominant polycystic kidney disease (ADPKD) is the most common inherited renal disease with a prevalence varying from 1:400 to 1:1000. It is mainly caused by mutations in one of two genes, PKD1 and PKD2, which encode polycystin proteins that are involved in ciliary function of the renal epithelial cell. ADPKD characteristic features include cystic lesions in the kidneys and less commonly in the liver, pancreas and arachnoid. Other extra-renal complications include colonic diverticula, intracranial aneurysms, aortic aneurysms, and valve abnormalities. ADPKD accounts for 2–9% of patients with end-stage kidney disease. Increased incidences of colonic perforation and post-transplantation erythrocytosis as well as an increased risk for both skin cancer and post-transplantation diabetes mellitus have been recently reported after kidney transplantation. The aim of this study is to assess patient and graft outcome in renal transplant recipients with autosomal dominant polycystic kidney disease.
Methods: This study included 53 live-donor kidney transplant recipients who were diagnosed as autosomal dominant polycystic kidney disease (ADPKD) and underwent kidney transplantation at the Urology and Nephrology Center, Mansoura University, Egypt from (1986–2014). An age, sex, relation to donor, basal immunosuppression and timing of transplantation matched cohort of 273 non-ADPKD renal transplants were used as the control group.
Results: Post-transplant acute rejection was significantly lower in the ADPKD group than the other group (p value 0.03). Post transplant diabetes mellitus (PTDM) was significantly higher in the ADPKD group than in the other group (p value 0.035). There's no significant difference between both groups regarding post transplant hypertension, malignancy, incidence of both viral and bacterial infections. 5, 10 and 15 years graft and patient survival are comparable in both groups (p value 0.3).
Conclusion: We can conclude that ADP

003 CLINICAL IMMUNOSUPPRESSION & BIOLOGICALS

P781

TORQUE TENO VIRUS KINETICS AFTER LUNG TRANSPLANTATION AND ITS ASSOCIATION TO IMMUNOSUPPRESSION SCHEMES AND TO CLINICAL COMPLICATIONS

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Background: We have shown previously that the plasma DNA level of human Torque Teno virus (TTV), a virus which is widespread in the population and causes persistent DNAemia in the absence of any defined disease, is associated with immunosuppression in lung transplant recipients (LTRs). We now investigated the correlation of TTV DNA with different immunosuppressive schemes, and with the occurrence of clinical complications.
Methods: Plasma TTV-DNA loads were analyzed at defined intervals within one year post transplantation by quantitative real-time PCR in 44 LTRs, receiving induction therapy with either Alemtuzumab (Campath) ($n = 26$) or with ATG ($n = 12$) or received no induction therapy ($n = 6$). The TTV load was further compared to clinical data.
Results: The TTV-DNA load significantly increased in all cases post transplantation within the first 60–90 days and remained at high levels thereafter. The TTV-DNA load reached significantly higher levels in patients receiving induction therapy with Campath ($p < 0.001$). In 25 patients episodes of microbial infections occurred within the first year after transplantation. The patients' mean TTV DNA load prior to these episodes was significantly higher than that in 19 control patients without infections at the same time period ($p = 0.002$).
Conclusions: Induction therapy with Campath seems to result in higher immunosuppression, reflected by TTV-DNA load post transplantation. Furthermore, it was confirmed that high plasma TTV- DNA load is related to the development of microbial infections.

023 KIDNEY

P782 THE USEFULNESS OF ROUTINE CULTURE OF DONOR KIDNEY PRESERVATION FLUID AND PART OF DONOR URETER: OUR EXPERIENCE

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Background: Infective complications following kidney transplantation are common. Immunosuppression, contaminated preservation fluid, and infection of donor ureter at the time of organ retrieval are the potential sources. However, the usefulness of routine culture of perfusion fluid and donor ureter is not clear. The aim of this study is to evaluate our experience.
Materials & Methods: We retrospectively evaluated the microbiological culture results of preservation fluid and donor ureter from kidney donors between January 2012 and December 2014.
Results: 158 kidney transplants were performed during the study period. There were 44 (27.8%) donation of brain death (DBD) kidneys, 65 (41.1%) donation after cardiac death (DCD) and 49 (31.1%) live donor kidneys. The mean donor age was 48.6 years and the mean age of the recipients was 51.4 years. Both donor ureter and preservation fluid was sent for culture in 90 (57%). In 120 (76%) ureter and in 127 (80.4%) fluid was sent for microbiological examination. Organisms were isolated from 62 (51.7%) ureters and 55 (43.3%) fluid samples. Non significant, low risk, and high risk organisms were isolated from 46 (38%), 6 (5%), and 10 (8.3%) ureter tips respectively. Non significant, low risk and high risk organisms were isolated from 39 (30.7%), 8 (3.9%), and 8 (3.9%) fluid samples respectively.

In 25 kidneys, same organisms were isolated from both samples. The overall infective complications were observed in 43 (27.2%) kidney transplant recipients. In 7 (16.3%) recipients same organisms were isolated from preservation fluid/donor ureter and following transplantation. All kidney transplant recipients with high risk organisms grown from preservation fluid/donor ureter were treated with appropriate prophylactic antibiotics and antifungals.
Conclusions: We observed infection from high risk in over 19% of the samples. Routine sampling allowed us to treat kidney transplant recipients promptly, avoiding major complications.

P783 IMPACT OF SYSTEMIC LUPUS ERYTHEMATOSUS ON THE OUTCOME OF RENAL TRANSPLANT RECIPIENTS: SINGLE CENTER EXPERIENCE. Z

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OTC

Introduction: Long term outcome of renal transplantation among systemic lupus erythematosus (SLE) patients remains a debated topic. Most of the previous reports were based upon small single-center studies most of which were not well designed.
Aim of the Study: We compared the long-term outcome of kidney transplantation in ESRD patients secondary to lupus nephritis with that in an age, sex, and donor matched control group of recipients.
Patients and Methods: This study comprised 192 kidney transplant recipients who received their grafts between 1994 and 2011 at Hamed Al-Essa Organ transplant center of Kuwait. These patients were further subdivided into two groups according to original kidney disease (36 secondary to SLE) and (156 secondary to non-SLE causes). All patients' data were assessed with special emphasis on graft and patient survival as well as post-transplant medical complications.
Results: The two groups were comparable regarding pre-transplant patient demographic features (age and sex of donors and recipients). Moreover pre-transplant diabetes, anemia, hypertension, tuberculosis, bone disease, type of dialysis, type of immunosuppression and viral profile were also matched. The overall incidence of post-transplant complications were comparable among the two groups especially NODAT, BK nephropathy and coronary heart disease ($p > 0.05$). Lupus patients needed significantly more anti-hypertensives ($p = 0.003$), and had higher prevalence of CMV ($p = 0.001$). On the other hand, we observed higher prevalence of hyperlipidemia in the control group ($p = 0.015$). We observed that the mean number of acute rejection episodes were significantly higher among lupus patients compared to the control group (0.94 ± 1.1 vs. 0.42 ± 0.66; $p = 0.011$). Kidney graft survival was worse among the lupus group compared to the control group ($p = <0.001$); however, patient survival was comparable in both groups at 1, 5, and 10 years ($p < 0.05$).
Conclusion: SLE as a cause of ESRD in renal transp

P784 IMPACT OF DONOR SOURCE ON GRAFT AND PATIENT SURVIVAL IN PEDIATRIC RENAL TRANSPLANT RECIPIENTS

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OTC

Introduction: Evaluation of the impact of kidney donor sources on the outcome of renal transplantation is not adequately studied.
Aim of the Study: We aimed to compare the long-term outcome of kidney transplantation from different sources among a pediatric recipient population.
Patients and Methods: This study comprised 105 pediatric recipients who received their kidney grafts between 1994 and 2011 at Hamed Al-Essa Organ transplant center of Kuwait. These patients were further subdivided into three groups according to donor source (37 with LRDs); (31 with LURDs) and (35 with cadaveric donors). All patients' data were assessed with special emphasis on graft and patient survival as well as post-transplant medical complications.
Results: All groups with mean follow up seven years-were comparable regarding pre-transplant demographic features especially diabetes, anemia, hypertension, tuberculosis, bone disease and viral profile. We found that patient survival at 1, 5, and 10 years was comparable in all groups. In our series, we observed that rejection rate in the 3 groups was comparable ($p > 0.05$). However, kidney survival was poor among cadaveric group compared to other groups despite potent induction and maintenance immunosuppression. This could be explained by poor HLA match; high PRA; higher incidence of ATN and NODAT in the same group ($p < 0.05$). This was translated as significantly higher mean serum creatinine. The overall incidence of post-transplant complications was comparable among the three groups except significantly higher post-transplant diabetes among LURD group ($p = 0.004$).
Conclusion: Pediatric renal transplants have good long term patient outcome whatever the donor source is; with poorer cadaveric grafts and higher risk of NODAT with unrelated donors

P785 IS HLA-DR MISMATCH MATTER AMONG PEDIATRIC RENAL TRANSPLANT RECIPIENTS IRRESPECTIVE OF DONOR SOURCE ?

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OTC

Introduction: Renal allograft failure in children has been associated with several factors, including age, race, donor source, cold ischemia time, primary renal disease, HLA antigen mismatch, and transplantation year. Graft survival has improved substantially over the years owing to changes in the induction and maintenance immunosuppression regimens.
Aim of the Work: To determine the impact of HLA-DR mismatching on rejection, graft survival, and sensitization in pediatric renal transplant patients and to determine the likelihood of finding an appropriate donor based on HLA-DR mismatch.
Patients and Methods: In this retrospective analysis, paediatric renal transplants performed in Hamed Al-Essa organ transplant centre of Kuwait ($n = 104$), between 1994 and 2011 were examined for the effect of HLA-DR mismatches on graft and patient survival. DR zero mismatch (group 1, $n = 17$); one mismatch (group 2, $n = 63$) and two mismatch (group 3, $n = 34$) comprised the three groups of our study. Pre-transplant complement-dependent cytotoxicity and flow cytometry cross matches were negative. Basic immunosuppression comprised Tacrolimus, MMF and steroids.
Results: The three groups were matched regarding mean recipient age (12.2 ± 5.5, 13.9 ± 3.8, 3.7 ± 4.2 years respectively); patient and donor sex; donor age (35 ± 8.2, 34 ± 7.4, 30 ± 9.3 years), original kidney disease, type of maintenance immunosuppression, basal graft function, viral profile and pretransplant co-morbidities (diabetes, anemia, hypertension and tuberculosis). Most of patients with two DR mismatch received cadaveric grafts and ATG induction; while patients with grafts from live donors received simulect induction (p 0.05).
Conclusion: HLA-DR mismatch pediatric renal transplantation-especially with cadaveric donors- is feasible with potent induction and maintenance immunosuppression.

007 DONATION/RETRIEVAL

P786

FACTORS ASSOCIATED WITH FAMILIES' OF BRAIN DEAD PATIENTS TO CONSENT FOR ORGAN DONATION

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Background: Patients who are neurologically dead are the main resources of organs for transplantation. In this study we aimed to investigate factors associated with families' decision to consent for organ donation.
Materials and Methods: A cross-sectional study was conducted in transplant ward of Namazi hospital affiliated to Shiraz University of Medical Sciences, Shiraz, Iran. Patients were divided to those who consented and those who declined to consent for organ donation and were compared regarding risk factors.
Results: Ninety one brain dead patients at our center were requested for organ donation. Families of 82 patients (90.1%) consented to donate at least one organ and 9 families (9.9%) refused to donate organ. Admission in brain dead Intensive care unit (ICU) during course of hospitalization (OR: 6.79, 95% CI: 1.09–42.07; p-Value = 0.039), previous knowledge of families about brain death and process of organ donation (OR: 5.04, 95% CI: 1.09–23.15; p-value = 0.038) and lower GCS at hospital admission (OR: 0.54, 95% CI: 0.41–0.71; p-Value = 0.0001) were independently associated with organ donation. Families with previous knowledge about brain death and organ donation explained more cultural, emotional, religious and intellectual stimulants for organ donation compared to those without prior knowledge (16.15 $\pm$ 3.52 vs. 11.70 $\pm$ 3.56) (p-value = 0.001) In consent group, having donation card (p-Value = 0.022) and higher age (p-Value = 0.038) were associated with consent in the first session of interview.
Conclusion: Increasing knowledge of general public and establishing brain dead ICU are modifiable factors that may increase consent rate.

013 IMMUNOBIOLOGY/BASIC SCIENCE

P787

RECIPIENTS OF LIVER GRAFTS FROM DONORS AFTER CIRCULATORY DEATH HAVE SIGNIFICANTLY HIGHER SERUM KYNURENINE LEVELS IN THE IMMEDIATE POST-REPERFUSION PERIOD

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Background: The use of liver grafts following donation after circulatory death (DCD) continues to increase but poor function remains an issue. Kynurenine – an intermediate metabolite of tryptophan – has been linked to many disease processes, however its role and function during liver transplantation is less well understood. We have previously shown through metabolomics, that kynurenine concentration is increased 3-fold in DCD graft parenchyma after static cold storage. The aim of this study was to correlate these findings with serum kynurenine concentration in recipients of DCD and DBD grafts.

Methods/Materials: Serum samples taken at four time-points (pre-transplant, immediate post-reperfusion, 12- and 24-h post-reperfusion) were analysed from 10 DCD and 10 DBD recipients. Kynurenine and tryptophan concentrations were determined in samples by ELISA (Labor Diagnostika Nord).

Results: Both DCD and DBD graft recipients had similar serum levels of kynurenine prior to transplant (DCD vs. DBD: 1232 vs. 1183 ng/ml [$p = 0.848$]). DCD liver graft recipients had a significantly higher serum kynurenine following reperfusion and this trend continued up to 24 h post-reperfusion (Figure 1) (DCD vs. DBD: Immediate post-reperfusion – 1927 vs. 1071 ng/ml ($p < 0.001$); 12 h 1635 vs. 1020 ng/ml ($p = 0.001$); 24 h 1898 vs. 1051 ng/ml ($p = 0.001$) respectively. The kynurenine:tryptophan ratio was similar throughout the immediate transplant period in both groups but had risen significantly 24 h after transplantation when compared to the pre-transplant ratio ($p = 0.004$).Fig

Conclusion: These results support our previous findings and the high serum kynurenine concentration in DCD recipients immediately post-reperfusion may reflect the degree of energy depletion within their grafts. Large-scale studies should be designed to explore the use of kynurenine as a biomarker of graft injury and its potential to indicate the degree of metabolic strain within the donor liver.

025 LIVER

P788

DE NOVO MALIGNANCY IN EGYPTIAN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION IN CHINA

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Introduction: De novo malignancy after orthotopic liver transplantation (OLT) has been reported with variable incidence, presentation and outcome.
Aim of the Study: The aim of this study was to determine the incidence, presentation and outcome of de novo malignancy in Egyptian patients who underwent orthotopic liver transplantation in China.
Patients and Methods: From April 2005 to December 2009, 92 Egyptian patients with ESLD had undergone OLT in China then completed their clinical follow up at our center. The etiology of their liver disease was HCV- related liver disease 87 patients (94.5%), cryptogenic 3 (3.2%), autoimmune 1 (1.0%) and alcoholic 1 (1.0%). Five patients (5.4%) developed de novo maliganancy. They were all 5 males (100%) with age range 53–69 years (mean 63.6 years) at the time of their presentation. The etiology of their liver disease was HCV in all of them (100%).
Results: One patient developed basal cell carcinoma of the face after 53 months of OLT that was successfully managed by local surgical resection, The second patient developed myxolymphosarcoma of the intercostal muscles and was managed by surgical resection followed by local radiotherapy. The patient died after 13 months of lung and bone metastasis. The third patient presented with squamous cell carcinoma of the left orbit with local infilteration of extra-ocular muscles and local lymph node invasion. He was managed by globe and muscle resection followed by local radiotherapy. The patient died of graft failure with liver and bone metastasis after 9 months. The fourth patient developed de novo HCC after developing liver cirrhosis due to recurrent HCV after 7 years of OLT. HCC was large 13.0 $\times$ 9.5 cm of the right lobe with another tumor 4.5 $\times$ 3.0 cm in left lobe with malignant thrombus in portal vein and AFP 11.500 ng/ml. The patient died after 4 months. The fifth patient developed PTLD presented with lymphadeneopathy and prolonged fever. He is currently under chemotherapy.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P789

DETERIORATION OF MITOCHONDRIAL FUNCTION IS THE KEY MECHANISM RESPONSIBLE FOR HEPATIC INJURY IN DCD LIVERS

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Introduction: Donation after cardiac death (DCD) livers are increasingly used to alleviate the donor organ shortage but are extremely susceptible to ischaemia-reperfusion injury (IRI). Mitochondria play a central role in hepatic IRI due to their role in reactive oxygen species (ROS) formation and apoptotic cell death. We investigated the mitochondrial functional changes during ischaemia-reperfusion in DCD livers.

Methods: Porcine livers (Group IR, $n = 5$) were subjected to 60 min of warm ischaemia (WI) or no WI (Control Group C, $n = 5$) followed by 1 h cold preservation during bench work prior to reperfusion. They were then connected to an extracorporeal perfusion circuit for 23 h for assessment of viability as a surrogate for reperfusion. Mitochondria were isolated from sequential liver biopsies and analysed for ATP content and Respiratory Control Ratio (RCR) measurement as an indicator of mitochondrial function. Haemodynamic parameters were recorded during normothermic perfusion and the perfusate was analysed for markers of hepatocellular injury.

Results: 60 min of WI did not alter mitochondrial function significantly ($p = 0.12$). However, subsequent cold preservation produced significant decline in mitochondrial function when compared with the Control group (RCR 3.97 ± 0.43 vs. 2.45 ± 0.21 $p < 0.001$). Mitochondrial function did not recover during reperfusion with oxygenated blood in Group IR livers. Mitochondrial injury was associated with increased hepatocellular damage as evidenced by raised transaminase release ($p = 0.02$) in the perfusate. By comparison, Control livers (Group C) maintained normal mitochondrial function during cold preservation and subsequent reperfusion with minimal hepatocellular injury.

Conclusions: Our data suggests that alteration of mitochondrial function is a critical event leading to cellular energetic failure and cell death in DCD livers. This may have important clinical implications.

023 KIDNEY

P790 SERUM C4 AND C4D LEVEL IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Complement activation and thereby deposition of C4d in the peritubular capillaries is considered "gold standard" for the assessment of renal allograft rejection. The aim of the study is to compare the post transplant changes in serum C4 and C4d level in patients with or without allograft rejection.
Materials and Methods: Peripheral venous blood was periodically collected from patients before (Pre- tx) and after Kidney transplantation (post- Tx) at 1 Month, 3 Months, 6 Months, 12 Months and at the time of Rejection. Serum level of C4 was quantified by Nephleometry (MiniNeph, UK) and serum C4d level was measured by ELISA (Quidel, USA).
Result: This study includes 75 first Kidney transplant recipients who were divided into two groups: Rejection (R, $n = 35$) and Non Rejection (NR, $n = 35$). Rejection group was further segregated as cellular (ACR, $n = 23$) and antibody mediated (AMR, $n = 12$). Thirty five age and sex matched healthy donors were recruited as control.

No difference was noted in serum C4 and C4d levels between pre-tx and control sera. Post- tx, serum C4 level decreased significantly during rejection followed by a sharp increase by 3rd month. A secondary phase of C4 decline was observed in the patients thereafter. The graph of C4 dysregulation showed a reverse pattern between R and NR group of patients.

During rejection, serum C4 level was found to be lower than their corresponding baseline values followed by a steady rise afterwards.

Variations in levels of C4 and C4d were similar in ACR and AMR.
Conclusion: During rejection, both serum C4 and C4d levels are lower than their corresponding baselines value suggeasting rapid complement activation during rejection irrespective of its types. C4d levels are constantly elevated after rejection. Thus, serum C4d paramenter may be used to assess subclinical rejection.

P791 CORRELATION OF C4D IN PERIPHERAL BLOOD AND BIOPSY DURING ALLOGRAFT REJECTION IN KIDNEY TRANSPLANTATION

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Post Graduate Institute of Medical Education and Research

Introduction: Presence of C4d peritubular capillary staining in biopsies is considered as a non serologic evidence of antibody involvement in graft rejection. Obtaining graft biopsy is an invasive, expensive and relatively risky procedure. Therefore, we aim to correlate C4d staining in biopsy with that of serum C4d level in patients with Kidney transplantation.
Materials and Methods: Blood samples were collected from the patients before (Pre- Tx) and After Kidney transplantation (Post- Tx) at 1 Month, 3 Months, 6 Months, 12 Months and at the time of Rejection. Serum level of C4d was quantified as μg/ml by ELISA (Quidel, USA). Renal biopsy was performed when indicated. C4d staining in biopsies was performed by Immunohistochemistry (DAKO Envision, USA). Values are represented as Mean ± Standard Error of Mean.
Result: Of 120 first Kidney transplant recipients, 41 (34%) patients had indicated allograft biopsies. Thirty five (85%) Kidney allograft biopsies had morphologic features of acute allograft rejection. Upon C4d staining, 20 (57%) of the rejected allograft biopsies showed diffuse C4d peritubular capillary staining with the Banff grading ranging from 1 to 3.

There were no significant differences between baseline serum C4d levels in healthy control (7.046 ± 1.116) and patients with ESRD (7.537 ± 0.4953). Post transplant decrease in serum level of C4d is seen in all the patients, regardless of rejection.

Irrespective of PTC C4d staining positivity, all the patients with rejection showed a similar pattern of C4d dysregulation following transplantation.
Conclusion: Serum C4d level alteration is similar in rejection irrespective of positive PTC C4d staining. Thus, serum C4d level does not correlate a positive PTC C4d staining in graft and hence cannot be used as an alternative approach for biopsy C4d staining in diagnosis of allograft rejection.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P793 BURNOUT IN ESOT SURGEONS

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Limited research examines burnout in transplant surgeons, particularly transplant surgeons outside of the U.S.
Method: Cross-sectional survey of European transplant surgeons (recruited via listservs) on personal/professional characteristics, frequency and discomfort with difficult patient interactions, decisional authority, psychological workload, support (coworker, supervisor, and director), and the Maslach Burnout Inventory (MBI): emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA).
Results: 101 transplant surgeons: mostly male (*n* 83, 82.2%), Caucasian (*n* 97, 96%), mean age 45.5 years (SD 10.03). Thirty (29.7%) reported high EE, 17 (16.8%) reported high DP, and 34 (33.7%) reported low PA. EE positively correlated with psychological workload ($p < 0.01$) and discomfort in difficult patient interactions ($p < 0.01$) and negatively with director ($p < 0.01$) and coworker support ($p < 0.01$). DP positively correlated with psychological workload ($p = 0.01$) and negatively with age ($p = 0.02$), decisional authority ($p = 0.01$), and coworker support ($p = 0.01$). PA did not correlate with any variables, thus no further analyses were performed with PA. Multiple linear regressions were performed with EE and DP as the outcomes and predictors included in models based upon bivariate significance. For EE, the model was significant ($p < 0.01$), with psychological workload being significant ($p < 0.01$) and director support approaching significance ($p = 0.051$). For DP, the model was significant ($p = 0.015$), but none of the predictors were significant although psychological workload approached significance ($p = 0.07$).
Conclusion: European transplant surgeons report lower levels of emotional exhaustion than U.S. transplant surgeons (Jesse et al., 2015). These differences are likely due to different cultural/work paradigms and warrant further exploration. For European transplant surgeons, psychological workload appears to be the strongest contributor to burnout and is an area for potential intervention.

023 KIDNEY

P794 COMPARISON OF ASYMMETRIC DIMETHLYARGININE LEVELS AND CORONARY ARTERY CALCIFICATIONS IN DIFFERENT STAGES OF CHRONIC KIDNEY DISEAE AND KIDNEY TRANSPLANTATION

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Cardiovascular disease is the leading cause of death in patients with chronic kidney disease as well as kidney transplantation. Coronary artery calcifications are associated with cardiac disease. Plasma asymmetric dimethlyarginine (ADMA), an endogenous inhibitor of nitric oxide synthase, is a potential cardiovascular risk factor. Increased ADMA levels lead to endothelial dysfunction and oxidative stress. ADMA accumulates in renal failure due to defective inactivation and excretion. The impact of kidney transplantation on ADMA levels is not clear. The present study is to define an association between ADMA levels and coronary artery calcifications in different stages of chronic renal failure patients and kidney transplantation patients

The study was performed on 46 non-uremic controls, 38 pre-dialysis, 39 chronic hemodialysis patients and 46 kidney transplantion patients. Plasma ADMA, hs-CRP, homocysteine, nitric oxide, Lipoprotein (a), HOMA- IR, Ca, P, PTH, alkaline phosphatase (ALP), cholesterol, albumin were determined in all subjects. Carotis intima-media thickness (cIMT) was measured by high resolution ultrasonography. Coronary artery calcification scores (CACS) were measured by multislice computed tomography.

Dialysis patient had higher levels of ADMA and CACS compared to controls, pre-dialysis patients and transplantation patients. ADMA levels and CACS were comparable between kidney transplantation and predialysis patients. CACS levels showed positive correlations with age, ALP, PTH, hs-CRP, ADMA, cIMT. ADMA levels showed positive correlations with P, Ca-P product, ALP, PTH, triglyceride, cIMT and negative correlation with HDL. Dialysis vintage was positively related to ADMA, CACS and hs-CRP.

We suggest a linkage between ADMA and coronary artery calcifications in chronic renal failure patients and kidney transplantation patients. ADMA may promote vascular calcifications through a deranged calcium-phosphate metabolism and be a new cardiac risk predictor.

P795 POSTTRANSPLANTATION DIABETES MELLITUS IS CHARACTERIZED BY INCREASED PANCREATIC A-CELL FUNCTION IN ADDITION TO B-CELL DYSFUNCTION

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Background: Posttransplantation diabetes mellitus (PTDM) is primarily believed to be a variant of type 2 diabetes mellitus (T2DM). T2DM is not only characterized by insulin resistance and β-cell failure, but also increased α-cell function and hyperglucagonemia in the fasting state and after meals. Unfortunately, we do not have information on glucagon release and post-challenge glucagon profiling in patients with PTDM. We therefore aimed to investigate whether hyperglucagonemia is an important mechanism underlying hyperglycemia in PTDM.
Methods/Materials: Twelve renal transplant recipients with PTDM and twelve age, gender, BMI and renal function-matched non-diabetic renal transplant recipients (controls) underwent a hyperglycemic clamp (fasting plasma glucose + 5 mmol/l) with concomitant glucagon like peptide 1 (GLP-1) or placebo infusions on alternate randomized occasions. An arginine potentiation test was performed in the end of the hyperglycemic clamp condition. Blood samples of glucose, glucagon, proinsulin and insulin were drawn before and repeatedly throughout the 180 min investigation.
Results: There were no significant differences in fasting concentrations of glucagon or insulin between the groups. Median (interquartile range, IQR) fasting proinsulin was higher in PTDM (3.6 (2.1–9.2) pmol/l) than in controls (1.93 (1.0–5.5) pmol/l), but not significant ($p = 0.09$). The PTDM group had a significant lower glucose mediated glucagon suppression than controls (maximal suppression from baseline; 42% (30–53%) vs. 68% (59–72%), $p < 0.001$), parallel with a significant lower first phase insulin secretion ($p < 0.001$). There were no differences in acute glucagon-, proinsulin- or proinsulin-to-insulin response to arginine between the groups, but the PTDM group had significantly lower acute insulin response ($p = 0.02$).
Conclusion: PTDM is a bihormonal disease with a combination of reduced insulin secretion and reduced glucagon suppression during hyperglycemia.

P796 OUTCOME OF RENAL TRANSPLANT FROM DONORS WITH EXCESSIVE ALCOHOL CONSUMPTION

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Background: Prolonged excessive alcohol intake can cause tissue damage as in liver cirrhosis; as a consequence, this will lead to organ function impairment. It is not clear whether excessive alcohol intake will cause similar changes in the kidney. We report the outcome of renal transplant function and histological findings in the pre-perfusion biopsy from donors with history of alcohol abuse with or without liver cirrhosis.
Methods: A retrospective database search of the last consecutive 225 kidney donors offered and transplanted in our unit; donors with excessive alcohol intake were included in the study and divided into two groups; alcohol abuse with or without liver cirrhosis. The presence of interstitial fibrosis or glomerular sclerosis in the pre-perfusion renal biopsy and the renal function were evaluated.
Results: Excessive alcohol intake donors with liver cirrhosis ($n = 15$) and those without liver cirrhosis ($n = 27$). Median age was 58 and 46 years, history of diabetes mellitus ($n = 1$ vs. $n = 0$) and hypertension ($n = 2$ vs. $n = 5$) respectively. Renal function six months post-transplant showed the mean creatinine value of 161 μmol/l (95% CI 93–227 μmol/l) vs. 147 μmol/l (95% CI 122–172 μmol/l). The presence of fibrosis in the pre-perfusion renal biopsy was 63.6% vs. 37.5% and glomerular sclerosis of 54.5% vs. 45.8%).
Conclusion: Recipients who had renal transplant from donors with alcoholic liver cirrhosis showed worse renal function at six months post-transplant than those with alcohol abuse only. The presence of interstitial fibrosis in the pre-perfusion renal biopsy from donors with a history of alcoholic liver cirrhosis was higher and this may have a negative impact on the graft quality and survival.

015 INFECTIONS

P797 **LOW GRADE ACUTE REJECTION, OR IS IT POLYOMA VIRAL NEPHROPATHY?**

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Purpose: To study the associations of Polyoma Viral Nephropathy (PVN) with Acute Rejection (AR) in Kidney Transplant (KTx) Biopsies (Bx) and their outcomes.
Method: Retrospective analysis of all Bx reports of KTxs at a single centre between 01/2005 to 12/2014. PVN was confirmed histologically using immunohostochemistry for SV40 antigen. Immunosuppression protocol included basiliximab induction and maintenance with tacrolimus, MMF and prednisolone.
Results: Of the 826 patients studied, 1659 Bx were undertaken in 704 patients. Incidence of PVN was 21 (2.5%), occuring at a median duration of 7.3 months post-Tx (10 followed treatment of AR, 3 seen synchronously with AR, 1 preceded AR, and 7 cases not associated with AR). On univariate analysis, PVN ($n = 21$) was significantly associated with AR– 14 (67%) vs. 227 (28%) and Interstitial Fibrosis/Tubular Atrophy- 8 (38%) vs. 104 (13%), compared to non-PVN group ($n = 805$) respectively, and a trend of association was seen with Calcineurin Inhibitor Toxicity. Death-Censored Graft Loss (DCGL) (15% vs. 14%), and mortality (9% each) were similar at last follow-up. Sub-group analysis showed that PVN was significantly associated with low Banff grade rejections (Borderline: 6 [29%] vs. 134 [17%], and Banff 1a/1b [33% vs. 5%]), but not with higher grade Banff rejections (0.5% vs. 0.01%) or Humoral Rejections (0 vs. 0.9%), compared to non-PVN, respectively. DCGL was significantly lower in low Banff grade rejections (borderline/1a/1b) associated with PVN, compared to low Banff grade rejections in KTx cases without PVN (1 [9%] vs. 24 [17%]), $p = 0.05$. DCGL was higher in higher Banff grade rejections with or without PVN (1 [100%] vs. 26 [55%]), respectively.
Conclusion: Although PVN is associated with treatment of low grade AR, this approach is justified because the graft loss of low grade AR without PVN is greater. Avoidance of depleting antibodies could account for a less poor outcome with PVN at our centre compared to literature.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P798 **MIR-182-5P INHIBITION DIMINISHES ISCHEMIC ACUTE KIDNEY INJURY**

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Acute kidney injury (AKI) remains a major clinical event associated with unacceptably high mortality rates, affecting 25% of all recipients of deceased donor organs. We identified miR-182-5p expression in the donor organ to be highly associated with post-transplant AKI. Therefore we tested the causal inference of miR-182 inhibition by antisense technology (ASO) *in vitro* (HK2 cells) and *in vivo*. miR-182-ASO inhibited miR-182-5p rapidly and progressively, from 6 to 96 h. Furthermore 45 rats were treated either with 25 mg/kg or 2.5 mg/kg antisense or mismatch oligonucleotide or placebo 24 h before left kidney was clamped for 40 min (ischemic injury) and the right kidney was removed. Creatinine trajectories and histology were evaluated within 7 days after injury. Kidney function improved significantly faster within the first seven days after injury (mixed model $p < 0.001$) and markedly restored kidney morphology at day 2 and 7 after IRI in the ASO-group but not in the control groups. Gene expression analysis revealed regulation of cell proliferation, metabolism and angiogenesis via miR-182-5p inhibition in rat kidneys after injury. ASO tested in a normothermic ex-vivo machine perfusion reduced levels of miR-182 by more than 100-fold during the whole observation period (6 h). Taken together we showed that the inhibition of miR-182-5p by antisense oligonucleotides *in vivo* improves kidney function after IRI induction and it greatly diminishes kidney damage. Further antisense oligonucleotides can be functional in an ex-vivo kidney machine perfusion system, which might imply translation into human kidney transplantation.

025 LIVER

P799

HEPATOPULMONARY SYNDROME RELATED PORTAL HYPERTENSION

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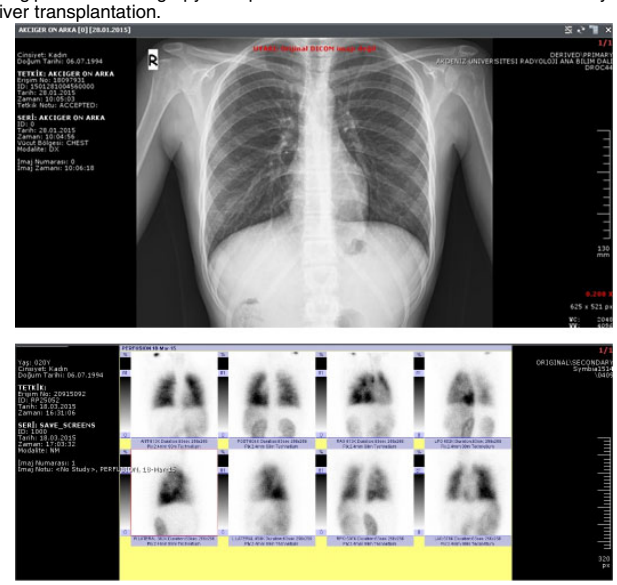
Introduction: Hepatopulmonary syndrome (HPS) is characterized by the presence of liver disease and/or portal hypertension, abnormal arterial oxygenation and intrapulmonary vascular dilatation. The incidence of HPS in patients with liver disease is 4–29% (1). In most cases, dyspnea is the first symptom (2), however more than 80% of patients present with liver disease findings. In addition 88% of patients with HPS have orthodeoxy even so 5% have cirrhosis findings (3). We present a 21 year old female with liver failure and HPS.

Case: The patient was admitted to hospital with dyspnea, fatigue and weakness, and she was overdiagnosed with asthma and was given medication. Simultaneously, her liver function tests were increased. Liver biopsy was done and she was diagnosed with cryptogenic cirrhosis. Then, she underwent a living donor liver transplantation. Before the operation, she had no significant physical and laboratory finding except clubbing and low oxygen saturation. In post operative follow-up, her oxygen saturation was as low as 70%. Therefore she was followed up in the intensive care unit. All the blood tests, chest radiograpy, pulmonary function tests, electrocardiography, ecocardiography and thorax tomography was reported to be normal.

Then a perfussion scintigraphy scan of lungs was performed. The scan revialeved a arteriovenous shunt in the patients lungs and the diagnosis was HPS.

The patient took oxygen treatment for a long time, and saturations increased progresively. But in 3rd month after operation, she is still dependent to oxygen concentrators. The oxygen saturations was about %85 in her last follow up.

Conclusions: The diagnosis of portal hypertension related HPS is usually difficult with rutine examinations. Liver failure patients with dyspnea and low oxygen saturation should be considered for HPS. Diagnosis is confirmed by lung perfusion scintigrapy. The patients with HPS can be treated succesfully by liver transplantation.



009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P800 **ETHICS IN LIVING DONOR LIVER TRANSPLANTATION: ASPECT OF PHYSICIAN**

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Background: Organ shortage is always big issue in liver transplantation. It is more problematic in most Asian countries where deceased donor liver transplantation (DDLT) is very limited in number. Living donor liver transplantation (LDLT) can be solution in that countries, but LDLT has many debates especially in ethics compared to DDLT.
Materials and Methods: Publications from centers which perform LDLT and papers from experts were reviewed.
Results: Donor mortality are low in LDLT but donor risk is the most pressing matter in that field. Physicians firstly must try to avoid risks medically but saftey cannot be always warranted. So ethics in LDLT, especially ethical aspect of physicians is important because it can affect LDLT in many directions, that is, give validity and meanings and also make themselves prudent in performing LDLT. As a result, it will help LDLT settled as a more established option for managemt of chronic liver disease (CLD) patients.
Conclusion: Not ony medical efforts but also ethical apect of physicians in LDLT should be considered as an important factor for LDLT being accepted as a more reliable method in management of CLD

023 KIDNEY

P801

REMOTE ISCHAEMIC CONDITIONING ON RECIPIENTS OF DECEASED RENAL TRANSPLANTS DOES NOT IMPROVE EARLY GRAFT FUNCTION – FIRST RESULTS FROM THE MULTI-CENTER, RANDOMISED, CONTROLLED CLINICAL TRIAL CONTEXT

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Background: Remote ischemic conditioning (RIC) attenuates ischemia reperfusion injuries in various organs in experimental and clinical studies. In the CONTEXT study we hypothesised that RIC on renal transplant recipients improves immediate graft function defined as time to a plasma creatinine (pCr) decrease by 50%.

Methods: Deceased donor renal transplant recipients were included at four European transplant centers. Participants were randomized 1:1 to RIC or control. RIC was applied during surgery prior to reperfusion and consisted of 4 cycles of 5 min occlusion of the thigh by a tourniquet separated by 5 min of deflation. Surgeons, patients and physicians were blinded to the randomisation. Primary endpoint: pCr was measured before and up to 30 days after transplantation. In case of posttransplant dialysis, pCr was measured until 30 days after dialysis termination. The time dependent changes in pCr were modulated for each patient using an exponential, logistic or linear model, and time to a 50% decrease estimated (tCr50). tCr50, log transformed, was compared between groups using a mixed regression model with intervention and center as fixed effects and donor as random effect.

Results: 222 patients were included, 109 in the RIC and 113 in the control group. Eleven patients had primary non-function (RIC 5 vs. control 6). No significant difference was observed between groups comparing cold ischemia time, recipient age, or gender. There was no significant difference in tCr50 between the groups (estimated median 122 h in RIC, 95%-CI:98–151 h and 112 h in control, 95%-CI:91–139 h, $p = 0.58$). 36 patients in the RIC and 40 in the control group received dialysis first week posttransplant (not significantly different).

Conclusion: RIC on deceased donor renal transplant recipients did not improve early graft function defined as time to a pCr decrease by 50%. Further analyses on secondary endpoints, including measured GFR and biomarkers, may identify other, potential effects of RIC.

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P802

TIME-DEPENDENT RELEASE OF EXTRACELLULAR HISTONES IN ISCHEMICALLY DAMAGED KIDNEYS

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Background: Extracellular histones can be released by either dying cells or activated immune cells. These proteins are important components of neutrophil extracellular traps (NETs), which are able to kill invading pathogens. However, histones were also found to be cytotoxic to host cells, including renal cells. In several patient and *in vivo* animal studies, histone levels correlate with disease severity in for example sepsis, but have not yet been linked to ischemic organ injury. This information could be valuable in current organ preservation methods, especially considering the sparse donation pool. Therefore, we investigated whether histones can be found in machine perfused kidneys and if this release is dependent on the period of machine perfusion.
Methods/Materials: We recently determined extracellular histones in perfusate samples of 394 machine perfused donation after circulatory death (DCD) kidneys. We selected 26 samples with the highest histone levels and studied the time-dependent increase of histones. Semi-quantitative analysis of histone concentration (μg/ml) was performed by Western Blotting. A paired t-test was used to compare histone concentrations between the different time points.
Results: Histone levels were shown to be time-dependent in all machine perfused DCD kidneys and seem to be continuously released during machine perfusion. Extracellular histone concentration was similar after 1 h or 2 h of machine perfusion (mean ± standard deviation, 1.63 ± 0.59 μg/ml; 1.64 ± 0.62 μg/ml, respectively) but significantly increased after 4 h (3.16 ± 0.62 μg/ml; mean difference between 2 h and 4 h = 1.53 μg/ml [95% confidence interval = 1.293–1.757], $p < 0.001$).
Conclusion: Cytotoxic extracellular histones are released in a time-dependent manner in machine perfused DCD kidneys. The consequence of the ongoing release of extracellular histones is unknown. Further research should focus on histones as a potential target for optimizing kidney transplantation.

007 DONATION/RETRIEVAL

P803

CHARACTERISTICS AND QUALITY OF FLUSH-OUT AND PERFUSION OF DONOR ORGANS AT TIME OF RETRIEVAL

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Background: Adequate organ preservation is an important determinant of outcome following transplantation. This preservation starts during the retrieval process when the hypothermic preservation solution used for the "cold flush" aims to wash out blood, as well as rapidly cooling the organ to reduce metabolism. There has been debate about the use of crystalloid versus colloid solutions for preservation due to the perception that colloid solutions, with increased viscosity, reduce the rate at which blood is washed out, and thus inhibit the cooling of the organs. We designed an organ retrieval model in pigs to compare UW, HTK, IGL-1 and UW-MPS solutions

Methods: Pigs underwent schedule 1 termination and once cardiac arrest was confirmed, a laparotomy was performed. During a period of 40 mins of circulatory arrest, monitoring was set up to measure temperature, viscosity and flows (using contrasted-enhanced ultrasonography [CEUS]) in the liver and kidney. After 40 mins, perfusion was started with UW, UW-MPS, IGL-1 or HTK ($n = 4$ per group) and the above parameters measured

Results: All solutions decreased the temperature of the liver and kidney to 20 ± 2.7°C and 18 ± 4.6°C respectively, and there was no significant difference in the end temperature of the liver and kidney when using different solutions ($p = 0.52$ and 0.08). However, when the viscosity of the effluent collected was compared at the end of the procedure, HTK and IGL-1 produced a less viscous effluent than UW and UW-MPS with the effluent from the liver being 1.23 vs. 2.41 mm^2/s ($p = 0.005$) and the effluent from the kidney being 1.19 vs. 2.17 mm^2/s ($p = 0.007$). CEUS suggests that all solutions reach the cortex. Biopsy specimens are currently being processed for histology

Conclusions: Although UW and UW-MPS are more viscous solutions than HTK and IGL-1, all solutions have similar physiological properties, with all reducing the temperature of the organs during a retrieval procedure, and achieving cortical flows

019 ISCHEMIA/REPERFUSION INJURY/PRESERVATION

P804

ISCHEMIC INJURY LEADS TO TOXIC EXTRACELLULAR HISTONE RELEASE BY KIDNEYS: A PIG STUDY

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Background: Extracellular histones play an important role in tissue injury and inflammation. Recent studies have shown that extracellular histones are cytotoxic and are associated with thrombus formation and activation of the innate immune system. The presence of histones in the extracellular compartment has been attributed to formation of neutrophil extracellular traps (NETs) by NETosis, a regulated form of cell death, restricted to neutrophils and other granulocytes or macrophages. Also, *in vitro*, dying renal cells were shown to release histones. However, it is unclear if kidneys can release extracellular histones independent of NETosis and to what degree this is associated with ischemic injury. Therefore, we tested this in a porcine kidney perfusion model.
Methods/Materials: Five pairs of porcine kidneys were procured in the slaughterhouse. To deprive the kidneys from all intravascular white blood cells, they were flushed for 20 min. Thereafter, put on hypothermic machine perfusion (HMP) for 1 h and then taken off the machine and flushed for 15 min. From this point, one kidney was put on HMP (4°C) and the contralateral kidney on normothermic machine perfusion (NMP) (28°C), to induce warm ischemia, for 4 h using UW solution. Machine perfusate samples were taken after 10, 30, 40, 60, 80, 120, 140, 160, 180, 200, 220 and 240 min and analyzed for extracellular histones using Western blot (μg/ml).
Results: Kidneys on NMP had a higher mean concentration of histones after 4 h of perfusion than kidneys on HMP (mean ± standard deviation, 0.764 ± 0.660 μg/ml vs. 0.032 ± 0.061 μg/ml, respectively.) A non-parametric Friedman test of concentration increase for repeated measures resulted in a significant higher increase over time for NMP compared to HMP (Chi-square 59.184, $p < 0.001$).
Conclusion: Kidneys release toxic extracellular histones independent of NETosis by white blood cells. This process is correlated to the amount of ischemic injury, likely due to cell death.

025 LIVER

P805

OUTCOME PREDICTION FOR CRITICALLY ILL EGYPTIAN CIRRHOTIC PATIENTS IN LIVER INTENSIVE CARE UNITS

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Objective: Decompensation in patients with chronic liver disease usually develops after an acute insult e.g. bleeding, or SBP. Mortality rates among cirrhotic patients admitted to ICUs are high reaching 81% (1). Many scoring systems have been suggested to predict the prognosis among cirrhotics (2). The aim was to compare the predictive value of CTP, MELD, APACHEII scores in critically ill cirrhotics thus prioritizing ICU admission.
Methods: This study retrospectively reviewed the medical records of 301 patients admitted to liver ICU in a tertiary care H from July 2007 to March 2012. The CTP, MELD and APACHE II scores were computed for each patient within the first 24 h of admission. Patients were classified as either survivors or non survivors. ROC curve was used to find out the best cut off and validity of each scoring system for prediction of mortality.
Results: Survivors 129 (42.9%) had significantly lower CTP, MELD and APACHEII scores (10.2 + 1.9, 21.8 + 6.8, 22.7 + 4.5) compared to non survivors (11.3 + 1.4, 31.4 + 8.9, 26.6 + 5.2) $p < 0.001$. MELD score had the highest sensitivity (86.6%) compared to CTP (75.6%) and APACH II (72%). The predictive accuracy of MELD score was the highest (AUC = 0.81) compared to CTP and APACHII scores (AUC = 0.67, 0.71) respectively. Mechanical ventilation and need for vasopressors was associated with higher OR 8 (95%) CI 2.6–24.5; ($p < 0.001$) for the former and OR 9.9 (95%) CI 1.9–50.8 ($p = 0.0006$) for the later.
Conclusion: In critically ill cirrhotic patients; MELD score had the highest sensitivity and predictive accuracy for mortality. The need for mechanical ventilation or vasopressors was associated with poor outcome.
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029 PANCREAS

P806

SUCCESSFUL SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANT WITHOUT NEED FOR PORTAL VEIN EXTENSION IN RECIPIENTS WITH TRANSPOSITION OF INFERIOR VENA CAVA: A REPORT OF TWO CASES

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Transposition of inferior vena-cava (TIVC) (left sided IVC) is a variant course of IVC. Porto-systemic anastomosis in Simultaneous Pancreas and Kidney transplant (SPKT) in TIVC is surgically challenging due to frequent availability of short portal vein length with pancreas graft. TIVC is an on-table diagnosis as the recipient vessels are not radiologically assessed pre listing. Extension of portal vein may pose increased risk of venous thrombosis. No literature evidence exists with regards to SPK transplant with TIVC. We present 2 cases of successful SPKTs with this vascular variant.

Case 1: 34 year male underwent a DBD SPK transplant. TIVC was found. The pancreas was positioned head up on right side. The portal vein was 1.5 cm in length and was anastomosed to IVC, end to side, by parachute technique. The arterial Y-graft was anastomosed to left common iliac artery followed by duodeno-jenunostomy. The rewarm ischemia time was 34 min and cold ischemia time <12 h. The patient made satisfactory recovery. The blood sugar is maintained between 5–6 mmol/l and serum creatinine has gradually stabilized around 160 μmol/l.

Case 2: 35 year female underwent a DCD SPK transplant. TIVC was found. The pancreas was positioned head up on right side. The portal vein was 2.0 cm in length and was anastomosed to IVC by 4-quadrant technique. The arterial Y graft was anastomosed to left common iliac artery followed by duodeno-jenunostomy. The vascular anastomosis time was 32 min and cold ischemia time was <12 h. Post-operative recovery was unremarkable. The blood sugar is maintained between 4–5 mmol/l and serum creatinine has stabilized around 120 μmol/l. The kidney was transplanted in left iliac fossa intraperitoneally in both the cases and both patients were discharged 2 weeks post transplant. This report suggests that SPK transplant can be safety performed without portal vein extension in recipients with TIVC and the results are at par with normal venous anatomy transplants.

023 KIDNEY

P807

FIVE YEARS RESULTS FROM THE CERTIC OBSERVATIONAL STUDY ON LONG TERM OUTCOME IN KIDNEY TRANSPLANT RECIPIENTS TREATED WITH EVEROLIMUS

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Everolimus is potentially associated with long-term benefits, such as preserving renal function and reducing the incidence of malignancies and major cardiovascular events (MACE). The CERTIC registry assessed the impact of treatment with everolimus for at least five years in 781 heart or kidney transplanted patients in 34 Italian centers.

Out of 380 enrolled patients with kidney transplant (KT), 88.4% started everolimus within 3 months after transplant and on average, two years before entering the study (T0). here we report the preliminary results on survival, renal function and incidence of malignancies and MACE at 5 years (T5) after enrollment.

In this group, patients survival was 94.6%, graft survival was 95.8%, 23 patients (6.8%) went back to dialysis a mean of 5.3 $\pm$ 1.5 years from transplant. The average annual reduction in kidney function (eGFR, ml/min/1.73 m^2) was approximately 1 ml, from 54.8 $\pm$ 23.1 to 50.5 $\pm$ 24.0 from T0 to T5. Mean proteinuria levels were 0.47 1.29 at T0 and 0.58 1.03 g/24 h at T5, while the proportion of patients with proteinuria >1 g/24 h was 7.3% at T0 (19 out of 262) and 11.5% at T5 (24 out of 209). The incidence rate of post-transplant malignancies, excluding non-melanoma skin cancers, was 1.2%, and 20 patients (5.9%) had at least one MACE, mainly myocardial infarction. Ninety-eight percent of patients used induction therapy at transplant (96% basiliximab) and the most represented immunosuppressive regime at T0 included everolimus with steroids and cyclosporine (80%).

The 5 years prospective observation of this cohort of KT recipients enetring the study a mean of 2 years after transplantation, indicates that use of everolimus could be associated to good graft and patient survival rates, a preservation of renal function and a low incidence of malignancies and MACE. The results of complete analysis will be presented at the conference.

009 ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

P808 ANALYSIS OF NURSING THESIS ABOUT ORGAN TRANSPLANTATION IN TURKEY

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The first successful organ transplantation in Turkey was a kidney transplantation from live donor performed in 1975. The Law about Organ and Tissue Procurement, Preservation, Grafting and Transplantation came into effect in Turkey in 1979. The shortage of organ donors is still a major problem for Turkey; No patients waiting for organs was offered but each year thousands of new patients are added to the list. Organ transplant coordination should be a job largely done by nurses as in Britain and America.

Methods: A search for published nursing thesis on organ transplantation was conducted using the Turkish Council of Higher Education Thesis Center database from their inception in May 2015 and thesis made since 1995 were analyzed.

Results: Since 1995, 28 nursing thesis (4 of them doctoral thesis, 24 of them master thesis) about organ transplantation was performed. Most of the thesis was carried out in 2014 and in 2012. The first master's thesis on organ transplantation was performed in 1995, first doctoral thesis was in 2002. All of the master thesis was performed as an descriptive study. Master thesis topics generally focused on evaluating the patient's quality of life, nurses' attitudes and knowledge towards to tissue /organ donation and transplantation. An interesting, only one thesis was performed the nursing care for patients with pulmonary transplantation (in dogs) in 1996 and experimental design was used in this thesis. Only, one dissertation was performed with child patient, another one dissertation was performed with patient's relative. All of the doctoral dissertations were assessing the condition of the patient and medical staff after organ transplantation. Only one thesis was performed in qualitative methods and Roy's adaptation model was used in another one thesis. Mostly descriptive and retrospective methods were used in other doctoral dissertations.

According these results, using of empirical and qualitative methods in nursing thesis are recommended.

P810 PSYCHOSOCIAL INTERVENTIONS FOR LIVER TRANSPLANT PATIENTS – COCHRANE PROTOCOL

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Following work by the Organ Donor Taskforce there has been a 41% increase in the number of transplants carried out across the UK over the last 6 years with 4655 patients receiving an organ transplant last year. In 2014, the number of liver transplants in UK increased by 12% to 880 compared with 782 in 2013. With this number increasing annually, it is important to identify the most effective interventions to improve patient outcomes. Research indicates that although liver transplantation offers improved quality and length of life, the transplant experience extends far beyond hospital discharge. It is evident that liver recipients experience numerous stressors which can lead to maladaptive coping and significant psychological distress particularly in the early post-operative phase. These negative emotional states can lead to immune dysregulation and adverse health behaviours such as nonadherence to the transplant regimen. This can result in rehospitalisation and retransplantation due to rejection. Despite current evidence indicating that various psychosocial interventions are effective in improving health states for liver recipients, we do not know which of these strategies (or indeed which specific components of these) are most effective.

This review aims to assess the effectiveness of psychosocial interventions available for liver recipients. Participants = liver recipients (of any age). Interventions = psychosocial interventions currently in place for liver recipients of any duration, intensity, or frequency, and delivered in any setting in a variety of ways (e.g. web-based, by a facilitator, delivered individually/in groups, by phone). Comparisons = no intervention or treatment as usual. Primary Outcomes = (i) Health-Related Quality of Life; (ii) psychological well-being (e.g. Post Traumatic Stress Disorder, depression, anxiety, coping and optimism); (iii) adherence (e.g. intake of medication, clinic attendance, alcohol, tobacco or illicit drug use).

025 LIVER

P811

IMPACT OF PSOAS MUSCLE INDEX ON SHORT-TERM OUTCOME AFTER LIVING DONOR LIVER TRANSPLANTATION

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Living donor liver transplantation remains an operation with high morbidity and mortality rates. The purpose of this study was to examine the factors affecting the short-term outcome after living donor liver transplantation. Forty-seven adult patients who received living donor liver transplantation from September 2001 to December 2014 were included. Short-term post-transplant outcomes were evaluated in terms of the onset of postoperative complications of grade IIIa and above (Clavien-Dindo classification) and postoperative 120-day mortality. Univariate and multivariate analyses were used to determine the possible predictive factors among perioperative variables such as preoperative psoas muscle index (PMI), blood laboratory test results, perioperative nutritional therapy, and operative factors. Lower PMI (lower than the first quartiles of PMI of donors), higher blood urea nitrogen (>14 mg/dl) and blood type incompatibility were independent risk factors for the development of postoperative complications. The 120-day survival rates were significantly lower for the lower PMI group (n = 30, 66.7%), compared with the higher PMI group (n = 17, 94.1%, p = 0.034). A significant correlation was observed between preoperative PMI and short-term postoperative outcomes. Sarcopenia estimated by PMI may serve as a measure of patient frailty and a target for risk stratification.