POSTERS

Translational Kidney Immunology

P001

CLINICAL APPLICATION OF MESENCHYMAL STROMAL CELLS WITH A SIMPLIFIED PROTOCOL FOR ABO INCOMPATIBLE LIVER TRANSPLANTATION IN SEVERE HEPATIC FAILURE PATIENTS

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ABO incompatible (ABO-I) liver transplantation (LT) is regarded as a relative contraindication because of the enhanced risk of acute rejection, biliary and vascular complications. Although several innovative strategies including rituximab, plasma exchange, immunoadsorption, splenectomy, immune globulin (IVIG), and graft local infusion (GLI) have been the introduced to improve the outcome, there is still lack of a simplified protocol for ABO-I LT in severe hepatic failure (SHF) patients. The immunomodulatory and regenerative properties make mesenchymal stromal cells (MSCs) prime candidates for preventing the antibody-mediated rejection (AMR). The standard immunosuppression protocol consisted of basiliximab, steroids, tacrolimus and mycophenolate mofetil. At a mean follow-up of 15.2 months (range, 2 days–26 months), there are 3 patients died due to multiorgan septic failure (2 patients) and gastrointestinal hemorrhage (1 patient). The major complications were infection ($n = 6$, 50.0%) and biliary complications ($n = 3$, 25.0%). To our surprising, no patients developed AMR after LT. Also, no MSCs related adverse events (include fever, allergic reaction, malignancies and opportunistic infections) were observed during the follow-up period. This new protocol is simple and much easier to carry out than the strategies that previously report. The clinical translation of MSCs seems safe and effective for adult ABO-I LT.

Clinical Cell Immunology

P002

RED BLOOD CELL ANTIBODIES IN PATIENTS UNDERGOING LIVER TRANSPLANTATION: A CROATIAN SINGLE CENTRE ANALYSIS

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Background: Red cell alloimmunization in patients awaiting liver transplantation (LT) complicates blood provision for the procedure and may influence the outcome. Our aim was to analyse red blood cell (RBC) antibodies in adults before and after LT and to objectify the scope of the issue.
Method: We retrospectively analysed RBC antibodies of adult recipients before and after LT, during a period 05/2011-05/2016, in our centre.
Results: 570 patients were reviewed of whom 72.8% were males. 17 (2.98%) patients had a positive indirect antiglobulin test (IAT) at the time of listing. In 15 (2.63%) patients RBC alloantibodies were identified with the commonest from the Rhesus blood group system (66.7%) and the Kell blood group system (26.7%). Less common antibodies were from other blood group systems: Kidd, MNS, Duffy and Lutheran. Single antibody was found in 10 patients, while the rest had multiple antibodies (range 2–5). Of the remaining two patients, one had warm autoimmune haemolytic anaemia and in one positive reactions in IAT were non-specific. RBC antibodies were more common in females (4.5%) than in males (2.4%). Median waiting time on the list was 26 days (range: 0–2792). One patient developed an additional alloantibody from the MNS blood group system by the time of LT. The follow-up RBC antibody screening, in case of clinical indication was performed in 249 (43.7%) patients, with the median of 92 days (range 7–1692) after LT. Additional 0.8% patients developed new antibodies, both from the Rhesus blood group system.
Conclusion: Red cell antibodies prevalence (2.63%) in patients awaiting LT is relatively high when compared to the healthy population (blood donors: 1% females, 0.2% males) in our country. Our results show that care should be taken when administering transfusion treatment to chronic liver disease patients and potential LT recipients. Such treatment should whenever possible, be with Rhesus and Kell typed blood to minimize the chance ofalloimmunization.

Basic Cell Other

P003

COMPARISON OF HUMAN MESENCHYMAL STEM CELLS DERIVED FROM VARIOUS COMPARTMENTS OF HUMAN FIBROFATTY AND VASCULAR TISSUES DURING ORGAN DONATION

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Background: Mesenchymal stem cells are one of the most interesting cell sources for use in regenerative medicine. Therefore, researchers have tried to isolate and characterize them from a variety of different sources. In the present study, we isolated and characterized mesenchymal stem cells from various compartments of human fibrofatty and vascular tissues.
Methods/Materials: Human adipose tissue was removed from the around of internal organs in abdominal cavity during organ donation. Tissue explant cultures were done from various compartments of the fibrofatty and vascular tissues, including adipose tissue far from the vessels, adipose tissue around the vessels, and outer layer of the vessels. After cell culture, the characterization of the cells was determined at 3th – 5th passages. Flow cytometry was recruited for antigen expression analysis of CDs 34, 45, 44, 90, 29, 73, and 105. For the evaluation of cell differentiation potential, adipogenic and osteogenic differentiation were conducted under differentiation protocols.
Results: The cells were positive for CDs 44, 90, 29, and 73 and were negative for CDs 34, 45, and 105. On the other hand, the adipogenic and osteogenic differentiation potential were different among the cells from the various compartments. The cells derived from around the vessels demonstrated better adipogenic and osteogenic differentiation than the other compartments.
Conclusion: Mesenchymal stem cells from various compartments of a tissue may show various potential. Therefore, it is essential to characterize cells from different tissues and compartments for different purposes in regenerative medicine.

Basic Cell Immunology

P004

CYTOTOXICITY OF FK506 THROUGH TRAIL, FAS AND TLR4 SIGNALING PATHWAY IN HUMAN JURKAT T CELLS

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Purpose: To elucidate the mechanism of cytotoxicity in FK506-treated Jurkat T cells, signal transduction pathway of TNF-related events was studied. We will further evaluate the roles of TNF-related death receptors and endoplasmic reticulum-related proteins on the death of Jurkat cells after treatment with FK506.
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 NFκB 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 concentration- 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 NFκB through the dephosphorylation 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, Bcl2 family protein-related mitochondrial dysfunction, activation of death-receptor and endoplasmic reticulum mediated signaling pathways.

Basic Cell Immunosuppressive agents

P005 SYNERGISTIC IMMUNE MODULATORY EFFECTS OF THALIDOMIDE AND DEXAMETHASONE CO-TREATMENT ON T CELL SUBSETS

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Background: Thalidomide (TM) has been reported to have anti-cancer and anti-inflammatory properties, and dexamethasone (DX) is known to reduce inflammation and inhibit inflammatory cytokine productions. Many studies have reported the combinatorial therapy of these drugs is clinically used for the treatment for multiple myeloma and lupus nephritis, but the mechanism responsible for its effects has not been elucidated. In this study, the authors examined that TM and DX co-treatment has a synergistic immune-modulatory effect on T cells by regulating the expressions of co-stimulatory molecules.
Methods/Materials: Splenic naïve T cells from C57BL/6 mice were sort-purified and cultured for $CD4^+$ T cell proliferation and regulatory T cell (Treg) conversion in the presence of TM and/or DX. After the incubation with the drugs, cells were collected and their expressions of OX40, 4-1BB, and glucocorticoid-induced TNFR-related protein (GITR) were quantified by flow cytometry.
Results: TM (1 or 10 μM) decreased the proliferation of $CD4^+$ T cells dose-dependently, while TM and DX (0.1 or 1 nM) combinatorial treatment synergistically further decreased the proliferation. Treg populations were preserved even after the drug treatments. Furthermore, the expressions of the co-stimulatory molecules were decreased by TM/DX co-treatment on both effector T cells (Teffs) and Tregs. Splenic $CD4^+$ T cells, isolated from TM or DX treated mice, expressed the same patterns of Teffs and Tregs populations as observed *in vitro*.
Conclusion: Considering the selective effect of TM on different T cell subsets, the authors suggest TM may play an immunomodulatory role and that TM/DX combinatorial treatment could further enhance the immunomodulatory effects by regulating the expressions of GITR, OX40, and 4-1BB in $CD4^+$ T cells. Further study is required to elucidate the molecular link between the TM and DX synergistic effect in T cells.

Translational Kidney Immunology

P006 CCR4HIGHCD4⁺ CELL POPULATIONS IN KIDNEY GRAFT BLOOD AFTER STEROID WITHDRAWAL: A PROSPECTIVE, RANDOMIZED, CONTROLLED, PARALLEL GROUP STUDY. PRELIMINARY RESULTS

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Introduction: Steroids represent a mainstay of immunosuppression after kidney transplant. The infiltration into the graft of active T cells following KT depends on the expression of chemokines and their interaction with their T-cell receptors. However, the natural history of the expression of these molecules in patients who undergo steroid withdrawal after transplant is unknown.
Material and Methods: In a controlled clinical trial (NCT02284464), a total of 176 KT patients with low immunological risk were recruited to randomly receive either conventional triple immunosuppression: steroids, TAC and MMF (Group A) versus steroid withdrawal at the 3 post-KT month (Group B). We compared the evolution of CCR4highCD4+ and CXCR3highCD4+ lymphocyte subpopulations in graft blood (GB) extracted by fine needle aspiration puncture determined by flow cytometry in patients after steroid withdrawal at the 3 month post-KT versus patients who continue to receive conventional triple immunosuppression. Measurements were made at 3 (baseline) and 6 months post-KT in GB and in peripheral blood (PB).

	Group A			Group B		
	PB	GB	P	PB	GB	P
CCR4highCD4⁺ (%)						
3 months	0.40 ± 0.34	2.28 ± 2.46	0.001	0.45 ± 0.64	2.09 ± 3.84	0.003
6 months	0.42 ± 0.57	2.97 ± 5.35	0.023	0.71 ± 0.81	1.27 ± 1.43	0.117
CXCR3highCD4+ (%)						
3 months	0.78 ± 1.54	0.82 ± 1.30	0.950	0.72 ± 1.34	0.50 ± 0.92	0.567
6 months	0.99 ± 1.73	1.63 ± 4.64	0.423	2.82 ± 4.70	1.05 ± 1.55	0.063

Results: So far, 68 patients have been randomized (34 in each group). There were no significant differences in the clinical and demographic characteristics between the groups at baseline. The first analysis (at 3 months) in those patients who had completed 6 months of follow-up (Group A: $n = 13$; Group B: $n = 15$) showed a significant increase in the CCR4highCD4 subpopulations in GB versus PB in both groups. However, at six months a significant increase in GB versus PB was only seen in Group A. There were no significant differences in the CXCR3highCD4+ lymphocyte subpopulation at the third or sixth month between GB and PB in either group (Table).
Conclusion: These preliminary results could suggest a possible effect of prednisone that would favor the recruitment of CCR4highCD4+ cells into the renal graft.

Basic Kidney Immunology

P007 THE GENE EXPRESSION OF FCRL2, 4 MOLECULES IN IRANIAN KIDNEY TRANSPLANT PATIENTS

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Background: Fc receptor-like (FCRL) molecules belong to the immunoglobulin superfamily. Their genes located on chromosome 1q21-23. The preferential expression of FCRL molecules by B cells that their potential to deliver activating or inhibitory signals. Recent study has demonstrated FCRL2 and FCRL4 expression in several B cell in renal transplant.
Materials and Methods: Blood sample was taken EDTA-treated were collected from 30 patients in 1, 3, 7 days post-transplantation. Total RNA was extracted from patient's Buffy coat and cDNA Synthesis was carried out. Gene expression for FCRL2 and FCRL4 were measured by Real Time PCR and compared with control group.
Result: The results showed that the expression levels of FCRL2 and FCRL4 were increased in patients group compared to the control group but not significant (p value> 0.05).
Conclusion: The expression of FCRL2,4 can be used as a diagnostic marker in kidney transplant patients that require further research in this area.

Basic Cell Immunosuppressive agents

P008 THE IMPORTANCE OF MSC BONE MARROW DOSES FOR PROLONGED REDUCING OF NEPHROPATHY SYMPTOMS AT MODELING OF KIDNEY AUTOTRANSPLANTATION ON RATS

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Background: It's known that kidney denervation-delymphatisation (KDD) is the important, but imperceptible cause of nephropathy progressing after kidney transplantation. Aim is to study the influence of different doses of MSC bone marrow (BM) on the severity of nephropathy symptoms progressing at modeling of kidney autotransplantation (MKA) on rats.
Methods/Materials: The influence of high ($3–5 \times 10^6$) and low ($0.3–0.5 \times 10^6$) doses of MSC BM was examined.MKA was carried out by KDD, contralateral nephrectomy and by activation of immune inflammation(kidney auto antigen and incomplete Freund adjuvant administration) MSC were injected once intravenously in 35–40 days after surgery. Experimental groups ($n = 105$) were: I–MKA only; II–MKA + high dose MSC; III–MKA + low dose MSC; IV–intact; V–intact + high dose MSC. Diuresis, Na^+ and urine protein

excretion, serum creatinine and urea and also kidney morphology were investigated at 3, 5, 7–10 months after MKA.
Results: In all groups serum creatinine and urea values kept in physiological ranges during all investigated period. Progressive increasing of Na^+ and protein excretion took place up to 7–10 months in gr.I and especially in II. But in gr.III the examined signs of kidney dysfunction disappeared during 5 months and then kept the normal values up to end of experiments. In gr.IV and V the examined signs kept normal values during all experimental period.Morphological investigation of kidney in gr.II showed the accumulation of large protein masses into different sections of nephrons; also lymphoid infiltrates, zones of membranous glomerulopathy, tubulointerstinal and glomerular sclerosis were found out. In gr.III only minimal signs of interstitial fibrosis, tubular atrophy and cell infiltration were revealed.
Conclusion: Suitable (low) MSC BM dose prolongs the reducing of nephropathy symptoms at MKA, high dose accelerates the progressing of nephropathy symptoms, that is sensitizes kidney to damage after KDD at MKA.

Clinical Cell Immunology

P009 THIRD-PARTY MESENCHYMAL STROMAL CELL THERAPY AND RISK OF ALLOSENSITISATION IN INTESTINAL TRANSPLANT PATIENTS

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Introduction: The use of heterologous third-party donor MSCs in solid organ transplantation has been reported; however, there is paucity of data related to the risk of allosensitisation.
Methods: We used third-party MSC for severe bowel inflammation and dysfunction in three intestinal transplant recipients. The patients and MSC donors were HLA class I and II genotyped using established in-house PCR-SSP and direct sequencing techniques by the transplanting centre and isolation facility respectively. Serum samples taken pre- and post-MSC infusion from each recipient were characterized for HLA-specific antibodies using Luminex.
Results: Three consented patients (2 female aged 53 and 29 years, 1 male aged 41 years) were infused MSCs intravenously. Patient 1 received an infusion of 1 million cells/kg and Patient 2 received two infusions, one week apart, with 3 million cells/kg of body weight for each infusion. Patient 3 was infused two doses 2 million cells/kg a week apart. No adverse reactions directly attributable to the MSC infusions were noted.

Patient 1 had no *de novo* production of MSC DSA or increase in the levels of pre-existing MSC DSA, at 6 and 24 months post infusion

Patient 2 developed HLA antibodies against the mismatched MSC donor HLA-A34 and DR18 (at 16 months), which persisted at a low level until 28 months post MSC infusion, when these specificities became undetectable.

Patient 3 did not recover despite MSC infusion and had the bowel explanted. Immunosuppression stopped one month after the infusion. Multiple HLA specificities, including HLA specificities of both the small bowel and MSC donors, were detected in his blood sample 3 months post-MSC and 2 months post transplant failure and immunosuppression cessation.
Conclusion: In our preliminary experience, it appears third- party MSCs can cause allosensitisation after MSC infusion in intestinal transplant recipients and this risk was greater when the immunosuppression was stopped shortly after the infusion.

Translational Kidney Immunology

P010 PHENOTYPIC AND TRANSCRIPTOMIC LYMPHOCYTES CHANGES IN ALLOGRAFT RECIPIENTS AFTER KIDNEY TRANSPLANTATION

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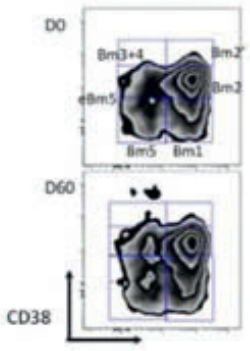
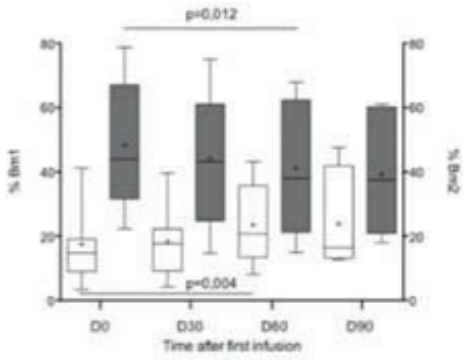
Effects of intravenous immunoglobulins (IVIG) are pleiotropic. Despite IVIG large use in the field of kidney transplantation, no phenotypic and transcriptional analyze of peripheral lymphocytes evolution after IVIG are available.

We designed a prospective cohort study of kidney allograft recipients treated with high-dose IVIG each month during three months and never treated before with Rituximab. PBMC were collected before treatment and before each infusion (Day 0, D30, D60, D90). Both transcriptional profile (13 genes selected to be mechanistically informative) and phenotypic characterization of peripheral lymphocytes were performed by real time PCR and flow cytometry, respectively.

Twelve renal transplant recipients have been included. Reasons of treatment was presence of anti-HLA donor specific antibodies (DSA) in nine patients, minimal microvascular inflammation with DSA in two patients and transplant glomerulopathy associated with DSA in one. All of them received





		Bm1	Bm2	Bm2'	Bm3+4	Bm5	eBm5
% pos. cells D0	Median	14.8%	43.8%	1.1%	0.6%	16.7	9.3
	Q1 - Q3	[9.9 - 19.0]	[32.6 - 65.4]	[0.7 - 3.2]	[0.3 - 0.8]	[8.5 - 22.7]	[7.1 - 14.1]
% pos. cells D30	Median	17.6%	43.1%	1.8%	0.6%	18.1%	10.0%
	Q1 - Q3	[9.3 - 22.2]	[29.2 - 58.1]	[0.8 - 3.0]	[0.4 - 0.9]	[11.0 - 26.3]	[8.4 - 18.2]
% pos. cells D60	Median	20.7%	37.9%	0.8%	0.7%	18.3%	10.5%
	Q1 - Q3	[13.6 - 28.8]	[24.6 - 56.9]	[0.7 - 1.8]	[0.6 - 0.8]	[8.9 - 27.8]	[8.4 - 11.6]
% pos. cells D90	Median	16.5%	36.4%	1.3%	0.9%	15.9%	10.3%
	Q1 - Q3	[13.2 - 41.9]	[21.9 - 59.8]	[0.6 - 1.5]	[0.6 - 1.1]	[8.6 - 25.4]	[7.3 - 20.2]

		RORgt	Tbet	GATA-3	CD3	CD32a	CD32b	CD19	BAFF	BAFF-R	TGFb	FAS	FASL	CD4
Fold Increase D30 ($N = 11$)	Median Q1–Q3	1.5 (0.–3.7)	1.0 (0.5–1.6)	0.5 (0.3–1.0)	1.2 (0.8–2.6)	1.0 (0.4–2.2)	0.9 (0.3–2.5)	0.8 (0.6–1.5)	1.3 (0.9–2.5)	1.2 (0.6–3.0)	2.0 (0.6–2.4)	0.7 (0.3–3.3)	0.9 (0.3–1.2)	1.3 (0.4–2.2)
Fold Increase D60 $N = 11$	Median Q1–Q3	2.0 (1.4–4.5)	1.0 (0.6–3.6)	1.1 (0.3–2.0)	2.2 (0.8–3.2)	0.9 (0.4–1.9)	1.2 (0.6–2.3)	1.7 (0.7–2.9)	1.6 (0.3–3.1)	1.6 (0.8–2.0)	0.6 (0.4–1.6)	0.7 (0.2–1.4)	2.0 (0.6-4.6)	1.3 (0.9–1.8)
Fold Increase D90 $N = 8$	Median Q1–Q3	0.7 (0.4–1.1)	0.7 (0.6–1.1)	0.3 (0.1–1.4)	1.1 (0.5–1.7)	0.6 (0.4–1.2)	0.7 (0.4–1.1)	0.9 (0.8–1.5)	0.9 (0.4–1.9)	0.4 (0.2–0.9)	0.5 (0.3–1.9)	0.3 (0.2–0.5)	0.9 (0.4–1.8)	1.2 (0.6–2.1)

three courses of high doses of IVIG. One patient presented with acute ABMR 15 months after IVIG first infusion. Three patients responded to the treatment with more than 50% decreasing of DSA MFI maximum and/or disappearance of more than 50% of DSA. Phenotypic analysis of B cell subsets showed after 60 days a significant increase of Bm1 cells (%IgD$^+$CD38$^-$, naïves cells) and a significant decrease of Bm2 (%IgD+CD38low, activated naïves cells) (Figure 1). Phenotypic analyze of peripheral T lymphocytes did not show any difference at the end of IVIG treatment. Transcriptomic analyses did not show any differences between J0, J60 and J90 (Table 1).

In conclusion, high doses of IVIG in kidney transplant recipients increased significantly naïves B cells and decreased significantly activated naïves B cells. However, gene expression did not differ before and after treatment.

Basic Cell Immunosuppressive agents

P011 ROLE OF MYCOPHENOLATE ACID ON DENDRITIC CELLS BY INHIBITION OF PROTEIN GLYCOSYLATION

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Background: Dendritic cells (DCs) are professional antigen-presenting cells and fine-tune the immune response. Mycophenolic acid (MPA) is considered an immunosuppressive compound mainly because of its inhibitory effects on lymphocyte proliferation. Here we studied specifically the mechanisms and effects of MPA on the ability of dendritic cells (DCs) to activate T cells.
Methods: Monocyte-derived dendritic cell (mo-DC) are obtained from buffy coats of healthy donors. Cells were treated with MPA 10uM and lipopolysaccharide (LPS) was used as stimuli for maturation. Mature dendritic cells (MDCs) were evaluated by means of specific MDCs markers (CD40, CD54, CD80, CD83, CD86) by flow cytometry. Functionality of mo-DC was evaluated by mixed leukocyte reaction (CFSE). Molecular mechanisms were assessed by adding guanosine to culture. We evaluated transcriptional levels by RT-PCR and protein expression by western blot and confocal microscopy.
Results: Maturation markers were downregulated in the presence of and reduced the activation of T cells with decreased of cytokine secretion (IFN-γ, TNFα and IL-2. The expression of all maturation markers were also decreased by MPA-treated cells without LPS. Guanosine reverted the effect of MPA. Furthermore, MPA alone reduced RNA levels of the different markers whereas if the cells were exposed to LPS, MPA-treated cells had the same levels of LPS, even upper depending on the maturation marker. Preliminary results showed reduced total protein level, but some of them showed decline only on glycosylated form. Immunofluorescence results supported this hypothesis.
Conclusions: mo-DC treated with MPA showed significant reduction of their capacity to activate immune responses characterised by a decline of maturation markers. MPA prevents maturation process by reducing basal levels of that markers. Reversion of guanosine indicates that the effect of MPA on mo-DC is due to the inhibition of IMP.

Basic Cell Immunology

P012 IN-VITRO STUDY OF NGAL IMMUNOMODULATORY EFFECT IN HEMODIALYSIS AND HYPERIMMUNIZED PATIENTS

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Background: In recent years, an increasing number of patients waiting for kidney transplant, showed the presence of alloantibodies against HLA antigens, and non-HLA. Evidence demonstrates the contribution of regulatory T cells (*Treg*) in modulating the immune response in different animal models and in clinical transplant, to suggest their potential use as markers of tolerance, rejection or prediction of organ transplant outcome. We have previously provided in vitro evidence that NGAL (neutrophil gelatinase associated lipocalin), a known biomarker of renal injury, is able to induce immune tolerance by upregulating HLA-G expression and expansion of T regulatory cells in normal subjects. In this study, we evaluated the effect of NGAL on expression of HLA-G and influence on *Treg* populations in hemodialysis and hyperimmune patients.
Methods: We enrolled 30 subjects divided in 3 groups: 10 healthy subjects, 10 uremic patients on hemodialysis and 10 hyperimmunized patients. We carried out isolation and characterization of immunophenotypic lymphocyte population *Treg* from peripheral blood mononuclear cells (PBMCs).
Results: Following treatment with increased doses of NGAL (80–640 ng/ml), an increased expression of HLA-G was observed in the population of CD4$^+$CD25$^+$FOXP3$^+$ in patients on hemodialysis. This increase is also proportional to the percentage of *Treg* themselves in PBMCs and comparable to healthy controls.

Basic Heart Immunology

P013 FEMALE RECIPIENT GENDER DETERMINES ADVERSE OUTCOMES FOLLOWING EXPERIMENTAL HEART TRANSPLANTATION

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Background: Clinical as well as experimental data on gender issues in solid organ transplantation remain scarce. However, recent observations indicate that recipient-donor gender mismatch could negatively impact allograft function posttransplantation.
Methods: Aiming to investigate clinically made observations in an experimental setting, male fully allogeneic Balb/C donor hearts were transplanted to either female (HTx-F) or male (HTx-M) C57BL/6 recipients.
Results: On day 5 following transplantation, grafts from female recipients revealed a significantly elevated expression of proinflammatory markers such as IL-2, IL-15 ($p < 0.01$, respectively) and IFN-γ ($p < 0.05$). Simultaneously,

IFN-γ was upregulated in the spleen ($p < 0.001$), indicating an elevated systemic inflammatory response compared to male controls. Importantly, transplantation of male hearts into female recipients under co-stimulation blockade (CTLA4-Ig) resulted in a significantly shortened median allograft survival (HTx-F: 29 days vs. HTX-M: 50 days; $p = 0.004$).
Conclusion: Our observations of inferior outcomes in female recipients foster the notion that gender disparities need to be crucially more highlighted in future solid organ transplant medicine.

Basic Cell Immunology

P014 DENTAL MESENCHYMAL STEM CELLS MAY HAVE IMMUNOREGULATORY EFFECT ON ALLOREJECTION

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Background: The immune response to an allograft is an ongoing process involving both innate and adaptive components. Graft rejection is multifactorial, alloantigen-specific induction of T-cell proliferation due to antigen presenting cells (APCs) is the major player in graft destruction of solid organ transplantation. In this case, we aimed to investigate whether dental tissue mesenchymal stem cells (dMSC) avoid allogeneic rejection by decreasing HLA-DR and costimulatory molecules expression on antigen presenting cells in vitro.
Methods/Materials: Peripheral blood mononuclear cells (PBMC) were isolated from the blood sample of 29 years old patient with allorejection after lung transplantation. PBMC was cultured with and without dMSC for 72 h. After culturing, mononuclear cells were stained with anti-CD11b for dendritic cells and anti-CD14 for monocytes. Additionally, all of the cells were stained with anti-HLA-DR, anti-CD80, anti-CD83 and anti-CD86 for the cell surface expressions.
Results: HLA-DR, CD80, CD83 and CD86 expression of $CD11b^+$ cells was 32.68%, 38.14%, 19.47% and 22.85% respectively. HLA-DR, CD80, CD83 and CD86 expression of $CD14^+$ cells was 29.47%, 12.17%, 36.43% and 17.65% respectively. HLA-DR expression of $CD11b^+$ cells and $CD14^+$ cells in PBMC cultures with dMSC was 9.26% and 8.19%. CD80 expression on $CD11b^+$ cells was 2.65% and $CD14^+$ cells was 3.15%. CD83 expression on $CD11b^+$ cells was 1.02% and $CD14^+$ cells was 7.82%. CD86 expression on $CD11b^+$ cells was 2.93% and $CD14^+$ cells was 1.96%. (Fig. 1).
Conclusion: The immunoregulatory effect of dMSC is remaining unknown in allorejection. Here, assessment of the suppressive effect of dMSC on the APCs surface expression of HLA-DR, CD80, CD83 and CD86 revealed that dMSC can downregulate the expression of these molecules on APCs and may avoid the allograft rejection.

Basic Kidney Immunology

P015 IL28B RS12979860 C/T POLYMORPHISM WITH ACTIVE CYTOMEGALOVIRUS (CMV) INFECTION IN IRANIAN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: Kidney transplantation as the only way to treat the patient with advanced renal failure. However acute rejection is one of the main problems in transplant patients.
IL-28b (also known as interferon lambda 3) triggers an antiviral cascade via JAK-STAT pathway; increase the expression of interferon (IFN)-stimulated genes, with activation of innate immune response against viral replication. The aim of this study was to investigate the relationship between IL28B rs12979860 C/T polymorphism with active cytomegalovirus (CMV) infection in kidney transplant recipients.
Materials and Methods: For this purpose, 100 kidney transplant recipients (50 patients with active CMV infection; 50 patients without active viral infection) and 100 healthy controls from Blood Transfusion Organization were selected. Genotyping was determined using PCR-RFLP method. The active infection was confirmed by CMV pp65 Antigenemia IFA Kit.
Results: The results showed that there was statistically significant difference between the genotype frequencies of CC and CT and also allele C between renal transplant patients and control. The genotype frequency in transplant group was CC (69%) and CT(19%) and in control group was CC(51%) and CT (13%), (p-value = 0.001). The genotype frequency in the CMV positive and negative groups was not significant.
Conclusion: IL28B rs12979860 C/T was not participated in CMV clearance in kidney transplant recipients.

Basic Liver Immunology

P016 GENETIC POLYMORPHISM OF INTERFERON REGULATORY FACTOR 5 (IRF 5) WITH ALLOGRAFT ACUTE REJECTION IN LIVER TRANSPLANT RECIPIENTS

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Background: Liver transplantation is the best treatment option for end stage liver disease and acute liver failure and acute rejection, that immunity response destroys cells of transplanted organ is a major problem. Little evidence has depicted about the involvement of IRF5 in acute rejection, however its capability of transcriptionally activating IFNs and pro-inflammatory genes through TLR4 cascade implies potential roles. The aim of this research is to survey the association of IRF5 gene polymorphism T/G (rs3757385) in liver transplant patients with acute rejection.

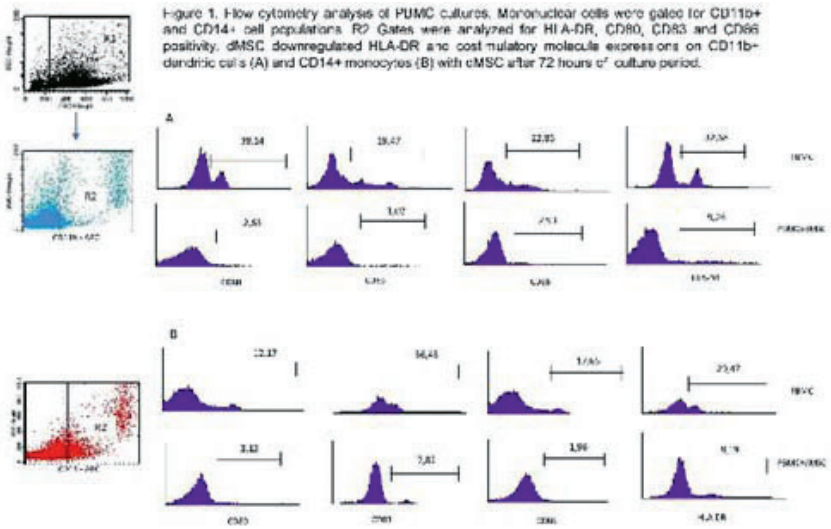

Figure 1. Flow cytometry analysis of PBMC cultures. Mononuclear cells were gated for CD11b+ and CD14+ cell populations. R2 Gates were analyzed for HLA-DR, CD80, CD83 and CD86 positivity. dMSC downregulated HLA-DR and costimulatory molecule expressions on CD11b+ dendritic cells (A) and CD14+ monocytes (B) with dMSC after 72 hours of culture period.

Material/Methods: The samples were collected from 5o patients with pathologically proven acute rejection, 50 patients without any complication and 100 normal controls. The PCR-RFLP method was used for detecting of genotype.
Results: The genotype frequency in rejection group was TT (16%), GT (42%), TT (42%). The frequency in non rejection group was TT (9.4%), GT (46.9%), TT (43.8%) and in normal population was TT (16.3%), GT (39.1%), TT (44.8%).
Conclusion: There was no significant association between polymorphism of rs3757385 T/G of IRF5 with acute rejection in our patients.

Basic Kidney Rejection

P017 PITFALLS IN EXPERIMENTAL KIDNEY TRANSPLANTATION IN MICE

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Background: Kidney transplantation (ktx) in mice is challenging but offers good translational models to study mechanisms of disease. In this study allogenic and isogenic ktx in combination with different cold ischemia times (CIT) was investigated after different times of follow up.
Methods: Allogenic and isogenic ktx was performed and C57Bl/6 and Balb/C mice served as donors and recipients. CIT was either 30 or 60 min and warm ischemia time was kept to 30 min to induce allograft damage. FACS analysis for leukocyte subsets and histology for inflammation and fibrosis were evaluated.
Results: Depending on the length of CIT allograft damage was aggravated. In the allogenic ktx with 60 min CIT acute rejection (Banff IIA) with severe inflammation was present. The majority of cells were CD3 positive T-lymphocytes as expected in cellular rejection. However, several ktx specimens showed kidney cell necrosis and either partial or total infarction. Infarcted areas without any leukocytes were suggestive for surgical complications. However, also secondary infarction due to severe cell infiltration was observed. By FACS analysis early infarction clearly correlated with less leukocyte infiltration to the tissue suggesting that individual animals were not representative for the whole group with cellular rejection. Also in isogenic ktx depending on the duration of CIT macrophage infiltration varied and was linked to more severe ischemia reperfusion injury. In both groups isogenic and allogenic ktx also ascending urinary tract infection was present in individual mice marked by enhanced neutrophil infiltration in the pelvis and enhanced neutrophils in FACS analysis.
Conclusion: The duration of cold ischemia time enhances the risk for local perfusion disturbances and accelerates rejection. In addition, also ascending urinary tract infection can occur and might change the inflammation pattern in these models. Thus, thorough histology work-up in these complex ktx models is alway.

Basic Cell Biomarkers and molecular changes

P018 MICRORNA PROFILING OF FK506-STIMULATED JURKAT HUMAN T CELL

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Purpose: We investigated whether the Jurkat T cell line became toxic when treated with various concentrations of FK506. We analyzed the microRNA expression patterns after the cells were stimulated with FK506 using a microRNA microarray, as well as the expression patterns of genes related to differentiation, activation, and proliferation of T cells.
Methods: To investigate the effects of FK506 on microRNA expression, we purified total RNA from Jurkat cells treated with 20 μM FK506 for 72 h and analyzed the microRNA profile using an Agilent chip.
Results: The results demonstrated that treatment with FK506 markedly downregulated 20 microRNAs and upregulated 20 microRNAs in a time-dependent manner. Genes downregulated by FK506 included let-7a*, miR-20a*, and miR-487a. In contrast, miR-202, miR-485-5p, and miR-518c* were gradually upregulated. Sanger Institute and DAVIS bioinformatics analyses indicated that the microRNAs regulated several transcriptomes including NFATc-related, T cell receptor/interleukin-2 signaling, and Ca^{2+}-calmodulin-dependent phosphatase calcineurin pathways.
Conclusion: We found that FK506 is not only involved in suppressing T cell proliferation /activation by inhibiting calcineurin during Jurkat apoptosis but also affected the microRNAs that are involved in the regulation of various signal transduction pathways.

Basic Liver Rejection

P019 T-HELPER CELLS, CD4+ EFFECTOR MEMORY T CELLS, TERMINALLY DIFFERENTIATED CD8+ T CELLS AND IL-4 GENE EXPRESSION ARE NON-INVASIVE BIOMARKERS OF CHRONIC REJECTION AFTER LIVER TRANSPLANTATION: A PILOT STUDY

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Aim: To determine the association of T Cells immunophenotype and gene expression of IL4 with occurrence of chronic rejection (CR) after liver transplantation (LT).
Materials and Methods: This is a report of observational retrospective case-control single center pilot study. Two clinical outcomes according to presence or absence of liver biopsy (LB) proven CR were tested for association with T-helper Cells (Th), $CD4^+$ Effector Memory (em) T Cells, Terminally Differentiated (td) $CD8^+$ T Cells (Td) and IL4 gene expression (GE) in peripheral blood. Inclusion criteria: adults with first liver transplant and a follow-up 3 and more years after LT. Exclusion criteria: HBV, HCV and PBC, PSC, AIH. Circulating $CD4^+$ and $CD8^+$ T-cells and their differentiation subsets were investigated by flow cytometry. IL-4 GE level was measured by real time PCR with reverse transcription method.
Results: 45 adult LT recipients with a median follow-up of 6.4 year after LT were included in the study. In 14 (31%) patients LB-proven CR occurred. Patients with CR showed significantly higher level of Th cells 1.02 (0.84–1.46) $\times$ 10^9/l compared with non-rejecting patients – 0.66 (0.24–0.87) $\times$ 10^9/l ($p = 0.01$), as well as higher level of $CD4^+$ Tem Cells – 00.25 (0.09–0.31) $\times$ 10^9/l vs 0.15 (0.04–0.24) $\times$ 10^9/l ($p = 0.033$) and higher level of $CD8^+$ Ttd Cells – 0.23(0.14–0.38) $\times$ 10^9/l vs 0.09(0.034; 0.16) $\times$ 10^9/l ($p = 0.034$). IL4 GE level was less in patients with rejection 0.27 (0.07; 0.42) AU vs 1.05 (0.53–1.24) AU in non-rejecting patients ($p = 0.006$). It should be noted that 5 patients (11%) after LT who had no biochemical signs of rejection and got standard immunosuppression with tacrolimus monotherapy had immunophenotype and IL4 GE like in rejecting patients. LB in these patients showed CR and confirmed subclinical chronic allograft damage.
Conclusion: Preliminary data of the study showed efficacy of immunophenotypic and genetic noninvasive biomarkers of CR after LT and can predict subclinical forms of liver CR.

Translational Cell Immunology

P020 DECEASED DONOR HUMAN PERIPHERAL BLOOD AND SPLENOCYTES FOR EXPERIMENTAL AND CLINICAL CELLULAR THERAPY

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Background: Human peripheral blood mononuclear cells (PBMCs) isolated from living donors are the main source of lymphocytes for basic, translational and clinical research. The number of PBMCs isolated form a single living donor is typically $<10^8$ cells, making it impossible to design extensive and repetitive studies using lymphocytes from the same donor. Studies are usually normalised, or PBMCs pooled, leading to potentially-inconsistent results with large errors from donor variability. We investigated splenocytes and peripheral blood obtained from deceased organ donors (DODs) as a potential solution to obtain mononuclear cells from the same donor.
Methods: Using appropriate ethical approval and informed consent, we obtained whole or large portions of spleen and large volumes of peripheral blood from 20 DODs. Cell viability and phenotype were assessed using flow cytometry and adoptive transfer to immunodeficient NSG mice was used to examine *in vivo* function.
Results: Splenocytes had a higher proportion of $CD19^+$ B cells compared to PBMCs (40.5% vs 14.1%). DOD spleens remained viable for at least 72 h at 4°C in organ preservation solution. $>10^8$ splenocytes were typically isolated from a 15 cm^3 portion of the spleen, yielding ~10^{10} cells from an average whole spleen. Cryopreserved splenocytes were successfully used to reconstitute the immune compartment of NSG mice and mounted an alloimmune response against regenerative cellular therapies. We also successfully generated regenerative cellular therapies from the same deceased donors, enabling examination of the immune response against autologous therapies.
Conclusion: The DOD splenocytes are an invaluable source of lymphocytes for studies, including for generation of humanised mice to model the human

compartment *in vivo*, and generation of clinically applicable cellular immunotherapies, including regulatory T and B cells. Ongoing detailed characterisation experiments *in vitro* and *in vivo,* including comparing with PBMCs from the same DOD.

Basic Cell Other

P021 TEMPORAL EFFECTS ON CELL VIABILITY AND PROLIFERATION: PROGRESSING FROM THE BENCH TO A CLINICAL ENVIRONMENT

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Background: Mammalian cells are often adversely affected by low temperature exposure, resulting in metabolic damage, apoptosis, necrosis and decreased viability. While the general consensus is to avoid low temperatures, short-term exposure to hypothermic conditions occurs regularly in both lab and clinical environments. The impacts of this on downstream cellular processes such as function and viability of stem cells and differentiated cells have not been fully explored.
Methods: *Differentiated cells:* Freshly passaged flasks of Chinese hamster ovary (CHO) cells experienced hypothermic conditions (ice bath,4°C) or were kept as a control (room temperature, 20°C) for up to 15 min prior to incubating at 37°C for cell expansion. Cells were enumerated daily using a haemocytometer and Trypan blue exclusion dye to determine viability.

Clinically relevant cells: Peripheral blood (PB) and bone marrow (BM), obtained with ethical approval from deceased organ donors, was split evenly and placed at hypothermic conditions (fridge,4°C) or room temperature (20°C) for 2 h prior to processing for mononuclear cell (MNC) extraction. MNCs were enumerated and assessed by flow cytometry for viability and phenotype determination.
Results: Three days post-treatment, hypothermically exposed CHO cells showed a 1.12-fold increased growth rate at cell viability above 85%. Control cells also retained the high viability despite a lower growth rate. MNCs extracted from PB and BM samples both showed improved MNC population when stored at 20°C, with an increase of 2.8-fold for PB and 5.7-fold for BM.
Conclusion: Our findings suggest time and cost for culture expansion can be significantly reduced by utilising hypothermia. This impact highlights the need for further investigation of clinically relevant cells, including how source cells and tissues should be best handled post-procurement. Optimisation of exposure time to hypothermic conditions is also being considered to determine a clearer understanding.

Translational Kidney Biomarkers and molecular changes

P022 IDENTIFICATION OF URINARY BIOMARKERS FOR CHRONIC ALLOGRAFT NEPHROPATHY USING PROTEOMIC METHODS

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Background: Chronic allograft nephropathy (CAN) remains a major cause of allograft loss in kidney transplants. The aim of this study was to identify a novel set of urinary proteomic profiles which could distinguish CAN in kidney transplant recipients.
Methods: This study included 20 renal transplant patients with histologically proven CAN and estimated glomerular filtration rate of less than 60 ml/min/1.73 m^2 (CAN group), and 20 renal transplant patients with normal kidney function (control group). To identify potential urinary biomarkers, we performed SDS-PAGE followed by liquid chromatography-mass spectrometry (LC-MS/MS). SWATH (Sequential Window Acquisition of all Theoretical Mass Spectra) was utilized in protein quantification. The data were normalized and receiver operating characteristic (ROC) curve was used in statistical analysis.
Results: A total of 96 proteins differentially expressed in urine samples between two groups were identified. Among protein profiles identified, RBP4 had high association with CAN group compared to control group (area under the curve [AUC] 0.838 (0.701–0.974)). Transferrin was also associated with CAN significantly (AUC 0.810 (0.660–0.960)). Angiotensinogen, SERPINA1, and B2M had high distinguishable capacity to differentiate CAN group from control group (AUC 0.685 (0.515–0.855), 0.718 (0.553–0.882), and 0.642 (0.465–0.820), respectively). The combined set of above mentioned 5 proteins had higher discriminating value of CAN group compared to control group (AUC 0.888).
Conclusion: These results suggest that RBP4, Transferrin, Angiotensinogen, SERPINA1, and B2M allow the detection of CAN and could be used as urinary biomarkers for predicting CAN in kidney transplant recipients. Further validation in a larger population is required to determine if these biomarkers provide a potential noninvasive method of diagnosing CAN in a clinical setting.

Basic Others Biomarkers and molecular changes

P023 NEW TRANSPORT SOLUTION FOR PARATHYROID ALLOTRANSPLANTATION

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Background: Preservation of organs in transplantation is a challenge. To overcome this problem organs are generally preserved through cold solutions for decades. Cold temperatures protects organs by decreasing metabolic activity. The aim of this study was to investigate of our new cold storage solution for parathyroid transplantation and its effect on preservation.
Methods/Materials: Main differences of our solution are it includes selenium, FBS (fetal bovine serum) and HEPES (hydroxyethyl piperazineethanesulfonicacid) with certain quantities (Table 1).To evaluate solution effectiveness we have investigated seven patients' (3 male, 4 female, mean age 37, age range 31–54) parathyroid glands who diagnosed with parathyroid hyperplasia and underwent surgery due to chronic renal failure. Glands were transported to the laboratory with our transport solution. Each gland was separated from the connective tissue, fatty tissue, and gland capsule. Tissue samples were removed from cold storage after 0, 6, 12, 18, or 24 h, respectively. Cells were obtained in laboratory and cell viability was assessed for each sample and time interval, separately. Parathormone (PTH) and Calcium-sensing receptor (CaSR) levels were detected by Enzyme Immunoassay (EIA) and Western Blot (WB) respectively. Statistical analyses were conducted one-way ANOVA.

Table 1. Solution components

Amino acids (mg/L)		Vitamins (mg/L)		Inorganic Salts (mg/L)		Other Components (mg/L)	
L-Arginine	211	Biotin	0.024	$CaCl_2$	33.29	D-Glucose	1100
L-Cysteine	25	Choline Chloride	0.7	$CuSO_4$-$5H_2O$	0.002	Hypoxanthine Na	4.7
L-Glutamine	146	Calcium Pantothenate	0.7	$FeSO_4$-$7H_2O$	0.83	Lipoic Acid	0.2
L-Histidine	23	Folic Acid	1.3	$MgSO_4$	74.62	Thymidine	0.7
L-Isoleucine	2.6	Niacinamide	0.6	KCl	285	Selenium	0.26
L-Leucine	13	Pyridoxine hydrochloride	0.2	KH_2PO_4	83	Sodium Pyruvate	1110
L-Lysine	29	Riboflavin	0.4	$NaHCO_3$	1200	HEPES	11908
L-Methionine	4.5	Thiamine hydrochloride	1	NaCl	6900	Fetal Bovine Serum	50
L-Phenylalanine	5	Vitamin B12	140	Na_2HPO_4	153.7		
L-Threonine	3.6	i-inositol	0.5	$ZnSO_4$-$7H_2O$	0.03		
L-Tryptophan	0.6						
L-Tyrosine	2.62						
L-Valine	3.5						
L-Alanine	17.9						
L-Aspargine	28.2						
L-Aspartic Acid	26.3						
L-Glutamic Acid	29.4						
L-Proline	23						
L-Serine	21						
Glycine	15						

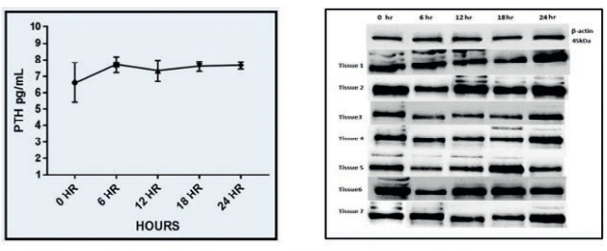

Fig. 1. PTH levels in different time intervals and CaSR (120 kDa) Western Blot image

Results: In this study cell viability was detected 92.7%. PTH and CaSR levels were evaluated (Fig 1). Three parameters indicated that there are no statistical differences in different time intervals for seven tissues ($p = 0.24$, $p = 0.08$, $p = 0.54$ respectively) which reveals parathyroid gland activity is significantly suitable even after 24 h cold storage.
Conclusion: PTH release and Ca sensing properties indicated that cells are fully functional even after 24 h cold storage and suitable for transplantation. Transport solution we developed is quite good at short term parathyroid organ preservation and has high potential to be used for other organ.

Basic Kidney Biomarkers and molecular changes

P025 EVALUATING ALLOGRAFT RENAL FUNCTION BY CYSTATIN C ESTIMATING GLOMERULAR FILTRATION RATE FORMULAS

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Introduction: Assessing accurate estimation of glomerular filtration rate (GFR) in kidney transplant recipients is very important. Therefore, we compared equations based on serum cystatin C (ScysC) alone or combined with serum creatinine (Scr), with formulas based on Scr-based alone to estimate GFR as precisely and simply as possible in kidney transplant recipients.
Materials and Methods: 186 kidney transplant recipients with stable kidney function were included in our study. The patients' GFRs were estimated by 2 creatinine-based equations (the modification of diet in renal disease (MDRD), Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI creatinine 2009), 1 creatinine-cystatin C based equation (CKD-EPI creatinine-cystatin C 2012) and 4 cystatin C-based equations (Hoek, Le Bricon, Rule, and CKD-EPI cystatin C 2012).
Results: The mean age of the recipients was 42.95 $\pm$ 11.2 years. CKD-EPI creatinine-cystatin C 2012 and Hoek equations appeared the least biased (mean eGFR 65.6 $\pm$ 18.6 and 65.1 $\pm$ 20.5 ml/min/1.73 m^2; the bias ΔmGFR 0.64 $\pm$ 13.2 and 0.13 $\pm$ 14.3 ml/min/1.73 m^2, respectively) and had the best correlation with mGFR ($r1 = 0.734$, $r2 = 0.736$, ($p < 0.001$)). CKD-EPI creatinine-cystatin C 2012 had the highest sensitivity and specificity 84.8% and 67.4% for the cut-off <60 ml/min/1.73 m^2.
Conclusions: We found that CKD-EPI creatinine-cystatin C 2012 and Hoek equations provided most accurate estimates.
Keywords: estimating glomerular filtration rate, serum creatinine, serum cystatin C, kidney transplantation.

Clinical Kidney Biomarkers and molecular changes

P026 INFLAMMATION MARKERS STREM-1, PGLYRP AND SMMP8 IN SALIVA OF KIDNEY TRANSPLANT PATIENTS

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Background: Triggering Receptor Expressed on Myeloid Cells 1 (TREM-1) is a cell-surface receptor of immune cells and it amplifies local and systemic inflammation. Neutrophil Peptidoglycan Recognition Protein 1 (PGLYRP1) is a functional ligand for TREM-1. Proteolytic matrix metalloproteinases (MMPs) cleave the membrane bound TREM-1 to soluble (s) TREM-1, allowing it to be a candidate biomarker of inflammation. We aim to associate salivary sTREM-1/PGLYRP1 axis and MMP-8 in kidney transplant patients in relation to oral inflammatory burden
Methods: 38 patients were examined at pre- and at post-transplantation. Their saliva was preserved for further analysis by ELISA for PGLYRP1, sTREM-1, IL1β and IFMA for sMMP-8. Oral infection foci were treated pre-transplantation. Oral inflammatory burden was assessed with the Periodontal Inflammatory Burden Index (PIBI). Previous cardiovascular disease (MACE) and creatinine were collected
Results: Pre-transplantation 79% of the patients had periodontal disease and mean PIBI was 12.5. After transplantation 45 % had periodontal disease and mean PIBI was 6.6. Pre-transplantation PGLYRP1, sTREM-1, IL1-b and sMMP8 concentrations were similar in patients with or without periodontal disease. After transplantation those with periodontal disease had higher PGLYRP1, sTREM-1 and sMMP8 ($p = 0.05$; $p = 0.08$ and $p = 0.08$, respectively), but these markers were still detectable even in the absence of periodontal disease (means PRGLYRP 6369 pg/ml; sTREM-1 135 pg/ml; IL1β 86 pg/ml; sMMP8 36 ng/ml). They were not correlated to kidney function or MACE. Noteworthy, they had higher PGLYRP and IL1β concentration pre-transplantation ($p = 0.021$ and $p = 0.045$)
Conclusion: Eradication of dental infections reflected in lower PGLYRP, sTREM-1 and MMP8 concentrations. However, even in the absence of periodontal inflammation these markers were measured in saliva. The utility of PGLYRP, sTREM-1, IL1β and sMMP8 to assess systemic inflammation beyond the oral cavity remains unknown.

Tanslational Kidney Biomarkers and molecular changes

P027 KIM-1 STAINING INTENSITY IN RENAL ALLOGRAFT BIOPSIES 10 DAYS POST TRANSPLANTATION IS INVERSELY CORRELATED WITH FUNCTIONING PROXIMAL TUBULAR EPITHELIAL CELLS

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Introduction: Kidney injury marker 1 (KIM-1) and neutrophil gelatinase-associated lipocalin (NGAL) are both promising urinary biomarkers for detecting delayed graft function (DGF) after kidney transplantation. Here, we investigated localization and distribution of KIM-1 and NGAL staining in renal allograft biopsies 10 days post transplantation. Furthermore, we studied the association with histological features, functionally defined DGF (fDGF), and the tubular function slope (TFS), as a marker of functioning proximal tubular epithelial cells (PTEC).
Methods: Kidney sections of day 10 biopsies of 64 donation after circulatory death recipients were stained for KIM-1 and NGAL and positive area was quantified using image J software. Biopsies were scored according to Banff criteria and ATN score. A ^{99m}Tc-MAG3 renography was performed to calculate the TFS.
Results: KIM-1 staining was located on the brush border of TEC and correlated with the presence of denudation ($p = 0.046$). NGAL staining was more focally present and had a cytoplasmic distribution. KIM-1 and NGAL staining were not correlated and no co-localization was observed. Staining of KIM-1 and NGAL was restricted to PTEC as shown by co-localization with the lectin PHA-E. Both stainings were not associated with fDGF, but KIM-1 staining tended to be higher in patients with prolonged fDGF ($\geq$21 days; $p = 0.062$). Furthermore, KIM-1 staining was inversely correlated with TFS (Spearman's $rho = -0.53$; $p < 0.001$), whereas NGAL was not. The latter finding might be because cortical NGAL staining is dependent on filtration and reabsorption by PTEC. In a rat model of IRI, we confirmed that KIM-1 and NGAL had a different distribution (corticomedullary vs. cortex and medulla), and again both co-localized with the PTEC marker PHA-E.
Conclusion: KIM-1 and NGAL staining showed different localization and distribution in both rats and humans. KIM-1 staining intensity was inversely correlated with functioning proximal tubular epithelial cells.

Basic Kidney Biomarkers and molecular changes

P028 THE USE OF THROMBOELASTOGRAPHY (TEG) TO GUIDE PLATELET INFUSION IN PATIENT WITH WISKOTT-ALDRICH SYNDROME (WAS) UNDERGOING RENAL TRANSPLANTATION

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Background and Method: (WAS) is a rare primary immunodeficiency disorder characterised by a triad of microthrombocytopenia, eczema and recurrent infections. Progression to end stage renal failure (ESRF) is common in survivors due to IgA nephropathy. We describe the case of a 24 years old male with WAS, previous haematopoietic stem cell transplant and ESRF on haemodialysis who underwent a live donor renal transplant from his mother. Reports of renal transplant in WAS recipients appear only a few times in the literature (5th). Perioperative management of haemostatic function is crucial. We used viscoelastic point of care tests to guide haemostatic decision making rather than platelet count, reducing exposure to unnecessary platelet transfusions without increased bleeding risk. Local advice, as per multidisciplinary transplant planning, was to give prophylactic platelet infusion prior to surgery to increase count to 80–100 $\times$ 109/l. Baseline platelet count was 20 $\times$ 109/l on morning of surgery and a pool of CMV negative irradiated platelets was transfused. Repeat platelet count had incremented to 54 $\times$ 109/l.

Thromboelastography (TEG) was performed which revealed near normal clot strength as described by the maximum amplitude (MA).which was 43.6 mm [normal range 44–65 mm] and CN fibrin MA was 16.5 mm [normal range 14–24 mm].
Discussion and Conclusions: In this case, the use of near patient TEG enabled global assessment of whole-blood haemostatic potential pre, intra and post operatively. Despite absolute platelet counts below suggested targets, demonstrated favourable clot strength with MA within normal parameters and rationalise platelet transfusion. Had platelet count been used to guide transfusion, the patient would have received a greater platelet load. Platelets are a scarce and costly resource that convey increased morbidity and mortality. It is therefore incumbent upon perioperative clinicians to use platelets judiciously and explore appropriate end points to guide transfusion.

Clinical Kidney Biomarkers and molecular changes

P029 THE ABILITY TO SUSTAIN ATTENTION IN ADEQUATELY HEMODIALYZED PATIENTS WITH END-STAGE RENAL DISEASE IS ASSOCIATED WITH CARDIOVASCULAR DISEASE PREDICTORS

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Background: Dialyzed patients have been shown to present with selective attentional/executive dysfunction, namely impaired energization that affects these patients' ability to sustain attention. However, although this energization deficit has been linked with a dysfunction of fronto-subcortical systems, it remains unknown if it is mainly caused by a disease-related intoxication, cardiovascular problems or both. Thus, this study aimed at addressing this question.
Methods: Twenty-four non-demented hemodialyzed patients and 25 demographically matched healthy controls were tested using four experimental reaction time (RT) subtests from the ROtman-Baycrest Battery to Investigate Attention (ROBBIA): 1) Simple RT, 2) Choice RT, 3), Prepare RT, and 4) Concentration. Additionally, specific disease-related biochemical variables were measured shortly after testing.
Results: Overall, in comparison to controls, dialyzed patients presented with a relatively selective inability to sustain attention, with no signs of impaired task setting and monitoring. Further, analyses revealed that this selective dysfunction of the attentional/executive system was significantly associated with oxidized low-density lipoprotein (ox LDL) as well as asymmetric dimethylarginine (ADMA), whereas there was no correlation with other biochemical factors (e.g. Kt/V, creatinine, hemoglobin, hematocrit).
Conclusion: This study not only indicates that dialyzed patients present with a selective inability to sustain attention but also that this cognitive dysfunction is related to patomechanism-based biomarkers predicting vascular impairment.

P030 THE EFFECT OF KIDNEY TRANSPLANTATION ON SELECTED BIOMARKERS OF OXIDATIVE STRESS AND OXIDATIVE DAMAGE OF BIOMOLECULES

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Introduction: It has been proven that oxidative stress plays an important role in the development of the consequences of the terminal stage of renal disorders.
Objectives: The objective of the study was to evaluate the effect of kidney transplantation on the oxidative stress in patients after kidney transplantation (KT) in comparison with those in a chronic haemodialysis programme.
Patients and Methods: The study encompasses 49 patients after KT with a good function of the graft (MDRD = 1.078 ml/s/1.73 m^2, s-creatinine 99.2 μmol/l) and 63 patients treated by haemodialysis. Plasma levels were determined for the markers of the oxidative damage to biomolecules – advanced oxidation protein products (AOPP), lipoperoxides (LP), 8-isoprostanes (8-iso) and 8-oxo-guanosine (8-oxoG). In addition to the activities of antioxidant enzymes (superoxide dismutase – SOD, glutathione peroxidase – GPX) also the Trolox equivalent total antioxidant capacity (TEAC) of plasma was measured.
Results: In patients after KT, significant reductions were observed of the levels of oxidation damaged lipids, proteins and DNA in comparison with dialysed patients. The level of LP decreased by 33.5%, 8-iso by 55.9%, AOPP by 29.2% and 8-oxoG by 65.6%. Even though the level of TEAC remained unchanged, the activity of antioxidant enzymes increased significantly (activity of SOD by 6.0%, and activity of GPX by 4.8%).
Conclusion: Based on our results we can conclude, that after kidney transplantation a marked improvement occurs in the activity of antioxidant systems of the organism leading to a decreased level of oxidation damaged biomolecules.

P031 TRABECULAR BONE SCORE AND BONE MINERAL DENSITY IN THE ASSESSMENT OF BONE LOSS AFTER KIDNEY TRANSPLANTATION

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Background: The trabecular bone score (TBS) is a new marker of bone microarchitecture based on grey-level texture measurements on lumbar spine (LS) dual x-ray absorptiometry images. The aim of this study was to assess TBS in kidney transplant recipients (KTR) and its ability to monitor treatment response to relevant interventions.
Methods/Materials: Patients with clinically stable renal function within one month post-transplantation were included in the study if BMD L2L4 measurements were available at baseline and after 12 months. The three treatment groups were: ibandronate, calcium and vitamin D_3 ($n = 63$), calcium/vitD_3 alone ($n = 59$), and no intervention ($n = 61$). Relative longitudinal changes were calculated using an ANCOVA model with baseline and intervention group as covariates. Pairwise comparisons were corrected for multiple testing by the Tukey-Kramer method.
Results: Baseline characteristics (overall mean ±SD) were similar between groups for age (51.4 ± 13.3 years), BMD L2L4 (1.167 ± 0.18 g/cm^2) and TBS L2L4 (1.234 ± 0.16). For BMD, the mean change from baseline was +2.1 ± 5.3% for ibandronate, −0.2 ± 5.6% for calcium/vitD3 and +0.4 ± 6.6% for no intervention. Baseline was a significant covariate ($p = 0.020$), whereas intervention was not significant ($p = 0.078$). Pairwise, there were no differences, ibandronate vs calcium/vitD_3 ($p = 0.10$); ibandronate vs no intervention ($p = 0.16$). Similarly for TBS, the mean change from baseline was +2.2 ± 9.5% for ibandronate, +4.3 ± 10.5% for calcium/vitD_3 and +5.9 ± 15.9% for no intervention. Also for TBS, baseline was a significant covariate ($p < 0.0001$), whereas intervention was not ($p > 0.25$ for all intervention groups).
Conclusion: In KTR, neither TBS nor BMD could reveal any treatment effects of bisphosphonates or for calcium/vitaminD_3 compared to no intervention. Long-term studies in this patient group and with fracture end-points are needed to better understand the usefulness of TBS versus BMD.

Translational Liver Biomarkers and molecular changes

P032 TOLL LIKE RECEPTOR 9 −1486C/T GENETIC POLYMORPHISM IS ASSOCIATED WITH HEPATOCARCINOMA RECURRENCE AFTER LIVER TRANSPLANTATION

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Background: Genetic polymorphisms of toll like receptors (TLR) are directly related to the modulation of innate immune response and tumor immunosurveillance, and have been associated with cancer. Thus, TLR 9 has shown proangiogenic effects.

The aim of this study was to determine whether TLR polymorphisms influence the risk of HCC recurrence after liver transplantation for HCC associated with HCV or alcoholic cirrhosis.
Methods: Retrospective study including 81 patients who underwent a first liver transplantation for HCC (64 associated to HCV cirrhosis and 17 to alcoholic cirrhosis) in our institution, with a follow-up of at least 6 months after transplantation. Evidence of HCC in the explanted liver was recorded and staged according to Milan criteria.

Seven genetic polymorphisms (TLR2 Arg753Gln, TLR3 Leu412Phe, TLR4 Asp299Gly, TLR7 Gln11Leu, TLR8 Met1Val, TLR9 −1237C>T and TLR9

−1486C>T) were analyzed by real-time PCR and melting curve analysis in all patients.

Demographic and clinical data, accordance to Milan criteria and genotype distributions were compared among patients with or without HCC recurrence.
Results: Hepatocarcinoma staging before transplantation underestimated tumour burden in 40 (49.4%) patients. Vascular invasion was evidenced in 7 (8.6%) patients. Ten patients (12.36%) developed HCC recurrence at 58 ± 38.3 months.

In the multivariate analysis, CT genotype of TLR9 −1486C/T polymorphism (OR 18.2, 95% CI 1.21–250, p = 0.036), vascular invasion (OR 17.5, 95% CI, 1.4–250, p = 0.02) and HCC beyond Milan criteria in the anatomopathological analysis of the explant (OR 6.5, 95% CI 1.1–41.9, p = 0.04) were independent risk factors for HCC recurrence after transplantation.
Conclusion: Our preliminary results suggest that TLR9 −1486C/T genotyping could help to identify patients at higher risk of HCC recurrence after liver transplantation.

Clinical Kidney Biomarkers and molecular changes

P033 PRETRANSPLANT IMMUNE INTERPLAY BETWEEN DONOR AND RECIPIENT INFLUENCES POSTTRANSPLANT KIDNEY ALLOGRAFT FUNCTION

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Renal transplant candidates present immune dysregulation caused by chronic uremia. Deceased kidney donors present immune activation induced by brain-death. Pretransplant donor and recipient immune-related gene expression was examined in search for novel predictive biomarkers crosslinking recipient and donor pretransplant immune status with transplant outcome.
Material and Methods: The study included 33 low risk consecutive renal transplant recipients (aged 18–65 years, mean 48 ± 12 years.). Kidneys were recovered from deceased donors aged from 20 to 68 years. (mean 46 ± 13 years.).

Expression of 30 genes linked to tissue injury, T-cell activation, cell migration and apoptosis was assessed in post-reperfusion kidney biopsies. Expression of 14 corresponding genes was assessed in pretransplant peripheral blood in renal transplant recipients who received grafts from abovementioned donors. The gene expression was analyzed with real-time PCR on custom-designed low-density arrays (TaqMan).
Results: Donor MMP9 expression was related to delayed graft function occurrence (p = 0.036) and short term kidney allograft function (14-day rs = −0.44, p = 0.012; 1-month rs = −0.46, p = 0.013). Donor TGFB1 expression was associated with short- and long-term graft function (14-day rs = −0.47, p = 0.007; 3-month rs = −0.63, p = 0.001; 6-month rs = −0.52, p = 0.01; 12-month rs = −0.46, p = 0.028; 24-month rs = −0.64, p = 0.03). Donor TGFB1 expression was not related to donor age (rs = 0.32, p = 0.081), which was also an independent factor influencing the outcome.

Recipient gene expression was not related to graft function but determined the acute rejection risk. Recipient IFNG and IL18 expression were protective against acute rejection (AUC 0.84, p < 0.001 and AUC 0.79, p < 0.001, respectively).
Conclusion: The kidney transplant outcome depends on the interplay between donor related immune factors, which mostly affect allograft function and recipient immune milieu, which influence alloreactive response.

Basic Kidney Biomarkers and molecular changes

P034 STANDARDIZATION OF RNA ISOLATION FROM URINE FOR TRANSCRIPTOME ANALYSIS IN KIDNEY TRANSPLANT PATIENTS

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In kidney transplantation, the urine is an important and representative sample for the analysis of immunological events and molecular mechanisms that occur in situ in renal allograft, such as rejection, graft loss or operational tolerance. In biomarkers studies, high-throughput technologies, mainly microarrays, are used. However, this technology has limitations. Therefore, we propose that the analysis of transcriptome sequencing in urine of transplanted patients is the better way to find biomarkers and to understand the process implicated in the regulation of the rejection and long-graft acceptance molecular mechanisms.

However, in RNA-sequencing this type of sample has not been exploited due to the easy RNA degradation and technical complications in RNA isolation procedures. Furthermore, the quality of RNA must be higher than other methodologies and it must be assessed through the whole workflow process. In consequence, it is necessary a standardized protocol for the RNA isolation from urine that guarantee the integrity of the recovered RNA and the quality of RNA sequencing results.

To reach this goal, we developed a protocol for the RNA isolation from cells of urine sediment.

We sought in literature and chose a commercial kit described for the extraction of urinary RNA. However, this kit did not allow the extraction of significant amounts of RNA and we observed a high amount of contaminants that absorbed around 280 nm. To solve this problem, we design a protocol of enrichment of urinary sediment with a series of samples and with RNA stabilization reagent. With this protocol, we improve the RNA concentrations obtained but we did not reduce the high amount of contaminants. We implemented a variation in the relation between sample-lysis buffer and this allow us obtain a calibration curve free of contamination.

Our protocol allows obtaining RNA from urine with concentrations and purity necessaries to transcriptome analysis using RNA sequencing process.

Translational Kidney Biomarkers and molecular changes

P035 GENETIC STUDY OF IRANIAN AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE FAMILIES

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Background: Autosomal Dominant Polycystic Kidney Disease (ADPKD is the most common genetic renal disorder and the fourth cause of end stage renal disease (ESRD) in Iran. Clinical diagnosis of the disease is based on imaging techniques, whereas the definite diagnosis method is DNA testing. There are two known causative genes, PKD1 and PKD2 for this disease. Nevertheless, due to the complexity of the PKD1 gene, its direct mutation screening is an expensive and time-consuming procedure. In this regards, pedigree-based haplotype analysis is a useful indirect molecular approach to identify the responsible gene in families with multiple affected individuals.
Methods: Here we investigate 15 appropriate unrelated ADPKD families, selected from 25 families, who referred for genetic counseling. Four polymorphic microsatellite markers were selected around each PKD1 and PKD2 loci. In addition, by investigating the genomic regions, two novel flanking tetranucleotide STR markers were identified.
Results: Haplotype analysis confirmed linkage to PKD1 in 9 families (60%) and to PKD2 in 2 families (13%). Linkage to both loci was excluded in one family (6.6%) and were inconclusive in 2 families (13%). Causative mutation was identified by direct analysis in two families, one to PKD1 and another to PKD2 locus. Meanwhile, genetic study confirmed the clinical diagnosis in two affected individuals from two unrelated families with equivocal imaging results, as well as ruling out the disease in one suspected individual.
Conclusion: Determining the causative locus prior to direct mutation analysis is an efficient strategy to reduce the resources required for genetic analysis of ADPKD families. This is more prominent in PKD2-linked families. Selection of suitable markers will also add value to this approach. Genetic testing is valuable for the definite diagnosis in individuals with an atypical renal findings, also it is the only way for determining the healthy living-related kidney donors

P037 ANALYSIS OF TFH AND BREG CELLS IN KIDNEY TRANSPLANT PATIENTS

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Background: Chronic failure of kidney allografts is strongly related with antibody-mediated rejection. The T follicular helper cells (Tfh) activate B cells and facilitate the synthesis of antibodies (abs). Breg synthesize IL-10, suppress immune responses and are increased in patients with operational tolerance. Differences in the number or function of these cells could be related to abs production and rejection.
Methods: We isolated PBMCs at pre-transplant (Tx) and at 7 and 14 days and 1, 3, 6 and 12 months post-Tx from recipients ($n = 164$). We analyzed the Tfh subset by flow cytometry as CD4 + CXCR5 + CCR7lowPD1high cells. After *in vitro* induction for IL-10 production, CD19 + CD38 + CD24 + IL-10 + cells were recorded as Breg. Tfh were cocultured with B cells to evaluate their capacity to stimulate conversion to plasmablasts and abs production.
Results: Pre-Tx, there were not differences in Tfh percentages between patients and healthy volunteers. Before Tx, Tfh proportion was significantly higher in anti-HLApos *vs* anti-HLAneg patients (1.8% vs 0.93%, $p < 0.01$).

Tfh decrease from pre- to 7 days post-Tx, then they recover after month +3. Basiliximab didn't deplete Tfh whereas thymoglobulin (Tg) diminished them. However, Tfh recovery after month +3 was significantly more noticeable in Tg-treated patients, as these cells triplicate the pre-Tx value at month +6. When co-cultured with B cells, kidney recipients Tfh were able to induce conversion to plasmablasts and abs production.

Tfh % was not different between rejecting and non-rejecting patients. However, %Breg at pre-Tx was significantly higher in patients who rejected. A Breg into CD19 cells % of 1.5 discriminated rejecting and stable patients with AUC = 0.803 (sensitivity = 80, specificity = 69%)
Conclusions: Anti-HLA-sensitized patients show higher % of Tfh. Tfh increase from post-Tx month +3, particularly in Tg-treated patients and induce abs production and plasmablast. Breg % at pre-Tx may be useful as a predictive biomarker for rejection.

Clinical Kidney Biomarkers and molecular changes

P038 CORRELATIONS OF BONE MARKERS AND BONE STATUS IN RENAL TRANSPLANT RECIPIENTS

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Background and Objective: Bone loss is a common clinical problem after renal transplantation, and the use of tacrolimus may contribute to this disease. The evaluation of bone status in everyday practice is based on noninvasive measurements, and the most widely used is mineral density (BMD) test. However, because of radiation and high price, bone markers displayed more safe and practical role than BMD. Taking this into consideration, the aim of the present study was to assess markers of bone metabolism: serum CrossLaps degradation products of C-terminal telopeptides of type I collagen (CTx), *N*-MID Osteocalcin (OSTEOC), tartrate-resistant acid phosphatase-5b (TRAP-5b) and bone-specific alkaline phosphatase (b-ALP), as well as their correlations with tacrolimus concentrations and BMD in renal transplant recipients.
Methods: Dual-energy X-ray absorptiometry (DEXA) was performed to measure BMD. CTx and OSTEOC concentrations were measured by Electrochemiluminescence, TRAP-5b concentrations were measured by ELISA, and b-ALP levels were measured by Microparticle chemiluminescent immunoassay. Tacrolimus blood concentrations were measured by Enzyme multiplied immunoassay technique. At the same time, 25-hydroxyvitamin D3 (25-OHD) was also measured which reflect bone status.
Results: There were 26.37% patients had bone loss. No correlations were found between BMD and other bone markers. However, tacrolimus concentrations were positively correlated with TRAP-5b levels ($r = 0.307$, $p = 0.024$). 34.7% of the recipients had vitamin D insufficiency (25-OHD 15–30 ng/ml), and an additional 61% had vitamin D deficiency (25-OHD < 15 ng/ml). Correlation analysis showed that 25-OHD concentrations were negatively correlated with PO4, PTH and TRAP-5b ($r = -0.37$, -0.28 and -0.25, respectively, $p < 0.05$). No correlation was found between 25-OHD and BMD.
Conclusion: Bone loss and deficits of 25-OHD was common after renal transplantation. Vitamin D supplemental may be important for those recipients.

P039 POSTTRANSPLANT PROTEINURIA AS A FEATURE OF NODAT

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Introduction: The first consideration in evaluating post-transplant proteinuria is whether it originates from the native kidneys or from the allograft. The second issue to consider is the type of allograft pathology causing posttransplant proteinuria. Some forms of allograft glomerular pathology, such as transplant glomerulopathy, may be associated with CAN. Second, other forms of nonrecurrent glomerular disease are rarely present in patients with CAN.
Methods: Case report study.
Results: Male patient, 44 years old, admitted with nephrotic syndrome, with the level of proteinuria of 7.93 g/day, with slight increase in serum creatinine level. Fifteen years ago he was diagnosed with IgA nephropathy with developing CKD in the next few years. Treated with intermittent dialysis for three years. Treated with kidney transplantation from living related donor ten years ago, without significant complications in the follow up period. He was treated with immunosuppressive protocol with basiliximab in induction and tacrolimus, mycophenolate mofetil and steroids after transplantation, without changes in protocol. The level of urine proteinuria in follow up period was less then 500 mg/day. One year prior to this hospitalization he developed arterial hypertension and NODAT. No signs of acute rejection or CAN. We also examined other possible causes of nephrotic syndrome - infections, malignancies and hematological diseases and malignancies, but without positive findings. We suspected that the cause of proteinuria and nephrotic syndrome could be recurrent IgA allograft nephropathy. The biopsy of the allograft was performed. Pathological examination showed only changes in the context of diabetic nephropathy. There were no signs of recurrent IgA nephropathy or other glomerulopathies.
Conclusions: Proteinuria is a useful prognostic marker after kidney transplantation. In patients without demonstrable glomerular pathology, other causes of proteinuria should be considered and investigated.

P040 KIDNEY TRANSPLANTATION IN PATIENTS WITH INHERITED THROMBOPHILIA

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Introduction: Early allograft loss, due to acute thrombotic complications, remains a constant and increasing complication of renal transplantation. Most recently the evolution of thrombophilia research has established the potential for inherited hypercoagulability to predispose to acute allograft thrombosis. Inheritance of the factor V Leiden (FVL), prothrombin G20210A mutation, or the presence of antiphospholipid antibodies (APA) or other hypercoagulable states such as hyperhomocystinemia or the C677T polymorphism of the methylenetetrahydrofolate reductase gene (MTHFR) may increase the risk of renal allograft thrombosis.
Methods: Case report studies.
Results: First patient, male, 34 years old, treated with kidney transplantation from deceased donor for the first time 5 years ago, because of ESRD caused by polycystic kidney disease. He got graft vein thrombosis causing DGF delayed graft function and hemodialysis requirement after transplantation. Graft survival was one year. He was tested for thrombophilia and prothrombin G20210A mutation was detected accompanied with C677T polymorphism. Second patient, male, 29 years old, treated with preemptive living related kidney transplantation in the age of 26, unknown etiology of ESRD. Patient developed graft artery thrombosis after kidney transplantation and deep venous thrombosis in the period of follow up, beside therapy with LWMH low weight molecular heparin. He also developed bilateral avascular necrosis of femoral head in the next period, treated with total hip arthroplasty. He was tested for thrombophilia and prothrombin G20210A mutation was detected. Second kidney transplantation in both cases with higher doses of anticoagulant therapy in preparation and afterwards underwent without thrombotic complications.
Conclusion: The risk of allograft thrombosis must be weighed against the risk of allograft thrombosis must be weighed against the risk of perioperative bleeding and the need for long-term anticoagulation.

Clinical Kidney Cancer

P041

RESULTS OF STEM CELL AND RENAL TRANSPLANTATION IN PATIENTS WITH END STAGE RENAL DISEASE AFTER PLASMA CELL DYSCRASIAS CARDIOVASCULAR

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Introduction: Plasma cell dyscrasias (PCD) are a cause of end stage renal disease (ESRD). Traditionally, renal transplantation (RT) has been avoided in these patients due to the poor patient survival, the risk of recurrence in RT and the high incidence of life threatening infections. However, the good results of stem cell transplantation (SCT) in combination with the new drugs in PCD patients with ESRD have encouraged to considerer in them a RT.
Aim: To describe the results of our experience of combined therapy with SCT and RT in patients with PCD and ESRD.
Material and Methods: We performed a retrospective study that included all patients with PCD who have received both SCT and RT in our hospital.
Results: We included 6 patients: 4 (67%) males, median age 55 years (49–57). The causes of ESRD were: 2 cast myeloma, 2 light-chain diseases, 1 primary amyloidosis and 1 focal segmental glomerulosclerosis. The causes of PCD were: 5 multiple myeloma and 1 primary amyloidosis. 4 (67%) of the patients received SCT 4 before RT and 2 (33%) after RT. Immunosuppression was steroids, tacrolimus and mycophenolate. 5 received induction therapy: 4 basiliximab and 1 timoglobulina. The median creatinine at 1 and 3 year was 1.6 (1.1–1.9) and 1.3 (1.1–1.9) mg/dl. One patient developed an acute rejection in 10 month after RT. Renal graft (RG) survival non-death censored was 83%. 5 episodes of infections that need admission occurred in 3 patients: 2 fungical, 2 viral and 1 bacterial infection. 3 patients developed a recurrence of their PCD after RT: 2 of them had a remission after treatment with lenalidomide (one partial and the other one complete remission) and the other patient died after 15 months. Patient survival was 83%.
Conclusion: Sequential SCT and RT could be a option for patients with PCD and ESRD. The patient and RG survival are conditioned to the relapse of hematological disease and infections complications. To elucidate the best management of PCD with ESRD is necessary.

Clinical Liver Cancer

P043

RECURRENT HEPATIC EPITELIOID HEMANGIOENDOTHELIOMA AFTER ORTHOTOPIC LIVER TRANSPLANTATION

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Hepatic epithelioid hemangioendothelioma (HEHE) is a rare vascular neoplasm with an unpredictable malignant potential. Orthotopic liver transplantation (OLT) is the method of choice for HEHE with hepatic failure. A correct pathological diagnosis is necessary and is often based on scant material.

We report a case of 49-year-old Estonian female, who presented with abdominal pain and resistant ascites. CT showed right lobe liver atrophy and hypertrophic enlargement of liver segment I. A liver biopsy showed liver fibrosis. Direct venography confirmed hepatic venous outflow obstruction. OLT due to chronic Budd-Chiari syndrome (BCS) was considered. OLT was performed in 2011 without complications. The results of Doppler ultrasound (US) and biopsy of the deceased donor liver were normal. The histopathology of the liver removed from our patient, revealed fibrosis and focal necrobiosis, caused evidently by hepatic veins thrombosis. Following OLT, the patient was successfully treated with permanent anticoagulant therapy. Annual US and magnetic resonance imaging (MRI) for 3 years post-OLT were normal. In 2015 she presented with nonspecific left shoulder pain. US showed multiple round hypo echoic lesions throughout the liver. MRI showed multiple lesions involving the liver. US-guided liver biopsy showed HEHE lesions in the transplanted liver. Positron emission tomography and CT showed a metastatic lesion in the left scapula. A second histopathological examination of the patient's liver biopsies taken in 2011 allowed to retrospectively diagnose HEHE lesions. Shortly we started with shoulder irradiation therapy. Now, two years later the patient is in good general condition, without any complaints, despite the fact that MRT has shown enlargement of liver lesions with the constant lesion in the scapula.

This case report confirms that BCS is not a primary disease and hepatic venous outflow obstruction can be caused by HEHE; a correct pathological diagnosis of HEHE is of vital import

Clinical Pancreas/Islet Cancer

P044

HHV-8 ASSOCIATED LYMPHADENOPATHIC KAPOSI'S SARCOMA MIMICKING PTLD AFTER PANCREAS TRANSPLANT

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Background: Kaposi's sarcoma currently comprises more than 5% of all *de novo* neoplasms in this group. The average time to development of Kaposi sarcoma following transplantation is 15–30 months. Human herpesvirus 8 (HHV-8) genomic sequences have been identified by polymerase chain reaction in more than 90% Kaposi sarcomas.
Materials: From 2003 to 2016, Kaposi's sarcoma was identified for study from 128 patients with 133 pancreas transplants performed at Taipei Veterans General Hospital. Literature review was also done.
Results: Only one case of Kaposi's sarcoma was identified, with an incidence of 1.5%. The patient suffered from varicella zoster Infection (chicken pox) 11 months after pancreas transplant alone (PTA). Four months later (15 months after PTA), lymphadenopathy with enlargement of multiple lymph nodes in neck, around celiac trunk, along the superior mesenteric artery and abdominal aorta, which mimicked posttransplant lymphoproliferative disorder (PTLD). The biopsy for pathology turned out to be Kaposi's sarcoma. HHV-8 viral gene was detected by the molecular (PCR) assay. The lymphadenopathic Kaposi's sarcoma regressed 3 months after treatment by adding sirolimus, reducing the dose of tacrolimus and discontinuing mycophenolate mofetil. There has been no evidence of tumor recurrence for more than 2 years, and he has been enjoying an insulin-free life with euglycemia for more than 3 years.
Conclusion: This is an unusual HHV-8 associated Kaposi's sarcoma mimicking PTLD presenting as lymphadenopathic form, instead of usual cutaneous form. Sirolimus is recommended for the treatment of Kaposi's sarcoma, in addition to reduction, cessation or modification of immunosuppressive regimen.

Clinical Kidney Cance

P045

MULTIPLE PRIMARY NEOPLASMS IN RENAL TRANSPLANT RECIPIENTS

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Immunosuppressive treatment is associated with increased risk for development of neoplasms especially with prolonged exposure. Most common are skin malignancies, however some patients may develop more than one primary neoplasm. Data on this topic as well as possible explanations are scarce.

All patients who received allograft at our institution from 1972 to 2016 were included in investigation with the aim to record patients with multiple primary neoplasms as well as risk factors for their development. Data were obtained from charts and medical records.

Over the observed period 1884 patients received renal allograft at our institution. 144 were found to have malignancy. Multiple primary neoplasms were recorded in 14 patients, 3 female and 11 male, age at the diagnosis ranging from 37 to 76 years. Combinations of malignancies included urinary bladder and ovarian, lung and thyroid, planocellular carcinoma (PCC) and basocellular carcinoma (BCC) in 2 patients, Merkel cell and BCC, appendiceal carcinoid and mucinous cystadenoma, kidney and urinary bladder in 2 patients, BCC and mucinous cystadenoma of salivary glands, prostate and PCC, ventricular gastrointestinal stromal tumor and kidney, ovarian carcinoid and colorectal carcinoma, adenocarcinoma and oncocytoma of native kidneys, prostate and urinary bladder. The most common primary kidney disease was Balkan endemic (aristolochic acid) nephropathy in 3 patients. Immunosuppressive protocol was cyclosporine based in 11 patients, and tacrolimus based in 3 patients. Tumors were diagnosed 2 to 27 years after the transplantation. Older age was associated with development of neoplasia shortly after the transplantation. Six patients died from malignancy, other have stable allograft function, and receive everolimus instead of the calcineurin inhibitor.

In conclusion, multiple primary tumors are not rare in renal transplant population and are associated with high mortality rate.

Clinical Liver Cancer

P046 THE IMPACT OF HISTOPATHOLOGICAL FEATURES OF PRIMARY TUMOR TO THE LONG-TERM OUTCOME OF LIVER TRANSPLANTS FOR HEPATOCELLULAR CARCINOMA: A 10-YEAR FOLLOW-UP

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Background: The aim of this study was to determine the impact of the histopathological features of the primary tumor to the long-term outcome of liver transplants for hepatocellular carcinoma (HCC).
Methods: Among 552 patients, a liver transplant performed in 61 patients (11%) for the treatment of HCC. Histopathological features such as tumor grade, tumor size, the number of tumor nodules, lymphovascular invasion (LVI) and the tumor necrosis were noted. Patients reviewed in two groups; Group1: patients beyond the Milan criteria, Group 2: patients within the Milan criteria. The mean follow-up time for all HCC patients was 77.9 ± 41 months (1–156 months).
Results: Overall survival of transplanted HCC patients was significantly lower than those of patients with non-malignant diseases (10-year survival rates 54% and 73.8%, respectively). HCC recurrence detected in only14 patients. Overall 5-year and 10-year survival rates of Group 1 were 56.4% and 43.6%. Overall, 5- and 10-year survival rates of Group 2 patients were 81% and 72.6% ($p < 0.001$). The disease-free survival found to decrease in recipients with increasing grade and tumor size ($p < 0.01$). Patients who had tumor necrosis, LVI, and multiple tumor nodules tended to show low survival ($p < 0.05$). A tumor size larger than 5 cm and the presence of LVI showed significant correlation with tumor recurrence and graft survival ($p < 0.05$). Group 1 patients who had high-grade, tumor necrosis and LVI tend to show poor prognosis compared to Group1 patients who did not have these histopathological parameters ($p < 0.05$ for all).
Conclusion: Liver transplant is a safe and effective treatment option with promising results, even if the tumor is beyond the Milan criteria. Histopathological features are shown to be the best parameters to specify patients with poor prognosis.

P047 EXPANDED CRITERIA FOR HCC IN LIVER TRANSPLANTATION

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Introduction: Liver transplantation (LT) is regarded as an optimal radical therapy for select patients with HCC. Here we evaluate our LT indications and results for HCC.
Methods: Between December 1988 and January 2017 we performed 552 LT at Baskent University (BU). We have been using our criteria for LT in HCC candidates since 1994: LT is performed on HCC patients regardless of the size and number of tumors, without major vascular invasion and distant metastasis, and with negative cytology (if the patient has ascites). In this study, we retrospectively reviewed our LT results of patients with HCC.
Results: Of 552 total LT performed at BU, 61 (11.1%) had LT for HCC (52 male 9 female; 11 children 50 adults). These were 41 living related LT (10 pediatric, 31 adult) and 20 deceased donor LT (1 pediatric, 19 adult). All DDLT had down staging therapy before transplant. We diagnosed HCC incidentally during pathological examination in 6 patients (10.1%; 4 pediatric 2 adult). All of these 6 cases are still alive without HCC recurrence for 75–140 months. 32 patients (6 children 26 adults) were operated on according to BU expanded criteria. We had 16 patients (1 pediatric, 15 adult) within BU expanded criteria radiologically and pathologically before LT. The other 15 patients (4 pediatric, 11 adults) were within Milan criteria radiologically before LT, but after LT, when pathologic specimens were evaluated, they were found to be within BU expanded criteria. We had 1 patient incidentally diagnosed after transplantation within BU expanded criteria. HCC recurrence was detected in 14/61 cases (23.7%). Disease free 5-year survival rates of patients within BU expanded criteria and within Milan criteria were 56.8% and 78.7%, respectively ($p = 0.024$).
Conclusions: Criteria for LT in HCC patients can be expanded results beyond Milan criteria with promising. Interventional radiology is also applied before LT or resection at our center.

Clinical Kidney Cancer

P048 MALIGNANCY IN KIDNEY TRANSPLANTATION: REGISTRY DATA FROM 1936 PATIENTS

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Background: Malignancies have been shown to be frequent comorbidities in kidney transplantation with large regional variability due to differences in background population, sun exposition and immunosuppressive therapy, however data from central Europe are lacking.
Methods: Prevalent 1936 kidney transplant recipients have been followed in a large single transplant centre registry and prevalent malignancies registered from 2014 until December 2016 were analysed in terms of type, immunosuppression, patients and transplants characteristics.
Results: Total 106 malignancies in 100 out of 1936 prevalent kidney transplant recipients were registered. All patients received CNI/MMF/steroid based immunosuppression and 58% patients received induction therapy. The most frequent were non-melanoma skin cancers (32%), renal (21.7%), prostatic (8.5%), breast (5.7%), lung (5.7%), gynaecologic (5.7%) and laryngeal (3.8%) cancers while post-transplant lymphoproliferative disease (PTLD) occurred in 6.6%. Renal cancer occurred at median 3.4 years while skin cancer at median 6.1 years after transplantation ($p < 0.01$), median onset of all malignancies was 5.5 years. Depletive induction immunosuppression with rATG was more frequently given to patients with prostatic cancer, PTLD and breast cancer, while no differences between induction and no-induction regimens were found in skin and renal cancers. 32% of patients with skin cancer while 52% in renal cancer were converted to mTOR inhibitor based immunosuppression. There was a tendency towards more frequent polycystic kidney diseases as renal principal diagnosis among patients with skin as compared to renal cancers (17% vs 4%). CMV mismatch (D+/R-) was observed in 22% patients with cancer.
Conclusion: Compared to other registries data, renal cancer was the second most prevalent one, while PTLD was less frequent. It is likely that renal cancer is not associated with the induction immunosuppression in this cohort.

P049 SIROLIMUS IN RENAL TRANSPLANTED PATIENTS WITH MALIGNANCIES IN GERMANY – TYPE OF TUMORS IMPACTING GRAFT AND PATIENT SURVIVAL

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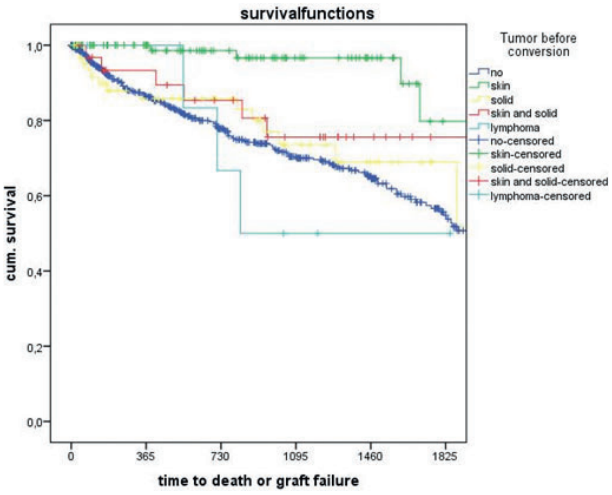
Renal transplant recipients have an increased cancer risk. The mTOR inhibitor sirolimus (SRL) has immunosuppressive and antitumor properties. Best management in transplanted cancer patient is unknown. In this retrospective study from 10 German transplant centers 726 patients (pts) were switched to a SRL-based immunosuppression. This analysis is on pts with a tumor prior to SRL initiation focussing on the tumor entity impacting patient and graft survival.

31.6% (230/726) pts had a tumor prior to initiation. In 214 the entity was known.

Major entities were skin ($N = 137$) and solid tumors ($N = 102$), lymphomas and hematological tumors were present with 15 and 3 cases, respectively. Baseline characteristics of pts with skin or solid tumors are shown in Table 2.

	Number of patients (N = 230)	%	
skin	101	43.9	
solid	63	27.4	
skin and solid	32	13.9	
lymphoma	8	3.5	
solid and lymphoma	4	1.7	
lymphoma and skin	2	0.9	
hematological	1	0.4	
solid and hematological	1	0.4	
skin, solid and lymphoma	1	0.4	
skin, solid and hematological	1	0.4	
unknown	16	6.9	
Solid Tumors	Number of tumors	Number of patients (N = 102)	% of patients
Lung	5	5	4.9
Stomach	2	2	1.9
Breast	16	13	12.7
Prostate	8	8	7.8
Bladder	7	6	5.9
Others	18	16	15.7
Renal	37	31	30.4
Gynecological	8	8	7.8
Thyroid	5	5	4.9
Central Nervous System	3	2	2.0
Colon	14	13	12.7
Skin Tumors	Number of tumors	Number of patients (N = 137)	% of patients
Basal cell carcinoma	81	59	43.1
Kaposi sarcoma	9	6	4.4
Keratoacanthoma	10	9	6.6
Melanoma	15	13	9.5
Bowen's Disease	38	35	25.5
Squamous cell carcinoma	75	48	35.0
warts	18	15	10.9
others	15	12	8.8
Actinic keratosis	24	21	15.3



Basaliomas (43.1%) and squamous cell carcinomas (35%) were the prevailing skin cancers. Patients with skin tumors were predominantly male and had a younger donor compared to pts with other non-skin-related tumors. The initial immunosuppression consisted less frequently of IL-2-receptor antibodies or mycophenolate but more often of azathioprine. At the time of conversion to sirolimus patients were older, longer transplanted and had a higher body weight.

The predominant solid cancers were renal cell carcinoma (30.4%), colon and breast cancer (both 12.7%). Pts with solid cancer had more frequently an initial immunosuppression with cytotoxic antibodies and mycophenolic acid and

	Whole population (N = 726)	Malignancy before conversion (N = 230)	Skin tumors (N= 137)	No skin tumors (N = 93)	p	Solid tumors (N = 102)	Non solid t umors (N = 128)	p
Recipient age at transplantation (years)	43.3 ± 13.6	47.1 ± 13.2	47.4 ± 13.0	46.6 ± 13.5	0.690	47.6 ± 13.6	46.6 ± 12.8	0.493
Recipient gender (% males)	63.6	64.8	71.5	54.8	0.009	62.7	66.4	0.564
Caucasian ethnicity (%)	99.0	99.6	100	98.9	0.225	99.0	100	0.259
Cause of ESRD (%)								
Diabetic nephropathy	12.4	4.4	2.2	7.6	0.361	5.0	3.9	0.281
Hypertensive nephropathy	3.6	3.5	3.7	3.3		4.0	3.1	
Polycystic kidney disease	11.4	11.4	13.2	8.7		6.9	15.0	
Glomerulonephritis	43.4	48.7	52.2	43.5		48.5	48.8	
Tubulointerstitial disease	14.3	14.0	13.2	15.2		12.9	15.0	
Other inherited diseases	3.6	5.3	4.4	6.5		5.0	5.5	
Other diseases/unknown	11.3	12.7	11.0	15.3		8.7	17.9	
Living donor transplantation (%)	16.4	13.0	12.5	13.6	0.807	12.5	13.3	0.856
Kidney/pancreas transplantation (%)	9.1	2.6	1.5	4.3	0.194	2.9	2.3	0.646
Kidney re-transplants (%)	25.5	17.6	18.5	16.3	0.667	16.7	18.4	0.733
Donor age (years)	44.3 ± 15.9	43.8 ± 17.1	41.7 ± 16.5	46.9 ± 17.7	0.030	45.2 ± 17.1	42.6 ± 17.2	0.300
Donor gender (% males)	56.6	56.3	59.7	51.2	0.226	53.3	58.5	0.459
HLA mismatches on locus A, B, DR (n)	2.4 ± 1.6	2.2 ± 1.6	2.0 ± 1.5	2.5 ± 1.7	0.055	2.2 ± 1.6	2.2 ± 1.6	0.130
Delayed graft function (%)	25.0	24.3	27.1	20.3	0.292	17.6	30.2	0.049
Initial Immunosuppression (%)								
Cytotoxic antibodies	15.6	13.7	13.4	14.1	0.881	19.8	8.8	0.017
IL-2-receptor antibodies	20.3	23.9	17.9	32.6	0.011	24.8	23.2	0.786
Cyclosporine	62.0	66.4	62.7	71.7	0.157	69.3	64.0	0.401
Tacrolimus	26.8	16.8	13.4	21.7	0.101	19.8	14.4	0.280
Azathioprine	31.7	44.7	56.0	28.3	<0.001	34.7	52.8	0.006
Mycophenolate	53.5	41.6	27.6	62.0	<0.001	50.5	34.4	0.015
Corticosteroids	96.6	96.5	96.3	96.7	0.851	98.0	95.2	0.254
Others	5.7	4.9	4.5	5.4	0.743	5.0	4.8	0.958
Acute rejection treatments before SRL initiation (%)	38.1	35.9	33.3	39.5	0.103	31.2	39.7	0.083
Age at conversion (years)	49.8 ± 13.4	56.4 ± 11.6	58.5 ± 10.8	53.3 ± 12.0	0.001	55.9 ± 12.3	56.9 ± 11.0	0.628
Period between transplantation and conversion (years)	6.1 ± 6.1	8.9 ± 7.4	10.7 ± 7.6	6.1 ± 6.2	<0.001	7.6 ± 6.9	9.9 ± 7.7	0.035
Diabetes (%)	23.6	21.7	18.9	25.8	0.220	17.2	25.4	0.140
Hypertension (%)	84.7	87.9	88.7	86.8	0.667	91.0	85.5	0.207
Body weight (kg)	73.8 ± 15.5	73.6 ± 14.4	75.7 ± 13.9	70.3 ± 14.7	0.012	72.1 ± 15.5	74.8 ± 13.5	0.193
BMI (kg/m^2)	24.9 ± 4.2	25.1 ± 3.9	25.4 ± 3.8	24.7 ± 4.2	0.279	24.9 ± 4.1	25.4 ± 3.8	0.258
eGFR at conversion (ml/min)	39±19	47 ± 21	49 ± 22	44 ± 19	0.087	47 ± 21	47 ± 21	0.854
eGFR at 1 year after conversion (ml/min)	41 ± 20	49 ± 22	50 ± 22	47 ± 24	0.196	49 ± 22	49 ± 23	0.894
Proteinuria at conversion (mg/l)	431 ± 726	297 ± 466	254 ± 416	362 ± 529	0.076	310 ± 465	287±469	0.204
Immunosuppressive regimen before conversion (%)								
Triple	39.4	24.5	19.5	32.1	0.054	30.6	20.2	0.141
Dual	51.9	64.2	70.7	54.3		56.5	69.7	
Mono	8.7	11.3	9.8	13.6		12.9	10.1	
SRL loading dose (mg)	6.4 ± 4.8	4.5 ± 3.5	4.4 ± 3.6	4.6 ± 3.5	0.255	4.3 ± 3.8	4.6 ± 3.4	0.249
SRL maintenance dose at conversion (mg/d)	2.9 ± 1.6	2.6 ± 1.2	2.5 ± 1.2	2.7 ± 1.2	0.189	2.6 ± 1.4	2.6 ± 1.0	0.532
SRL maintenance dose at 3 months after conversion (mg/d)	2.7 ± 1.8	2.2 ± 1.4	2.0 ± 1.3	2.6 ± 1.6	0.032	2.6 ± 1.5	2.0 ± 1.3	0.009
SRL trough level at 3 months (ng/ml)	8.1 ± 3.8	7.6 ± 3.4	7.8 ± 3.3	7.5 ± 3.5	0.617	7.2 ± 3.2	8.0 ± 3.5	0.116
BPAR after conversion (%)	9.0	4.3	2.9	6.5	0.197	4.9	3.9	0.713
Cold ischemia time	14.2 ± 8.0	15.8 ± 8.2	16.6 ± 8.6	14.6 ± 7.7	0.058	15.2 ± 8.1	16.3 ± 8.5	0.319

less frequently with azathioprine or delayed graft function as compared to patients without a solid tumor. Time between transplantation and initiation of SRL was shorter and maintenance dose at 3 months post conversion was higher in solid cancer pts than in other tumor

The 5-year-patient-and-graft-survival was higher in pts with a skin tumor than in those with a solid or a solid plus skin tumors ($p = 0.004$).

In Conclusion the entity of the tumor has an impact on patient and graft survival. Renal function was similar after 1 year.

Basic Liver Cancer

P050 INFLUENCE OF MTOR-INHIBITORS AND MYCOPHENOLIC ACID ON HUMAN CHOLANGIOCELLULAR CARCINOMA AND CANCER ASSOCIATED FIBROBLASTS

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Background: Recent studies showed promising results after liver transplantation (LTx) in non-resectable early stage Cholangiocellular Carcinoma (CCA). A worse prognosis correlates with a high density of cancer associated fibroblasts (CAFs) in the tumour. Mycophenolic acid (MPA) and the mTor inhibitor Everolimus are used to prevent organ rejection but showed an antiproliferative effect on CCA-cells also. The influence of immunosuppressive drugs on tumour proliferation and migration after paracrine stimulation by CAFs is not known. It is still unknown, which signaling pathways are activated following CAF-mediated stimulation.
Methods: CCA cell lines HuCCT1 and TFK1 were utilized. CAFs were derived from resected CCA tissue. Cell viability, tumour cell invasion and semiquantitative cytokine-expression were measured. Phosphorylation of ERK, STAT3 and AKT was determined by Western-blot analysis.
Results: CCA cells treated with MPA exhibited a dose related decrease in cell viability. Cyclosporine A (CSA) treatment had no effect on cell viability. Everolimus significantly inhibited proliferation at very low concentrations. Everolimus significantly reduced the pro-invasive effect of CAFs on tumour cell invasion at a concentration of 1 nM ($p = 0.047$). MPA and CSA showed no effect on tumour cell invasion. Treatment of CAFs with 1 nM Everolimus showed a significant reduction of IL 8-, IL 13-, MCP1-, MIF- and Serpin E1-expression. CCA-cells showed significant increases in phosphorylation of ERK, STAT3 and AKT under influence of conditioned CAF-media. This effect was suppressed by Everolimus.
Conclusion: Secretion of proinflammatory cytokines by CAFs may lead to increased activation of JAK/STAT3-, ERK- and AKT-signaling and increased migration of CCA-cells. Everolimus abrogates this effect and has an antiproliferative effect even at low concentrations. A combination of standard therapies with Everolimus and MPA is a promising therapy option to treat CCA following LTx.

Clinical Liver Cancer

P051 THE EFFECT OF ADMINISTRATION OF NEOADJUVANT LOCOREGIONAL THERAPY ON THE OUTCOME OF LIVER TRANSPLANTATION FOR HCC PATIENTS WITHIN DIFFERENT TRANSPLANT CRITERIA

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Background: Hepatocellular carcinoma (HCC) is a leading cause of cancer-related deaths worldwide. The organ pool shortage necessitates the use of rigorous criteria for Liver transplantation (LT) for HCC. In this regards two main criteria for LT for HCC were implemented with good outcome, namely the Milan and UCSF criteria.
Patients and Methods: 88 patients underwent LT between August 2003 and end of July 2013 for the presence of pathologically proven pure HCC lesions at our institution. Studied patients were divided into three groups; Group A: patients with HCC within Milan criteria. Group B: patients with HCC within UCSF criteria but outside Milan criteria. Group C: patients with HCC outside both criteria.
Results: Based on explant pathology, 60 patients were found to belong to Milan criteria (group A), 16 patients within UCSF criteria and another 12 patients outside both. Follow up ranged from 8.6–125.5 months with a mean of 45 $\pm$ 30.9 months. The 1, 3 and 5 years overall patient survival was (88.5%, 77.1% and 77.1% respectively). On the other hand the 1, 3 and 5 years tumor free survival was (97.4%, 89.7% and 89.7% respectively). Patient, graft and tumor free survival did not differ significantly between the three groups; (p value using Log Rank test = 0.49, 0.57 and 1.0 respectively). HCC recurrence rates were 5%, 6.25% and 8.3% in group A, B and C respectively; (p value of 0.89, and 0.15 respectively). Post-transplantation HCC recurrence was significantly related to the presence of vascular invasion, and degree of differentiation of HCC lesion (p value of 0.0001 and 0.001 respectively). On the other hand; Post-transplantation HCC recurrence was neither related to transplantation criteria nor Total Tumor Volume (TTV)>115 cm^3. 34 patients received neoadjuvant locoregional therapy (43.2%). The effect of administration of neoadjuvant locoregional therapy on patient and tumor free survival was further ass

P052 RESULT OF MULTIPLE TRANS-ARTERIAL CHEMOEMBOLIZATION FOR HEPATOCELLULAR CARCINOMA PATIENT BEFORE LIVER TRANSPLANTATION: A LARGE VOLUME SINGLE CENTER'S STUDY IN SOUTH KOREA

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Introduction: Liver transplantation (LT) is a widely accepted treatment for hepatocellular carcinoma (HCC), but much controversy remains. The use of locoregional treatment such as trans-arterial chemoembolization (TACE) is one of them. TACE before LT was known as good option for HCC treatment.

We analyses the impact of TACE before LT according to the treatment multiplicity.
Methods: Total 117 patients were treated with TACE before LT, from January 2009 to May 2012 in Samsung Medical Center (SMC). The pathology was confirmed by explanted liver.
Results: Preoperative PIVKA level was high in HCC recurrence group (297.0 ± 419.34 vs 105.8 ± 245, $p = 0.03$). Microvascular invasion in pathologic finding influenced recurrence rate (69.7% vs 28.9%, $p = <0.01$). The proportion of multiple TACE was high in recurrence group (94.1% vs 67.4%, $p = 0.02$)
Conclusion: Poor laboratory and pathologic finding and multiple treatment of TACE before LT may influence the high postoperative recurrence rate.

LT for HCC patient is almost living donor LT (LDLT) in South Korea because of organ shortage. This increase the number of TACE and waiting time for LT, and maybe give adverse effect on the result of LT.

P053 LIVER TRANSPLANTATION FOR METASTATIC NEUROENDOCRINE TUMORS: A 15 CASE SINGLE CENTER REPORT

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Background: Patients with Neuroendocrine tumor (NET) presenting with unresectable liver metastasis, liver transplantation (LT) is a viable treatment which still remains controversial since the potential of this procedure and more extended coincident procedures is difficult to access.
Methods/Materials: In a retrospective study we included all cases of NET underwent LT alone or more extensive procedures including whipple, bowel resection and multivisceral transplantation, in our center from 2011 (which was our first experience in this field) till 2017,with mean age of 33.3 years (range 14–50). Two of the patients had previous surgery of primary tumor and the others (13 patients) presented with unresectable liver involvement, seven of which had defined primary tumors and the other 6 had an unspecified NET. In addition to LT 4 patients underwent Multivisceral transplant, one patient pancreas transplant, one patient whipple resection and one patient segmental ileal resection.
Results: 1 year survival in extended procedure was 28% whereas in LT alone was 87.5%,till now we had just one mortality after 2 years post LT due to lung metastasis, and one retransplant due to rejection, and all other patients (8) in good follow up condition.
Conclusion: Liver transplantation with curative mission appears outweighted in young patients with only hepatic involvement, whereas extrahepatic disease requiring more extended procedures need more accurate evaluations concerning medical options.

Clinical Kidney Cancer

P054 SEVERE ALLOGRAFT REJECTION AND AUTOIMMUNE HEMOLYTIC ANEMIA AFTER ANTI-PD1 THERAPY IN A KIDNEY TRANSPLANTED PATIENT

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Introduction: Anti PD-1 (programmed cell death 1) antibodies have demonstrated anti-cancer activities and survival benefit but have been associated with immune related adverse event (IRAE) and allograft rejection. We report the case in a kidney transplanted patient (KTP) who presented auto-immune hemolytic anemia and severe graft rejection under NIVOLUMAB.
Case: A 73-year-old KTP, 15 months post-transplant, was diagnosed with a metastatic superficial spreading melanoma (SSM), BRAF mutation negative. Immunosuppression was reduced (tacrolimus switched for everolimus). After 2 anti-PD1 injections the patient presented acute renal failure with severe grade 2A acute cellular rejection on biopsy. No donor specific antibodies were identified. Rejection was resistant to high steroid doses and the patient returned to dialysis

At the same time he developed auto-immune hemolytic anemia (AIHA) (Hb 6.9 g/dl), Coombs assay positive for complement, and severe thrombocytopenia. There were no schizocytes nor platelet antibodies. Bone marrow aspiration found no local tumor invasion. Nivolumab was stopped. 3 months later, the patient died from multifocal diffusion of SSM.
Discussion: Anti-PD1 antibodies, Nivolumab or Pembrolizumab, administered in kidney transplanted patients, have been involved in cases of cellular acute rejection. In addition to ours, 7 cases have been reported. Their timing versus treatment administration suggests causality. All transplants have been lost excepted 2 in whom full dose immunosuppression was maintained. This finding questions the usual practice of immunosuppression reduction in patients treated with anti-PD1 antibodies for melanoma or other neoplasia. IRAE are the main complications of anti-PD1 antibodies and it is the first time that AIHA is described in a KTP.
Conclusion: Anti-PD1 antibodies have improved the survival of patients in oncology. We still have a lot to learn for the best use of these treatments and we need to accumulate these rare cases.

P055 TWO CASES OF SUCCESSFUL RENAL TRANSPLANTATION IN PATIENTS WITH STABILE REMISSION OF HAIRY-CELL LEUKEMIA

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Background: Hairy-cell leukemia (HCL) is an uncommon lymphoproliferative disorder of B-cells that is characterized by infiltration of leukemic cells that exhibit hair-like protrusions in bone marrow and spleen. Previously 2 cases of patients developing HCL after renal transplantation have been described. Here we present for the first time two patients that have been in complete remission of HCL and received a renal transplant without the reoccurrence of their hematological disease.
Case Report: First patient is a 73-year-old male that has been treated for hairy cell leukemia at the age of 54. Nine years later he started hemodialysis (HD) and was treated for 3 years. He received a renal graft from a deceased donor. Initial immunosuppression protocol consisted of induction therapy with basiliximab, tacrolimus, mycophenolic acid and corticosteroids. In maintenance protocol tacrolimus was converted to everolimus 11 months after transplantation. During 5-year post transplant follow up the patient is in complete remission of HCL and still has a good graft function (GFR 117 ml/min).

Second patient is a 64-year-old male that has been treated with cladribine for HCL at the age of 51. He developed ESRD at the age of 57 years and was treated with HD for 5 years, when he received a renal graft from a deceased donor. His immunosuppression consisted of basiliximab, tacrolimus, mycophenolic acid and corticosteroids. Mycophenolic acid was converted to everolimus 14 months after transplantation. The patient still has a functioning graft (GFR 76 ml/min) and no signs of malignant disease.
Conclusion: Here we presented two patients with a successful renal transplantation after accomplishing complete remission of HCL for more than 10 years. We would like to address that patients that had complete remission of HCL for more than 10 years could be considered as renal transplant recipients, also their immunosuppressive therapy should be tailored by including mTOR inhibitors in their therapy protocol

P056 FIRST CASE OF SYNCHRONOUS OCCURENCE OF GIST AND RENAL CELL CARCINOMA IN KIDNEY TRANSPLANT RECIPIENT

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Background: Renal cell carcinoma (RCC)is the second most frequent malignancy in kidney transplant recipients. According to the literature to date there are three cases of GIST in immunocompromised patient, two kidney transplant recipients and one HIV patient. Cases of synchronous occurrence of two malignancies in kidney transplant recipients are rare. Synchronous occurrence of GIST and other primary tumors has been reported in the literature. To the best of our knowledge there are four sporadic cases of synchronous occurrence of GIST and RCC in general population.
Case Report: At age of 67 after 2 years on hemodialysis our patient received cadaveric kidney. He received daclizumab followed by cyclosporine, MMF and steroids. Immediate graft function was established and it remained stable with no rejection episodes for the next 7 years when abdominal ECHO revealed anechogenic lesion with hiperechogenic areals 5.5 $\times$ 4.5 cm in the upper region of the right kidney. MSCT scan showed complex cystic formation 5.2 cm in the upper region of the right kidney with solid tissue zone of 1 cm in its caudal part with incidental finding of the formation 3.1 $\times$ 2.2 cm in the proximal part of the gastric curvature. Using contrast endoscopic ultrasound it was found to be irregular, in homogenous hard tissue formation with hyperperfusion. Laparoscopic right sided nephrectomy was performed and histologic analysis showed clear cell renal carcinoma gradus 2 (pT1b NxMx). After 2 months laparotomy with excision of the gastric formation was done. Histologic analysis confirmed low risk GIST (pT2 NxMx).Regular follow up and no specific treatment was indicated by oncologist. CyA was replaced with mTOR inhibitor. After 12 months of follow up patient is doing fine, with stable graft function.
Conclusions: To the best of our knowledge this is the first case of synchronous occurrence of GIST and RCC in kidney transplant as well in other solid organ recipient. This is also the first case of GIST in solid organ recipient other than kidney

Clinical Kidney Cancer

P057 CUTANEOUS SQUAMOUS CELL CARCINOMA METASTASIS TO PAROTID GLAND – FIRST CASE IN KIDNEY TRANSPLANT RECIPIENT

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Background: The most common cancer following kidney transplantation is nonmelanoma skin cancer (NMSC), with cutaneous squamous cell carcinoma (cSCC) affecting head and neck being the most frequent. It has low metastatic potential and in kidney transplant recipient is associated with higher risk of metastasis than in general population. The most common site of metastases are local lymph nodes. In rare cases cSCC can metastase in parotid gland.
Case Report: At age of 71 after 1 year on hemodialysis our patient previously treated with hemodialysis for one year received kidney transplant. He received basiliximab followed by tacrolimus, MMF and steroids. 16 months after transplantation skin lesion from his forhead was removed and histological analysis showed cSCC. Tacrolimus was replaced with everolimus. After 3 months skin lesion of the left ear lobe and left scapular region were removed. Histological analysis showed cSCC. After 2 months recidive of cSCC of the left ear lobe was confirmed. After 3 months solid formation of cca 2 cm was observed in projection of right mandibulae. Cytological analysis obtained after puncture was not sufficient to confirm diagnosis. Further workup included CT scan of the head and neck which showed necrotic expansive mass of both parotid glands, right 27 mm with affection of the right ear lobe, left 18 mm with no signs of bone destruction, no enlarged lymph nodes and no brain lesions. Bilateral parotidectomy followed with reconstruction of the right ear canal which was find to be affected intraoperatively. Histological analysis showed cSCC. Surgical treatment was followed by adjuvant radiotherapy. Graft function remained stable, and patient is doing fine 6 months after surgery.
Conclusion: To the best of our knowledge this is the first case of cutaneous squamous cell carcinoma (cSCC) metastasis in parotid gland in kidney transplant and also in other solid organ recipient.

P058

TUMOURS OF NATIVE KIDNEYS IN PATIENTS AFTER KIDNEY TRANSPLANTATION

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Introduction: Malignant kidney tumours globally amount to 4% of all newly diagnosed tumours in the adult population. Patients after kidney transplantation (KT) have a 1.7 times higher cumulative risk of a malignant disease than the common population and 9.8% of deceases caused by malignity being the consequence of renal tumours.
Patients and Methods: Between 2008–2016, 37 nephrectomies of native kidneys have been performed in 33 patients after KT. Retrospectively we examined the occurrence, type and stage of kidney, the treatment and its outcome, the time elapsed between KT and diagnosis of malignity, duration of the eliminating methods prior to KT, the immunosuppressive (IS) protocol used, the change in IS and function of the graft one year after the change in IS.
Results: Renal cell carcinoma was proven histologically in 10 cases (27%).Patients of average age 49.4 years were diagnosed on average 54 months after KT, and prior to KT they were treated by eliminating methods for 52 months. Histologically we diagnosed 3 cases of clear cell renal carcinoma (30%), 8 papillary renal carcinoma (80%).One patient had both the clear cell and papillary carcinoma. At the time of diagnosis, 8 patients were in pT1a stage, 2 patients in pT4N1M1 stage. 1 patient in stage T3N1M1, refused further diagnostics and treatment and died of the progression of the non-treated disease. IS was modified in all patients. 2 patients with functional grafts died of progression of the disease. In remaining patients we did not observe progression of the carcinoma. The change of IS did not worsen function of the grafts. The average s-creatinine at the time of diagnosis was 110 μmol/l, one year after diagnosis 106 μmol/l.
Conclusion: Patients after KT underlie a higher risk of malignanity. Regular oncological screening, early diagnosis and treatment of the malignity of native kidneys at an early stage lead to a complete cure and preserving the function of the transplanted kidney.

Clinical Liver Cancer

P059

DOWNSTAGING BEFORE LIVER TRANSPLANTATION FOR ADVANCED HEPATOCELLULAR CARCINOMA

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Background: It has been shown that tumor biology including differentiation, serum alpha fetoprotein (AFP) and protein induced by vitamin K absence-II (PIVKA-II) can predict posttransplant recurrence of hepatocellular carcinoma (HCC) and survival better than morphologic factors such as tumor numbers and size. And also, downstaging before LT serve as a selection tool. Furthermore, successful downstaging can affect recurrence of HCC by modulation of these biology. We analyzed the result of downstaging and correlation with tumor recurrence.
Methods/Materials: We retrospectively reviewed 119 patients with HCC who underwent LT at Pusan National University Yangsan Hospital between May 2010 and December 2015. The risk factors for HCC recurrence were analyzed and the overall survival and disease-free survival rates were calculated based on each risk factor.
Results: We defined the A-P 200 criteria as simultaneously exhibiting AFP levels of ≤200 ng/ml and PIVKA-II levels of ≤200 mAU/ml. Multivariate analyses revealed that the independent risk factors for HCC recurrence were Above A-P 200 criteria (HR = 3.776, p = 0.013) and microvascular invasion (HR = 3.781 p = 0.012). The 3-year disease-free survival rates among patients who fulfilled or exceeded the A-P 200 criteria in within Milan criteria were 92.8% and 60.0%, respectively (p = 0.009). And the 3-year disease-free survival rates among patients who fulfilled or exceeded the A-P 200 criteria in above Milan criteria were 89.5% and 35.8%, respectively (p = 0.011). And we intentionally controlled the patients with advanced HCC by downstaging and 23 cases were included into the control group. The control group comparing with 33 cases of the uncontrolled group showed significantly lower recurrence rate. (the 3-year disease-free survival rates 95.5% versus 56.1%, p = 0.007).
Conclusion: Successful downstaging can affect recurrence of advanced HCC by modulation of tumor biologic factors.

Clinical Kidney Cancer

P060

GIANT CELL REPARATIVE GRANULOMA LONG TERM POST KIDNEY TRANSPLANTATION

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A 20-year-old male kidney transplant recipient since 2010 on triple immunosuppression; oral steroids, tacrolimus, mycophenolate mofetil. He is suffering graft transplant glomerulopathy with serum creatinine 2.4 mg/dl, HB 6.5, wbcs 17×10^3. He was presented to emergency department with fever 40 C, dental pain and dental mass on the left lower mandible. Panoramic x-ray showed displacement of the wisdom tooth with space occupying lesion. CT mandible confirms the diagnosis and showed that space occupying lesion is cystic in nature. Intravenous fluids and broad spectrum empirical antibiotics was started for 3 days with no improvement, fever reaching 40.7 C. Swap culture revealed normal mouth flora. Intensive care in the form of frequent cold foments and cold fluids to control the body temperature. Blood transfusion with washed RBCs, HB improved to 12.5 mg/dl to prepare the patient for surgery. The patient was referred to the operating theater, under general anesthesia, dental surgeons extracted the wisdom & the 8th teeth. They excised the mass in-between completely with curettage of the area. Coagulation diathermy was used to control the bleeding then continued sutures were taken to close the wound in the gum. Post-operative, the patient condition improved dramatically, body temperature became normal 37 C, serum creatinine dropped to 2.1 mg/dl, HB 12.5 mg/dl, WBCs 12×10^3. Histopathology analysis of the extracted mass revealed reparative (central) giant cell granuloma. Patient received a complete course of meropenem and discharged home.

Clinical Liver Cancer

P061

HEPATOCELLULAR CARCINOMA METASTASIS IN LEFT ADRENAL GLAND WITH ACTIVE BLEEDING SIGNSIN A LIVER TRANSPLANT PATIENT

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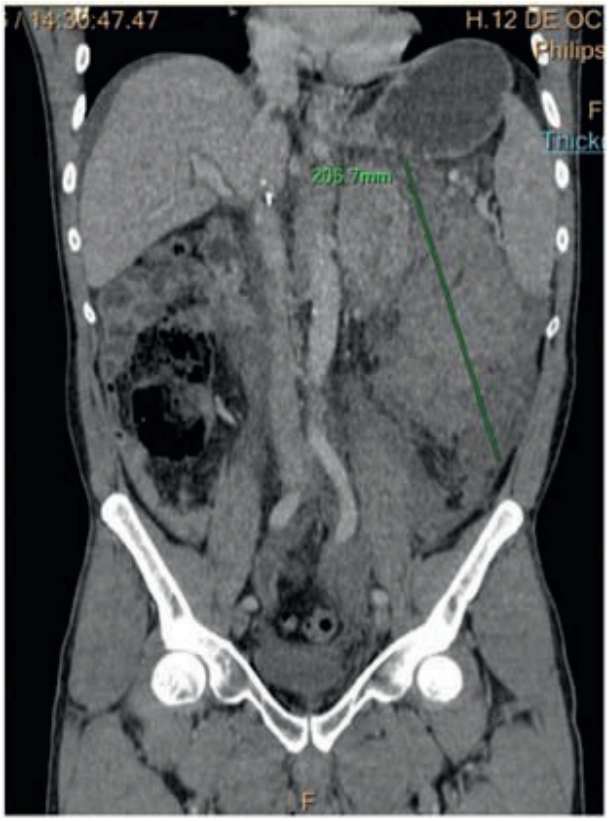
Background: Adrenal gland neoplasms are mostly benign, non functioning lesions. Adenocarcinomas are uncommon and of poor prognosis. In patients with a past history of neoplasms, metastasis are to be considered.

Malignant neoplasms in liver transplant patients account for approximately 30% of the mortality within a 10 year follow up, and are the main cause of death after the first year post-transplant. Due to the long-term immunosuppression, the development of a malignant lesion is 2 to 4 times more frequent compared to general population and are more aggressive.
Clinical Case: We present a 57 year old male who received his first liver transplant form a brain dead donor in July 2013. He had a hepatitis C virus-related cirrhosis and a hepatocellular carcinoma confined to the liver. He received antivirals for the treatment of the hepatitis C virus infection, resulting in a negative viral load in December 2015.

In February 2016, the patient is admitted to the Emergency Room due to a sudden severe pain in his left side of the abdomen and hypotension. A Computed Tomography angiogram is performed identifying an actively bleeding left adrenal mass, measuring 5×8 cm, not previously identified, surrounded by a massive retroperitoneal hematoma measuring $14 \times 6 \times 20$ cm. An angiography is performed aiming to control the bleeding, ineffectively. Due to the repeated need for blood transfusion, the decision is made to transfer the patient to the surgical room. Metanephrine level is within normal range.
Findings: A retroperitoneal hematoma is found during surgery, involving the left adrenal lesion, then an adrenalectomy was performed. Pathological examination determined the recurrence of hepatocellular carcinoma.
Conclusions: When a bleeding adrenal lesion is diagnosed in a patient with a previous history of liver transplant due to hepatocellular carcinoma, a metastasis is to be considered.

Adrenalectomy is the preferred treatment when embolization is not available or effective in bleeding control.



P062

THE CLINICAL OUTCOMES OF PATIENTS WITH PORTAL VEIN TUMOR THROMBI AFTER LIVING DONOR LIVER TRANSPLANTATION

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Introduction: The purpose of this study was to evaluate the feasibility of living donor liver transplantation (LDLT) for treatment of patients with hepatocellular carcinoma (HCC) and segmental portal vein tumor thrombi (PVTT).
Patients and Methods: Between January 2005 and December 2015, we retrospectively analyzed 242 patients in a control group ($n = 184$), a microvascular group ($n = 24$) and a PVTT group ($n = 34$). To assess the risk associated with PVTT, we evaluated recurrence, the disease-free survival, the overall survival rate, and other various other factors based on the characteristics of patients and tumors. The median follow-up duration was 52 months.
Results: The 5-year disease free survival and overall survival rate after LDLT in all patients were 79.5% and 70.7%. Of these, 34 (14.0%) patients had PVTT, of whom 7 had lobar PVTT in first-order braches. The control, MVI, and PVTT group differed in terms of tumor morphology (maximal and total diameter) and biology (alpha-fetoprotein (AFP) and protein induced by vitamin K absence or angiotensin II level). Statistically significant among-group differences were apparent in the recurrence, disease-free survival and overall survival rate. Lobar PVTT reduced the 5-year disease-free and overall survival rate to dismal and 14.3% respectively, but segmental PVTT below the second-order branch were associated with favorable 5 years disease-free and overall survival rate (63.9% and 50.3%, respectively). We found no statistically significant difference in the disease-free or overall survival rate of patients with MVI alone and segmental PVTT alone. In patients in the segmental PVTT group with AFP levels <100 ng/ml, the 5-year disease-free and overall survival rate were 90.9% and 71.3% respectively.
Conclusion: A tumor thrombus in a lobar vein remain a contraindication to liver transplantation However, a segmental PVTT is acceptable, especially when the AFP is <100 ng/ml. Our findings must be confirmed in future studies,

Basic Liver Cancer

P063

IDENTIFICATION OF TRANSPORTERS MEDIATING CISPLATIN RESISTANCE IN AN ATP7B KNOCKOUT CELL LINE

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Cisplatin (Cp) is a widely used platinum-based anticancer agent. Development of resistance results in therapy failure and was previously associated with an overexpression of copper transporter ATP7B. It was proposed that this leads to an increased efflux of Cp. ATP7B, known as Wilson protein, is primarily expressed in the liver; making hepatoma cell lines a valuable model to study the role of ATP7B in Cp resistance.

Human hepatoma cells (HepG2) lacking functional ATP7B (Chandhok et al. (2014)) were exposed to increasing Cp concentrations. Cell viability assay (MTT), growth curve analysis and apoptosis staining (AnnexinV) were performed to assess resistance. Intracellular Cp was measured via inductively coupled plasma mass spectrometry. Gene expression analysis (RT-qPCR) and transfection experiments with a mammalian expression vector were conducted to review the impact of overexpression of gene candidates.

A Cp resistant cell line (CpR) was created using HepG2 cells lacking functional ATP7B. Cell viability of CpR was significantly higher in the presence of various Cp concentrations compared to parental cells. Intracellular Cp level was significantly decreased in CpR. RT-qPCR analysis revealed two candidate genes which showed a different expression level as compared to parental cells: organic cation transporter 3 (OCT3: -5.17 ± 2 SE) and metallothionein 1 (MT1: 8.91 ± 4 SE). Regrowth of CpR in standard medium (CpRw) revealed that the acquired resistance was due to a stable modification. In CpRw, downregulation of OCT3 was unchanged (-5.48 ± 2 SE), whereas MT1 expression was normalized (0.44 ± 1 SE). Overexpression of OCT3 in CpR resulted in almost complete loss of resistance.

OCT3 seems to be involved in the establishment of Cp resistance, at least in hepatic cells lacking copper transporter ATP7B. Downregulation of OCT3 may represent a novel marker for assessment of the prognosis during platinum treatment, possibly leading to the improvement of cancer therapy.

Clinical Kidney Cancer

P064

CANCER IN THE KIDNEY TRANSPLANT RECIPIENT

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Background: There is retrospective experience in many reports about the association between the intensity of immunosuppression and the higher frequency of malignancy.
Methods: 275 transplant patients were analyzed. A record was made of the frequency, anatomicpathological diagnostics, location the mean interval between transplantation and diagnostics (latency time), follow-up time, use of antilymphocyte-antibodies, affectation by cytomegalovirus, rejection and immunosuppressive therapy.
Results: Of 273 patients, 9.52%(26) were diagnosed of cancer. The majority, 93.43%(24), corresponded to De novo malignancy, 7.7%(2) were recurrences of pre-existing disease. The mean age at diagnosis was 63.19 ± 7.24. The latency time was 63.65 months (11–114), although there is a notable but unexplained reduction over the last five year (33.50 vs 63.65 months). The average follow-up time was 97.54 months. The most frequent malignancies were skin cancers, predominantly Basal-cell and Squamous-cell carcinomas. The incidence of other tumors was similar to the general population. The risk of neoplasm was 0.36%, 4.36% and 9.52% at one, five and ten years after the kidney transplant. No association was detected with use of antilymphocyte-antibodies, CMV infection, rejection episodes or different immunosuppressive therapy. At the time of analysis, 84.60%(22) of patients had functioning graft, 7.70%(2) had returned to dialysis and 7.70%(2) had died, both due to the cancer.
Conclusions: Our experience is similar to what is reported in the literature. The incidence of cancer is higher than expected in the general population and increases according to the duration of the immunosuppression. Skin cancers

were the most frequent malignancies. Unlike other studies, there was a low incidence of lymphoproliferative disorder and Kaposi's sarcoma, and the incidence of other solid malignancies being similar to that of the general population. To reduce the development of malignancies must be one of our objectives

Clinical Liver Cancer

P065 CAN ALPHA-FETOPROTEIN PREDICT POST LIVER TRANSPLANT HEPATOCELLULAR CARCINOMA RECURRENCE? A SINGLE CENTER EXPERIENCE

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Liver transplant (LT) is the gold standard treatment for selected patients with liver disease and hepatocellular carcinoma (HCC). Organ shortage dictates optimal selection of LT candidates to prevent or minimize post-LT HCC recurrence (HCC-R). Whereas the role of Alpha-Fetoprotein (AFP) as a surveillance and diagnostic test for HCC has recently declined due to the advances in imaging modalities, its significance in LT candidate selection and prediction of post-LT HCC-R has strongly emerged. Rising AFP slope and/or high absolute values before LT were reported to correlate with unfavorable histological features of HCC, post-LT HCC-R and poor outcome.
Methods: We retrospectively reviewed HCC patients transplanted at our center in the last 10 years to study the relation between pre-LT AFP and post-LT HCC-R.
Results: Fifty four patients underwent LT for HCC at our center, 7 of them were excluded because of early mortality and 47 included in the study (30 males & 17 females). Fourteen patients (29.8%) had live donor LT and 33 (70.2%) deceased donor LT. Milan Criteria were used for selection of LT candidates. Locoregional treatments (LRT) were performed for 36 patients (76.6%) while on the waiting list. The mean follow up was 65.13 ± 34.9 months. Four patients developed HCC-R (8.5%) and 3 of them died of disease progression. The fourth had an isolated hepatic lesion that was treated with LRT then surgical resection. The overall and recurrence free survival rates were 85.1% & 82.9% respectively. The time till diagnosis of HCC-R was 30 ± 12.9 months. Four patients had a rising AFP slope >15 ng/ml/month and only one of them developed HCC-R. One patient had high pre-LT AFP >500 ng/ml. No statistically significant association was found between AFP and HCC-R.
Conclusion: We couldn't find a significant relation between pre-LT AFP and post-LT HCC-R. Possible causes include pre-LT tumor control of a good percent of patients with LRT leading to reduction of AFP levels and number of HCC-R.

P066 LIVER TRANSPLANTATION IN PATIENTS WITH LIVER CIRRHOSIS, HEPATOCELLULAR CARCINOMA (HCC) AND SYNCHRONOUS COLON CANCER: CAN THEY TREAT WITH AN ORTHOTOPIC LIVER TRANSPLANTATION?

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Introduction: Co-existence malignancy in patient with liver cirrhosis, out of hepatocellular carcinoma (HCC), is contraindication for an orthotopic liver transplantation (OLTx). However, the presence of colon cancer (Ca) in the above patients, OLTx and colon resection, could be the treatment of choice for these patients. We present a series of two cases with long-term survival.
Patient and Method: *1st Case*: A 64-year-old male, diagnosed with HCC in segment 6, in 2001 and he needed an OLTx. However during pre-transplant assessment an adeno-Ca in rectum was discovered. Patient had a living related OLTx from his wife in November 2002, abroad. Two months later, patient had a low anterior resection (LAR). Both operations were uneventful. Patient is in excellent condition with normal renal and liver function and normal FBC.

2nd Case: A 46-year-old male diagnosed with 3.5 cm HCC in segment 7, in June 2007. He underwent a laparoscopic protocol evaluation. Liver appearance and liver biopsy matched to the Child B/C liver cirrhosis. As he fulfilled Milan criteria, was suggested an OLTx and proceeded to pre-OLTx assessment. During protocol colonoscopy, an ulcerative sigmoid colon-Ca found, however, we suggested him an OLTx and after successful completion his pre-OLTx assessment, he listed. Three weeks later he underwent to an OLTx. However, nine months later he developed left foot severe infection due to a trauma and severe urine tract infection, resulting to sepsis and death.
Discussion: Relevant literature, regarding treatment of liver cirrhosis with HCC complicating with synchronous colon cancer, is poor and controversial. Most centers reject these patients from an OLTx or prefer to treat the colon cancer first and later on to deal with the liver cirrhosis (one case in the literature). We believe that carefully selective patients can benefit from this combine treatment.

P067 SALVAGE LIVER DONOR LIVER TRANSPLANTATION FOR DIFFERENT HEPATOCELLULAR CARCINOMA STAGES IN EGYPT

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Background: Egypt has high incidence of HCV related liver cirrhosis. Consequently HCC showed rising trends among hepatic patients. In the absence of cadaveric liver transplantation program it represents a great challenges for those patients. Living donor liver transplantation nowadays considered potentially curative management for them. We aimed at highlighting our experience, one year after launching a new liver transplant team in Egypt.
Materials & Methods: A total number of 71 living-donor liver transplants were performed (July 2015 – December 2016) at Air Force Specialized Hospital and Nasser Institute Hospital by a single team. 58 adults and 13 pediatric patients had received new grafts due to underlying liver diseases.
Results: Male:Female ratio was 58:13, mean age was 48 (±11.8) years in adults and 6.5 (±3.8) years in children, mean BMI 28.5 (±4.5) in adults and mean weight 21Kg (Range: 10–37)in children. 55 Right lobe grafts, 1 whole liver domino graft, and 3 left lobe grafts transplanted in adults (one patient received dual right and left grafts), and 13 liver lobes grafts in pediatric patients. Mean GRWR 1.24, RLV 39%. Overall Child A (3.5%), B (36.5%) and C (60%). Mean MELD in non-HCC patients was 18(±5.7).

HCV cirrhosis was the major etiology in adults (76%) and HBV (4%), HBcAb-IgG (44%). In adults, portal vein thrombosis exists in 16 patients (28%), Hepatocellular carcinoma in 31 patients (53%), Milan criteria fulfilled in 31 (57%), BCLC-A0(3%), BCLC-A3/A4 (33%), BCLC-B (13%), BCLC-C (3%) and BCLC-D (48%). HCC Downstaging in 8(27%) and Bridging in 9(30%). Several challenges were encountered such as; dual-graft liver transplantation, domino-liver transplantation, acute fulminant liver failure. Overall 1-year survival is 86%.
Conclusions: Several challenges faced the hepatic patients in Egypt such as HCV, chronic PVT and High rate of HCCs. In the absence of Cadaveric program for Liver transplantation, LDLTx is the only lifesaving option offered for them.

Basic Others Other

P068 VLADIMIR DEMIKHOV – TOO INCREDIBLE FOR REALITY, TOO REAL FOR FANTASY

Alexey Zulkarnaev
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20th century is the era of origin and incredibly fast development of transplantation as a science and as a branch of medicine. And if the author of the first transplantation of a cadaveric kidney in 1933 is Y.Y. Voronoy got a worldwide recognition, the merits of another transplantation pioneer, V.P. Demikhov, are much less known.

And at the same time to overestimate Demikhov's contribution in modern transplantation and cardiovascular surgery is impossible. In 1937, being a third-year student, he designed and produced the world's first artificial heart and implanted it in his dog himself. The dog was alive for five hours.

This daring researcher carried out the following operations for the first time in the world (as an experiment): 1937 – successfully implanted an artificial

heart; 1946 – a heterotopic heart transplantation into a chest cavity; 1946 – a coupled transplantation of a heart-lung complex; 1947 – single lung transplantation; 1948 – liver transplantation; 1951 – orthotopic heart transplantation without the use of cardiopulmonary bypass; 1952 – mammary coronary artery bypass; 1954 – the transplantation of the second head to a dog.

In 1965 Demikhov developed the method of maintaining the vital organs by their xenotransplantation. As a result, 4 cardiopulmonary complexes were transplanted into one animal and they were functioning within 7 days.

It is striking that despite the fact that Demikhov had a remarkable surgical technique, he wasn't even a doctor, he was a biologist.

Christian Barnard who performed the world's first heart transplant from a human into a human in 1967, came to the Demikhov's laboratory twice in 1960 and 1963. All his life Christian Barnard considered Demikhov as his teacher.

V.P. Demikhov was far ahead of his time. Perhaps partly because of this, he didn't become widely known. His bold experiments seem fantastic even today. This great scientist takes place of honour among the pioneers of the world transplantation.

Translational Kidney Donation and donor types

P069 ETHICAL REFLECTIONS FACING KIDNEY TRANSPLANT IN NEW CALEDONIA

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Organ transplant program involves emergence of new problems of medical, surgical, technical, socio-economic, cultural, anthropological, political, but also philosophical and ethical order.

These points have impact on the Caledonian society including:

1. Anthropological aspects

a. Concept of donation with semantic (traditional donation/modern gift), religious, cultural and social interactions remembering the individual position in Melanesian society and wider Caledonian society.
b. Perception of the body (preservation/destruction) and funeral rites (burial, embalming, cremation...). In contrast in modern society, we observe a gradual disappearance of death with an increase of technicity.
c. Property and socialization of the body in relation to a specific family pattern in the Melanesian world especially with parental authority awarded to the maternal uncle.

2. Legal and philosophical aspects of the concept of brain death. We had to make applicable to New Caledonia the definition of brain death by the French bioethic law.
3. Societal aspects.
Anonymity can be difficult to achieve in small society
4. Access to the registry can be unequal due to differences in access to care between Noumea and the bush.
5. Access to information for a better understanding of kidney transplant. It means to promote dialogue among social groups "I know for my family, they know me!" while respecting cultural differences related to multiculturalism of Caledonian society.

Promote these ideas in New Caledonia need to communicate in a multi cultural society. Media and communication tools must be adapted in accordance with the difference of cultural references and social ties.

It appears that organ donation is not a particular problem under the light of cultural and societal aspects in New Caledonia. However, there is a high rate of refusal (50%). This is to be linked with the concepts of preservation of body integrity, the diagnosis.

P070 OUTCOME OF KIDNEY TRANSPLANTATION FROM EXPANDED CRITERIA DECEASED DONORS

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Introduction: The use of kidneys from expanded criteria deceased donors (ECD) has been generally accepted in view of the global shortage of organs available for transplantation and the increasing disparity between organ supply and demand.
Aim: To explore the outcome of kidney transplantation from ECD in comparison to that from standard criteria deceased donor (SCD).
Patients and Methods: Patients who received kidney transplants between January 2011 and December 2014 were retrospectively reviewed. 103patients received kidney transplantation from deceased donors at Hamed Al-Essa Centre during this period. 22 (21%) grafts were obtained from ECD and 81 (79%) grafts from SCD. Recipients of ECD grafts were 12 males and 10 females aged 19 years to 65 years at the time of transplantation, and the procedure was re-transplantation (2nd or 3rd transplant) in 9% of recipients. Recipients of SCD grafts were 46 males and 35 females, aged 5 years to 77 years at the time of transplantation, and the procedure was re-transplantation in 15% of recipients.
Results: ECD was associated with 9 (41%) instances of surgical complications, and showed 50% primary graft function, 27% delayed graft function, and 23% primary graft non-function. The mean hospital stay was 16 days. There was no recipient death but 5 grafts were lost at 1–10 days post transplantation. The 1-year and 4-year survival rates were 100% and 100% respectively for recipients and 77% and 77% respectively for grafts. SCD was associated with 29 (36%) instances of surgical complications, and showed 52% primary graft function, 42% delayed graft function, and 6% primary graft non-function. The mean hospital stay was 22 days.
Conclusion: 1- ECD represent a good source of kidneys for transplantation. (2) Kidney transplantation from ECD is associated with similar rates of recipient and graft survival compared to those obtained in kidney transplantation from SCD.
Keywords: Kidney Transplantation, Expa

Clinical Kidney Donation and donor types

P071 RESULTS OF TRANSPLANTATION FROM TYPE 2 DM IN UNCONTROLED DONORS AFTER CIRCULATORY DEATH

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There are a few reports about the acceptance of kidney with Type 2 Diabetes Mellitus (DM2)from Uncontrolled Donation after circulatory death donors (uDCD) .Our protocol accept the inclusion of uDCD donor with good metabolic control Type 2 DM with oral antidiabetics without retinopathy or nephropathy, preferably without other complicated cardiovascular risk factors. The aim of this study is to evaluate the evolution of kidney transplant from uDCD DM2 donors.
Method: All patients who received uDCD kidney transplant between January 2004 and December 2016 were included. Demographic baseline characteristics of donors and recipients, final Renal Resistance (FRR) measured with pulsatile perfusion machine, cold ischemia time (CIT) and pre-implantation biopsy score (BS) were described. End-points were glomerular filtration rate (GFR) at 6 month after transplantation and graft survival (GS). Parametric and non parametric tests and correlations were performed.
Results: 194 recipients were included: 29 (15%) received kidneys from DM2 donors and 165(85%) from non DM2 donors. Not significant differences were found in donor age, FRR, CIT, primary renal dysfunction, GFR at 6 month after transplantation and BR. Significant differences were founded in the recipient age: 54.38 $\pm$ 8.56 in DM2 group vs 49.14 $\pm$ 11.23 in non DM2 group ($p = 0.006$).GS was 45.17 $\pm$ 43 months for DM2 group vs 61.15 $\pm$ 44.84 months for non DM2group (p0.068). However, GS reduces progressively related with age increase: significantly when analyses by donor age: donor $\geq$40 years old (*n* 140): 48.4 $\pm$ 41.40 months vs donor <40 years old (n54): 87.24 $\pm$ 41.16 months ($p = 0.000$). Considering that prevalence of DM2 in donors$\geq$ 40 years old was 26 (19%) vs 3 (5%) in the youngest donor group, could explain this difference. Nevertheless, GS in donor $\geq$40 years old with and without DM2 was 37.19 $\pm$ 39.1 month's vs 51.0 $\pm$ 41.8 months, respectively (p = NS).
Conclusion: DM2 could be an acceptable uDCD donor, however a rigorous selection of the donor is required.

P072

SHORT-TERM OUTCOME OF KIDNEY TRANSPLANTATION BETWEEN LIVING RELATED DONORS AND DONORS AFTER CARDIAC DEATH: A SINGLE-CENTER STUDY

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Objectives: To discuss the short-term outcomes of kidney transplantation in living related donors (LRD) and donors after cardiac death (DCD).
Methods: Ninety-three kidney transplants were performed in our center from July 2011 to July 2014. These transplants can be divided into two groups based on the source of donors: LRD (n = 33) and DCD (n = 60). Renal function recovery in the perioperative period, renal function on day 90, rehospitalization rate, and complications within 90 days after surgery were statistically analyzed.
Results: The delayed graft function (DGF) rates were 6.1% in LRD and 25.0% in DCD (p = 0.024). The mean restoration durations of DGF were 22.5 ± 10.6 days in LRD and 16.3 ± 6.1 days in DCD (p = 0.226). The mean days of serum creatinine (SCr) decreasing to half of the preoperative level in non-DGF recipients were 1.1 ± 0.5 days in LRD and 2.4 ± 2.7 days in DCD (p = 0.06). The mean days of SCr decreasing to normal level were 4.7 ± 4.8 days in LRD and 11.6 ± 19.5 days in DCD (p = 0.159). The mean SCr levels on day 90 post-surgery were 107.7 ± 26.1 μmol/l in LRD and 118.6 ± 60.5 μmol/l in DCD (p = 0.474). Cystatin C, acute rejection (AR) incidence, and complications within 90 days after transplantation did not significantly differ between LRD and DCD.
Conclusion: Although the incidence of DGF was higher in DCD than in LRD, recipients from the two groups could reach similar renal function levels. The occurrence of complications did not also significantly differ. Long-term outcomes should be observed in future studies.

Clinical Kidney Allocation

P073

SHOULD WE PERFORM KIDNEY TRANSPLANTATION ON PATIENTS OLDER THAN 70 YEARS OLD?

Asunción Sancho Calabuig, Eva Gavela Martínez, Julia Kanter Berga, Irina Sanchis, Ana Isabel Avila Bernabeu, Jose Francisco Crespo Albiach, Luis Manuel Pallardó Mateu

Patients older than 70 years are the fastest growing age group of incident patients on renal replacement therapy, presenting a higher mortality in the first 3 years after beginning dialysis. Kidney transplantation is not always considered as an option because of their morbidity, representing a lower proportion of patients on the waiting list. However, kidney transplantation could be a useful option in selected cases.
Objective: To compare the evolution of kidney transplant recipients older than 70 years old ($R \geq 70$) with transplanted patients younger than 70 years ($R < 70$) in our series.
Material and Methods: We analyzed 889 kidney transplants adult recipients and compared $R \geq 70$ (n: 54, 5.5%) to $R < 70$ (n = 833). Follow-up: 85.3 ± 65,27 months (–: 0–239.7). Mean recipient age was 71.7 ± 1.7 years in $R \geq 70$ vs 51.1 ± 12.2 in $R < 70$ (p < 0.001). No differences were found in cardiovascular risk factors pretransplantation, except left ventricular hypertrophy or dyslipidemia that were more prevalent and tobacco that was less frequent in $R \geq 70$ (p < 0.05). Donors in $R \geq 70$ were older p < 0.001), more frequently women (p = 0.024), cerebrovascular death (p < 0.001), high blood pressure (p < 0.001) and lower serum creatinine levels (p = 0.002). $R \geq 70$ presented higher mismatches (p = 0.001), they received thymoglobulin for induction (p < 0.001) and tacrolimus (p = 0.027). Graft survival (non-censored data) was similar (p = 0.085). Main causes of graft failure were chronic dysfunction and death with functioning graft in $R \geq 70$. Patient survival was lower (p < 0.001) in $R \geq 70$. Infectious death was the most frequent cause, followed by cardiovascular disease and cancer (p = 0.022).
Conclusions: Kidney transplantation, in selected recipients older than 70 years, related to a graft survival similar to that of younger recipients with an acceptable renal function, but with a lower patient survival. We consider that kidney transplant should be considered an acceptable option for selected older patients.

Clinical Kidney Other

P074

FOLLOW-UP STATUS AMONG LIVING KIDNEY DONORS AFTER TRANSPLANTATION

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Background: The purpose of this study was to identify follow-up status among living kidney donors after transplantation.
Method: This study was carried out a secondary analysis of data from one hospital in Korea. A total of 81 donors from February 2010 to April 2016 were selected for analyzing of the follow-up status. Data were analyzed using descriptive statistics, Kaplan-Meier, and Cox regression.
Results: Overall, 56.8% of donors were still maintaining follow-up. Donor follow-up rates at 1, 2, and 3 years were 87.6%, 79.5%, and 67.6%, respectively. The significant predictors of follow-up loss among donors were donor's stay area, smoking habit, and follow-up caregiver.
Conclusion: For physical and psychological health management of donors, continuous care of nephrologist is required with the surgeons since transplantation.

Clinical Kidney Donation and donor types

P075

THE INFLUENCE OF LIVING RELATED AND DECEASED DONOR KIDNEY TRANSPLANTATION ON GRAFT SURVIVAL: A PROPENSITY SCORE MATCHED ANALYSIS

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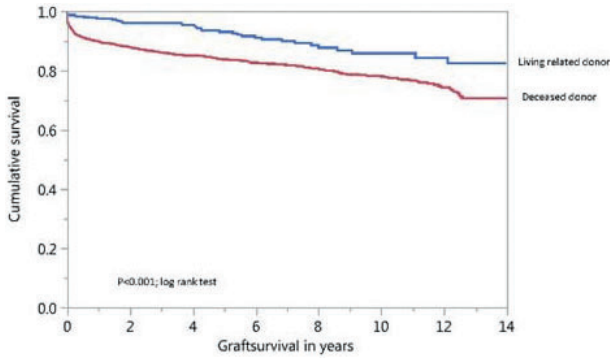
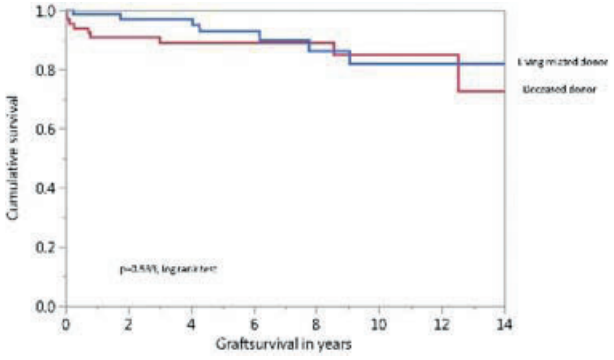
Background: There are several significant differences between donors, recipients and the transplant procedure of living related and deceased donor kidney transplantation. Living donation is associated with increased graft survival. This study aims to evaluate the influence of living related donation beyond said differences in a propensity score matched analysis.
Methods: Among 1953 kidney transplants 404 were performed after living related donation. A propensity score was developed to mitigate the differences of pre-operative donor and recipient data. The cohort was matched for donor and recipient age, body mass index, HLA mismatches, indications, donors' comorbidities and recipients' dialysis duration. 1:1 nearest neighbor matching was performed with a caliper of 0.2 times standard deviation of the propensity score. Graft survival analysis was performed using multivariable Cox regression before and after matching.
Results: Before matching, recipients underwent a median time on dialysis of 5.8 (range 0–27.4) years. Kaplan Meier analysis showed significantly increased graft survival after living related kidney transplantation (p < 0.001; log rank). Multivariable Cox regression analysis identified living related donation to be an independent significant protective factor for graft survival (p = 0.001; HR = 0.539 (96%-CI: 0.352–0.791).

After matching, recipients underwent a median time on dialysis of 2.8 (range 0-10.7) years. Kaplan Meier analysis did not display a significant difference in graft survival in both groups (p = 0.539; log rank). Multivariable Cox regression could not confirm living related donation to be an independent significant protective factor for graft survival in the matched cohort (p = 0.226).
Conclusion: Our findings suggest that the underlying mechanism of the protective effect of living donation on graft survival is the healthier donor and recipient clientele due to a timely plannable transplantation and less recipient time on dialysis





Clinical Kidney Donation and donor types

P076 EXCLUDED PAIRS FROM LIVING DONOR KIDNEY TRANSPLANT: MONOCENTRIC EXPERIENCE OF 13 YEARS

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Background: The increasing diffusion of living donor kidney transplant (LDKT) over the last years was accompanied by the extension of the donor selection criteria, which allowed the inclusion of "medically complex" donors, with comorbidities such as hypertension, overweight, history of prior malignancy, suboptimal renal function. We analyze causes which led us to exclude pairs from LDT.
Methods: We performed a retrospective observational study including all 168 donor-recipient pairs assessed by Our Transplantation Unit from 2003 to 2016.
Results: 168 couples were evaluated, 88 of which (52.3%) were considered ineligible. Causes of ineligibility can be grouped into 5 categories: donors' clinical ineligibility for donation (inadequate GFR, *de novo* diagnosis of diabetes mellitus, active malignant neoplasms or other pathologies that may contraindicate the kidney donation, surgical ineligibility for kidney donation), immunological incompatibility (positive cross-match), lack of psychological eligibility or withdrawal of donor/recipient will, recipients' clinical ineligibility, intercurrent deceased donor transplant. The main cause of pairs' exclusion is donors' clinical ineligibility (31/88, 35%), followed by immunological incompatibility (22/88, 25%), psychological or lack of donor/recipient's will to the transplant (18/88, 21%), recipients' clinical ineligibility (9/88, 10%), intercurrent transplant from a deceased donor (8/88, 9%).
Conclusion: The percentage of pairs' exclusion from LDKT at Our Center is comparable to the few data available in the literature. The extension of the donor eligibility criteria expanded the "donor pool" with excellent results in terms of quality of the graft and donor's health. Clinical ineligibility of the donor remains the first cause of donation process interruption. Nowadays couples excluded for immunological causes could benefit from programs aimed at overcoming the immunological barrier (desensitization, crossover transplantation).

Clinical Kidney Donation and donor types

P077 EFFECT OF AKI DONOR ADMIT CREATININE ON RENAL TRANSPLANT OUTCOMES

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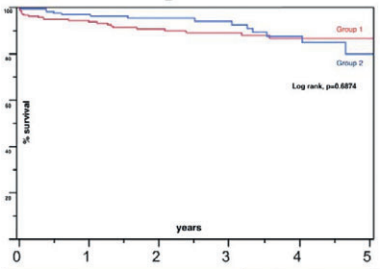
Background: Purpose of the study was to explore the effect of admit AKI donor creatinine on graft outcomes.
Method: Single center retrospective analysis of kidney transplants performed using organs from deceased AKI donors (terminal creatinine $\geq$ 2 mg/dl). Combined organ transplants were excluded. AKI kidneys were biopsied and kidneys with cortical necrosis or moderate/severe chronic changes were discarded. The cohort was divided based on admit donor creatinine ($<$ or $\geq$ 1.5 mg/dl). Outcomes were graft survival, DGF, 1-, 4-month and 1-year creatinine/eGFR and Banff staging.
Results: 387 patients were included. 171 recipients had a donor admit creatinine $\geq$ 1.5 mg/dl (group 1), while the rest (group-2) a creatinine $<$ 1.5 mg/dl. Group-1 donors were younger, female, with lower KDPI, non-hypertensive, oliguric and with higher terminal and peak creatinine levels [table 1]. Group-1 recipients were younger, with higher 1-week creatinine which became lower 4 months post-transplant. 1-year eGFR (CKD EPI formula) was better in group-1. Graft survival was similar.
Conclusion: For carefully selected AKI kidney donors, an elevated admit donor creatinine is not associated with inferior outcomes and these kidneys should be transplanted.



	Group-1	Group-2	p
Donor			
Age (yrs)	33.5±11.8	41.6±14.7	<.0001
Female	19.3	39.4	<.0001
KDPI	43.6±22.3	58.6±23.0	<.0001
HTN	18.7	32.4	0.0024
Oliguric	60.0	26.8	<.0001
Peak creat. (mg/dl)	6.38±2.91	4.15±1.99	<.0001
Term. creat.	5.56±2.91	3.94±1.94	<.0001
Recipient			
Age	54.6±12.7	57.8±12.7	0.0142

	Group-1	Group-2	p
4-month creat. (mg/dl)	1.35±0.47	1.58±0.82	0.0012
4-month eGFR (ml/min/1.73m^2)	60.3±20	52.0±20.8	0.0002
1-yr eGFR	62.1 ±21.6	55.5±21.0	0.0137

P078 PAIRED KIDNEY EXCHANGE TO WHERE? A REPORT FROM SAUDI ARABIA

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Background: Increasing numbers of sensitized patients in need for kidney transplant and scarcity of kidney organs was the driving force to look for alternative resources for kidneys like donation after cardiac death, HCV +ve donors and desensitization protocols. Paired kidney exchange (PKE) is a proven option for these patients providing them with a compatible living donor kidney—but until now has not been routinely and effectively practiced in the Middle East.
Methods and Material: Patients who failed desensitization for either HLA or ABO incompatibility (ABOi) in a single transplant center in Saudi Arabia were added to PKE pool using software provided by the Alliance for Paired Donation. Patients previously placed on the deceased donor waiting list who initially presented with an incompatible living donor were also offered participation. Enrollment of consented patient's data began in April 2015.
Results: Our first 2-way exchange transplant was in December 2015. Overall, 40 pairs have been added to the pool during the first year. Last cycle was in December 2016 .We identified more than 150 possible combinations resulted in 8 offers ranging from 2-way to 4-way cycles. Four of these offers were completed (50%),resulting in transplants for 12 patients out of 120 kidney

transplant performed by the center during 2016(10%).The other 4 offers that could have transplanted 7 more patients were retracted due to multiple reasons including: lack of proper patient education in the early phases of the program, outdated patient and/or donor information and donor withdrawal. 5 Patients were highly sensitized (PRA>80%). 5 were ABOi with their donors, one of them was HCV+ve.
Conclusion: This report of a sustained kidney exchange experience from a Gulf Country, demonstrates the clear benefit of expanding access to technology that is underutilized in our region. Proper patient education and selection could further improve the utilization of available living donors.

P079 THE IMPACT OF DONOR KIDNEY WEIGHT TO RECIPIENT BODY WEIGHT RATIO AT THE DECEASED DONOR KIDNEY TRANSPLANTATION

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Background: There are many other risk factors for post-transplant kidney function. The aim of this study is to investigate the association between donor kidney weight (Kw) to recipient body weight (Rw) ratio (Kw/Rw) and their post-transplant kidney function.
Methods: Between July 2011 and Nov. 2016, 45 patients underwent DDKT at Department of Surgery at Konyang University Hospital, Daejeon, Korea. According to the Kw/Rw ratio recipients were divided into two groups: Kw/Rw <3.0 (Group A; $n = 20$), 3.0 ≤ Kw/Rw (Group B; $n = 25$). The following characteristics and results were evaluated retrospectively through the medical records.
Results: Our study includes 45 recipients with 35 male (77.8%) and 10 female (22.2%) patients. Mean donor graft weight was 208.8 ± 42.6 g. Mean Kw/Rw was 3.37 ± 1.04 g/kg. Operative time was not statistically different between the group A and the group B (200.7 ± 39.6 min vs. 204.2 ± 49.1 min, $p = 0.789$). Donor age (39.7 ± 14.4 years vs. 45.3 ± 13.4 years, $p = 0.183$) and hospital stay days (20.0 ± 16.9 days vs. 17.0 ± 5.2 days, $p = 0.446$) was not significantly different between A and B groups. The 1-year patient survival in the group A was 92.9% compared to 91.4% in the group B ($p = 0.487$). Graft survival at 1 year was 100% and 91.4% in the group A and the group B ($p = 0.219$) respectively. The mean serum creatinine levels and glomerular filtration rate (GRF) level at post-transplant 12 months were significantly better in the group B than the group A (12th months Cr: 1.40 ± 0.5 mg/dl vs. 1.07 ± 0.2 mg/dl, $p = 0.044$, 12th months GFR: 60.0 ± 16.9 vs. 74.7 ± 16.3, $p = 0.023$). In simple linear regression, the correlation between Kw/Rw and 12th months creatinine levels show statistically significance ($p = 0.012$).
Conclusions: Our results show that higher donor kidney weight to recipient body weight ratio may be affected good function of grafts. The findings of this study might have been influenced.

P080 OUTCOMES OF COMMERCIAL KIDNEY TRANSPLANTATION: EXPERIENCE FROM A TERTIARY SINGAPORE HOSPITAL

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Background: Singapore's lack of kidney donors has led to patients turning to overseas commercial sources for transplantation. Systematic reviews and single centre studies suggest that outcomes are inferior especially for infections. SGH is the largest renal referral centre and thence the recipient of the largest number of patients returning from overseas with commercially obtained kidney transplants (KTX), we sought to determine the clinical outcomes of this group of patients.
Methods: A retrospective analysis was performed on 179 KTX done from Jan 2008 to Dec 2012. 44 were commercial KTX, 89 local deceased and 46 local living KTX. Primary end-points were renal function and allograft survival. Secondary end-points were hospital readmissions, medical and surgical complications as well as key infections.
Results: Renal function was better in overseas KTX (eGFR 70.43 ml/min/1.73 m^2) compared to local living KTX (eGFR 61.2 ml/min/1.73 m^2) and local deceased KTX (eGFR 52.0 ml/min/1.73 m^2; $p < 0.001$). However, graft survival was comparable (overseas KTX 97.7% vs. local deceased 96.6% vs. local living 97.8%; $p = 0.89$). Patient survival was also comparable (overseas KTX 100% vs. local deceased 96.6% vs. local living 97.8%; $p = 0.46$). There were also no significant differences between the 3 patient groups in secondary end-points such as urinary tract infections, CMV, BKV, HBV, HCV and HIV infections. Incidence of surgical complications, malignancy and hospital readmissions were also comparable. However, numerically, more overseas KTX experienced CMV infection, BKV infection, HBV infection, surgical complications, malignancy and hospital readmission episodes per patient. Furthermore, 52% ($n = 23/44$) returned to our hospital without proper handover documentation.
Conclusion: Survival and renal function were comparable between overseas KTX and local KTX. However, there was a trend towards more complications in the overseas KTX which did not reach statistical significance due to the small sample size.

P081 TWO-STAGE DECEASED DONOR ORGAN RETRIEVAL CAN IMPROVE RENAL TRANSPLANT RESULTS FROM EXPANDED CRITERIA DONORS

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Background: Extended criteria donors (ECD) represent nowadays the main source for kidney transplantation. The use of elderly donors results in acceptable but reduced graft survival, with higher incidence of delayed graft function (DGF) and graft rejection. One of the key factor for improvement could be shorter cold ischemia time (CIT). In this prospective study, we propose a new retrieval management to shorten CIT of the selected ECD grafts to improve the outcomes.
Material & Methods: The lymph node for HLA typing, recipient selection and current cross-match test was taken from the groin of a deceased donor prior to retrieval. The organ retrieval did not proceed until negative cross-match result was known and recipient was ready for transplant. Kidney transplantation followed immediately after organ retrieval. Therefore the CIT was shortened dramatically. Between 2013 and 2016, 15 ECD kidneys were transplanted using this modified retrieval procedure. The control group included 30 comparable ECD grafts from the same period matched by donor age. One year follow-up graft survival and function were analyzed.
Results: The immediate onset of graft function was more often in the study group than in the control group: 93.3% versus (vs.) 66.7%, $p = 0.026$. DGF was less frequent: 6.7% vs. 30.0%, $p = 0.040$. Primary graft nonfunction was not observed in the first group: 0.0% vs. 3.3% $p = 0.243$ N.S. Also, one-year graft survival in the study group was higher compared to the control group: 100.0% vs. 83.3%, $p = 0.033$.
Conclusion: Two-stage organ retrieval from deceased donors shortens the cold ischemia time and significantly improves the overall function and survival of ECD renal grafts.

Basic Kidney Other

P082 OUTCOME OF FAMILY KIDNEY DONORS

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Background: Kidney transplantation is the best treatment for end stage renal disease; a living donor gives the best results in terms of graft survival.
Materials and Methods: To evaluate the morbidity of kidney removal from the donor, the medical consequences and impact on quality of life in the long term, we performed a retrospective study of 100 family kidney donors during a period from December 2006 to June 2015.
Results: In our series the mean age of donors is 45 years old, the median body mass index is 25.3 kg/m^2. The donation was among siblings in 54%, from parents in 40%, from children to parents in 6%. At the time of donation, 53% of donors had a creatinine clearance between the 91–100 ml/min, 34% between 101–120 ml/min and 13% between 80–90 ml/min. The per- or postoperative mortality was zero. The per operative complications observed were: pain, pneumothorax in 02 cases and surgical hematoma in 02 cases. A transient alteration of the renal function was observed during the first postoperative days. The median value of the clearance in the late postoperative calculated creatinine was 65 ml/min (90–45 ml/min).
Conclusion: Kidney transplantation from living donors has many advantages for the recipient but requires a healthy person undergoing nephrectomy. Therefore, it became necessary to assess the future of long-term donors.

P083

DECEASED KIDNEY DISTRIBUTION & ALLOCATION IN THE KINGDOM OF SAUDI ARABIA: RETROSPECTIVE REVIEW

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Background: The Saudi Center for Organ Transplantation (SCOT) is the sole supervising, regulating and coordinating body for organ donation and transplantation inside the Kingdom of Saudi Arabia. It is also the referral center for Gulf Cooperation Council (GCC) Countries and adopted the uniform law on regulation on organ sharing among GCC countries as guidelines. In deceased organ donation, kidneys from deceased donors is the most utilized organ in the kingdom, helping patients suffering from ESRD and improving their quality of life by means of kidney transplantation; Thus, we studied the distribution and allocation of these kidneys from the zonal distribution system to kidney allocation and its utilization.
Methods & Materials: A retrospective review was done during the period of 2014–2016, using the Critical Pathway of Organ Donation comprising the potential, eligible, actual and utilized deceased kidneys inside the kingdom of Saudi Arabia.
Results: In 2014 to 2016 a total of 1160 Potential Deceased Donors (DD) were recorded by SCOT, of which 944(81%) donor's next of kin were approached for organ donation after declaration of death, and 313 (33%) had given their consent to donate the organs. A total of 626 kidneys were consented, of these 400 (65%) kidneys were transplanted (utilized) in KSA, 106 (17%) kidneys was also utilized by GCC countries including 2 kidneys shared by KSA to UAE, non-recovered kidneys were 96 (15%), while 24 (4%) kidneys were not utilized. In 400 kidneys transplanted in KSA, kidney donors were categorized using the Standard and Extended Criteria (SCD, ECD) and the Donors Kidney Donor Risk Index (KDRI). A total of 290 (72%) SCD kidneys and 110 (28%) ECD kidneys were transplanted while the kidneys transplanted from deceased donors with KRDI index of less than <0.8 were 17 (4%) kidneys, 0.8–1.15, 163 (41%), 1.15–1.45, 113 (28%) and >1.45, 107 (27%) with mean KDRI of 1.25. SCOT allocation protocol allotted 20% of SCD d

Clinical Kidney Donation and donor types

P084

PROBABLE RABIES VIRUS TRANSMISSION FROM KIDNEY TRANSPLANTATION IN CHINA

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Rabies is an acute lethal infectious disease, which is usually transmitted by the infected animals. Here, we reported two cases who were infected with probable rabies through kidney transplantation. The donor of the transplantation was a 6-year-old boy diagnosed as "viral encephalitis" without a clear exposure of rabies animals. The two recipients who also had no exposure to rabies infected animals since the transplantation operations were both successfully performed with the donor's two kidneys, respectively. They underwent a 44- and 49-day incubation period and both showed serious mental and nervous symptoms, such as paralysis of limbs, dysphagia, paresthesia and supervened dysdipsia. They died in 45 and 34 days respectively after the occurrence of the symptoms. The samples from the saliva, sputum and urine of the two recipients were collected and detected for rabies nucleic acid. All of the samples showed positive for rabies nucleic acid, indicating that they were both died of rabies.

Because lack of the corresponding laboratory conditions, diagnosis for rabies is relative difficult in some rural regions of China, however, the incidence for rabies in these regions is higher than that in the urban regions. Therefore, these patients were usually diagnosed as "viral encephalitis", because of an unclear exposure history. In addition, rabies was not specifically excluded for the use of organs or tissues according to the regulation raised by China Ministry of Healthy in 2006. These reasons may result in a risk to transmit rabies through kidney transplantation. Therefore, screening for the rabies virus in the donor before kidney transplantation is highly recommended, especially when a donor is diagnosed as "viral encephalitis" without a clear history of rabies animal exposure.

Clinical Kidney Allocation

P085

KIDNEY TRANSPLANTATION RESULTS IN VERY HIGHLY SENSITIZED PATIENTS INCLUDED IN A VIRTUAL CROSSMATCH PROGRAM: ANALYSIS OF KIDNEY PAIRS. ANDALUSIAN WORK GROUP FOR HIGHLY-SENSITIZED PATIENTS

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Background: Organ-exchange strategies based on virtual crossmatch (V-XM) can improve kidney transplantation in very highly-sensitized (HS) patients.
Methods: Andalusia started a V-XM protocol for very-HS patients in june, 2012 (calculated panel reactive antibodies 95%). After organ allocation a cytotoxic-XM performed immediately before transplantation had to be negative for surgery to proceed.

The results of 3.5 years since the beginning of this protocol were analyzed and will be updated until the 5 years of follow-up (jun,2017). Whenever possible we also compared the course of the recipient (non-HS) of the other kidney from the same donor.
Results: Of the 57 grafts, 52 kidney transplantations were performed (the pretransplantation cytotoxic-XM was positive in 5; predictive value 91.3%). Five patients (9.6%) experienced acute rejection (4 antibody-mediated rejections (AMRs); 7.6%).

Donor-specific antibodies developed in 10 patients. No patient died. One-year graft survival was 98%. We compared the course of the non-HS recipient of the other kidney, excluding cases with no pair (*n*:5), pairs who were children recipients (*n*: 3), pancreas-kidney recipients (*n*:5), or pairs already included in the V-XM protocol (*n*:44).

Finally, 35 pairs were studied. More HS-patients developed donor-specific antibodies ($p = 0.016$). No significant differences were seen in acute rejection, but AMR was more common (p: 0.057). No deaths occurred in either group, and there were no differences in graft survival or renal function.
Conclusion: Although a few patients still developed AMR, our V-XM based protocol achieved very satisfactory results. Although the number of patients analyzed in the first 3.5 years was limited, the initial survival of these high-risk recipients was comparable to the controls.

P086

PRIORITIZATION OF KIDNEY TRANSPLANT "SPECIAL" RECIPIENTS IN ANDALUSIA, A SPANISH REGION OF 8.4 MILLION INHABITANTS

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Background: Andalusia, a region located in southern Spain with a population of 8.42million inhabitants, got in 2016 a rate of 47.1 donors p.m.p, which generated 814 solid organ transplants, 485 of which were kidney transplants. There are a number of "special" recipients on waiting list for renal transplantation with some specific peculiarities that determine few options for transplant if no action is taken for correction.
Objectives: One of the functions as health officials in the Regional Transplant Coordination is to achieve equity in access to transplantation for all patients. Therefore, and in order to avoid inequalities, it is essential to coordinate and agree criteria for prioritizing these special receptors with the different teams involved.
Methods: This work describes the strategies implemented to achieve this goal, contemplating on it specifically to paediatric patients (childhood donors represented only 2% of the total), those patients in awaiting a kidney transplant combined with any other organ, whether adults or children, and highly-sensitized kidney recipients. These recipients require specific conditions of the organ and donor type.

Results: Each donated organ in Andalusia, in the absence of conventional patients and those in code"0"(those that require in extremis a nonrenal organ), is thoroughly analyzed in order to be offered firstly to all these complex patients.

The order of priority is as follows: 1. highly-sensitized kidney patients, 2. children combined transplant kidney-liver, 3. paediatric kidney tansplant, 4. combined transplant kidney-pancreas, 5. combined transplant kidney-liver, 6. combined transplant kidney-any other than the liver. If there is an exceptional situation not covered, is discussed and agreed between the Regional Transplant Coordination and all transplant teams involved.

Conclusion: After the various strategies implemented, transplants have increased among these special patients, which has solved the major problem of inequality that existed.

Basic Kidney Donation and donor types

P087 POST DONATION FEAR OF KIDNEY FAILURE AMONG SPANISH LIVING KIDNEY DONORS

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Our study assessed the psychometric properties of a Spanish version of the Fear of Kidney Failure (FKF) Questionnaire, the impact of the FKF on LKD, and defined the profile of LKD with higher scores on FKF.

107 LKD from those donating in 2005–2015 were randomly selected. The FKF was translated following international standards. The FKF criterion validity was assessed by calculating its relationship with anxiety, depression, and fear-related personality dimensions. Divergent validity was verified by assessing whether the FKF was unrelated to personality dimensions from which it should be independent. LKD were grouped by Cluster Analysis of the FKF scores. Groups were compared on demographic and clinical variables to characterize those LKD with higher scores in the FKF.

The internal consistency and temporal stability of the FKF were acceptable. The FKF was positively correlated with depressive and anxiety symptoms, and neuroticism, and negatively correlated with optimism. The FKF was unrelated to extroversion, openness to experience, agreeableness, and conscientiousness. Cluster Analysis classified LKD in 3 groups: absence of fear (73%), moderate fear (18%), and high FKF (9%). Groups did not differ in demographics or donation outcomes. Higher FKF scorers showed a higher percentage of potential cases of depressive and anxiety disorders, worse quality of life, scored higher in neuroticism and lower in optimism. Multivariate regression showed that FKF higher scorers were best characterized by anxiety and interference of health on physical ability and on emotional state.

Post donation fear of kidney failure is uncommon among LKD. However, a subgroup characterized by higher anxiety and worse quality of life, show elevated FKF scores, and might present with anxiety and depressive disorders.

Clinical Kidney Allocation

P088 SINGLE-CENTRE EXPERIENCE OF THIRD OR MORE KIDNEY TRANSPLANTS RECIPIENTS USING LIVE-DONORS (ABO/HLA COMPATIBLE AND INCOMPATIBLE) OR DECEASED-DONORS

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Background: Patients requiring a 3rd or subsequent kidney transplant (KT) pose significant surgical and immunological challenges, with limited long-term evidence to aid decision-making. We conducted a single-centre retrospective analysis of all adult 3rd or subsequent KT recipients performed between February 2000–2016.

Methods: Outcomes of interest included 1- and 5- year patient/graft survival, overall complication rates, surgical techniques and number of patients experience biopsy-proven rejection. We performed a separate analysis of deceased-donor, compatible live donor and ABO/HLA-incompatible recipients.

Results: We performed 67 such transplants – 59 had a third, 7 had a fourth and one had a fifth KT. Median follow-up was 4.5 years. Median pre-transplant calculated reaction frequency (cRF) was 94%, with 62% being highly-sensitised (cRF>85%). An extraperitoneal approach was used in 72% of cases, with only 5 cases requiring an old graft nephrectomy at surgery. 34% experienced atleast one episode of biopsy-proven rejection.

In the 3rd KT group, 1- and 5-year patient and graft survival was 94.8%/88.1% and 86.4%/67.6% respectively. In the 4th transplant group, 1- and 5-year patient survival was 100% and 80%. Graft survival was 100% at both time points. The 5th KT recipient received a live-donor kidney in 2000, which was still functioning. Overall complication rates were 36.7% and 21% in the third and fourth KT groups respectively.

Overall, 34 patients had a deceased-donor, 18 had an ABO/HLA compatible live-donor and 15 had ABO/HLA-incompatible live-donor transplant, with patient survival at 1 and 5-years being 94%, 94% and 100% and 83.3%, 94.4% and 90% ($p = 0.23$) respectively. Graft survival at 1 and 5-years was 82.2%, 100% and 73.3 and 74.4, 100% and 37.2 ($p < 0.05$) respectively.

Conclusion: This cohort represents the highest number of live-donor recipients in a 3rd or more KT series. ABO/HLA incompatible transplantation is a viable option in this challenging group.

Clinical Kidney Donation and donor types

P089 EXCELLENT 7-YEAR FUNCTION OF KIDNEYS FROM AN ACUTE RENAL FAILURE DONOR ON CONTINUOUS VENO-VENOUS HAEMOFILTRATION

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Background: The organ shortage has induced many transplant centres to utilize sub-optimal grafts, such as expanded criteria donors (ECD) and donors after cardiac death (DCD). Acute renal failure donors, sometimes present in intensive therapy units, have been used in a very low number due to the fear of high primary non function rate of this type of grafts, especially from ECD. There are many published reports regarding the utilization of kidneys from acute renal failure donors, but very few regarding severe acute renal failure (AKIN – Acute Kidney Injury Network criteria 3), and even fewer regarding donors on haemodialysis treatment.

Methods: We transplanted two kidneys from a 67-year-old donor who suffered from acute renal failure as a consequence of extracorporeal circulation for cardiac surgery and died from a massive cerebral oedema with cistern obliteration. The kidneys had been discarded by other transplant centres, due to the acute renal failure treated by a continuous veno-venous hemofiltration (CVVH). Protocol graft biopsies were done pre-transplant. Graft function data including serum creatinine, creatinine clearance and proteinuria were collected yearly for 7 years of follow-up. We also evaluated the delayed graft function, acute rejections episodes and graft survival.

Results: Both transplants were successful and both grafts showed a very good renal function. One of the two recipients suffered from delayed graft function and renal drug toxicity resolved 1 month post-transplant. We did not register any acute rejection episode. After 7 years of follow-up the recipients show an excellent graft function, comparable to standard criteria donor grafts.

Conclusion: In these years where transplant centres are trying different methods to increase the number of organs, acute renal failure treated by CVVH does not appear to be a contraindication to the utilization of the grafts.

Clinical Kidney Other

P090 LOW-RADIATION-DOSE SINGLE-PHASE MDCT PROTOCOL WITH SPLIT CONTRAST MEDIA DOSE AND TIME OPTIMIZATION: AN EFFECTIVE PROTOCOL FOR RENAL DONORS EVALUATION

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Background: A routine, multiphase, computed tomography (CT) protocol is associated with high radiation exposure to potential kidney donors. To reduce radiation exposure, several authors have suggested a reduction in the number of phases. Dual-phase protocols (with an unenhanced phase followed by a combined vascular and excretory phase) have been proposed for the preoperative evaluation of potential renal donors.

Methods: Sixty-eight studied potential renal donors were divided into two groups. The first group (39 cases) was scanned with a routine quadric-phase protocol (non-contrast, arterial, venous, and delayed), and the second group (29 cases) was scanned with a single-phase protocol. We compared the intra-operative findings (renal arteries, veins, and excretory system) to the radiologic assessment in both groups. The radiation dose of the suggested protocol was also compared to that of the routine quadric-phase protocol.
Results: The single-phase protocol was efficient in the evaluation of renal arteries, veins, and excretory systems in all studied potential renal donors. Renal arteries were well visualized in the combined vascular excretory phase using the routine abdominal CT technique; no significant difference was noted when these results were compared to those obtained from the CT angiography used in the quadric-phase protocol. The mean effective radiation dose of our suggested single-phase protocol was only 60% of the dose resulting from the routine quadric-phase protocol.
Conclusion: The use of a low-radiation, single-phase CT protocol, which relied on a combined vascular and excretory phase, significantly reduced the radiation dose. Furthermore, the proposed protocol provides adequate visualization of renal arteries and even small collateral veins, and affords sufficient opacification of the urinary tract.

Clinical Kidney Donation and donor types

P091

EVOLUTION OF TECHNIQUE IN LAPAROSCOPIC DONOR NEPHRECTOMY: A SINGLE CENTER EXPERIENCE

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Background: Renal transplantation is the most successful therapy for improving survival and quality of life for end-stage renal disease (ESRD). Living donor kidney transplantation (LDKTx) has been used as an alternative to reduce the stay on the waiting list of patients with ESRD. Laparoscopic donor nephrectomy (LDN) has become the standard procedure for LDKTx. This study aims to describe evolution of surgical technique with LDN at our institute.
Methods/Materials: We retrospectively analyzed our experience with LDN performed from January, 2003 to November, 2016, focusing on describing modifications of the surgical technique and devices made during those years. Demographics, operative factors, and post-operative complications of donors were reviewed.
Results: From the beginning of our experience with LDKTx we have performed 185 cases. From 2003 to 2016, 144 LDN were performed. Modifying our technique in response to the learning curve, complications encountered, and technological advancements, we experienced low complication rates.
Conclusions: Continual refinement with LDN techniques based on intraoperative observations and technological advances is necessary to keep complication rates low, and reduce donor morbidity and time for recovery.

Clinical Kidney Allocation

P092

OLDER ADULTS: THE RACE OF TWO RISKS – TRANSPLANTATION VERSUS TIME IN THE "WAITING LIST". HOW CAN A COMPROMISE BE FOUND?

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Older adults comprise over 20–25% of all the patients with CKD5. Older adults present as quite a heterogenous population and require a specific approach to risk stratification to allow for the choice of the optimal modality of kidney replacement therapy (dialysis or transplantation).

We have analysed the results of treatment of 316 patients with CKD5 over the age of 65 years, 144 of them received a cadaveric first kidney transplant, while the others did not: they remained on the waiting list (WL), died or dropped out (censored).

The survival rate of recipients was 96%, 93%, 86%, and those on the WL – 94%, 77% and 59% after 1, 3 and 5 years respectively ($p < 0.001$). Whilst amongst the recipients the annual mortality was relatively stable, that in the WL group increased significantly by the fifth year. Remaining on the WL for over 5 years increased the relative risk of death before transplantation (Tx) by 3.1 times ($p < 0.001$) and reduces the predicted 5-year survival rate post Tx from 90% to 76% ($p = 0.003$).

At the point of inclusion the WL patients have an average cumulative illness rating scale for geriatrics (CIRS-G) of 11 [9.25; 13] (median, interquartile range), after 5 years on the WL – 17 [12.25; 18.75] – $p < 0.001$; severity index 1.38 [1.31; 1.62], 1.48 [1.35; 1.7] respectively, $p = 0.014$.

If the CIRS-G is more than 24 and the severity index is more than 1.85–2.18, conversion of risk occurs: the risk of death after transplantation is a little higher than that for patients remaining on the WL: the relation of risks is 1.12 times ($p = 0.711$), there is no difference in the predicted annual survival rate in these recipients and those who are on the WL: 85% and 87% respectively, $p = 0.511$.

Our study shows that when considering the question of transplantation in elderly patients on the WL, it is necessary to stratify per risk. Remaining on the WL for over five years significantly reduces the predicted survival rate post transplantation.

Clinical Kidney Donation and donor types

P093

DONOR RENAL ARTERY BAROTRAUMA SECONDARY TO HIGH PRESSURE HYPOTHERMIC AORTIC PERFUSION: A POTENTIALLY AVOIDABLE CAUSE OF SUB INTIMAL HAEMATOMA IN RENAL ARTERIES

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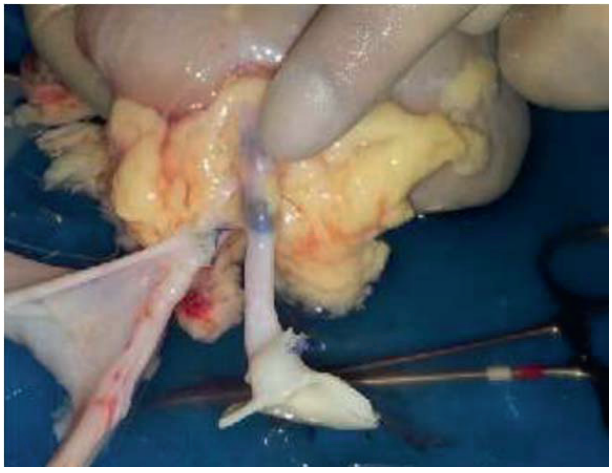
In 2015 there were 8945 patients on the UK kidney transplant waiting list and 3121 transplants performed. This shortfall continues to be a major cause of patient mortality and morbidity. A targeted national approach has led to an exponential increase in donation after circulatory death (DCD) in the last decade. In 2015, 38.8% of total deceased donor kidney transplants in the UK were from DCD donors. In 2010 a National Organ Retrieval system protocol was introduced in order to standardize organ procurement, particularly from DCD donors. This involved high pressure (>250 mmHg) in-situ hypothermic flush through the aorta. First introduced for DCDs, the pressured perfusion is now used for all deceased donation. It is widely accepted that cold preserved vessels are more prone to injury. This leads to the potential of vessel barotrauma. A potential manifestation of this is sub-intimal haematoma (SiH) and can make organs non-transplantable. This series is a single centres experience of the incidence of SiH in donor renal arteries, since 2010.

The author maintained a prospective photographic record of all deceased donor kidneys with SiH received at their institution during the study period. All organs included underwent standard national protocol procurement. Outcome of these kidneys were analysed in binary terms, i.e. transplanted or discarded

Nineteen kidneys were received in our institution with SiH in the study period. All these kidneys were received following the introduction of the new retrieval protocol in 2010. 13 were from DCD and 6 were from DBD donors, 6 left and 13 right kidneys. The mean donor age was 53 years, 7 male, 12 female. Degree of SiH was graded. Two kidneys were transplanted after resection of the proximal segment containing the intimal damage. Fourteen kidneys were discarded.

An increasing incidence of SiH since the widespread use high pressurized cold aortic perfusion leads to an increase discard rate of cadaveric kidneys for transplant.



P094 RENAL TRANSPLANTATION BETWEEN SPOUSES IN ALGERIA

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Background: Kidney transplantation remains the best treatment for end-stage renal disease. The first kidney samples were taken from living donors, the majority of which were genetically related. In recent years, there has been a diversification of the sources of grafts, in particular from the spouse.

The aim of our work is to evaluate the survival of grafts and patients and to identify the prognostic factors of graft function.

Material and Methods: This is a retrospective study carried out from January 2012 to December 2016. The number of patients receiving a graft from the spouse was 50. The immunosuppressive treatment was based on induction by ATG or Anti-IL2 and CTC, MMF and CNI for maintenance treatment. We analyzed demographic characteristics, episodes of acute rejection, complications and survival of grafts and patients.

Results: There were 38 men (76%) and 12 women (24%) with a sex ratio of 3.16, the mean age was (43 $\pm$ 8.853 years) and the donor age was (40 $\pm$ 9.026 years). 88% of the patients were dialysed before the transplant, only six patients benefited from a pre-emptive transplant. Initial nephropathy was indeterminate in 72% of cases.

62% of patients had between 5 and 6 HLA mismatches with the donor. The mean graft function at 1 year and 3 years was 11.77 mg/l and 12.45 mg/l creatinine, respectively.

Conclusion: Given the growing need for organs, renal transplantation from spouses is a viable option in our population, what allow to expend the circle of living donors, especially in the absence of a national program of tacking from donors in state of encephalic death.

P095 EFFICIENT WORK UP KIDNEY TRANSPLANTATION/ DONATION IN A NON ACADEMIC HOSPITAL: BY TIMELY STARTING THE PROCESS OF EDUCATION AND EXAMINATIONS MAY INCREASE THE POSSIBILITY OF PRE-EMPTIVE TRANSPLANTATION

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Background: When a patient needs to be informed about renal replacement therapy the digital patient program is used by the nephrologist to inform all necessary disciplines involved.

Methods: Each will make an appointment with the patient. At first general information is given to the patient and his family/friends by the social worker. Secondly the nurse coordinator gives information about all options in renal transplantation and explains the test procedures which are necessary to decide if patients are appropriate candidates to receive a kidney. In case of availability of a potential donor, information is directly given about living donation and the procedure can directly be started. The nurse coordinator ensures that the patient and potential donor complete all required tests in the shortest possible time in their own hospital. The close cooperation consists of daily deliberation between all disciplines and quickly changing the process of a patient or donor when needed. The progress is reported in the digital file and everyone involved will be informed.

Results: 2013–2017 (4 years) 289 patients entered the programme. 315 donors (for 167 recipients) entered the programme. 116 couples have been approved and presented for transplantation of which 51 couples have been transplanted, 40 couples have been put on hold because of a stabilised kidney function. 25 couples are still in the work up programme. 8 recipients were not transplantable due to medical reasons. 30 donors were disapproved. The median work up time of the procedure of the recipients was 102 days from start of the process to transfer to transplant centre. (2014 and 2015) Retarding factors are described. The median work up time for the donors was 88 days (2014 and 2015)

Discussion: The efficient work up programme in the patients treating hospital results in a significant improvement of the possibility of pre-emptive renal transplantation, or otherwise, patients are earlier registered on the waiting list

P096 FROM PROPOSAL TO PRACTICE: PARTICIPATION OF COMPATIBLE DONOR-RECIPIENT PAIRS IN THE NATIONAL KIDNEY EXCHANGE PROGRAM

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Background: Since 2004 incompatible donor-recipients pairs have participated in our national kidney exchange program. Between 2009–2012, 5 compatible pairs decided to donate in the exchange program, which resulted in 14 instead of 5 transplants. Enrolment of compatible pairs could help increase the success rate in the kidney exchange program. However, how should we educate compatible pairs about the possibility of participation. Here we discuss the implementation of a protocol and describe a study, designed to evaluate the decision-making process.

Methods: Our team discussed the protocol to minimize undue influence and the moment of education. A questionnaire was developed to evaluate the protocol and the decision-making process regarding participation.

Results: In June 2016 we introduced the compatible pairs program. We developed a leaflet with neutral information. Education about living donation programs was standardized. All new patients and donors who visit the outpatient clinic for the first time will be informed about these programs. The first consultation with the coordinator take place at the time that donor-recipient pair do not know if they are compatible or not. The information leaflet is handed out at this point. The second consultation with the coordinator takes place when the compatible pair visit the outpatient clinic for the immunological results. If the cross-match is negative and they are ABO and HLA compatible, we discuss the willingness to participate in the exchange program. When the pair has made a decision, we ask them to participate in a survey study.

Conclusion: Education takes place to raise awareness that a living donor can always give the kidney in a indirect way. This can be the case if it's medical necessary or voluntary on an altruistic basis to help other pairs. With the questionnaire we aim to gain insights into patients and donors motivation to their decision. Acceptable and unacceptable conditions of the program will be evaluated.

P097 VASCULAR CALCIFICATIONS IN LIVING KIDNEY DONOR EVALUATION

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About 25–30% of kidney transplantations in Germany are after living kidney donation. In daily practice many patients who present as potential donors have to be rejected due to medical conditions such as hypertension, diabetes mellitus or obesity. But there are also anatomical reasons not to accept a donor. Underlying medical conditions of the donor need to be carefully evaluated and can range from benign pathologies to malignancies.

Here we present different potential donors who had relevant vascular calcifications without any clinical symptoms (i.e. no hypertension or renal function impairment). Depending on the location of vascular plaques different surgical strategies for allograft transplantation may be considered or might result in rejection of a donor due to the elevated risk for complications. Results of computer tomography (CT), magnetic resonance imaging (MRI) and corresponding isotope nephrography are presented.

One donor had excellent renal function but showed marked plaques on the aorta even including the renal arteries. Here the surgery associated risks were considered to high and donation was rejected.

An almost total occlusion of the renal artery in one patient who did not show any clinical signs of hypertension had to be rejected since the length of the renal artery after the stenosis was considered to short for anastomosis.

As further vascular finding a donor with 4 and 3 renal arteries has been identified. Since the donation was planned for a 7 months old baby this seemed to hazardous and donation was rejected.

For vascular evaluation either computer tomography or magnetic resonance imaging can be used. The possibility for 3D reconstruction is valuable to unravel renal or vascular pathologies and to assess surgery related risks.

Clinical Kidney Allocation

P098 CAN WE PREDICT THE TIME POINT A PATIENT WILL LIKELY RECEIVE HIS KIDNEY TRANSPLANT?

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Background: One of the most important questions for patients on the waiting list is when will I get my kidney transplant. The Swiss transplant allocation algorithm relies predominantly on a ranking system based on points acquired by the patient due to waiting time, HLA and cPRA scores. The allocation system provides for each organ offer a ranking of all listed patients. We calculated the potential time point of transplantation for the individual patient based on their previous allocation history and ranking.
Methods: All patients who received a deceased donor kidney transplant at our hospital between Jan and Dec 2014 were analyzed retrospectively. Patients who received combined organ transplants or pediatric recipients were excluded. We computed a regression analysis between date of organ offer and ranking score for each individual patient. Based on this regression we calculated the predicted time point when the patient would be ranked number one, thus get the organ offer. We also computed the time difference between actual and predicted time of transplantation.
Results: Altogether 23 patients could be included in the final analysis. Their actual median waiting time was 4.4 years (min 0.8, max 6.0 years), the predicted was 5.6 years (min 1.7, max > 15 years). Variation in predicted versus actual transplant times was primarily due to significant recipient sensitization, blood group status, and EBV-negativity. However, the analysis revealed a subgroup of high predictability. In unsensitized patients with blood group 0 the mean difference between predicted and actual transplant time was 7 months. In this group the relatively robust predictability was reflected in a mean R^2 value of 0.86.
Conclusion: Overall the variability between predicted and actual time point of transplantation is high, however in patient subsets the likely time point of receiving a kidney transplant can be predicted with reasonable accuracy.

Clinical Kidney Donation and donor types

P099 THE RISK FACTORS OF KIDNEY FAILURE FOR LIVING KIDNEY DONOR

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Background: More than 10% of the population worldwide is affected by chronic kidney disease. Hypertension, obesity and older age are widely considered as a factors increasing a risk of renal failure (RF). It is generally expected, that living kidney donation (LKD), despite of the loss of nephrons, would not lead to accelerated loss of renal function lifelong. Safety and lack of increased risk of RF must be provided for every kidney donor candidate.
Methods: Retrospective study including 156 living kidney donors that underwent nephrectomy procedure in 2003–2016 was performed. Patients were divided into 2 groups based on the criterion of glomerular filtration rate (GFR) estimated during the long-term follow-up observation. Medical data were analyzed in terms of parameters related with the kidney functioning. Differences between the groups were assessed.
Results: Mean follow-up period was 5.4 years. Group I (GFR>60 ml/min/1.73 m^2) was consisted of 116 donors aged 24–64 years. Group II (GFR<59 ml/min/1.73 m^2) included 40 donors aged 28–72 years. Mean postdonation GFR-loss was 25.1% in both groups (24% (group I) vs. 28.2% (group II), [n.s.]) during the observation. Patients in group I were significantly younger, with the average age 41.4 years in comparison to the group II with the mean age 48.3 years. BMI scores were significantly higher for the group II than for the first one. No statistical significance in terms of predonative hypertension were observed (group I: 8 cases vs. group II: 5 cases).

	Group I	Group II	p value
CKD EPI GFR [ml/min/1.73 m^2]	>60	<59 (down to 33.7)	–
No. of patients (male: female ratio)	116 (37m:79f)	40 (17m:23f)	–
Postdonative loss of GFR	24%	28.2%	0.11
Predonative hypertension	8 cases (7.4%)	5 cases (12.5%)	0.26
Mean age [years]	41.4	48.3	<0.001
Median BMI [kg/m^2]	23.9	26.1	<0.001

Conclusions: Qualification to LKD should be based on a multivariate analysis including all potential risk factors. Taking the estimated GFR as a criterium on its own is not enough, even if all other factors within acceptable limits suggest the safety of LKD when assessed selectively. Mathematical formulas involving several predictors seem to be necessary. Combination of them may conceivably reveal the individual risk of RF being significantly higher after donation.

Clinical Kidney Donation and donor types

P100 FOLLOWUP AND OUTCOME OF RENAL TRANSPLANTATION WITH DECEASED AFTER CARDIAC DEATH DONORS (DCD)

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Introduction: Prior to the introduction of the diagnosis of brainstem death, transplant organs were removed from DCD. There are renewed interest in DCD kidney transplantation and have been developed programs with this type of grafting. We analyzed the function and outcome of kidney transplants performed from DCD in our hospital.
Patients and Methods: Sixty five patients were grafted with kidneys from DCD (45 type II and 20 type III). This group was compared with recipients of standard criteria donors (SCD) matched for age, sex, number of transplants and HLA. Immunosuppression was performed with Basiliximab, Prednisone, Tacrolimus and 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 mg/dl versus 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: The DCD source of kidneys has evidence of equivalent graft function and survival, compared with SCD and may contribute to expand the donor pool

Clinical Kidney Donation and donor types

P101 KIDNEY TRANSPLANTATION FROM CONTROLLED DCD DONORS – SINGLE CZECH CENTRE 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 2012/2013/2014/2015/2016 we performed some 235/282/265/263/255 kidney transplants (KTx) at our institution, of those 4/2/6/0/4 were from DCD donors. The retrieval with 5 min of no-touch interval we performed in 8 cases, 16 kidneys we transplanted. Mean donor age was 46 years (SD 8), average cold ischemic time (CIT) was 4.7 h (SD 2.2).
Results: There were 5 cases of delayed graft function (DGF) observed (31%), all the other 11 patients developed prompt kidney graft function. Mean SCr one month after the KTx was 136.5 μmol/l (SD 65), or 1.54 mg/dl (SD 0.73). The immunosuppression protocol was based on TAC/PRED/MMF and induction with Thymoglobulin.
Conclusion: Our initial experience is encouraging with low incidence of delayed graft function. There is room for expansion of the program in Czech Republic. Short CIT seems to be the key for DGF prevention in our hands.

P102 CZECH NATIONAL KIDNEY EXCHANGE PROGRAM – 5 YEARS AND 53 TRANSPLANTS

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Introduction: Kidney paired donation has been at first performed at our institution in 2003. Until 2011 only four 2-way exchanges were performed. Czech national paired exchange program has been setup in 2011, based at singe/most experienced Czech transplant center. All the incompatible pairs are collected prospectively in the database. The computer matching run is performed every three months with on average 12 pairs included.
Methods: There were in total 53 paired live kidney transplants (KTx) performed in Czech since 2011. There were nine 2-way, one 3-way and 4-way, two 5-way, two 6-way and one 7-way domino kidney paired exchanges performed, three altruistic samaritan donors entered the scheme so far. There were 9 (21%) cases of re-transplant, of those seven second, one third and one fourth KTx. Two surgeons performed all the transplants, one did all the mini-invasive nephrectomies using Hand Assisted Retroperitoneoscopic (HARS) live donor nephrectomy technique.
Results: Mean recipient age was 47.4 years (SD 11.8), seven patients had their second, one third and one fourth transplant done, mean SCr on discharge was 122.3 μmol/l (SD 40), equivalent of 1.38 mg/dl (SD 0.45). There were two cases of delayed graft function, all the other 51 kidneys started to work immediately, 1 patient died 3 days after surgery from MI. The program did help some 52 patients so far. The AB0i KTx program is being run in parallel as second option and also as a part of the program.
Conclusions: National kidney paired donation program can be run with the success in a single institution. Even long chains including 7-way exchanges can be performed at single institution. Paired donation limits some of the highly sensitized patients as well as blood group 0 recipients who may benefit from ABOi transplantation. To improve the matching rate, the cooperation with other European centers may increase number of incompatible pairs.

P103 USE OF ROUTINE SURGICAL DRAIN IS NOT ALWAYS NECESSARY AFTER LAPAROSCOPIC LIVE DONOR NEPHRECTOMY: MORE AND MORE MINIMALLY INVASIVE

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Background: Living donor kidney transplantation remains the optimal treatment option for patients with end-stage renal failure. Because its nature, donor outcomes are utmost important, as they are healthy individuals undergoing surgery to improve the life of others; so, if it is possible this procedure must be more and more minimally invasive with favorable outcomes. In this study, we aimed to evaluate the impact of routine use of surgical drains on complications and length of hospital stay (LHS) in patients undergoing LLDN.
Methods/Materials: Two hundred sixty-five donors who underwent LLDN from January 2010 to January 2017 were included in this study. Donors were divided into two groups: intraabdominal drainage and no drainage. Demographic data, serum creatinine levels, conversions, postoperative complications, and LHS were also collected.
Results: The mean donor age was 47.6 ± 11.1 years and 57.7% of the participants were female. Of the all individuals, 237 underwent left LLDN and 28 underwent right LLDN. The conversion rate from laparoscopic to open nephrectomy was 3.4%. Donors were divided into two groups: drain (n = 177) and no-drain (n = 88). The two groups did not differ significantly in relation to age, sex, postoperative serum creatinine levels. The mean LHS was the same also in both groups (drain 6.1 ± 2.1 days, no-drain 5.7 ± 2.4 days; p = 0.18) and there was no significant difference in postoperative infectious complications such as hemorrhage, intra-abdominal abscess, and urinary tract infection (p = 0.81). The rate of donors using routine drain was higher in right nephrectomies than in left-sided nephrectomies. However, these differences were of borderline significance (drain with left 64.9%, drain with right 82.1%; p = 0.06).
Conclusion: Prophylactic routine drain placement following LLDN did not provide a significant advantage in terms of LHS and postoperative complications. Based on these results, routine drainage should not be considered mandatory after LLDN.

P104 A SUCCESSFUL CASE OF DECEASED DONOR KIDNEY TRANSPLANTATION FROM ACUTE KIDNEY INJURY DUE TO RHABDOMYOLYSIS AND SUSTAINED HYPOTENSION OF NON-HEART BEATING DONOR WITH EXTRACORPOREAL MEMBRANE OXYGEN

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Introduction: Rhabdomyolysis with AKI is not contraindicated, but donor selection is important. In Korea, kidney donor pool is very small and mean waiting time was 4.4 years. Moreover, DCD is only allowed legally at the cases suspicious of brain death and processing about DBD.
Case Report: We reported a successful case of deceased donor kidney transplantation from acute kidney injury due to rhabdomyolysis and sustained hypotension of DCD donor with extracorporeal membrane oxygen (ECMO).

A donor was 35-year-old male patient who suffered from sudden cardiac arrest and was admitted to department of cardiology. Brain death was progressed. As the day went by, although critical dose of inotropics were administered, BP was decreased and veno-arterial ECMO was applied. Rhabdomyolysis mainly from ischemic damage of right leg was aggravated, and liver and kidney functions were deteriorated and 10 h- anuria was developed. All organs except one kidney were discarded. During transfer to operating room, cardiac arrest was developed. After 30 000 heparin was administered, DCD procedure was performed and perfusion using ECMO was done after 6 min of arrest.

56-year-old female patient having DM, HTN, CRF with hemodialysis during 4.5 years got allograft. Reperfusion was initiated 1 h after surgery. Total cold ischemic time was 615 min. After POD 17 of uliguria, more than 2000 cc of urine output was maintained. The lowest level of creatinine was 3.84 mg/dl despite every other day hemodialysis before POD 18, the level was decreased to 0.87 POD 30. ATN was proven with renal biopsy at POD 12. The myoglobin level was too high and not checkable on POD 1 without any events or symptoms about rhabdomyosis. The level was decreased to 1135 on POD 3 and 425 on POD 5.
Conclusion: Acute kidney injury from Rhabdomyolysis and sustained hypotension are not absolutely contraindicated for kidney donation, and donor selection and management must be discussed intensively and further researches will be needed.

P105 UP GRADE THE OLDER DONORS TO RECIPIENT OVER SIXTY YEARS OLD IN KIDNEY TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

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The use of kidneys from older donors is generally accepted but is controversial.

We evaluate the outcome of the patients over 60 years' old who receive a kidney from old donors more than 60 years old.

This is a retrospective study from April 2011 to September 2016, 205 patients were transplanted with grafts from deceased donors aged 60 years and older (60–84). The end point was patient and graft survival. Graft and patients' survival were calculated using Kaplan –Meier method. The median lengths of follow up were 65 ± 6 months.

Two hundred and five kidney transplants were performed. Five patients receive dual kidney transplant. We believe selective use of dual kidney transplantation can provide excellent outcomes to recipients of kidneys from older donors with reduced renal function.

Median recipients and donor age were 66, 30 and 65 years old. After a median follow–up of 65 months, 21 of 205 patients died (10.24%). Twelve of twenty patients died before of the first years of the transplant. The cause of death was because of cardiovascular complications and infectious diseases. Patient survival rates were the 89.76%.

The graft survival with death censored was 87%.
Conclusion: We have a good outcome of kidney transplant from donors aged 60 years and older, achieved in elderly recipients with low comorbities Its important a selective pre transplant evaluation. The use of older donors can provide excellent outcomes to older recipients.

P106 THE ASSESSMENT OF GRAFT-RELATED RISK FACTORS FOR WORSE INITIAL GRAFT FUNCTION OF LIVING-DONOR KIDNEY TRANSPLANT

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Background: Immediate graft function (IGF) is associated with better long-term outcome of kidney transplantation than slow (SGF) or delayed graft function (DGF). Donor age, HLA mismatch, AB0 compatibility, time on dialysis and cold ischemia time are mostly considered to impact the early outcome of deceased-donor renal transplant. Predictive factors for IGF of living-donor (LD) kidney transplant have not been well defined.
Methods/Materials: Study included 40 cases of kidney transplants from LD performed between Aug 14 and Dec 16. Recipients were compared in 2 groups based on their initial graft function (IGF group with serum creatinine <3 mg/dl by 5th postoperative day vs non-IGF group with SGF and DGF cases). Data of harvested kidneys weight and dimensions after their cold preparation and perfusion were prospectively collected. The impact of the allograft-related factors for initial graft function was analyzed.
Results: IGF group included 24 cases (mean age 34.9 years, 13 men). 16 cases (mean age 36.6 years, 12 men) were classified as non-IGF. Kidneys transplanted with IGF result were on mean 115.2 mm-length, 58.3 mm-width and 41.9 mm-thick. Those with non-IGF were on mean 111.1 mm-length, 56.3 mm-width and 42.3 mm-thick. Mean organ volume was estimated at 145.8 cm^3 in IGF group and 138.2 cm^3 in non-IGF group (NS). Mean allograft weight was determined on 0.163 kg vs. 0.153 kg, respectively (NS). The mass of 1 cm^3 of transplanted kidney estimates at 1.17 g in average for IGF group, while 1.16 g for non-IGF (NS).

	IGF Group	Non-IGF Group	p value
No. of cases	24	16 (12 SGF, 4 DGF)	–
Male-to-female ratio	13:11	12:4	0.182
Mean age [years]	34.9 (20.0 – 60.3)	36.6 (22.3 – 65.7)	0.814
Mean cold ischemia time [min]	48.8	66.8	0.296
Mean anastomosis time [min]	33.3	36.88	0.5
Mean length [mm]	115.2	111.1	0.233
Mean width [mm]	58.3	56.3	0.57
Mean thickness [mm]	41.9	42.3	0.9
Average volume [cm^3]	145.8	138.2	0.55
Average weight [kg]	0.163 (0.112 – 0.228)	0.153 (0.120 – 0.242)	0.242

Conclusion: No notable differences in terms of harvested organ's dimensions were observed between groups, but a small number of analyzed cases limits the interpretation of the lack of statistical significance. Detecting those recipients with higher risk of worse initial graft function makes it possible to timely posttransplant intervene. The impact of SGF or DGF for the long-term outcome of LD kidney transplantation is severe enough to justify carrying further investigation.

P107 DONOR-DEPENDENT PREDICTORS OF IMMEDIATE GRAFT FUNCTION AFTER LIVING-DONOR KIDNEY TRANSPLANTATION

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Background: Risk factors of slow graft function (SGF) and delayed graft function (DGF) for deceased-donor (DD) kidney transplants are well known. Predictors for immediate graft function (IGF) after living-donor (LD) kidney transplantation have not been well defined yet in the literature.
Methods/Materials: 40 cases of LD kidney transplants performed between Aug 2014 and Dec 2016 were evaluated. A comparison of donors clinical features was performed between 2 groups based on recipients initial graft function (IGF group with serum creatinine <3 mg/dl by 5th postoperative day vs SGF/DGF group including other cases).
Results: IGF was observed in 24 cases (mean aged 34.9 years). 16 patients (mean aged 36.6 years) were classified as SGF (12 cases in all) or DGF (4 cases). 37 patients received left-sided organ (23 for IGF vs 14 for SGF/DGF [NS]). No significant differences were observed in human leukocyte antigen (HLA) matching between the groups [NS]. More than 3 HLA mismatches were found in 14 cases (58.3%) in IGF group, while in 5 cases (31.3%) in SGF/DGF group. Transplantation procedures were performed from 12 unrelated (IGF-to-SGF/DGF ratio: 7:5) and 28 related (IGF-to-SGF/DGF ratio: 17:11) LD [NS]. No significant differences were observed in terms of mean donor age (44.96 years for IGF vs 48.16 years for SGF/DGF) and mean donor BMI (24.23 kg/m^2 for IGF vs 24.13 kg/m^2 for SGF/DGF). No significant differences between the groups were also observed in terms of the impact of Kidney Weight/Recipient Weight Ratio (Kw/Rw), Kidney Weight/Recipient BMI Ratio (Kw/BMI) or Kidney Weight/Recipient BSA Ratio (Kw/BSA) on initial graft function.

	IGF Group ($N = 24$)	SGF/DGF Group ($N = 16$)	p value
Left-sided allograft	23	14	0.326
Right-sided allograft	1	2	0.326
Unrelated donor	7	5	0.89
Related donor	17	11	0.89
Mean HLA mismatches	3.0	2.13	0.13
Mean donor age [years]	44.96 (ranged 24.84–72.49)	48.16 (ranged 31.36–59.79)	0.378
Mean donor BMI [kg/m^2]	22.37 (ranged 19.16–32.63)	23.82 (ranged 20.57–29.04)	0.235
Mean Kw/Rw [g/kg]	2.5	2.3	0.116
Mean Kw/BMI [gm^2/kg]	7.4	6.7	0.145
Mean Kw/BSA [g/m^2]	93.0	85.5	0.137

Conclusion: Although there were a slight differences noticed between compared groups in our analysis, no statistical significance was observed. The influence of a small sample cannot be excluded. Further studies, with a greater number of cases included, investigating a predictors of LD kidney transplant immediate function are urgently needed.

P108 A SINGLE CENTER OUTCOMES ANALYSIS OF CONTINUOUS RENAL REPLACEMENT THERAPY TO INTERMITTENT HEMODIALYSIS IN DONORS WITH ACUTE KIDNEY INJURY

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Body: Acute Kidney Injury (AKI) occurs frequently in the ICU and renal replacement therapies, such as intermittent hemodialysis (IHD) and Continuous renal replacement therapy (CRRT) are often initiated in this setting. IHD and CRRT have been compared in several studies, but no study has compared these two therapies in Donors with AKI.
Aim: To assess transplant related outcomes in recipients from donors with acute kidney injury on IHD versus CRRT at the time of procurement.
Methods: Kidneys transplanted at our center with AKI either on IHD or CRRT between 1/2015–10/2016 were analyzed for donor admit creatinine (DaCr), donor peak creatinine (DpCr), donor terminal creatinine (DtCr), patient survival, graft survival, and post-transplant recipient Cr (Cr) at 1, 3, 6, and 12 month intervals.
Results: 25 recipients at our center received kidney transplants from donors with AKI on a RRT. (17 donors, 7 kidneys received IHD, 18 kidneys received CRRT.) When comparing CRRT to IHD, the mean DaCr was 1.56 versus 1.82, mean DpCr 6.67 mg/dl versus 5.43, and mean DtCr was 3.27 mg/dl versus 4.14 mg/dl. Mean donor age was 27.77 years versus 28 years. Mean KDPI was 37% for both groups. Race: 4AA, 3 Caucasian, 3 Hispanic, and 1 other versus 5 Caucasian and 2 Hispanic. Post kidney transplant mean Cr was 1.61 mg/dl versus 1.51 mg/dl at 1 month, 1.02 mg/dl versus 1.18 mg/dl at 3 months, 1.14 mg/dl versus 1.15 mg/dl at 6 months, and 1.13 mg/dl versus 1.15 mg/dl at 12 months. There was 1 death with functioning graft (Cr 1.19 mg/dl), related to a fungal infection in the CRRT group. There was 1 graft thrombosis in the IHD group but no deaths. There was no difference in the delayed graft function rate between the two groups.
Conclusion: ICUs are increasingly utilizing CRRT over IHD as a preferred form of RRT. Our study concludes that the choice of RRT in donors with AKI does not seem to have a significant impact on survivals and renal function. Since

P109 EXTENDED DONOR CRITERIA KIDNEYS IN OLD ADULT RECPIENTS, GRAFT AND PATIENTS OUTCOME: SINGLE INSTITUTE EXPERIENCE

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Background: Age limits of both kidney transplant recipients and donors have expanded significantly in recent years. Yet outcomes of ECD kidneys in old adult recipients are not well understood. The goal of this study is to estimate patient and graft survival in this group of patients, as well as estimate the cost of transplantation at single Institution.
Methods: Retrospective study of all kidney transplant recipients of age 65 or older, who received ECD kidneys from DBD and DCD in our institute between July 2008 and March 2016. We follow the UNOS classification of DBD and DCD grafts. We applied same parameters on both DBD and DCD grafts.
Results: Thirty patients have been included in this study, average age was 68.5 ± 2.3 years and mean follow up was 1082 ± 976 days. Seven patients received DCD kidneys. Eight patients lost their grafts (26.7%), all of them in the first-year post transplant operation. One graft has been removed because of recurrent pyelonephritis not responding to treatment after 2 months, and one was removed 2 days because the donor had adenocarcinoma of gall bladder. One kidney failed 9 months after transplant secondary to BK nephropathy. Two kidneys had intra-parenchymal thrombosis, one on post-operative day one and other one removed two days after renal artery re-implantation, which was performed 4 months after transplant operation. Two patients had primary non-function grafts. One patient lost his graft because of chronic rejection 7 months post-transplant.

Eleven patients are dead (36.6%), three of them died with failed graft (10%). Five patients died within first year (16.6%), two patients died within 3 years (0.07%) and four patients died within five years after transplant operation (13.3%). One patient because of massive gastrointestinal bleeding, another one due to massive intra-cranial bleeding, one pa.

P110 EXPANDING ACCEPTANCE CRITERIA AND THE INCIDENCE AND OUTCOME OF POST-TRANSPLANT UROLOGICAL COMPLICATIONS IN KIDNEY TRANSPLANTATION

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Introduction: Due to organ shortage, expanded criteria donor (ECD) kidneys have been increasingly utilized to expand the donor pool. The expansion of acceptance criteria increases the risk of urological complications.
Subjects and Methods: A total of 203 kidney transplants recipients were reviewed after the introduction of ECD. These included 65 (32%) live donor (LD), 81 (40%) standard criteria donor (SCD) [of which 56 (27.6%) DBD and 25 (12.3%) DCD] and 57 (28%) ECD [of which 35 (17.2%) DBD and 22 (10.8%) DCD] kidney transplants. Seven ECD kidney pairs (3 DBD and 4 DCD) were utilised as Dual. ECD is defined as a donor ≥60 or 50–59 years old with at least two co-morbidities including hypertension, cerebrovascular accident (CVA) as a cause of death, and pre-retrieval creatinine >132.6 μmol/l. Urinary catheter is normally removed at day 2–3 post-transplant unless longer catheterisation is indicated.
Results: Twelve urological complications were reported in 12 (5.9%) recipients. These collectively occurred significantly in 8 (14%) ECD compared to 3 (3.7%) SCD and one (1.5%) LD transplants ($p < 0.05$). Ureteric stricture was the most common complication occurring in 8 cases (3.9%), of which 3 (4.6%), 4 (4.9%) and 1 (1.8%) in LD, SCD (3DBD and one DCD) and ECD (DCD) kidney transplants respectively. All except the LD transplant (12 months) occurred within 3 months post-transplant. However, there was no significant difference between groups. Intra-operative renal pelvis puncture caused by the D-J Stent in an ECD/DBD transplant that was stitched successfully. A case of anastomotic urine leak case was reported in an ECD/DBD transplant (0.5%). Obstructive uropathy (mild hydronephrosis) caused by lymphocele in reported in one (0.5%) ECD/DCD transplant. Hydronephrosis secondary to vesico-ureteric reflux occurred was report.
Conclusion: All post-transplant urological complications were managed successfully. Ureteric stricture was the most common complication.

Table 1: Post-transplant urological complications, intervention and outcome.

Complication	No. of cases (%)	Intervention	Outcome
Ureteric stricture	8 (4%)	7 Surgical re-construction after nephrostomy One Nephrostomy and antegrade stenting: 1	Grafts salvaged
Obstructive uropathy by lymphocele	1 (0.5%)	Radiological drainage of lymphocele.	Successful, kidney function improved.
Ureteric stent pierced renal pelvis.	1 (0.5%)	Stent retracted & closure with 4/0 PDS intra-operatively.	Functioning graft
Hydronephrosis 2ry to VU reflux	1 (0.5%)	Conservative measures.	Mild Hydronephrosis, kidney function remained stable.
Anastomotic Urine leak	1 (0.5%)	Surgical reconstruction.	Successful, graft salvaged.

P112 ESTIMATING DONOR ORGAN QUALITY WITH BASELINE HISTOLOGY AND KIDNEY DONOR RISK INDEX FOR PREDICTING GRAFT OUTCOMES IN DECEASED DONOR KIDNEY TRANSPLANTATION

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Background: Donor organ quality is a key determinant of graft outcomes in deceased donor kidney transplantation (DDKT). The effect of baseline histology at the time of transplantation and several donor quality scoring systems on long-term graft outcome has been evaluated but these results were debated.
Methods: To investigate the predictive values of baseline histology and kidney donor risk index (KDRI) for graft outcome, we screened 167 patients who received DDKTs at Ulsan University Hospital from April 2003 to June 2016. Among them, 66 DDKTs who underwent baseline kidney biopsies and whose KDRIs were available were included in this analysis. All baseline biopsy was rescored according to the updated Banff classification.
Results: Median follow-up was 18.5 months. Mean age of recipients and donors are 51.4 and 44.7 years, respectively. Mean kidney donor risk index (KDRI) was 1.40 ± 0.44. During follow up, delayed graft function (DGF) and biopsy-proven acute rejection (BPAR) developed for 6 and 11 patients, respectively. Graft failure occurred to only 1 patient at 8 days after DDKT for acute antibody-mediated rejection, and the baseline biopsy showed 50% glomerulosclerosis (3/6), severe (>50%) interstitial fibrosis and severe (>50%) tubular atrophy. In multivariate linear regression, age (standardized beta = −0.223, $p = 0.026$), BPAR (standardized beta = −0.414, $p < 0.001$), KDRI (standardized beta = −0.264, $p = 0.013$) and interstitial fibrosis/tubular atrophy (IFTA, standardized beta = −0.266, $p = 0.009$) were significant predictors of last-visit estimated glomerular filtration rate.
Conclusion: Several clinical and pathologic parameters such as KDRI and IFTA may be helpful for predicting allograft outcomes in DDKTs.

P113 CORRELATION OF THE RENAL CORTEX VOLUME WITH THE GLOMERULAR FILTRATION RATE IN LIVE DONORS FOR RENAL TRANSPLANTATION

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Introduction: As a Pre-transplant evaluation, both kidneys of the donor are analyzed from the structural and functional approaches. Renal function is determined by the Glomerular Filtration Rate (GFR) and the Estimated Glomerular Filtration Rate (GFR). The GFR of both and of each of the kidneys can be determined with the use of Renal Scintigraphy (GR). To date there are no studies reported in the national and international medical literature that correlate VCR-CT with GFR-GR, GFR-AC and GFR (CG, MDRD, CKD.EPI) in Mexicans living donors.
Aim: To determine if there is correlation of the volume of the renal cortex by CT (VCR-CT) with the GFR determined with GR (GFR-GR). In parallel, we intend to define if there is correlation of the VCR-CT with the GFR determined with (GFR-AC).
Material and Methods: The present study is analytical, observational and cross-sectional. A review of the donors from January 1, 2014 to December 1, 2014, with a complete clinical file, kidney measurements, pre-donation tomography volume, and TFGe by different formulas and by renal Gamma-gram.

Results: See table 1

	R value	p value	Low confidence interval	High confidence interval
eGFR 24 h urine	0.289	0.103	−0.036	0.377
eGFR herts	0.346	0.049	0.002	0.684
eGFR CG	0.162	0.368	−0.121	0.136
eGFR MDRD	0.137	0.446	−0.145	0.321
eGFR CKD-EPI	0.289	0.103	−0.051	0.522
Weight kidney	−0.224	0.211	−0.164	0.038
Long kidney	−0.005	0.976	−2.086	2.026
Gross kidney	−0.098	0.587	−4.349	2.504
Deep	0.146	0.418	−2.076	4.867
Volume donor kidney	0.097	0.590	−0.062	0.108

Discussion Conclusions: To date there is no consensus as to which is the best formula, the equations for calculating the GFR of both kidneys are routinely used in the vast majority of transplant centers. Examples of the most frequently used are the Cockroft-Gault (CG), Modification of Diet in Renal Disease (MDRD) and Chronic Kidney Disease Epidemiology Collaboration Equation (CKD.EPI) equations. However, they tend to underestimate the GFR as they were designed from the study of patients with CKD in healthy donors to estimate the rate of glomerular filtration. Of the different formulas, the one that best correlated with the GFR was the Herts method which uses the volume of the kidney.

Clinical Others Donation and donor types

P114 IMPLEMENTING A SPECIALIST REQUESTER ROLE TO INCREASE CONSENT RATES IN THE UNITED KINGDOM

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Background: Organ donation consent rates in the UK have been stagnant over the last 10 years or more, despite a modernised infrastructure and an increased work force of specialist nurses in organ donation. In order to address this deficiency NHSBT have begun the roll out of a Specialist Requester role across the UK. Based on the principles that concentrated training, practice, exposure and fewer people undertaking the role will increase the expertise of those performing that role and thus increase the consent rate. In addition to this, there has been a significantly high attrition rate with Specialist nurses, and feedback has demonstrated that a 24 h on-call commitment was a trigger for individuals leaving the organisation. Findings from a 9 month pilot in two regional teams in England demonstrated a 5–7% increase in consent rates and positive impact on working hours.
Method: The Specialist Requester role is being implemented with the aim of impacting positively upon both consent rates and the working hours of the Specialist Nurse team. The evolution of the Specialist Requester role will see a change from the current working model and so engagement with clinical teams to address concerns and allay fears has been necessary to ensure the success of the roll out. The concerns from nurses and clinicians are mainly regarding changes to pay, the focus on individual performance, role erosion and the potential impact on hospital development.
Results: The Specialist Requestor role is now live in 4 regions across the UK. The early indications are showing an increase in consent rate and a reduction in working hours.
Conclusion: Initial concerns expressed by nursing and clinical teams have largely subsided and the role is becoming embedded in practice demonstrating that it is possible to achieve a new model of working to impact consent rates and work-life balance.

Basic Others Donation and donor types

P115 NEEDS FOR A PAEDIATRIC ORGAN AND TISSUE DONATION PROTOCOL; AN OVERVIEW OF THE LITERATURE

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Background: Paediatric donation is a unique and extremely sensitive process that requires specific knowledge and competencies. Most countries make use of a specific donation protocols for organ and tissue donation to ensure optimal care for the donor and the family during and after the donation process. These protocols, however, focus mainly on adults. The donation process for children differs from that of adults in many ways. We performed a literature review to identify and compare donation protocols for the paediatric population.
Methods: We searched PubMed, Web of Science, Embase electronic databases. Our search strategy consisted of terms describing organ and tissue donation protocols, specific to children and neonates. After title and abstract screening, we performed full-text screening on relevant data such as protocol, policy description or recommendations for a protocol.
Results: A total of 13 articles were included in this literature review. Most articles originated North America and only a few were from Europe. Most of the articles discussed Donation after Cardiac Death (DCD) protocols. Other articles discussed both DCD and Donation after Brain Death (DBD) and one article focused solely on DBD. The recurring themes in these articles included identification of potential donors, approach of parents and family, palliative care and collaboration with the Organ Procurement Organization (OPO). Seven of the 13 articles (54%) call for standardisation of paediatric donation policies.
Conclusion: Publications on paediatric donation protocols are very scarce. Despite the call for standardisation of paediatric donation policies by international experts, no comprehensive and national paediatric donation protocol was found. We identified several recurring themes in the literature that can be used for the development of such a protocol.

Clinical Liver Allocation

P116 LONG-TERM OUTCOMES OF LIVER TRANSPLANTATION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE VERSUS PATIENTS WITH ALCOHOLIC LIVER DISEASE

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Background: Non-alcoholic fatty liver disease (NAFLD) is now a frequent indication for liver transplantation (LT). Comprehensive follow-up studies are required to better understand long-term outcomes in comparison with other indications for LT. Alcoholic liver disease (ALD) is an established indication for LT and similar to NAFLD lifestyle choices play an important role in the pathogenesis of ALD. This study aimed to evaluate long-term outcomes and changes in body mass index (BMI) following LT for NAFLD in comparison with LT for ALD.
Methods: Patient and graft survival were compared using Kaplan Meier curves and log rank test. Multivariable analysis of recipient (age, sex, presence of hepatocellular carcinoma, MELD) and donor characteristics (age, donor type) was performed as determinants of patient survival. BMI at listing was compared with BMI at regular intervals post-LT in each group.
Results: Between 2002 and 2015, 84 patients underwent LT for NAFLD and 224 for ALD. Patient survival at 1-, 3-, 5- and 10 years post-LT was similar in the ALD group and the NAFLD group (94 vs. 93%, 91 vs. 89%, 83 vs. 77%, 62 vs. 66% respectively, $p = 0.36$). Only patient (in the NAFLD group) was re-transplanted. Graft survival (ALD vs. NAFLD) was comparable at 1-, 3-, 5- and 10 years post-LT (94 vs. 93%, 91 vs. 89%, 83 vs. 77%, 62 vs. 66% respectively, $p = 0.32$). Multivariable survival analysis didn't identify any significant predictors of reduced survival. In comparison with the ALD group, BMI was significantly higher in the NAFLD group at listing (31 vs. 27, $p < 0.001$), 3 months post-LT (28 vs. 26, $p < 0.05$) and 6 months post-LT (29 vs. 27, $p < 0.001$) but was equivalent in the longer-term up to 5-years post-LT (29 vs. 30, $p = 0.80$).
Conclusions: NAFLD patients had similar long-term outcomes compared to ALD patients. NAFLD patients returned to their baseline BMI within just one-year post-LT but in the longer-term post-LT there was no significant difference in BMI between the groups.

Clinical Others Allocation

P117 TELECONSULTATION OF IMAGES BETWEEN COLLECTORS AND GRAFTING CENTERS

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After the clinic, imaging is the most effective way to rapidly assess a donor. Whether to confirm the diagnosis of brain death, eliminate a medical contraindication. These radiological examinations must also enable the transplant teams to make their decision on specific data enabling them to evaluate the benefit to their patients more precisely. The decision-making process can be optimized by transmitting images to the transplant teams, enabling them to assess the organs more quickly and safely, and avoid unnecessary movement if the organ is not of sufficient quality. More than 50% of donors now have "extended criteria" for interpreting these H24 radiological exams and, in urgent cases, may be a problem, while 80% of donors have a radiological record on their hospital. charge. These images are most often stored on a PACS.

The proposed process is an IT intermediation provided by the Agency of Biomedicine (ABM) and guaranteeing the anonymity of the donation: 1. Images from the donor's examinations are stored on the PACS system of the institution to which it is connected. It's an usual process2. A data-processing dialogue is initiated between the sampling institution and the ABM. in order to reconcile the donor identification on the computer systems of the two entities; In fine the personal data are substituted by the cristal number. 3. Once this operation has been carried out, the "donor" file can be, within the Cristal computer application of ABM,(access paths and identifiers allowing access), in a secure and limited way, for 8 days, Visible to the transplant (TT). 4. The doctors of ABM, TT can thus directly access the copied, stored and anonymised images on the ABM server. 5. Beyond the simple on-screen viewing (streaming), the downloading of images can be envisaged.. 6. The time required for consultation is 15 min. The transmission of images thus becomes a decision-making aid for all the TT who have access to the images with all the other medical information contained in the folder CrIstal

Clinical Liver Donation and donor types

P118 EXPERIENCE OF RENAL TRANSPLANTS FROM DONORS WITH A RENAL ARTERY ANEURYSM AFTER A LAPAROSCOPIC DONOR NEPHRECTOMY AND EX VIVO RECONSTRUCTION OF THE RENAL ARTERY BAIMAKHANOV B.B, IBRAGIMOV R.P.

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Introduction: The use of kidneys from a select group of living donors with renal artery aneurysms (RAA) is a novel way to increase the number of organs available for transplantation. Renal artery aneurysms are uncommon, and various surgical options to treat renal artery aneurysms have been described.
Materials and Methods: Aneurysm was an incidental finding in live donor (woman 53 years old) while preparing for transplantation. During examination there were no lab changes and any complaints. CT shows renal artery aneurysms (RAA). We used standard permanent clip for the repairing RAA.
Result: Renal function test results of patient satisfied the living-donor selection criteria. The left kidney with RAA was removed laparoscopically, and ex vivo repaired of the aneurysm and successfully transplanted to man, aged 30 years.
Conclusion: In cases of renal artery aneurysms that necessitate treatment, a renal allograft transplant should be considered as a treatment option. It provides safety and benefit to the recipient as well the donor.

P119 CURRENT ANALYSIS ON EMPLOYMENT STATUS OF RECIPIENTS AFTER LIVING OR DECEASED DONOR LIVER TRANSPLANTATION

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Background: Due to the development of better surgical techniques and immunosuppressants, survival of liver transplant patients is improving. With the focus shifting from longer graft survival to patient quality-of-life (QOL), employment is an important factor in aiding the social reintegration of liver transplant patients. This study aims to evaluate current employment status of liver graft recipients and various factors that may influence the outcome.
Method: 50 patients above age 18 who underwent either living or deceased donor liver transplantation at a single center from March, 2009 to July, 2016 were interviewed at random during their visit to the outpatient clinic. The internally developed questionnaire consisted of 20 items regarding employment, financial status, and social activity. The Karnofsky Performance Scale and EQ-5D were used to evaluate patient function and QOL.
Results: 25 (50%) patients returned to work after transplantation and 24 (96%) of the working group previously had jobs. 21 (84%) returned to work within in the first year after transplantation. In the non-working group, 7 (28%) declared themselves retired while 3 (12%) actively searched for jobs. Fatigue was the most frequent reason for unemployment ($n = 13$, 52%).

Hospital stay was slightly shorter (23.24 ± 15.16 vs 25.56 ± 13.57, $p = 0.571$) and Karnofsky scale was higher (87.40 ± 8.55 vs 83.60 ± 12.87, $p = 0.226$) in the working group. The group that returned to work within the first year took longer time in stabilization of the liver function test (25.10 ± 35.10 vs 16.76 ± 16.47 days, $p = 0.321$). No other variables were found to give significant influence over working status.
Conclusion: The data shows that 50% of the patients return to work after receiving liver transplantation. Fatigue was the most common complaint of the unemployed group, and resolving the cause for this symptom may help in increasing employment rate. Some patients may return to work too quickly before their liver function is stabilized.

Basic Liver Allocation

P120 THE MODEL FOR END-STAGE LIVER DISEASE (MELD) AND SEVEN DERIVED VARIANTS TO PRIORITIZE LIVER TRANSPLANT CANDIDATES: WHICH IS THE WINNER?

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Background: Under the current liver transplantation policy, the patients with the highest risk of death are preferred for organ placement. The aim of this study was to investigate the prognostic value of the Model for End-stage Liver Disease (MELD) and seven derivations including, MELD-Na, MELD-Albumin, 5vMELD, uMELD, iMELD, MESO, and UKELD for outcome prediction in cirrhotic patients waiting for liver transplantation.
Methods: The study was conducted on 416 cirrhotic patients (65.9% male; age 49 ± 13.9 years) admitted to liver transplant waiting list from January 2013 to October 2016. A combination of novel and traditional measures was employed to quantify models' performance: The Brier Score (BS), c-statistic, Hosmer-Lemeshow (H-L) test, calibration plot, and Decision Curve Analysis (DCA). Study endpoints were 3-month, 6-month, and 1-year mortality.
Results: All prognostic models had acceptable overall performance (0.12 < bs<="" p="“"><</bs.
Conclusion: Although modified versions including sodium and albumin showed effective prioritization of liver transplant candidates, but poor calibration statistics highlight the need for recalibration process as an inevitable prerequisite before daily clinical use at individual level in different populations.

Clinical Liver Donation and donor types

P121 3D PURE LAPAROSCOPIC LIVING DONOR HEPATECTOMY

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Laparoscopic living donor hepatectomy is performed very selectively in some countries because of the small sized structures and anatomic variations which requires more precise technique. In Kazakhstan about 200 cases of living donor liver transplantation were performed starting from December 2011. We now present the first case of laparoscopic living donor hepatectomy in Kazakhstan using a 3D laparoscopic device with team from Seoul National University Hospital professor Kwang Woong Lee and professor Young Rock Choi, Seoul, Korea.

A 23-year-old male volunteered for living donor to his younger brother who had combined hepatitis B and D and hepatitis C related cirrhosis without any history of antiviral treatment. His model for end-stage liver disease score was

22. Brief morphologic characteristics of donor and recipient were as follows: donor – height 177 cm, weight 74 kg, BMI 23.64 kg/m^2 standard liver volume 1348 ml; recipient – height 172 cm, weight 78 kg, BMI 26.44 kg/m^2, standard liver volume 1350 ml. Donor graft volume was 820 ml and left remnant liver volume was 32%. The surgery was performed in October 2016 with 5 port insertion using an ultrasonic dissector, Cabitron Ultrasonic Aspirator, and clips. The liver was extracted via 10 cm sized suprapubic incision. V5 and V8 were reconstructed to the right hepatic vein using the PTFE graft. Both donor and recipient were discharged after 8 and 17 days respectively without any events.

Clinical Liver Donation and donor types

P122 WHEN THE DONOR GIVES THE TOXICS WITH THE GRAFT

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Most of the medical treatments have an hepatic metabolism, their metabolism and elimination is determined by the measure of their blood concentration. Does a liver graft could carry medication?
Material, Method: We present the case of a young girl, 2 years old, weight of 13Kg, who had a biliary atresia requiring a liver transplantation. The opportunity of a graft appears the 6th of November.

The donor was a lady, 26 years old, weight of 60Kg, brain dead after a suicide by massive absorption of medication on the 3th of November. The donor was quickly supported after cardiac arrest, without no flow, 107 min of low flow. The graft was removed 72 h after the drug absorption.

The graft was washed with IGL as conservation solution, the warm ischemia duration was 30 min, and the cold ischemia was 9 h. Before reperfusion, the graft (230 g) was washed with 250 ml of a 4% Albumin solution and purged with the patient portal blood (80 ml).

After reperfusion, the cardiac frequency dropped (127 to 88/min) associated with a low blood pressure (64/31)) without response to phenylephrine or norepinephrine, as after taking beta blockers. The patient presented a post-operative wake up delay (ablation tracheal tube 9 h after the procedure without sedation)

Blood sample were done in the recipient for the donor toxics 30 min after reperfusion.

Substances absorbed by the donor	Substances founded in the recipient	Half-life (h)
Propranolol	Propranolol 0.015 mg/l	5 h
Lamotrigine	Lamotrigine 0.02 mg/l	24 h
Venlafaxine	Venlafaxine 0.01 mg/l	5 h
Mianserin	Mianserin 0.01 mg/l	17 h
Cyamemazine	Cyamemazine 0.005 mg/l	10 h
Loxapine	Loxapine 0.03 mg/l	8 h

Despite the liver graft sampling has been well done and a wash out with Albumin and patient blood realized, we found the toxics absorbed by the donor in the recipient blood 30 min after the graft reperfusion.

The hepatic metabolism as probably been interrupted during the low flow period, although the donor had been stable and treated with ECMO.
Conclusion: The preservation and the washing of the graft didn't eliminate the medication taken by the donor. The drugs probably stored intracellular in the graft were released in the blood recipient in active form.

Basic Others Other

P123 THE DIFFICULTIES IN THE DIAGNOSIS OF BRAIN DEATH: A CASE OF DECOMPRESSIVE CRANIECTOMY

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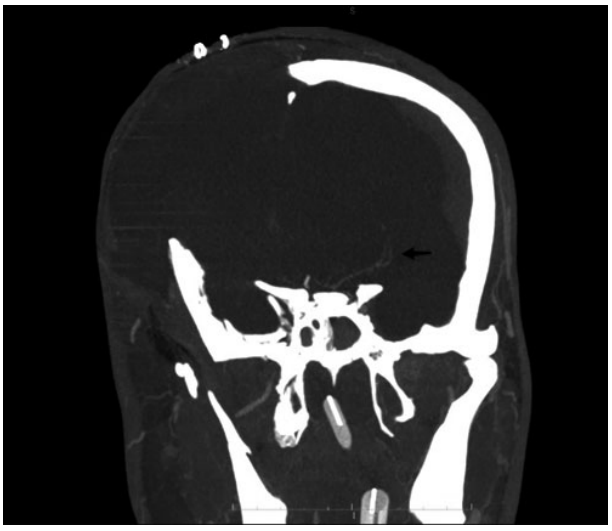
Decompressive craniectomy is a surgical procedure applied to reduce intracranial pressure. It is a frequently used method to increase cerebral perfusion and prevent cerebral compression when medical therapy is unsuccessful in patients with head trauma. Early decompressive craniectomy results well especially in patients with traumatic brain injury. However, variety of problems arise in supportive tests to confirm the diagnosis after clinically diagnosed brain death in patients; who have undergone decompressive craniectomy after head trauma.

A 25-year-old male patient was admitted to our emergency department due to a motorcycle accident. In cranial CT scan, there were an intraparenchymal hematoma in the right frontoparietal region, a fracture in the right sphenoid wing and posterior orbital wall, and right ventricular compression and left shift (Image 1). The patient underwent drainage of epidural hematoma and decompressive craniectomy by the neurosurgery clinic. The GCS score was assessed as 3 after approximately 8 h. Although the signs of brain death continued clinically, minimal cerebral blood flow was observed in CTAs taken on the following 10th and 16th days and brain death could not be supported. On the 21st day of hospitalization, brain death was not diagnosed with adjunctive tests and the patient was lost in 20 days after the positive apnea test.

Decompressive craniectomy used to reduce intracranial pressure, in these patients creates difficulties in supporting the clinical diagnosis of brain death. Consequently, we believe that there is a need for highly reliable and advanced adjunctive tests in order to be able to diagnose brain death in decompressive craniectomy and similar clinical situations and to avoid the loss of potential donor candidates.

Image 1:



Clinical Others Donation and donor types

P124 PERSIAN POSSIBLE DONOR DETECTION PROGRAM, A WAY TO DECREASE SHORTAGE OF ORGAN DONORS

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Background and Aim: One of the most important worldwide reason of suitable organ shortage for transplantation is inappropriate possible donor detection. Nowadays there are three different methods of donor identification in the world include passive detection, administrative detection and active detection.

This study evaluated the effectiveness of one new method of donor detection which is combination of administrative and active detection named PPDDP (Persian Possible Donor Detection project).

Methods and Materials: This study was conducted in one OPU center in Iran in 2013 which was consisted of:

- IP (Inspector Project): using trained nurses for visiting the ICUs regularly
- TDDP (Telephone Donor Detection Program) using trained medical staffs for primary evaluation of possible donors and following GCS 4 and 5 and GCS3 non-brain dead cases by phone
- HR (Hospital Reporting): reporting the possible donors to the OPUs by hospitals

Results: The number of possible donor detection increased from 70 cases per month to 475 during one year that showed the significant difference between PPDDP technique and traditional approach ($p = 0.001$). Furthermore, we revealed of 1560 possible donor patients who were detected with GCS = 4 or 5 in one year, 88 cases donated the organs, of 213 patients with GCS = 3 but non-BD (Potential donors), 61 cases and of 475 cases with GCS = 3 and BD (suspicious to be eligible donors as the inspectors point of view) 158 cases donated the organs.

Altogether, we had 158 actual donors from eligible detected donors by inspector and 149 actual donors due to following the possible and potential donors and totally 307 actual donors/year.

Conclusion: The study showed that the PPDDP technique significantly increased the rate of potential organ donation.

Keywords: PPDDP, donation, brain death, transplantation, donors

Translational Others Donation and donor types

P125 EFFECTS OF PEER TRAINING ON ATTITUDES TOWARDS ORGAN DONATION

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Aim: The aim of this study is to determine the effects of peer training on nursing faculty students' attitudes towards organ donation.

Methods: The study was conducted with the third-year nursing faculty students between February 2016 and October 2016 in accordance with the semi-experimental research model, and the effect of the peer-training model on attitudes towards organ donation was assessed. Twelve volunteer students were actively involved in the peer training. Data were collected by using the Organ Donation Attitudes Scale (ODAS) which is a valid and reliable instrument for determining attitudes towards organ donation in Turkey. The study data were collected in three stages: Pretest (before the peer training, $n = 240$), posttest 1 (1 month after the peer training $n = 193$), and posttest 2 (6 months after the peer training $n = 198$). To perform the analysis, the SPSS 15.0, descriptive statistical analysis and repeated measures analysis of variance (ANOVA) were used.

Results: The participants were in the 19–27 age group. Their mean age was 21.63 ± 1.19 years. There was no statistically significant difference after the peer training ($F = 0.666$, $p = 0.516$). The rate of the participants who had donor cards at the baseline, post-test 1 and post-test 2 were 24.2%, 8.8% and 13.3% respectively. The participants' knowledge related to organ donation registration system in Turkey increased after the peer training.

Conclusion: The study results demonstrated that peer training did not positively change nursing faculty students' attitudes towards organ donation but encouraged them to have donor card and increased their knowledge of organ donation system. To ensure the improvement of attitudes towards organ donation, there is a need for community-based interventional studies involving young population and their families.

Keywords: organ donation, peer education, nursing student

Clinical Liver Donation and donor types

P126 COMPLETE BLOOD COUNT OF DECEASED DONORS AND THE RESULTS OF LIVER TRANSPLANTATION

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Introduction: Evaluating donor characteristics is mandatory for the recipients' safety and aiding predicting outcomes. The aim was to assess whether abnormalities in complete blood count (CBC) of DBD liver donor present risk factors.

Methods: Early and long-term results [1-year recipient (1RS+/1RS-) and graft (1GS+/1GS-) survival, 5-year recipient (5RS+/5RS-) and graft (5GS+/5GS-) survival rates] of liver transplantation were evaluated in connection with donor CBC [HGB (g/dl), HCT (%), WBC (k/mm^3), PLT (k/mm^3)] respectively for 2804 transplantations in the years 1998–2013 and 1724 in the years 1998–2009. Data originated from Poltransplant's records.

Results: 1RS and 1GS for total group: 84.3% (2364/2804) and 81.3% (2279/2804). 5RS and 5GS: 72.8% (1255/1724) and 68.8% (1186/1724).

HGB for: 1RS+ = 11.4, 1RS− = 11.5, p = 0.327; 1GS+ = 11.4, 1GS− = 11.6, p = 0.093; 5RS+ = 11.1, 5RS− = 11.3, p = 0.071; 5GS+ = 11.0, 5GS− = 11.4 -was statistically (p = 0.009) lower for 5GS+.

HGB <vs≥ 12 = "" had="" no="" effect="" on:="" 1rs+ vs 1rs− = "" (84.8% vs 84.0%, p = "0.535)" and = "" 1gs+ vs 1gs− = "" (82.3% vs 80.4%, p="0.194);" 5rs+ vs5 rs− = "" (74.0% vs 71.5%, p = "0.264)" 5gs+ vs 5gs− = "" (70.6% vs 66.2%, p = "0.059). HCT for: 1RS+ = 34.4, 1RS− = 34.9, p = 0.171; 1GS+ = 34.4, 1GS− = 35.0, p = 0.076; 5RS+ = 33.6, 5RS− = 34.1, p = 0.174; 5GS+ = 33.5, 5GS− = 34.2 -was statistically (p = 0.048) lower for 5GS+.

HCT <vs≥ 36 = "" did="" not="" affect:="" 1rs+vs="" 1rs-="" (85.0% vs 83.3%, p="0.23)" and="" 1gs+ v s1gs− = "" (82.5% vs 79.8%, p="0.074);" 5rs+ vs 5rs− = "" (73.2% vs 71.6%, p="0.454)" 5gs+ vs 5gs− = "" (69.8% vs 66.8%, p="0.197).WBC for: 1RS+ = 13.8, 1RS− = 14.4, p = 0.072; 1GS+ = 13.8, 1GS− = 14.4 – was statistically (p = 0.044) lower for 1GS+; 5RS+ = 13.6, 5GS− = 14.2, p = 0.079; 5GS+ = 13.6, 5GS− = 14.2 – was statistically (p = 0.026) lower for 5GS+.

WBC <vs≥ 10 = "" did="" not="" affect:="" 1rs+vs1rs− = "" (85.5% vs 83.8%, p="0.28)," 1gs+ vs 1gs− = "" (82.9% vs 80.7%, p = "0.204);" 5rs+ vs 5rs− = "" (75.2% vs 72.0%, p = "0.19)" and="" 5gs+ vs ="" 5gs−="" (71.8% vs 67.7%, p = "0.102). PLT for: 1RS+ = 184, 1RS− = 188, p = 0.414; 1GS+ = 184, 1GS− = 189, p = 0.261; 5RS+ = 176, 5RS− = 183, p = 0.154; 5GS+ = 175, 5G</vs≥></vs≥></vs≥>

Clinical Others Donation and donor types

P127 EFFECTIVENESS OF QUESTIONNAIRES ON EXTRACTING INTENSION OF PRESENTING OPTIONS FOR ORGAN DONATION IN JAPAN

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Background: The Organ Transplant Law was revised in 2010 in Japan. The number of organ donations, however has not increased, which is a major barrier to transplantation medicine. In fact, options for organ donation rarely are presented to family members. In this research, we examine the effectiveness of the questionnaire on option presentation of organ donation.

Methods/Materials: We examined the questionnaire distributed just after arrival to the family of 2093 patients who were transported to the emergency medical center in our hospital from Oct. 2014 to Sep. 2015. The contents of the questionnaire were confirmation of intention of organ donation by patient and whether they like to provide information on organ donation by professional staff. We calculated basic statistics and statistically analyzed patient / family attributes with McNemar test and χ^2 test.

Results: The questionnaires were returned from 1548 families (recovery rate: 74.0%). Eighty-nine families (5.8%) expected intervention by in-hospital donor coordinator, 638 (41.2%) did not, and 821 (53.0%) did not know. Among 50 families intervened by the coordinator, 22 desired, 4 undesired, and 24 were unknown. Of the 9 who donated organs/tissues, 6 desired, but 3 were unknown. In the family who filled out the questionnaire, 637 (41.2%). The answer "unknown" for the intervention was significantly more when the key person was a wife ($p = 0.025$). Fifty-nine (3.8%) families responded that the transferred patients themselves had intention of organ donation. Families recognizing the

intention of the patients themselves by the document were clearer to intervene ($p < 0.001$).
Conclusion: The questionnaire is effective in screening the intention of organ donation of the family immediately after the emergency visit. However, we need to consider continuous support, because the family's thinking could change along the course of treatment and verification of the intention of the patient's intention of donation.

Translational Cell Donation and donor types

P128 APRODUCING ISLET LIKE CELL CLUSTERS FROM HIPSCS WITH CHEMICAL METHOD

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Diabetes mellitus is characterized by either the inability to produce insulin or insensitivity to insulin secreted by the body. Islet cell replacement is an effective approach for diabetes treatment; however, it is not sufficient for all the diabetic patients. MicroRNAs (miRNAs) are a class of small noncoding RNAs that play an important role in mediating a broad and expanding range of biological activities, such as pancreas development. The present study aimed to develop a protocol to efficiently differentiate human induced pluripotent stem (iPS) cells into islet-like cell clusters (ILCs) in vitro by using miR-186. The human iPS colonies were transfected with hsa-miR-186 by using siPORT™ NeoFX™ Transfection Agent. Total RNA was extracted 24 and 48 h after transfection. The gene expressions of insulin, NGN3, GLUT2, PAX4, 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.

Morphological changes were observed on the first day after the chemical transfection, and cell clusters were formed on the third day. The expression of pancreatic specific transcription factors was increased on the first day and significantly increased on the second day. The ILCs were positive for insulin and NGN3 proteins in the immunocytochemistry. Overexpression of miR-186 can be an alternative strategy for producing ILCs from the iPS cells in a short time. This work provides a new approach by using patient-specific iPSCs for β-cell replacement therapy in diabetic patients.
Keywords : β-Cell, Pancreas, Human iPS cell, miR-186

Clinical Others Donation and donor types

P129 THE OXFORD STUDENT TRANSPLANT ROTA: A UNIQUE LEARNING OPPORTUNITY

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Background: Transplant surgery is a growing speciality but it remains a small part of most medical school curricula. With limited undergraduate exposure doctors may be inadequately prepared to identify potential organ donors, and to provide appropriate information to patients. Furthermore, this could negatively impact recruitment to the speciality.

Organ retrieval is a crucial component of transplant surgery and yet few students are afforded the opportunity to attend these procedures. To address this problem we have developed a student transplant rota which we propose provides a unique learning opportunity, engages students in the speciality and encourages students to consider the ethical and emotional aspects of organ donation.
Methods: Medical students were invited to sign up to the transplant rota and attend organ retrievals. Students were asked to complete an online questionnaire regarding their experience ($n = 26$). Quantitative results were measured using a 5-point modified Likert scale.
Results: After attending an organ retrieval 58% of students were more likely to pursue a career in surgery (mean 3.7). 35% were more likely to pursue a career in transplant surgery, whilst 19% were less likely (mean 3.2).

All students would recommend attending a retrieval and 96% felt it was a useful learning experience. 81% of students stated they felt more confident discussing organ donation with patients.

Qualitative analysis was overwhelmingly positive; however, a number of students found aspects of the experience emotively challenging.
Conclusions: Undergraduates should be encouraged to attend organ retrievals and this can be achieved through a student transplant rota. Interestingly, after attending a retrieval, student opinion on a career in transplant surgery was divided which may represent a more realistic understanding of what the career entails. We should also recognise the emotional impact of organ retrieval and practitioners should be aware of this when accompanied by students.

Clinical Liver Donation and donor types

P130 DOMINO SPLIT LIVER TRANSPLANTATION FOR TWO RECIPIENTS FROM LIVING DONOR WITH MAPLE SYRUP URINE DISEASE: AN ADDITIONAL SOURCE TO EXPAND THE POOL OF LIVER GRAFTS

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Background: Whole Domino liver transplantation (LT) from living donors (LD) affected of maple syrup urine disease (MSUD) has been demonstrated to be a rare but successful alternative source of liver grafts. Up to now there is still no report in the literature about splitting such organs in order to further increase the pool of liver grafts.

Herein, we report a case of successful domino split liver transplantation in 2 recipients from a living donor affected of MSUD.
Methods: A 19 years old girl with MSUD underwent a whole DDLT in another centre. She donated her liver for a Domino LT. The graft was shipped to our centre and it was splitted ex-situ into a left lateral and an extended right lobe.

The left lateral lobe was transplanted into a 3 months old baby with decompensated liver failure in biliary atresia. The extended right lobe was transplanted in a 42 years old man with decompensated PSC-cirrhosis.

To be mentioned is the fact that although both recipient were listed with special MELD, none of them would have never reached a LT in a fashionable time because of absolute scarcity of DD and no living donor available. Both recipients and their families were aware of this special and dramatic situation and therefore accepted this "marginal" offer as only life saving chance.
Results: Both LT were successful. The CIT for the paediatric and the adult recipient were 8.5 and 10.5 h respectively. The postoperative course was uneventful in both recipients.

Six months after LT both recipients are doing well, with no metabolic complication related to MSUD liver.
Conclusion: We could demonstrated that MSUD domino liver scan be successfully splitted for 2 recipients. This is an additional option (although rare) to further expand the pool of liver grafts in times of extreme organs and donors paucity.

Basic Liver Donation and donor types

P131 COMPLIANCE WITH SAFETY OF LIVING DONOR ORGANS

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Introduction: Medical activities are under the supervision of the World Alliance for Patient Safety, which operates under the auspices of the World Health Organization. These requirements include the development of protocols and standards, implementation of safe medical services in particular in transplantation.
Materials and Methods: The total amount of 145 donor organs is examined (83 kidneys, 62 livers). The average age of the kidneys donor is 33.2 years (men 28, women 55). The average age of the liver donor is 33.5 years (men 21, women 41). Each type of donor test was assessed according to point-based system. Four-tier scoring system of pre-surgical scores was used.
Results: In calculation the total points in donors varied from 0 to 10. In first age group (20–29 years) of kidney donors the average risk is 2.3. In the second age group (30–39 years), the average risk is 3.3, in the third age group (40–59 years) the average risk is 4.0, but the largest average risk is in older age group (60 years and older) – 5.7, in some cases it's reaches 8 points. Thus the risk of kidney donation is increased with the age. Among liver donors of the first age group the average risk is 2.4. In the second age group the average risk is 3.9, in the third – 4.2. There were no patients in the fourth age group.
Conclusions: For patients with preoperative risk of more than 4 points the number of days in hospital is increased and postoperative period is more complicated. The average number of postoperative days depends on the age of the patient in the group of donors in case of more difficult operation in collecting of liver. In the analysis of donor preoperative state, we must consider the possible risk of the operation, and if there exists high risk the patient should be denied in his desire to become a donor because it is dangerous for his life.

Clinical Liver Allocation

P132 IMPACT FOR HEPATITIS C VIRUS (HCV) ANTIVIRAL TREATMENT ON THE NEED FOR LIVER TRANSPLANTATION (LT)

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Background: Therapies for hepatitis C virus (HCV) infection have revolutionized the treatment of patients with chronic HCV infection. The effect of these therapies on the epidemiology of liver transplantation (LT) due to HCV has yet to be elucidated.
Aim: To establish whether the indications for LT have changed as a result of the introduction of new therapies for HCV.
Materials and Methods: Retrospective study based on a prospectively maintained registry of patients who undergo LT at La Fe Hospital in Valencia from 1997 to 2016.An analysis of outcome measures over time stratified by LT indications was performed.
Results: From January 1997 to December 2016, 2379 patients were listed for LT. Of these, 1113 (47%) were listed for HCV cirrhosis ± hepatocellular carcinoma (HCC).This percentage varied significantly over time from 52.5% in the 1997–1998 initial period to 33% in the 2014–2016 final period ($p = 0.03$). The proportion of patients infected with HCV who were included in the waiting list (WL) due to the presence of an HCC increased significantly ($p = 0.001$) over time. In addition, among HCV-positive patients included in the WL for decompensated cirrhosis without HCC, the proportion of those with an HCV-alcohol mixed etiology also increased significantly over time ($p = 0.001$).Of all HCV-positive patients included in the WL during the 20-yr period, 203 were eventually removed from the WL due to either clinical improvement ($n = 77$) or more frequently worsening/death ($n = 126$).Delisting due to clinical improvement was more frequent during the last decade 2007 to 2016 (63% vs 37% $p = 0.030$).
Conclusions: The proportion of patients waitlisted for LT for decompensated HCV cirrhosis has significantly decreased over time; in contrast, that of waitlisted HCV-positive patients delisted for clinical improvement has significantly increased. This change is possibly related to the large-scale use of direct-acting. A decrease in the indication for LT is not observed in HCV-patient in whom the indication is HCC.

P133 AGEING IN LIVER TRANSPLANTATION: DOES THE INTERACTION OF DONOR AND RECIPIENT AGE MATTER?

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Introduction: In Liver Transplantation (LT), the average age of both donor and recipient have been steadily increasing in the last years. However, whether donor and recipient age may interact and influence outcomes after LT it is still not well-known. We explore the effect of donor and recipient age interaction and its impact on patient and graft survival after LT.
Methods: The relationship between donor, recipient demographics, transplant characteristics and patient and graft survival were explored at multivariable Cox regression in 849 consecutive LT performed between 1/2000–12/2015. The variable 'age' was introduced in the model as both continuous and categorical. An arbitrary cut-off of 70 years was chosen, thus defining both 'old donors' and 'old recipients' as ≥70y. Data are expressed as median (IQR).
Results: Donor age was 52y (41–62) and 13.5% 'old donors' were identified. 'Old recipients' were less frequent (7%) and recipient age was 57y (49–64). With a median follow-up of 11.4y (95% CI: 10.9–11.9), overall patient and graft survival at 5 year was 75.6% and 71.5%, respectively. Donor age and 'old donors' did not impact on both survivals after LT. Similarly, recipient age did not influence outcomes, but 'old recipients' increased the adjusted risk of death after LT by 2-fold (HR: 2.1, 95% CI: 1.2–3.6; $p = 0.008$). This effect was not confirmed for graft survival (HR: 1.39, 95% CI: 0.8–3; $p = 0.2$). Donor and recipient age did not interact. In particular, matching 'old donors' to 'old recipients' did not add a significant risk of death (HR: 0.5, 95% CI: 0.2–1.1; $p = 0.2$) or graft loss (HR: 0.6, 95% CI: 0.2–1.7; $p = 0.3$) after LT.
Conclusions: Elderly donors should be considered for LT since donor age does not impact patient and graft survival. In contrast, 'old recipients' exhibits a significantly increased risk of death, which will not be enhanced by the transplantation of grafts procured from 'old donors'.

P134 IDENTIFYING INDEPENDENT COST DRIVERS FOR THE FIRST YEAR AFTER LIVER TRANSPLANTATION

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Background: Several complications after liver transplantation resulting in subsequent procedures with associated costs. The current study aims to identify independent cost drivers one year after liver transplantation (LT).
Methods: 182 adult patients after LT were analyzed. Current reimbursement schemes (e.g. G-DRG) and drug costs were used to calculate the cost of the first year after liver transplantation taking the perspective of the statutory health insurance. Multivariable binary logistic regression and receiver operating characteristic (ROC) curve analyses were performed to identify independent risk factors for cost range in the highest quartile.
Results: Median costs one year after LT were 105 566 (range 10 054–612 605) € with a median hospital stay of 17 (range 0–81) days. One-year mortality rate was 16.6%. Independent cost drivers in the observation period were recipient age ($p = 0.006$ (OR: 1.050; 95%-CI: 1.011–1.089)), the Lab-MELD-score at time of transplantation ($p = 0.006$ (OR: 1.042; 95%-CI: 1.011–1.074)) the onset of a biliary leak ($p = 0.022$ (OR: 7.688; 95%-CI: 1.335–44.291)) and the participation in a postoperative rehabilitation program ($p = 0.001$ (OR: 0.206; 95%-CI: 0.078–0.547)) enabling prediction of the highest cost quartile with an area under the ROC curve of 0.755. Revision surgery due to hemorrhage and hepatic artery thrombosis did not reach significance.
Conclusion: The variables higher age and Lab-MELD-score at time of LT are independent risk factors for increased costs possibly due to related comorbidities. A biliary leak influenced the costs significantly, while hemorrhage did not influence the costs. The underlying mechanism might be the higher one-year mortality rate of patients with hemorrhage. Rehabilitation programs have a protective effect on costs. This can be explained by a healthier patient clientele qualifying for this treatment.

Clinical Liver Donation and donor types

P135 DONOR SAFETY AND RECIPIENT LIVER FUNCTION AFTER RIGHT-LOBE LIVER TRANSPLANTATION FROM LIVING DONORS WITH GILBERT SYNDROME

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Background: Donor safety is the most important aspect in living-donor liver transplantation (LDLT). Gilbert syndrome is an autosomal recessive condition that is a common cause of isolated unconjugated hyperbilirubinemia, and its prevalence is not negligibly low in the general population. This study intended to assess donor safety and recipient liver function after LDLT with the use of right liver grafts from living donors with Gilbert syndrome.
Methods: Among 2,140 right liver transplantations performed from January 2002 to December 20113 at our institution, we identified 12 living donors (0.6%) who showed a preoperative serum total bilirubin level of 2 mg/dl. These donors were clinically diagnosed with Gilbert syndrome. The clinical outcomes of these donors and their recipients were analyzed retrospectively.
Results: The mean donor age was 24.6–7.1 years, and 11 donors were male. All subjects met the preoperative evaluation conditions for right liver donation except for the level of unconjugated hyperbilirubinemia. The mean serum total bilirubin level of the donors was 2.23–0.20 mg/dl before and 1.79–0.61 mg/dl 1 year after right liver donation. The preoperative donor direct bilirubin level was 0.43–0.19 mg/dl. The preoperative indocyanine green retention rate at 15 min was 8.2 2.8%. All donors and recipients recovered uneventfully and were alive at the time of writing. The recipient serum total bilirubin level was 1.29–0.47 mg/dl 1 year after LDLT.
Conclusions: We suggest that LDLT with living donors with Gilbert syndrome can be safely performed, but that a meticulous preoperative evaluation is vital to maximize donor safety.

Clinical Liver Donation and donor types

P136 BILIARY COMPLICATION OF LIVING DONOR IN LIVER TRANSPLANTATION

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Introduction: The safety of the living donor remains an essential concern. The donor should not be harmed or disadvantaged by the surgical removal of liver segments. Donor complications will prolong the donors' hospital stay times, increase medical costs, and influence the quality of life of the donors. It may also influence the donor candidate's decision to donate. The morbidity rates for liver graft donors ranges between 0% and 78.3% depending on the criteria. the most common procedure-related postoperative complications among donors for LDLT involve the biliary tract. We review biliary complication of living donor and discuss how do we overcome it. And we report our experiences about biliary complications of living donor in our institute.
Methods and Patients: From May 2010 to December 2015, 147 cases donors who underwent living donor liver transplantation studied retrospectively.
Results: Among 46 donor who underwent complication, 4 had biliary leakage and 1 had biliary stricture. And 4 underwent ERBD to treat biliary leakage and stricture. In the case of biliary stricture, Hepaticojejunostomy was done during donor operation. According to Clavien-Dindo classification, there are 33 cases of Grade I complications. Severe complication above gradeIII was checked in 12 cases (8.2%) and also biliary complication above grade III in 5 cases (3.4%).
Conclusion: The biliary complication of liver donors is the major concern of living donor liver transplantation. Although, every transplantation surgeon have tried to overcome this intractable complication, it still shows high incidence. There are some strategy to prevent biliary complication in our center including radiopaque suture methods or leakage test, and intraoperative cholangiography and so on. First of all, accumulated experience and meticulous surgical technique are the most important point to overcome the biliary complications.

Basic Others Other

P137 ORGAN DONOR PROCUREMENT IN GREECE: HOW CAN WE REVERSE THE STATISTICS?

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Background: Greece has the lowest organ donation percentage among all European Union countries (4.6 per million of population in 2014) and the trend seems to be downwards. Unless radical measures are undertaken, the future is not promising. Legislation changes in 2011 created ethical dilemmas and the country was unprepared to accept presumed consent of deceased donors. Moreover, the financial crisis roughened an already problematic situation.
Methods/Materials: A review of the literature on organ donation from living or deceased donors was conducted and available data was discussed in light of the current situation in Greece.
Results: Countries with successful organ procurement systems have trained either in-hospital coordinators ("Spanish model") or extra-hospital-based professionals ("American model"), but have given limited attention to the role of mental health professionals who restrict their interventions to assessing the wellbeing of living donors. These models can help to illuminate the low rate of organ donation in Greece. The low budget of the Hellenic Transplant Organization, the inadequate link with intensive care units and hospitals, the lack of trained health professionals and the uncoordinated campaigns for public awareness may account for the shortage of organ donation. Furthermore, curricula of medical and nursing educational institutions do not include courses on how to approach, inform, and support families of potential organ donors.
Conclusion: Major changes should be rapidly undertaken in Greece in order to cover the unmet needs of people who wait for a transplant. Administrators should provide health professionals with motives so as to actively engage them in the organ donor procurement. Multidisciplinary transplant teams should include mental health professionals and universities should provide master's degree programs and seminars to educate health professionals and inform the public.

Clinical Liver Donation and donor types

P138 TRANSFER OF HELLP SYNDROME BY A LIVER GRAFT FROM A PREGNANT FEMALE DONOR TO MALE RECIPIENT

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Eclampsia with hemolysis, elevated liver enzymes and low platelets (HELLP) syndrome is a rare complication to pregnancy. Herein we report a case of liver transplantation with an organ from a 36-year old pregnant (week-28) donor who suffered brain death following cerebellar hemorrhage due to eclampsia in spite of urgent cesarian section. The organ was matched to a 62-year old man with primary sclerosing cholangitis. The donor showed no clear signs of HELLP syndrome. Blood tests at time of donor operation showed LD 6.7, AST 0.89, ALT 1.68 (μkat/L) and platelets 133×10^9/l. Gross examination of the liver at time of procurement or implantation did not reveal anomalies. The recipient's lab test showed expected transaminase elevation first days after transplantation. Seven days later, following an uneventful transplantation and ICU recovery, the patient presented sudden increase in transaminases, peaking post-op day 12 (AST 212, ALT 129), with severe thrombocytopenia (8×10^9/l). The patient also developed hypertension and hyperthermia with intact graft blood circulation. The recipient displayed clear symptoms of HELLP syndrome at this stage. Liver biopsy showed necrotic patches and signs of bile stasis. Despite steroid treatment, the symptoms aggravated and the patient developed renal failure with metabolic acidosis. The patient underwent liver retransplantation on day 14 after the first operation. Intraoperatively massive liver necrosis with diffuse subcapsular hematomas were seen. The patient was discharged after an uneventful recovery after retransplantation. Warnings related to use of such grafts have been reported. HELLP syndrome may occur up to a week after delivery in a woman with eclampsia but the cause is unknown. In our case HELLP was transferred to and occurred in a male recipient a week after child delivery in the donor. Eclampsia in the donor without overt HELLP may persist in and be transferred by a liver graft to develop into HELLP even in a male recipient.

P139 ABO INCOMPATIBLE LIVING DONOR LIVER TRANSPLANTATION USING A RIGHT POSTERIOR SEGMENT GRAFT

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Where deceased donors are rarely available, especially in East Asia, graft obtained from a family member of the recipient is mainly employed and thus ABO-incompatible (ABO-I) living donor liver transplantation (LDLT) becomes unavoidable. In recent years, owing to advances in the prevention and treatment of antibody mediated rejection after ABO-I therapeutic interventions, survival following ABO-I liver transplantation has markedly improved. Meanwhile, in adult-to-adult LDLT, left lobe graft is frequently insufficient for the recipient, while right lobe graft carries a higher donor risk. The right posterior segment graft (RPSG) was introduced to increase donor selection options. We report our experience using a right posterior segment graft ABO incompatible living donor liver transplantation. A forty-nine-year-old male patient (blood type B) diagnosed with hepatocellular carcinoma and liver cirrhosis due to hepatitis B received ABO incompatible living donor liver transplantation from his son (blood type AB). Due to the small remnant liver (21% of total liver volume) when using the right lobe graft, we decided to use the right posterior segment. The graft weighed 684 g and the graft to recipient weight ratio was 0.96. Neither local infusion therapy nor splenectomy was performed. After initial increase of liver enzymes following liver transplantation, the aspartate transaminase (AST) and alanine transaminase (ALT) levels started to decrease on the second postoperative day. Plasmapheresis was not required following transplantation and the recovery of the patient was uneventful. The patient was discharged on the 20th postoperative day. In conclusion, in certain circumstances where using a typical ABO compatible liver graft (right or left lobe) is not possible, ABO incompatible living donor liver transplantation can successfully be performed using a right posterior segment graft.

P140

LIVER TRANSPLANTATIONS AND BRAIN DEAD DONORS WITH HISTORY OF ALCOHOL ABUSE

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Introduction: Liver grafts from donors with chronic and active history of alcohol abuse are usually immediately discarded for liver transplantation (LT). Our aim is to report our results with those grafts.
Patients and methods: We performed a retrospective case control study on 315 LT from January 2011 to December 2016. Inclusion criteria for the study group were adult LT patients transplanted with livers from donors with alcohol abuse. The control group consisted in randomly matched LTs with similar recipient (R) and donor (D) age, sex and ischemia time, performed with standard livers. The ratio of case-to-control was 1:2. Short term results, biochemical data from day 0 to 30 after LT, rejection episodes, surgical complications and graft survival are reported. Data were compared with appropriate statistical tests such as unpaired T-test, Mann-Whitney test and X^2 test. $p = 0.5$ was considered statistically significant.
Results: The study group consisted of 8 LT with donors with history of chronic an active alcohol abuse, whereas 16 patients transplanted with standard grafts served as control group. A donor hepatic biopsy was performed in 6/8 (75%) donors with alcohol history and in 9/16 (56.3%) among others. Mean micro-macro steatosis percentage in livers from donors with alcohol abuse was $19 \pm 17\%$. Laboratory exams showed statistically significant higher values among patients with livers from donors with alcohol abuse, in Aspartate Aminotransferase (AST) from day 0 to 5, Alanine Aminotransferase (ALT) from day 0 to 30, and Total Bilirubin (TB) from day 4 to 15. No statistical difference was found in the occurrence of rejection episodes within 30 days from LT and for complications requiring surgery. Moreover, all patients of both groups are alive after 30 ± 23 (range 2–70) months from LT.
Conclusion: May be it's time to reconsider the use for LT of livers from donors with chronic and active alcohol abuse.

Basic Others Other

P141

MODERNISING THE SPECIALIST NURSE IN ORGAN DONATION (SNOD) ROLE WITHIN THE DONOR HOSPITAL: A REVIEW

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Background: The Organ Donation Taskforce, set up by the government with the aim to improve the number of organs for transplant in the United Kingdom, recommended the introduction of an embedded SNOD within each National Health Service (NHS) Trust. Their role is to work to improve organ donation rates, alongside a Clinical Lead – Organ Donation (CLOD) and an Organ Donation Committee (ODC). In 2016 the London Organ Donation Services Team (ODST) implemented the Specialist Requester (SR) role with the intent to further increase the region's consent rate. The introduction of this new role has urged a review of the role of the embedded SNOD (ESNOD). An effective working partnership between the two roles is essential to meet their common goal of increasing organs available for transplantation.
Methods: Data collected through a survey was analysed by the newly established working group. In order to improve the accuracy, both qualitative and quantitative data were used. The data was then analysed, presented and discussed with the rest of the team during a workshop. Areas of consideration: cluster group working, working hours, collaboratively working with the Specialist Requesters, cluster presentation of Key Performance Indicators at team meetings, support SNOD, day to day role, community engagement, debriefs, support and training.
Results: 60% of the team participated in the study. The results showed a big disparity between which meetings ESNODs attended and prioritised and that some ESNODs were working in isolation. Additional findings were area of teaching and education.
Conclusions: The findings indicated that a regular review should be in place as the role of the SR evolves, to ensure continued cohesive working. Attention to the cluster or team working should be paid with the aim to share knowledge, improve confidence and feel less isolated. A review of the teaching contents is due with the aim to give clearer message to the audience.

Clinical Liver Donation and donor types

P142

EXPANDING THE DONOR POOL: LIVER GRAFT WITH RUPTURED HEMANGIOMA

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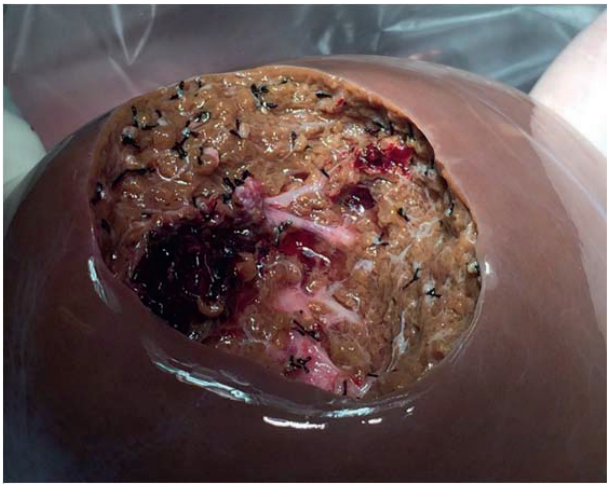
Background: Organ scarcity for donation has led to a widening of criteria for transplantation. Examples of it are donors diagnosed with hepatic hemangioma. In such cases, some surgeons tend to perform a backtable resection while others prefer to follow up after transplantation. A few papers describe the use of these grafts and acceptance for donation after a rupture during trauma is extremely uncommon.
Clinical case: A 17 year old male is admitted to the Intensive Care Unit after severe head and abdominal trauma. He suffered cardio-respiratory arrest, which he recovered from after 15 min of cardiopulmonary resuscitation. He was hemodynamically unstable and required vasoactive drugs. Liver function test revealed a mild increase in aminotransferase levels. A Computed Tomography was performed, showing an hepatic lesion measuring 6×3 cm in segment 8, with active bleeding signs. Finally, brain death was certified and organs were offered for transplantation. The lesion was resected on backtable surgery by an ultrasound device and the haemostasis of the cut surface was ensured with a fibrin sealant patch. A vascular lesion corresponding to cavernous hemangioma and lacking malignant cells was visualized on pathological examination.
Results: Orthotopic liver transplantation was performed on a 59 year old female with alcoholic cirrhosis and 10 mm hepatocellular carcinoma confined to the liver (segment 8). MELD (Model for End stage Liver Disease) score was 19 and Child-Pugh score C12. Previous medical history was significant for high blood pressure, type 2 diabetes and familial combined hyperlipidemia. The postoperative course was uneventful except for urinary tract infection.
Conclusion: Due to the discrepancy between organ availability and liver graft requirements, an effort has been made to accept grafts formerly considered as poor quality organs. Cavernous hemangioma should not be considered as a contraindication, even after its rupture. Backtable resection is to be performed.



Translational Others Other

P143 INCREASING DEMAND ON MASTER EDUCATION FOR DONATION AND TRANSPLANTATION

Ballesté-Delpierre Chloë[1], Ricard Valero[1], David Paredes[2], Fritz Diekmann[2], Vicens Torregrosa[2], Aurora Navarro[2], Ramon Adalia[2], Jordi Colmenero[2], Martí Manyalich[2], Alba Coll[3]
[1]University of Barcelona – Tpm-Dti Foundation, Spain; [2]University of Barcelona, Spain; [3]Tpm-Dti Foundation, Spain

Background: Transplant Procurement Management (TPM) and the University of Barcelona (UB) offer a Master in Donation and Transplantation since 2004. From 2004 to 2010, 3 Spanish, 3 English and 4 Italian editions were held. Since 2011 to 2016, 6 editions in English have been hold. The aim of the study is to analyze the students' profile and evaluation scores to assess improving measures.
Methods/Materials: Data is organized in 2 periods (2004–2010 & 2011–2016). Participants gender, nationality and background were analyzed. For the scores, final grade and the scores in the academic modules were recorded in each period respectively.
Results: A total of 207 students participate in the Master editions, 96 students from 2004 to 2010, and 111 since 2011 until 2016. Student's profile: In 2004–2010, there were 56% women and 44% men. Medicine was the most frequent background (47.91%). Participants attended from 19 different including European (1), American (15) and Asian (3) countries. In 2011–2016, the proportion of women was still prevalent (63.13%). The background heterogeneity was lower (4) and still Medicine was the highest (57.66%). Students were from 32 countries, mostly European (46) and American (50). Evaluation scores: In 2004–2010 students were qualified on a blended (on-site and online) course on Donation & Transplantation, an internship and a Final Master Dissertation (FMD). The Master's final grade was Pass/Fail. In 2011–2016, master comprehend 4 blended (on-site/online) modules (Donation, Transplantation, Management, and Tissue Banking), a 6 weeks internship and a FMD. Participants achieved excellent degrees in each module (Donation: 7.32/10), Transplantation: 8.15/10).
Conclusion: Considering that the main characteristics of the master are the students' internationality and heterogeneity, the improving measures must focus on flexibility in the module selection and promoting online modality.

Clinical Others Donation and donor types

P144 CURRENT STATUS OF HIV-TO-HIV TRANSPLANTS IN THE UNITED STATES

Christine Durand[1], Allan Massie[1], Aaron Tobian[1], Niraj Desai[1], Andrew Cameron[1], Nabil Dagher[2], Diane Brown[1], Samantha Halpern[1], Darin Ostrander[1], Andrew Redd[1], Shrirish Huprikar[3], Serena Bagnasco[1], Brandy Haydel[4], Susan Lerner[4], Sander Florman[4], Dorry Segev[1]
[1]Johns Hopkins University, United States; [2]Nyu, United States; [3]Mount Sinai, United States; [4]Mt Sinai, United States

Background: The HIV Organ Policy Equity (HOPE) Act allows transplantation using organs from HIV-infected (HIV+) donors for HIV+ individuals in the United States under research protocols. We opened the HOPE in Action trial (NCT02602262) to evaluate the safety and efficacy of HIV-to-HIV deceased donor kidney and liver transplantation.
Methods: HIV+ transplant candidates without active opportunistic infections (OI) on antiretroviral therapy (ART) with HIV RNA <50 c/ml, CD4 >200 or >100 cells/μl (kidney and liver, respectively) were eligible. HIV+ deceased donors could not have an active OI. An effective post-transplant recipient ART regimen had to be justified based on donor HIV RNA and ART history.
Results: Between March 2016 and March 2017, organs from 4 HIV+ donors have been used for HIV-to-HIV transplants. Median donor age was 33 (IQR 30–41), and median KDPI was 42 (IQR 19–67). From these 4 donors, 6 HIV-to-HIV kidney transplants and 2 HIV-to-HIV liver transplant were performed. At up to 12 months post-transplant, all recipients are doing well without graft failure, AIDS defining infections, breakthrough viremia, or HIV disease progression.
Conclusion: We report the first 8 successful cases of HIV-to-HIV transplants under the Congressional HOPE Act. These cases provide proof-of-concept that the use of HIV+ donors can increase access to organ transplants for HIV+ candidates who face high waitlist mortality.

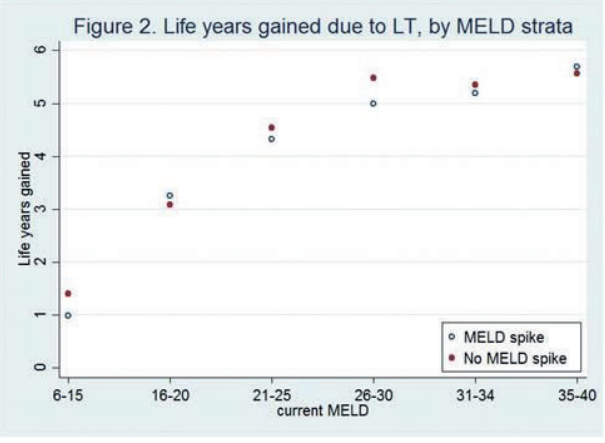
	N = 8
Median (IQR) age	50 (45–56)
Female: *N* (%)	2 (25%)
Race: *N* (%)	
White	2 (25%)
Black/African-American	5 (63%)
Asian	1 (13%)
Non-Hispanic ethnicity: *N* (%)	7 (87%)
Hispanic ethnicity: *N* (%)	1 (13%)
Transplant type: *N* (%)	
Kidney only	6 (75%)
Liver only	2 (25%)
Kidney/liver	0 (0%)
HIV RNA at transplant, c/ml: *n* (%)	
Detected (<200, viral blip)	2 (25%)
Undetectable (<20 copies/ml)	6 (75%)
CD4+ T-cell at transplant, cells/mm^3, median (IQR)	584 (319–1008)
Hepatitis C antibody: *N* (%)	3 (38%)
Hepatitis C NAT: *N* (%)	2 (25%)
Hepatitis B Surface Ab: *N* (%)	7 (88%)
Hepatitis B Surface Ag: *N* (%)	0 (0%)

Basic Liver Allocation

P145 SURVIVAL BENEFIT OF LIVER TRANSPLANTATION FOR PATIENTS WITH SUDDEN MELD SPIKE

Xun Luo, Allan Massie, Dorry Segev
Johns Hopkins University, United States

Background: Patients with a recent sudden MELD increase of >30% over 7 days (MELD spike) have higher waitlist mortality than patients with stable MELD, but lower allocation priority. There is concern that patients with MELD spike might not benefit from LT. We sought to quantify the survival benefit of LT for these patients.
Methods: We identified 2,984 adult liver recipients with MELD spike between 2002–2015 from United States national registry data. Patients with exception or Status-1 were excluded. For recipients with MELD spike, we conducted 1:3 matching based on current MELD, diagnosis, ABO, age, gender, and race among three control groups, respectively: 32,659 waitlist candidates with spike, 30,949 recipients without spike, and 85,570 candidates without spike. We used Cox regression to compare mortality risk. We calculated life years gained (over 10 year) from to LT by comparing mortality between recipients and candidates.
Results: Candidates with spike had 19% higher waitlist mortality risk than those without spike (HR = 1.141.191.25, $p < 0.001$). However, their post-transplant mortality was comparable (HR = 0.951.021.10, $p = 0.6$). Overall, LT provided 4.65 life years for patients with spike and 4.59 life years for patients without spike. Stratifying by MELD strata (Figure), patients with higher current MELD had more life years gained due to LT. The life years gained were similar between patients with and without MELD spike across current MELD.
Conclusions: Liver candidates with MELD spike had higher mortality risk than their counterparts with the same current MELD. Their survival benefit from LT was comparable. Decreased waitlist priority for patients with a MELD spike is unjustified.



Basic Others Other

P146

HOSPITAL PROFILING AND HOSPITAL STRATIFICATION SYSTEM AS A FIRST STEP FOR ASSESSMENT THE POTENTIAL OF ORGAN DONATION FROM DECEASED DONORS

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Background: To be able to calculate the potential of deceased organ donation; in single hospital, in the region or totally in the country it was necessary to develop a useful stratification system for all hospitals. We constructed such model in Poland.
Materials and methods: Out of a total number of 1032 hospitals in Poland, 406 have structural possibilities (ICU as min) and stuff to confirm death according to neurological criteria. We excluded 19 hospitals where brain death determination is possible but deceased do not meet criteria for donation as a rule (oncological or infectious profile) or hospitals were not equipped in operating theatre. These hospitals were characterized accordingly to:

- the degree of referral (1st degree-county hospital vs 2nd degree large hospital)
- patients profile (pediatric vs adult)
- having vs not having in structures neurological departments, stroke units or neurosurgery
- number of beds in ICU
- geographical localization

Then hospitals were divided into groups.
Results: The largest group of hospitals with potential organ donation were 1st degree referral hospitals having ICU only for adults – 161. Another group of hospitals have in their structure units: ICUA I+NstrA-76; ICUA I+NA-25; ICUA II+NstrA+NsurA-23; ICUA II+NstrA-19; ICUA I+NstrA+NsurA-17; ICUA II-8; ICUA II+NstrA+NP+NsurA-6; ICUP I+NP+NsurP-5; ICUP I-4; ICUP I+NP-4; ICUA I+NA+NsurA-3; ICUA II+OITP II+NstrA+NsurA-3; ICUA I+NsurA-2; ICUA I+NsurA-2; ICUA I+ICUP I+NP-2; ICUA I+ICUP I+NstrA-2; ICUA II+NA-2; ICUA II+NstrA+NP-2; ICUP II+NP-2; ICUP II+NP+NsurP-2 and in the remaining 19 cases, the hospitals were unique in the country range hospital department. The total amount of hospitals with potential donors in Poland is 387. The results of this study we treat as a basic and fundamental for next steps leading to calculation of potential donation in the country. Our thesis is, that characterized in details hospitals from the same group should have the same potential and should be active in donation process on the same level.

Basic Liver Donation and donor types

P147

LIVER GRAFTS FROM DONATION AFTER CARDIAC DEATH IN OBESE RECIPIENTS

Andrea Molina Raya[1], Mireia Domínguez Bastante[1], Andrea Vílchez Rabelo[1], Manuela Expósito Ruiz[2], Jesús Villar Del Moral[1], Yiliam Fundora Suárez[1]
[1]Hospital Virgen De Las Nieves, Spain; [2]Fibao, Spain

Background: There is no consensus in the literature on the association between Body Mass Index (BMI) and morbidity/mortality in liver transplant (LT). Due to the low number of liver donors, it is necessary to expand the donor pool. Trying to solve this problem, our group is focus on alternatives to conventional LT using grafts from Donation after Cardiac Death (DCD), split or elderly donors.
Methods: A single-center, observational-cohort, retrospective study was conducted in patients undergoing LT from January 2011 to December 2014 using grafts from DCD in obese recipients. Central tendency, dispersion measures and absolute and relative frequencies were calculated. Patients were followed for ≥6 months. IBM SPSS Statistics 19.0 software was used for the analysis.
Results: There were 7 grafts from CDC: two Maastricht IIa (28.6%), one IIb (14.3%) and four III (51.3%). The etiology of cirrhosis was: 3 hepatocellular carcinoma (42.9%), 2 alcoholic (28.6%), one hepatitis virus C (HVC) (14.3%) and one cryptogenetic cirrhosis. Average BMI was 32.99 ± 0.977 kg/m^2. The mean CHILD and MELD values were 7.29 ± 1.49 and 16.43 ± 1.39. The average time in ICU and hospital stay were 3 ± 1.41 and 29.71 ± 21.66 days respectively. Regarding complications, there appeared: 2 post-reperfusion syndrome (28.6%); 2 late biliary stenosis (28.6%) treated with RCPE; one complete and early arterial thrombosis (14.3%) treated with anticoagulation; 2 ischemic cholangiopathy treated with RCPE (28.6%) (one early and for arterial thrombosis; the other later and because of the DCD process). We made one retransplantation (14.3%) in the first month secondary to a severe acute rejection. Only one patient died (14.3%) because of HVC relapse.
Conclusions: Although the small size of our population did not allow to conduct a comparative analysis, our patients show a low rate of complications, with a high survival (85.7%). According to our experience, we can recommend safely the use of grafts from DCD in obese recipients.

Clinical Liver Donation and donor types

P148

IN SITU-SPLIT LIVER TRANSPLANTATION FROM BRAIN-DEAD DONORS UNDER EXTRA-CORPOREAL MEMBRANE OXYGENATION

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[1]Geneva University Hospitals, Switzerland; [2]University Hospital of Zurich, Switzerland

Organ shortage is the main challenge in organ transplantation and it is important to optimise the number of organs that brain dead donors can provide. Liver splitting allows to transplant two liver grafts from one donor; it is generally contraindicated, however, in case of hemodynamic instability. The extracorporeal membrane oxygenation (ECMO) is an effective tool to stabilize donors when standard medical treatment has failed, yet, to our knowledge, no previous cases of successful splitting from donors under ECMO has been reported. We describe the cases of two young brain dead donors in whom hemodynamic instability was reversed by ECMO, allowing uneventful in situ splitting. Two adult and two paediatric recipients were successfully transplanted with immediate graft function, as well as of other organs including one heart, two lungs and four kidneys. After a mean of 15 months of follow up, all patients are doing well with no signs of rejection.

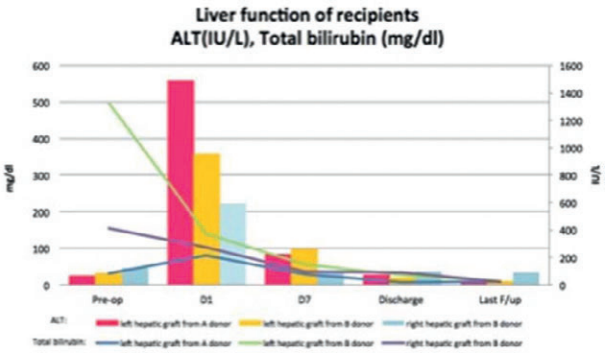

Image 1: Laboratory values of the three liver recipients transplanted in our centre

We advise that a history of circulatory instability and poor perfusion/oxygen delivery that is adequately corrected by ECMO should not be considered as an absolute contraindication to in situ splitting.

Basic Liver Donation and donor types

P149 HEPATIC TRANSPLANT FROM DONORS AGED 80 YEARS AND OLDER

Andrea Vilchez Rabelo[1], Andrea Molina Raya[1], Mireia Domínguez Bastante[1], Manuela Expósito Ruiz[2], Jesús Villar Del Moral[1], Yiliam Fundora Suárez[1]
[1]Hospital Virgen De Las Nieves, Spain; [2]Fibao, Spain

Background: Spain has always been a pioneer in the development of transplants, including hepatic. However, despite the increase in the number of donors, demand is increasing. In order to attempt to subdue this situation, there are many transplant surgical teams using implants known as suboptimal grafts. This study is based on this type of transplant, focusing on the use of octogenarian livers.
Methodology: A prospective cohort study was performed in our hospital between 2002 and 2014, including 307 hepatic transplants from donors aged 79 years or less, and 17 transplants from donors aged 80 years or over. A comparison was carried out between Student t-test for numeric variables and Mann-Whitney in the cases where normality was not attained. Pearson or Fisher's Chi-square test was employed for categorical variables when applicability conditions were not attained. $p < 0.05$ values were considered relevant.
Results: A comparative study between both groups was performed concluding that both groups were statistically comparable. The bivariate study was carried out and no statistically significant differences between any of the variables were found: biliary complications (≥80 years old $n = 3$ (17.6%) vs <80 years old $n = 70$ (23.3%)). Vascular complications (≥80 years old $n = 2$ (12.5%) vs <80 years old $n = 73$ (26.7)). Ischemic cholangiopathy (≥80 years old $n = 0$ (0.0%) vs <80 years old $n = 18$ (6.5%)). Graft rejection (≥80 years old $n = 4$ (25.0%) vs <80 years old $n = 79$ (28.4%)). Transplant requirement (≥80 years old $n = 3$ (17.6%) vs <80 years old $n = 16$ (5.3%)). Survival rate, with minimal follow-up of four months (≥80 years old $n = 12$ (75.0%) vs <80 years old $n = 191$ (65.4%)).
Discussion: Throughout this study, significant differences in the consider variables have not been found, the results therefore confirm that the use of elderly donors, and more specifically aged 80 older, is an excellent source of hepatic grafts.

Clinical Liver Donation and donor types

P151 A CASE OF A SUCCESSFUL CHILD-TO-ADULT DECEASED DONOR LIVER TRANSPLANTATION

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[1]Korea University Guro Hospital, Korea; [2]Veterans Health Service Medical Center, Korea

Introduction: The outcome of child donors transplanted into adult recipients has not been well studied. Weight of pediatric donor liver is considerably less than the standard liver weight of adult patient, the difference comes with excessive portal venous inflow and portal hypertension which could lead to small-for-size syndrome (SFSS). We experienced and reported a case of a successful Child-to-Adult deceased donor liver transplantation.
Case Report: Donor was a 6-year-old body, and his BMI was 18.33 kg/m^2. His standard liver volume (SV) was 726.691. Recipient was a 45-year-old female patient with alcoholic liver cirrhosis and severe portal hypertension. Child-pugh score was 12 and MELD score 25. Her SV was 1012.27. After procurement, graft weight was 682 g and GRWR 1.42. During recipient operation, large amount of ascites and bleeding tendency were identified. Careful total hepatectomy was performed and weight was 860 g. Under iced gauze packing, piggyback cavocaval anastomosis was done because size mismatching between donor and recipient IVC. The discrepancy between donor and recipient PV was identified and PV end to end anastomosis with reverse folded recipient PV was performed. Total cold ischemic time was 223 min. Hepatic artery anastomosis between donor celiac artery and recipient branched patch (using gastroduodenal artery and proper hepatic artery bifurcation from common hepatic artery) was done. Minor bile leak was visible around donor bile duct, but accurate foci were not identified. And so hepaticojenostomy was performed through the mucosal graft procedure of Smith. Total operative time 363 min. The postoperative course was good. Liver volume by CT was increased to 1168 ml at the postoperative 5 days and 1270 ml at the postoperative 14 days. Allograft was enlarged more than SV.
Conclusion: We suggest pediatric donor liver could only be used for comparatively matched adult recipient and clinical study with large sample sizes are still needed.

Clinical Others Donation and donor types

P153 THE IMPORTANCE OF THE ORGAN AND TISSUE DONATION COORDINATING UNITS ON CADAVERIC DONOR RATES

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BalıKesiıR Atatürk State Hospital Organ and Tissue Transplantation Organisation Unit, Turkey

Background: We aimed to document the cadaveric donor rates in our hospital after establishing organ and tissue transplantation coordination unit.(OCU)
Method: Brain death patients and cadaveric donors in intensive care units (ICU) was evaluated retrospectively between 2007–2016 years.
Results: Balikesir is a city of turkey and its population is 1.196.176. In whole city only 7 hospitals has ICUs and there are 77 beds in 2nd degree ICUs and 53 beds in 3rd degree ICUs. There was not any expert staff in these hospitals before the establishment of the OCU either any cadaveric donors. Brain death patients for donation were sent to transplantation units in tertiary hospitals. The evaluation and donation ended in a chaotic organisation. Because of this chaotic situation and difficulty of transporting these patients to transplantation clinics, brain death patients were overlooked. As a result it caused loss of organ and tissue donation. After establishing OCU in 2007 at all hospitals in Balikesir region, new ideas and mechanisms for gaining cadaveric donors were developed. After this organization the brain death diagnosis rates and cadaveric donor rates increased by years.
Discussion: We know that organ donation is the most effective treatment protocol on end term organ failure. It lengthens patients life, is more cost effective on treatment. The coordinators of OCU visit all intensive care units daily and collaborate with the expert staffs of these units. After the organization for brain death diagnoses, they make the family interviews for permission of organ and tissue donation this always ends in a better way in experienced hands than a person who has not any practice for this conversation. As a result of our study we have seen that our system of organ and tissue donation coordination has solved coordination problems and increased the rates of the cadaveric donors.
Conclusion: We offer all hospitals which want to increase their cadaveric donor rates to establish an OCU.

Hospital Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
balikesir State Hospital	0	0	0	1	1	3	3	7	12	12	0
Ataturk State Hospital	0	0	0	0	3	8	5	2	3	7	2
Edremit State Hospital	0	0	0	0	1	2	1	5	4	3	0
Bandirma State Hospital	0	0	0	0	1	0	2	2	11	12	4
Gonen State Hospital	0	0	0	0	0	0	0	1	0	1	0
Results	0	0	0	1	6	13	11	17	30	35	6

Clinical Liver Allocation

P154

PREDICTING PATIENT SURVIVAL AFTER LIVER TRANSPLANTATION USING DECISION TREE TECHNIQUE

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[1]Shiraz University of Medical Sciences, Iran; [2]Shiraz Organ Transplant Center, Shiraz University of Medical Science, Iran; [3]Shiraz University, Iran; [4]Shiraz University of Medical Science, Iran

Background: The aim of this study was to investigate the predictive value of MELD, other recipient and donor factors and extract hidden relationships between them.
Methods: A retrospective study of all adult patients who underwent first liver transplantation during March 2011 to March 2014 was undertaken. Patients were excluded if their received graft from a non-brain-dead donor or had undergone a previous liver transplant. Patient who their medical records have a lot of missing values or patients who could not be following up for 24 months exactly during our study were also excluded.
Results: The subjects after excluding were 731 and had 82% survival rate (age 42 $\pm$ 13.3 years, female/male 259/472). Data set randomly assigned to model building set and validation set (n = 517 and n = 214 respectively). C5.0 decision tree algorithm using 10-fold cross validation was applied on dataset for rule extraction. Hepatocellular carcinoma, hepatitis B virus, hepatitis C virus, cryptogenic cirrhosis, Primary sclerosing cholangitis, autoimmune hepatitis, Wilson, primary biliary cirrhosis, other diseases were diagnosed in 58, 192, 21, 123, 136, 113, 37, 45, 64 patients respectively. Decision tree rule extraction revealed that patients with Na $\leq$ 146 mEq/l and warm ischemia time > 30 min are likely to survive (264 patients, 0.887 rule accuracy), patients with Na > 146 mEq/l and ideal donor and donor age $\leq$ 24 could survive (67 patients, 0.928 rule accuracy), patients with Na > 146 mEq/l and ideal donor and mild macrovesicular steatosis could survive (75 patients, 0.90 rule accuracy).
Conclusion: Donor Na is an important factor that have effect on patient survival. High level donor Na with other risk factors may have not negative effect and low level donor Na with other risk factors may have negative effect. Thus, a large-scale cohort study is needed to validate our results.

Basic Others Donation and donor types

P155

EFFECTS OF THE HOSPITALIZATON TIMES TO THE FAMILY DONOR APPROVALS AT BURSA REGION IN 2015

Türkan Yilmaz Ulusoy
Bursa Provincial Health Directorate, Turkey

Method: Time effect of the Hospitalization to the donor approvals are retrospectively searched for the 227 brain death event with the t test method between dates 01.01.2015–31.12.2015 in BUrsa, Balıkesir, Çanakkale, Yalova, Düzce, Bilecik provinces.
Findings: Within this study, 227 brain death events are searched. As a result: %50.7 of them is male, %42.3 is female. Average age is 54.9 years. %61.7 of the events is Subarachnoid Hemorrhage, %21.6 of the evens is cerebrovascular disease, %6.2 of the events is Intracranial hematoma and %10.6 can be reported as others. %58.1 of the events has no additional disease, %21.1 of the events had Hypertension and diabets. Family organ donation rate in our country is %35.2. Average Hospitalization for the donors is 2–3 days and average hospitalization for the brain death is 2–3 days. Time effect of the ''Hospitalization'' to the Donor approval is searched with T test method. p value 0.08 is as p >0.05, it can be said that there is no effect between ''Hospitalization times '' and ''Donor Approvals''
Result: As a result of the study, it is seen that ''Hospitalization Times'' does not effect the ''donor Approvals''. Other Effects like Culture, education, Lack of Donor Information of the people, close contact to family during intensive care process needs to be considered in the project.

Clinical Liver Donation and donor types

P156

LIVING DONOR LIVER TRANSPLANTATION: EVALUATION OF THE DONORS IN BULGARIA

Vili Pushev, Miroslav Zashev, Jordanka Uzunova, Radosvet Gornev, Lyubomir Spasov
Uh "Lozenetz", Bulgaria

Background: Living donor liver transplantation program in Bulgaria starts in 2004. One of the most important part of the living donor liver transplantation is evaluation of the potential donors. The proper selection is to ensure a successful outcome for the donor and the recipient. Living donor liver transplantation has a main role in a country with low organ donation.
Methods/Materials: 26 living donor liver transplantation were perform in Bulgaria from the start of the program. The study include 96 consecutive living liver potential donors. Using standardized protocol which includes biochemistry tests, serological tests, MRI imaging of the Anatomical variants, all potential donor are evaluate. Exclusion criteria for donors are: age under 18 years, obesity, Hepatic steatosis more than 30%.
Results: Using multi-step evaluation protocol, which includes medical and psychological evaluations of the donor and precise anatomical study of the liver. 96 potential donors passed all steps of evaluation. The age of the candidates are between 18 and 56 years old. Three candidate are excluded because parenchymal pathology on imaging (nodular hyperplasia, hemangioma in the left hepatic lobe and liver echinococcus. Some of the candidates are excluded due to anatomical variation. There was no donor mortality at our center. 40% of the children were with PELD 30, which need as quickly as possible to evaluate the donor and perform the transplantation. .
Conclusion: The proper donor selection and specialized postoperative care, minimize the potential risk of a living donor after hepatectomy. In cases of patient in coma as a result of liver failure there are more challenge to evaluate the proper candidate.

Clinical Others Donation and donor types

P157

HEALTH LITERACY: THE ROLE OF PERSONAL EXPERIENCE IN DECEASED ORGAN DONATION

Maria Theodosopoulou[1], Daniel Casanova Rituerto[2], Frank Dor[3], Thanos Athanasiou[3], Charles Pusey[3], Raquel Perez Barquin[2], Vassilios Papalois[3]
[1]Imperial College, United Kingdom; [2]University of Cantabria, Spain; [3]Imperial College Healthcare NHS Trust, United Kingdom

Background: Examining how people access and understand health-related information, as well as how their decisions are based upon that information are key areas of interest relating health literacy. Our research focused on examining opinions, views and experiences of medical students, renal patients, and hospital administrative staff in three European countries regarding Deceased Organ Donation (DOD).
Methods/Materials: Focus groups discussions with the above mentioned groups were organized in the UK, Spain, and the Netherlands. Following thematic analysis one of the themes raised by the participants was the influence of their personal experiences around DOD and transplantation.
Results: Analysing the participants' personal experiences two forms became most apparent: the face-to-face and vicarious experiences. Face-to-face experiences involved real patients, patient's families, or medical teams and addressed issues, such as consent about DOD, life before and after transplant. Vicarious experiences involved discussions with family members or colleagues, which brought out opinions, as well as dilemmas about own personal decisions.
Conclusion: Real life stories and concrete discussions help people relate an abstract and distant concept, such as organ donation, to their own life. These experiences bring out emotional issues, air out dilemmas, inform people with inside stories, and facilitate the understanding of how benefits of DOD are manifested.

Clinical Others Donation and donor types

P158 LOOKING AT DECEASED ORGAN DONATION CAMPAIGNS FROM LAY PEOPLE'S EYES

Maria Theodosopoulou[1], Frank Dor[2], Daniel Casanova Rituerto[3], Thanos Athanasiou[2], Charles Pusey[2], Raquel Perez Barquin[3], Vassilios Papalois[2]

[1]Imperial College London, United Kingdom; [2]Imperial College Healthcare NHS Trust, United Kingdom; [3]University of Cantabria, Spain

Background: Continuous medical advancements allow transplants to be lifesaving operations with high survival rates as well as provide major improvement to the quality of life and lifestyle of patients and their families. However, one of the major world-wide, long-lasting challenges, which health-care professionals and social scientists have to deal with, is the shortage of available organs. To help raise awareness among the public, organ donation campaigns take place all over the world celebrating the gift of life and informing people about medical facts, statistical data, and stories of transplanted patients.
Methods/Materials: Focus groups discussions took place in the UK, Spain, and the Netherlands with medical students, renal patients and hospital administrative staff. Thematic analysis revealed concepts and themes regarding the role and effectiveness of awareness campaigns.
Results: The visibility of Deceased Organ Donation, the activation of people as small-scale campaigners, and the differences between different groups within countries and within Europe are some of the themes, which were raised during the discussions. The analysis presents participants' views regarding the time scale and intensity of awareness campaigns, their impact on motivating people and suggestions about possible design of awareness campaigns.
Conclusion: Awareness campaigns are a useful tool to draw people's attention at sensitive issues and get them familiar at health concepts. Integrated in a network of interventions campaigns can target specific groups in order to respond to their needs.

Clinical Others Donation and donor types

P159 VIEWS OF UK RENAL PATIENTS REGARDING DECEASED ORGAN DONATION

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Background: This research focuses on Deceased Organ Donation (DOD) not only as an isolated individual decision, made by the individual and affecting solely that individual, but as a decision, which is made within a social context and influenced by it. This research project focuses on health literacy practices of renal patients regarding DOD.
Methods/Materials: 146 renal patients (on dialysis and transplanted) at a major UK University Hospital participated in a survey of 32 questions and went through formal validation process (Kappa statistic 0.714 between perfect and random agreement). Ethnic background, religious and cultural traditions, exposure to awareness campaigns, participation in family discussions regarding DOD, and knowledge of relevant terms and procedures are topics explored in this project.
Results: Renal patients view organ donation mostly as an altruistic act of helping others (91.5%), while they list religious beliefs as the least preferred reason (11%) for supporting DOD, while some patients (8.51%) express the need to learn more about DOD. There are significant differences across patients of different ethnicity regarding the sources they use to form an opinion about DOD (p-value 3.35317e-69), their expression of wish for giving consent for a family member (p-value 4.02532e-31).
Conclusion: The influence of ethnicity among renal patients needs to be further explored and considered in future interventions and design of health literacy policy.

Clinical Liver Donation and donor types

P160 UPDATE ON POST-OPERATIVE COMPLICATIONS IN 207 LIVING-RELATED LIVER DONORS – A SINGLE CENTER EXPERIENCE

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Background: Living donors are considered as healthy individuals. Surgery is associated with potential complications. However in this narrow group of operated beings, all possible means should be undertaken to keep the complication rate at near to zero number. Donors of left lateral or a left liver lobe for pediatric recipients should be complication free. Unfortunately published reports on complications remain uncommon among centers.
Material and Methods: A retrospective study was performed on a cohort of 207 living related liver donors for pediatric transplantation throughout a 10 year period. There were five right lobe, 43 left lobe and 159 left lateral liver resections. We analyzed post-operative complications during hospitalization of donors from a prospectively maintained database.
Results: Living donor mortality was zero. 12 patients (5.79%) developed temperature of 37.9 C. Two patients (0.97%) developed remnant liver dysfunction, three patients (1.45%) had hematomas at the resection plane, four donors (1.93%) presented mild pancreatitis, two donors (0.97%) were reported with delayed bowel function, three donors (1.45%) had wound infection and one patient (0.48%) had a short episode of visual disturbance. All donors were discharged following treatment for the specific complication.
Conclusions: Complications may occur in living related liver donors but the rate should remain low for their wellbeing. Reporting complications and rates is necessary from an ethical and experience-gaining side in order to gather better knowledge for long term management and care of living donors.

Clinical Others Donation and donor types

P161 HEALTH LITERACY PRACTICES AMONG DUTCH HOSPITAL ADMINISTRATIVE PERSONNEL

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Background: Health literacy is a term introduced in 1974 and its origins based on the concept and practice of literacy. It includes a cluster of skills, and aims at informed and responsible decisions, shaping health behaviours, health and wellbeing (WHO, 2009).
Methods/Materials: A survey was distributed in 203 hospital administrative staff of a major University Hospital in the Netherlands, followed by a focus group discussion. Through the validated questionnaire the participants expressed their views and knowledge on Deceased Organ Donation (DOD), as well as whether they discuss the topic with family members.
Results: The breakdown of the participants shows that 67% are registered organ donors, 82% view DOD as an altruistic act, while less than a third (14%) has been involved with patients. They see themselves as well informed about various health issues, such as cancer (69%), smoking (61%), diabetes (56%), and heart disease (54%). According to their ethnicity they use different learning sources about DOD (p-value 2.6293e-47), and also they discuss with different people their wishes on DOD (p-value 5.31108e-37).
Conclusion: The results of this research project reveal differences of health literacy practices among people of different background and suggest a further exploration of their educational needs.

Basic Ethics/law/psychosocial/public policy Other

P162 PROTOCOL OF HOSTING THE FAMILIES OF ORGAN DONORS AFTER CONSENT: A PROPOSAL OF HEALTH TECHNOLOGY IN BRAZIL

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Introduction: The moment of authorization of the donation by relatives of donors is very critical, since this request is initiated, in many cases, early, after the communication of the death brain, not allowing the family the right to experience the reactions of mourning before a loss report, for a decision on organ donation. In a recent study, the families of donors lamented the lack of socio-emotional and religious support offered by the Unified Health System (SUS) when grief was still in progress, they said that they felt excluded from the process after donation (Fernandes, 2015).
Objective: This research was to develop in the Hospital the protocol of the care network of donor families for transplants after the consent of the donation, by referral of these families to the services offered in Campinas/SP.
Method: This is an exploratory research with a qualitative approach. The protocol was constructed by professionals from the Organ Procurement Organization, starting with the survey of donor data and identification of families from October 2016 to December 2016. Initiates by referral to nursing consultation, psychological assessment or by mental health professional, evaluation of the social worker and comfort by listening to spiritual and religious leadership with the purpose of elaborating loss, mourning and conflicts in relation to the act of donating organs, after the saturation of the data will be submitted to content analysis, the research is approved by the FCM-UNICAMP Ethics Committee.
Results: It is the care in the totality of the care offered to the family donors in the most important moment of their lives, the greater knowledge of this experience lived by them of consent of the donation of organs for transplants, the comfort coming from the socioemotional support by qualified professionals in the moment of loss.
Conclusion: This protocol contributes as a model instrument to be implemented by other organ procurement organization.

Basic Ethics/law/psychosocial/public policy Donation and donor types

P163 KNOWLEDGE LEVELS AND ATTITUDES OF PEOPLE LIVING IN A CITY OF TURKEY ON ORGAN DONATION AND TRANSPLANTATION

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Objective: The purpose of this descriptive study was to determine the knowledge levels and attitudes of people living in a city of Turkey on organ donation (OD) and transplantation.
Methods: Data were collected using a questionnaire administered to 414 people residing in this city between February and May 2016. The primary and secondary endpoints of the present study were to determine the attitudes and knowledge levels of participants on OD and transplantation, respectively.
Results: Four hundred and fourteen people between the ages 20 and 65 years participated. In total, 8.9% of the participants correctly answered the question 'What is necessary for donating an organ?' and 31.4% of them correctly answered the question 'What is brain death?' Moreover, 53.1% of the participants stated that they wanted to receive reliable information on OD from OD centres. There was a close relationship between high education level and the willingness to donate organs ($p < 0.05$). Further, 94.7% of the participants stated that they did not want to donate organs: 22.9% of them explained that their decision was because of their religious beliefs and 19.6% stated that their families did not allow it. It was observed that people who accepted organs from others were more willing to donate organs to their relatives ($p < 0.05$).
Conclusion: People living in this city do not have sufficient knowledge on OD; they had various concerns on the issue and wanted to receive information from OD centres. Exemplification and internalisation methods can be used in educational schedules to increase the OD.

Attitude	*n*	%
Yes	19	4.5
I want to save a life	17	89.4
I think I can feel psychologically better	0	0
I want one of my organs to continue to live after my death	1	5.3
I or one of my relatives may become an organ recipient in future	1	5.3
Other reasons	0	0
No/Indecisive	392/3	94.7/0.7
I do not want due to my religious belief	91	22.9
I am afraid that my corpse can be used as a commercial good	26	6.5
I do not want others to intervene to my corpse	58	14.6
I think my family would not give permission	78	19.8
I think that in a case of an emergency my treatment can be carried out deficiently	22	5.5
Other reasons	122	30.7

Clinical Ethics/law/psychosocial/public policy Donation and donor types

P164 LIVING RENAL DONORS – QUALITY LIFE EVALUATION ONE YEAR POST DONATION

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Background: Living organs donors are exposed to procedures that imply risks without offering benefits nor clinic or physics. Our institution has created the figure "ILDA" (independent living organ advocate), in order to guarantee the voluntarily decision of the donor, the guidance and the follow-up. The objective of this study was to analyze the population of living kidney donors of our institution and to evaluate:(1) Quality of life, (2) hospitalization time, (3) Post-operative complications, (4) time to job return.
Materials and methods: Prospective study design. Minimum follow up 12 months. Population: 38 living kidney donors. Mean age 47.7 years (range 21–69). We evaluate quality of life through Euroquol-5D poll and job return through a semi-structured interview done by an independent observer. Complications were classified as major or minor, and the hospital days were obtained of the hospital charts.
Results: All the donors ratified their decision to donate. Euroquol-5D poll showed no personal cleanliness proble 1 donor had mobility problems (2.63%); 5 donors (13.15%) referred difficulties in everyday activities, 5 (13.5%) moderate pain, and 2 (5.3%) presented anxiety syndrome. None of the donors needed post donation psychological treatment. Average hospitalization in-time was 3.55 days (range, 2–8). Nine donors (23.6%) had post-operative complications: 1 eventration that required surgical treatment (major), 2 testicle pain (minor), 2 back pain (minor), 3 superficial wound infection (minor) and 1 inguinal pain (minor). Mean time to job return was 49 days (20–90) and 5 donors (13.15%) suffered salary discount for not working days.
Conclusions: At one-year post donation, all donors ratified their decision to donate. All donors had good quality of life results with an acceptable mean time job return. Post-operative complication rate was within results published in the literature. The ILDA program guarantee an independent decision and improves post-operative follow up.

Translational Ethics/law/psychosocial/public policy Donation and donor types

P165

LEGAL ASPECTS CONCERNING ORGAN UTILIZATION FROM HBV INFECTED DONORS

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Organ transplantation is related to the risk of transmission of infection, including hepatitis B and the development of the disease in transplant recipient. This issue should be seen in several areas:

1. the use of organs from an infected donor of unexplored and unknown status;
2. the use of organs from infected donors, but with known and negative at the time of transplantation HBV status (infection during the window period);
3. conscious use of organs from an infected donor and transplanted to properly selected and treated recipient with the respect of principles of organ allocation from donors of increased risk;
4. conscious use of organs from an infected donor and transplanted to any recipient without respect of principles of organ allocation from donors of increased risk.

After the query and analysis of Polish and European legislation and recommendations we summarized that almost all of situations mentioned above is characterized by relativism, and may be as follows:

1. the use of organs from a donor with incomplete characterization is unintentional criminal act, exposing health or life of the donor (Polish Penal Code) but it may be defended by EU Directive 53/2010: "if According to a risk-benefit analysis in a Particular Case, Including in life-threatening emergencies, the expected benefits for the recipient outweigh the risks posed by incomplete data, an organ may be considered for transplantation";
2. situation fully corresponds to the definition of serious adverse event;
3. proceedings fully justified on the basis of the risk-benefit analysis and prediction of the results of transplantation;
4. situation is rather clear, which is a medical mistake and crime against life and health (Polish Penal Code).

Clinical Ethics/law/psychosocial/public policy Infection

P166

HEPATITIS B AND C SEROLOGICAL PROFILES OF LIVER/KIDNEY DONORS AND RECIPIENTS: 10-YEAR CROATIAN SINGLE CENTRE ANALYSIS

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Introduction: Screening for hepatitis B (HBV) and hepatitis C (HCV) viruses is a requirement in organ transplantation. The information acquired influences organ allocation and post-transplant management. The goal of this review was to determine HBV and HCV serological profiles of liver and kidney donors and recipients.
Methods: HBV and HCV serologies were retrospectively obtained for adult liver and kidney recipients and their donors between 6/2006 and 6/2016 using a hospital transplant database.
Results: In total 1308 serological profiles of organ recipients and their donors were analyzed. There were 452 kidney (65% male, mean age 49.5 $\pm$ 12.5 years.) and 856 liver recipients (72% male, mean age 55.1 $\pm$ 10.4 years). 1.5% kidney and 5.4% liver recipients were hepatitis B surface antigen (HBsAg) positive. 34.5% of kidney and 69.7% of liver recipients were non-immune to HBV. The prevalence of successful pre-transplant HBV vaccine immunity was greater in kidney than in liver recipients (36.9% vs 5.5%). 2.2% of kidney and 3.4% of liver recipients were only HBcAb positive. HBV vaccine immunity of both organ recipient groups did not change significantly during period of 10 years (p = ns). There were 2.2% kidney and 15.7% liver HCV antibody positive recipients. 1.1% of kidney and 0.2% of liver recipients were both HBsAg and HCVAb positive. From the total number of kidney grafts, 8.85% were HBcAb positive and no kidney grafts were HBsAg or anti-HCV positive. From the total number of liver grafts 7.7% were HBcAb, 0.1% HBsAg and 0.2% HCVAb positive.
Conclusion: The prevalence of HBV and HCV HBV co-infection in organ recipients is low, as well as the prevalence of anti-HCV in kidney patients at the time of transplant. HBV immunity in the pre-transplant liver kidney cohort is low and has not changed significantly in the observed period. This analysis indicates that greater efforts should be implemented in the pre-transplant vaccination process.

Clinical Others Other

P167

REVIEW OF NATIONAL SCIENTIFIC STUDIES RELATED TO TRANSPLANT NURSING IN TURKEY

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Aim: The aim of this study is to review national scientific studies conducted on transplant nursing in Turkey.
Methods: Within the scope of this study, scientific reports and theses published between 2012 and 2017 (last five years) were reviewed. To search for papers and theses in line with the purpose of the study, the following key words were used: "transplant nursing", "organ transplant nursing", "organ transplant patient/recipient", "transplant patient care" and "nursing". Scientific activities of five associations whose declarations on transplant nursing are released at national scientific events were reviewed. In order to access national theses, the theses archived in the National Theses Center of Council of Higher Education were reviewed.
Results: At the end of the review, 51 declarations released at 12 of 14 scientific congresses were accessed. At the National Theses Center, 7 master degree and 4 doctorate theses were accessed. of the declarations released in national scientific events, 3 were on experience sharing, 8 were reviews, 21 were descriptive studies, 12 were case studies, 2 were scale development studies and 2 were interventional studies. of the declarations, 20 were on liver transplantation, 18 were on kidney transplantation and 1 was on heart transplantation. At the National Theses Center, there were 2 scale development studies, 7 descriptive studies and 2 interventional studies on transplant nursing.
Conclusion: The great majority of studies were conducted on adult liver and kidney transplant recipients. Therefore, further studies should also be carried out with recipients of other organs at different ages. It is also recommended that interventional studies likely to affect the health care outcomes of recipients should be carried out.
Keywords: transplant nursing, solid organ transplantation, declarations, thesis

Clinical Ethics/law/psychosocial/public policy Other

P168

ENCOURAGING INDICATION ONE'S WILL ON ORGAN DONATION THROUGH A GUINNESS WORLD RECORD CHALLENGE

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Background & Objective: Though many people are awaiting organ transplantation, only 12.6% of the population has declared the intent to donate organs in Japan. Therefore, we conducted a survey with 10,000 Japanese people using the "stages-of-change model," explored variance among the different stages, and recommended interventions for encouraging people to move to the next respective stage. We found that it is important to reduce anxiety by providing accurate information and fostering commitment to encourage people to indicate their will to donate organs. This study examined if the provision of accurate information about organ donation and commitment led to changes in cognition and intention to donate.
Methods: We conducted a 30-min intervention providing accurate information to participants aged 15 years or older, who responded to a questionnaire before and after the intervention. We used a Guinness World Record (GWR) challenge, the "Largest Organ Donation Awareness Lesson" to provide information to participants who were instructed that falling asleep, whispering, or touching their smartphone during the lecture would lead to disqualification. Data were analyzed using a two-tailed t-test.
Results: The GWR challenge was accepted by 433 people. Post intervention, improvement in knowledge and desirable cognitive changes (e.g., "Brain death is the death of a person," "I have few anxieties about organ donation," and "Declaring one's intention is important") were observed. Additionally, intent for behavioral change was confirmed by 50% of the sample and the percentage of declaration of donation increased significantly, from 16.8% to 34.5%.
Conclusion: Provision of accurate information about organ donation and commitment through the GWR challenge facilitates positive cognitive and behavioral change. Thus, setting a GWR challenge, such as the "Largest Organ Donation Awareness Lesson" is a useful strategy for encouraging people to indicate their will to donate.

Clinical Ethics/law/psychosocial/public policy Other

P169

THE EFFECTS OF RIGHT COMMUNICATION WITH RELATIVES ON CADAVERIC ORGAN DONATION RATE IN INTENSIVE CARE UNIT PATIENTS: A SUMMARY OF TURKISH DATA

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Introduction: In different cultural and geographical regions, the process of diagnosis of brain death and the routes to be followed on the way to the donation or organs can differ except for the basic diagnostic rules. In this study, it was aimed to investigate the incidence and features of brain death cases followed up in intensive care unit (ICU) for different clinical reasons.
Material-Method: In a prospective single-center study, brain death was diagnosed with Glaskow Coma Scale (GCS) < 8 patients in 2100 tertiary ICU patients between 2015 and 2017 in Turkey, and the process of organ donation was examined. The data are preliminary results of the prospective study and the patient follow-up continues.
Results: In our study, 160 patients with GCS < 8 were followed in our intensive care unit. Fifty-eight (36.3%) of these patients had a GCS of 3 during the follow-up period. Forty-four (27.5%) of all patients were diagnosed with brain death. Apnea tests of 44 patients were positive. Forty (90%) of the patients who were diagnosed with brain death were eligible donor candidates. Twelve of the eligible patients (30%) accepted the donation, while 28 (70%) did not. The median age of the patients receiving organ donation was 46.5 (21–59), while the median age of those without it was 48 (18–84). In the follow-up, it was determined that 130 (81.3%) of the patients were ex-outpatients and 30 (18.8%) were discharged (Table-1).
Conclusion: Organ donation process varies all around the world according to cultural and geographical characteristics. Our data suggest that effective communication with patient's family, emotional support, and sharing information are as important as detecting organ donors. We believe that completing the process as fast as possible and with the right means of communication will increase the number of organ donors. On the other hand, adequate time should be allowed for family members to grieve and compose themselves.

Gender *n* (%)	
Male	95 (59.4)
Female	65 (40.6)
Clinics *n* (%)	
Neurosurgery	106 (66.3)
General surgery	16 (10)
Internal disease	13 (8.1)
Emergency unit	11 (6.9)
Others	14 (8.8)
Etiology *n* (%)	
Subarachnoid hemorrhage	46 (28.8)
Intracerebral hematoma	30 (18.8)
Brain injury	15 (9.4)
Intracranial Mass	14 (8.8)
Sepsis	13 (8.1)
Others	42 (26.1)
Ancillary tests *n* (%)	
Transcranial Doppler	39 (88.6)
Computed tomography angiography	5 (11.4)
Complications *n* (%)	
Diabetes insipidus	29 (65.9)
Hypertension	10 (23.3)
Hyperglycemia	15 (34.9)
Hypotension	28 (65.1)
Arrhythmia	14 (33.3)
Times median (min-max)	
Duration from initial to GCS 3 (hour)	28.5 (0–493)
Duration from initial to GCS 3 (donation +) (hour)	13 (0–118)
Duration from initial to GCS 3 (donation −) (hour)	34 (0–190)
Duration until brain death occurs in patients with GCS 3 (hour)	33 (10–144)
Duration until brain death occurs in patients with GCS 3 (donation +) (hour)	36 (12–144)
Duration until brain death occurs in patients with GCS 3 (donation −) (hour)	27 (10–72)
Duration from diagnosis to declaration of brain death (min)	30.0 (10–160)
Duration from declaration to arrest (donation −) (hour)	8 (4–16)
Duration from declaration to surgery for organs (donation +) (hour)	12 (4–16)
ICU duration in non-survivors (day)	6 (1–110)
ICU duration in discharges (day)	24.5 (6–72)

Basic Ethics/law/psychosocial/public policy Donation and donor types

P170

THE INVESTIGATION OF THE SOCIO-DEMOGRAPHIC AND CULTURAL PROPERTIES OF ORGAN DONATIONAL FAMILES

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Hedefler:

- Bursa'daki demografik özelliklere göre (2015) donör ailelerin incelenmesi.
- Bağışçının mirasında aile onayı sorguluyor.

Bilgiç:

- Bildirilen telefon görüşmeleri ve yüz yüze görüşmeler yapıldı 80 donör aileyle
- Onların sosyo-demografik özellikleri ve vericinin mirası etkileri incelendi

Sonuçlar:

- 80 donör aile değerlendirildi (1 ila 2 aile üyeleri/akrabalar görüşülmüştür)
- 32 kadın bağışçının özellikleri görmek bakıldığında, 48 erkek, yaş ortalaması 55.9, aile üyeleri ile yapılan toplantılar organ bağışı kararında sonra veri elde edildi; % 34.19 kadın,% 65.81 erkek,% 21.29 eğitim durumlarında ilkokul,% 15.48 ortaokul,% 56.12 lise oranının cinsiyete göre dağılımına bakıldığında Üniversite mezunu% 7: 9. Mesleki dağılımlar% 27.74 ev hanımından fazla,% 33.54 işçi,% 12.9 emekli,% 4.5 'li çiftçi,% 7:09 am serbest meslek sahibi,% 14.19 kamu personeli tarafından incelenmiştir. Aile bağışlarınların organlarının vasiyetnamesi bağışlandığı için bağış yapan ailenin onayını% 83.75,% 16.25 olarak aldı. Olgular% 43.22'si kızı ve oğlu,% 13.54 kız kardeşi ve erkek kardeşi,% 23.87 eşi,% 11.61 anne ve baba,% 7.74 diğer bağış ailesinin kararı kararlaştırdı.

Sonuç: 2015 donör ailelerin sosyodemografik özellikleri incelendi; Erkek bağış ve organ bağışı kararının, erkeklere çoğunda, organ bağış oranının düşük olduğu, organ eğitim düzeyi organ bağış oranının yüksek olduğu, daha yüksek olduğu tespit edildi. Orada eğitim ve farkındalık güçlüleştirebilir bağış oranları onun esseri olduğu düşünülmektedir.

Clinical Ethics/law/psychosocial/public policy Donation and donor types

P171

COMPARISON OF WILLINGNESS TO DONATE ORGANS AFTER DEATH IN ADVANCED DIRECTIVE REGISTRY WITH REAL CONSENT RATES IN ANDALUSIA

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Introduction: Andalusia is a region in southern Spain with a population of 8.4 million inhabitants, comprising 8 provinces. Donation rates were 47.1 pmp in 2016 (Spain 43.4 pmp).

The Advance Health Care Directives, also known as a Living Will (LW), allows patients to make known in advance their wishes and preferences about the health care that they wish to receive when they are unable to communicate because of illness. Advanced Directive Registry (ADR) allows for registering willingness to donate or not to donate organs after death. Health professionals will consult in case of donation and guarantees that their wishes are respected.
Objective: To compare the rates of willingness to donate organs after death in ADR with real consent rates in Andalusia in 2016.
Results: 3138 people registered their LW in Andalusia in 2016 (374 pmp).72% of all registrations are initially in favor of the donation. There is greater acceptance of organ donation with respect to tissue donation (72% vs 64%) but these differences are not significant. 470 interviews were performed by transplant co-ordinators to the families of potential donors, 86% of them consent the donation. There is only one province where the refusal to donation was greater than registered in the LW. This result could be explained by a small number of donors in that province.
Conclusion: It is possible that the profile of the people who register their Living Will is different form donor profile in our region. Other factors may also be

influential: the family plays a prominent role in the decision-making process when the donor did not registered any opinion, so, the profile of the people who finally consent or not the donation, is very varied. The results obtained make us think that specific training of transplant co-ordinators in approaching families of potential donors is very important to increase consent rates to donation. Further more specific studies will clarify some of the issues raised.

Translational Ethics/law/psychosocial/public policy Other

P172 HUMAN PERFORMANCE ASSESSMENT OF MULTI-ORGAN RETRIEVAL WITH THE JOINT SCRUB PRACTITIONER IN THE UNITED KINGDOM

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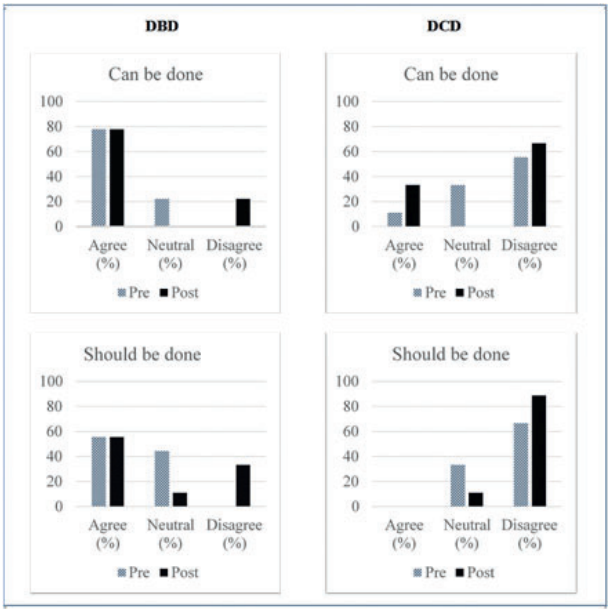
Background: The United Kingdom National Organ Retrieval Service (NORS) review recommended a Joint Scrub Practitioner for abdominal and cardiac teams during combined organ retrieval. To understand the functional implications, and evaluate feasibility of the joint scrub role we evaluated individual psychological response and team performance in simulated multi-organ retrievals.
Methods: Two high fidelity simulations were conducted in an operating theatre with porcine organs, en bloc, placed in a mannequin. For DBD simulation an anaesthetic machine provided simulated physiological output. DCD retrieval began with rapid arrival in theatre of the mannequin. Cardiothoracic (lead surgeon) and Abdominal (lead and assistant surgeons; joint scrub practitioner) teams combined for the retrievals. Data collected before, during and after simulations used self-report and expert observers, to assess; attitudinal expectations, anxiety, self-confidence, mental workload, non-technical skills, teamwork, and social validation perceptions.
Results: Attitudinal changes regarding feasibility of the Joint Scrub Practitioner for DBD and DCD are displayed in Figure 1. There were no significant differences in anxiety or confidence prior to either simulation nor in mental workload afterwards. However variance between simulations for individual members of the team was noted. Non-technical skills were slightly lower in DCD than in DBD (self and expert rating). Global ratings of team performance were significantly ($p < 0.05$) lower in DCD than in DBD.
Conclusion: Measures of attitude indicate less support for the proposed Joint Scrub role for DCD than for DBD multi organ retrieval. Further work to determine feasibility of the NORS recommendations in the UK is required. Measures of team performance and individual psychological response can inform feasibility considerations and have been adapted for use in the Vanguard project currently underway.



Clinical Ethics/law/psychosocial/public policy Other

P173 REPORTING OF SARE SYSTEM IN SLOVENIA

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Introduction: After the Directive 2010/45/EU was adopted in Slovenia, we have implemented the quality and safety (QaS) requirements in organ donation and transplantation. Serious Adverse Events (SAE) and Serious Adverse Reactions (SAR) reporting on the national and international level is one of the crucial tools to fulfil QaS standards. Main Eurotransplant (ET) task is optimal organ allocation within all member states including Slovenia. ET offers a SAE/R handling service to all its member states based on Commission implementing Directive 2012/25/EU, but SAR/E reporting (organovigilance) system should be next important task of ET.
Backgrounds: We present the national organovigilance model runs in Slovenia to provide the QaS in organ donation transplantation. The system operates 24/7 and shall be well recognized by the competent experts and responsible persons in all national health institutions. The organovigilance system is based on experience achieved when developed system for tissue and cells. EFRETOS, EUSTITE and SoHO V&S EU projects improved our national system as well. Organovigilance system has functioned fully since 2010.
Description of Slovene system: Slovenija-transplant (ST) is competent institution for organ donation/transplantation coordination and organovigilance. National level in covered by central coordinators who are competent persons and on call 24/7. ST prepared two types of forms to report organovigilance cases in two steps. First type evaluates the case and second confirms it and prepares the corrective measures. We notice that reporting cases is inadequate, which is common in all ET countries. Educational models and the list of SARE are recognised in ET countries but still insufficient reported including Slovenia.
Conclusions: We are establishing new educational model to rise professional awareness on organovigilance, despite in some ET member states the list of SARE is not clear and need further discussions.

Basic Ethics/law/psychosocial/public policy Other

P174 REPORTING OF SARE IN ET COUNTRIES

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Background: EU member states are obliged to fulfil the requirements of Directives 2010/45/EU and 2012/25/EU on reporting and dealing with Serious Adverse Events (SAE) and reactions (SAR) in the field of organ donation and transplantation. Slovenia is a full member of Eurotransplant (ET) for the main purpose of optimal allocation and use of procured organs since year 2000. To meet the requirements defined by both directives the national systems for reporting SARE in cooperation with ET shall be established. The aim of the presentation is to analyse organisational structure and functionality of the national systems related to reporting SARE and communication with other members of ET.
Method of work: On the basis of national reports given in the frame of workshop organised at the ET Wintermeeting in the 2017 we compared the efficiency and functionality of the national systems within ET member countries. We assess the establishment of a system, corrective measures, number of reported cases, educational models and the kind of SARE recognised.
Results: 5 countries prepared the reports on their systems: Germany, Hungary, Belgium, Netherlands and Slovenia. The reports showed us very different approach. All competent authorities recognised the need to organize the system. The main differences are shown in levels to which the system has been developed. The Netherlands proposed a new idea to organize the system by the project performed on the national level. The SARE is underreported in all countries. ET plays the role as an element in the chain to collect information, reports, and distributes it to the target countries.
Conclusions: The discussion pointed out the need to continue with organization of additional workshops. Good practice from one country should be used in others. The corrective measures and educational programs for all involved experts on the donor and recipient side have not been presented.

Basic Ethics/law/psychosocial/public policy Other

P175

EDUCATING PROFESSIONAL AND LAY PUBLIC ABOUT ORGAN DONATION AND TRANSPLANTATION

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Background: Education of medical professionals and lay public about organ donation is one of Slovenija-transplants (ST) main competencies, one of priorities of Action plan on organ donation and transplantation (2009–2015) and required by Directive 2010/53/EU. ST as a national competent authority gradually developed national educational scheme and included it in legislation in a form of regulations deriving from new Slovene transplant law from 2015.
Methods/materials: ST has put a lot of effort into educating key medical professionals and lay public since its establishment in year 2000. In the course of years we identified key educational needs and defined key target groups, such as medical professionals in general, specialists in the field of intensive medicine, tx coordinators, general public etc. This brought us to regulating this field of activity with modern legislative in 2015. Regulations determine contents, target audience and regularity of educational events. On the basis of regulations ST prepares yearly plan of education by type of event, presumed number of events and participants and estimation of costs.
Results: Regular educational events: Basic education on donor program (4–6 per year). Advanced education on donor program and organ procurement – course in Tx Coordination for tx coordinators, ICU doctors and nurses (1 per year). Giving bad news and family interview on donation workshops (3–4 per year). Educating authorised persons for collecting declarations on organ donation (3–4 per year). Lecture on organ donation and transplantation as part of curriculum at Faculty of Health Sciences.
Conclusions: We believe continuous education is key element to build and increase trust of professional and general public in donor system and transplantation. Highly elaborated Slovene educational scheme is a result of structured approach and continuous work in the field since ST was established.

Clinical Ethics/law/psychosocial/public policy Donation and donor types

P176

QUALITATIVE EXPLORATION OF THE BELIEFS AND ATTITUDES TO ORGAN DONATION AMONGST THE SIKH COMMUNITY IN UK

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Background: This preliminary qualitative work was done as part of a larger project within the Sikh community exploring attitudes to organ donation. In the UK, there is a disparity in the number of patients on the transplant waiting list and available donor organs, this is especially true in ethnic minorities.
Methods: A single focus group was conducted with 4 males and 4 females, aged 20–29 from the Sikh community. Thematic analysis of the data was undertaken to identify key themes for further investigation.
Results: The decision to join the organ donation register was considered to be primarily a personal decision rather than a religious one. Level of knowledge was fairly rudimentary, but this was not a barrier to decision making for this group. However, lack of knowledge was identified as problematic in relation to older generations within this community, who may overrule donation decisions due to lack of understanding around organ donation. It was highlighted that challenging these beliefs was difficult for younger generation Sikhs due to cultural factors. The fundamental principles of organ donation aligned well with the religious tenets of Sikhism of being a volunteer, being selfless and doing good for the wider community. There were no specifically religious issues conflicting with organ donation in terms of how the body was viewed after death, but there remained a possibility that older generations would prefer not to tamper with the body and have a funeral arranged quickly which may preclude organ donation. It was felt that the community would be open to further education on organ donation, but it was essential that this was delivered in Punjabi by an individual with whom members of the community could identify.
Conclusion: Barriers to organ donation could be addressed by education linked to the premises of the Sikh religion. A priority for the older generation of Sikhs was to ensure that they did not overrule donation decisions of other individuals.

Clinical Others Other

P177

THE IMPORTANCE OF ASSISTANCE BY MEDICAL INTERPRETERS FOR FOREIGN RESIDENTS OF JAPAN SEEKING RENAL TRANSPLANTATION

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Introduction: There are slightly less than 2.8 million foreign nationals residing in Japan. That amounts to approximately 1.6% of the total population of the country. Kitasato University Hospital has been conducting renal transplantation operations since 1972. As of May 2016 a total of five foreign nationals from Peru, Laos, Korea and China sought a renal transplantation operation at the hospital. Amongst three cases of foreigners who did not have a Japanese family member accompany them I needed to use the assistance of medical interpreters for two cases.
Purpose: By providing the assistance of a medical interpreter to a patient who is seeking a renal transplantation operation but has a low level of Japanese comprehension it is possible to enhance the patient's level of understanding about renal transplantation and alleviate their concerns.
Method: An investigation was conducted to directly hear from patients in order to grasp the difference between those who received assistance from a medical interpreter and those who did not have any assistance from an interpreter.
Result: The group that received the assistance of a medical interpreter indicated a decreased level of concern regarding renal transplantation operation. The assistance of a medical interpreter it was possible to more easily identify new problems and learn more about the concerns of patients.
Discussion: Both groups expressed similar areas of concern regarding costs, rehabilitation time, waiting time, and HLA matching. Amongst the group that did not receive the assistance of a medical interpreter there was insufficient understanding and some patients chose to forego the procedure. The waiting time for renal transplant operations in Japan is close to 17 years. The transplant team must also play the role of supporting the patient's intent in receiving a renal transplantation. It is clear that it is important to provide support to ensure that there is no reduction in patient adherence.

Clinical Others Other

P178

COST-EFFECTIVENESS ANALYSIS OF SOLID ORGAN TRANSPLANTS IN A PRIVATE, PHILANTHOPIC AND TERTIARY HOSPITAL IN BRAZIL

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To perform a cost-effectiveness analysis of solid organ transplants carried out in a private philanthropic hospital in Brazil.
Methods: For cost analysis we included all patients that underwent kidney, liver, heart and lung transplants in 2015 in our Hospital. We collected data about costs per patient including the pre transplant phase (eligibility evaluation for the transplant, listing and outpatient follow up), the transplant and post-transplant phases until 1 year of follow up. Unit costs were associated to each health resource, obtained from the hospital costing system. For the survival analysis we used Cox model, using all the transplants performed from 2002 to 2016 in our institution. For the cost-effectiveness analysis we used the following calculations: 1. Calculation of average cost for each year of life = (average total cost/mean survival time); 2. Calculation of lifespan in years for the repayment of the transplant by the recipient = (average total cost/GDP per capta); 3. Calculation of wealth production after the transplant [(mean survival time)–(average total cost/GDP per capta)*GDP per capta]. The values of GDP per capta and dollar exchange rate were the ones from 12/2015, being U$ 6.963,94 and BRL 3.91, respectively.
Results: All types of transplant analyzed here were cost-effective; all of which had a cost of life saved per year less than 3x GDP and the dialysis treatment cost. Considering all of them together, there will still be a wealth production after paying off the treatment, in mean of U$ 32,672.67.
Conclusions: In a private Hospital, where the Transplant Program is funded by the Public Health System, kidney, liver, heart and lung transplants were considered cost-effective therapies. This analysis can support our Hospital Managers and transplant teams to take the best decision in an era of growing chronic diseases.

Basic Ethics/law/psychosocial/public policy Donation and donor types

P179

RETROSPECTIVE STUDY OF ORGAN DONATION AFTER BRAIN DEATH CASES IN ISTANBUL UNIVERSITY, ISTANBUL SCHOOL OF MEDICINE INTENSIVE CARE UNIT

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Backround: Hundreds of people pass away due to complications of the organ failure every day while on the organ transplant list on the World. Sufficient living donor cannot be found for the patients with the need of transplantation. The transplantation need as well as the technology enabled the cases who have been diagnosed with brain death in the intensive care unit to become organ donors. Early detection of possible brain death cases in the legal perspective, and making them organ donor candidates earlier after taking informed consent from their relatives is lifesaving. There are efforts highlighting the importance of organ donation through the legal regulations and social awareness rising campaigns in our country. Unfortunately, despite of these efforts, the organ transplantation ratios are very low in our country compared to other countries, due to sociocultural, economic, and especially religious reasons.
Material/Method: Following Institutional Ethics Committee approval and patient consent, the brain death cases in the Istanbul University, Istanbul School of Medicine Intensive Care Unit between the years 2004 – 2012 were evaluated retrospectively.
Results: The transplantation ratio is found to be only 10%.
Conclusion: It will be a ray of the hope for the patients with need of organ transplantation, when first we, physicians, become more sensitive about this issue and work in a collaboration with organ transplantation coordinators; and when the Ministry of Health and especially the Directorate of Religious Affairs make some efforts encouraging society for organ transplantation.

Clinical Ethics/law/psychosocial/public policy Other

P180

THE MEANING OF INITIAL EXPERIENCES OF DECEASED DONOR ORGAN TRANSPLANTATION AT LOCAL HOSPITAL

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Background: In deceased donor organ transplantation (DDOT), organ distribution is a sensitive theme. Local hospital has few chances to achieve deceased donor organs, so it is very difficult to improve DDOT in local hospital. But there may be advantages in growing up DDOT at local hospital although there are obstacles to be solved. We expect that our initial experience may help considering the meaning of DDOT at local hospital.
Methods: We had an early experience of 17 cases deceased donor kidney transplantations (DDKT) which were performed from Mar. 2012 to Dec. 2016 and reviewed the data.
Results: There were helps of the experienced surgeons as an supervisor from another hospitals initially. All the donated organs used at our hospital were incentive kidneys. National organ donation agency were involved in agreement of donation from donor's family. The donors were aged from 18 to 61 years old and diagnosed of brain dead state due to brain injury. The recipients were aged from 21 to 59 years old and mostly had diabetes mellitus and/or hypertension. The range of cold ischemic time were 2 to 5 h. The durations of hospital stay were 14 to 21 days. The range of serum creatinine levels were 1.1~2.6 mg/dl at 1 month after transplantation. Two patients had surgical complications, urinary leakage and wound dehiscence with seroma. Two patients developed chronic rejections. There was no graft loss or patient loss.
Conclusion: Our early experience showed acceptable results in initial performing DDOT at local hospital in spite of some obstacles. The performance of DDOT at local hospital can make local hospital give confidence and strong ties to patients and provide conveniences of patients not to journey to distant transplantation center and also may contributes to base expansion of transplantation and to increasing more concerns of organ donation.

Basic Ethics/law/psychosocial/public policy Other

P181

TRANSPLANT VOLUMES IN CHINA

David Matas
University of Manitoba Faculty of Law, Canada

Background: Researchers, including the author of this abstract, came to the conclusion that Chinese transplant volumes have been in recent years 60,000 to 100,000 a year. The report on this research, an update of previous work of the three authors – David Matas, David Kilgour and Ethan Gutmann – was published in June 2016 and posted on the website www.endorganpillaging.org The Government of China has denied these figures. The presentation would visit and summarize this controversy over numbers.
Methods/Materials: The presentation would go over the methodology which produced the Matas/Kilgour/Gutmann update. In a nutshell, the authors went through source material from individual hospitals – bed and staff counts, newsletters, research reports, websites, media reports and any other material available to get numbers for each hospital which were then aggregated. In addition, minimum bed counts for certification of hospitals, allowing them to do transplants, were used. The presentation would also go over the basis for the smaller numbers the Government of China claims.
Results: The result would be that the higher numbers generated by the Matas/Kilgour/Gutmann update have a sufficient evidentiary foundation to justify the need for an institution based independent international investigation into the sourcing of organs for transplants in China. The answers given by the Government of China to date to independent research about volumes are not sufficient to meet international standards of transparency, accountability and openness to scrutiny.
Conclusion: The European Parliament and the United States House of Representatives have both already called for an international institution based investigation into sourcing of organs for transplants in China. The presentation would conclude that this call remains today relevant.

Clinical Ethics/law/psychosocial/public policy Donation and donor types

P182

THE INFLUENCE OF INFORMATIVE MATERIAL OVER AWARENESS AND OPINION ABOUT ORGAN DONATION ON BRAZILIAN UNDEGRADUATE STUDENTS

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Background: Literature records on the effectiveness of informative campaigns at shifting opinion and technical knowledge of young adults on regards to organ donation are scarce. Awareness of young adults on the matter of organ donation is crucial, especially to those enrolled in universities, as such group is more likely to be in higher positions and influence a large number of people.
Objective: To assess the influence of exposure to informative material on the subject of organ donation and shifts in the trend of answers of undergraduate students to a standardized questionnaire, comparatively to the answers of a control group to the same questionnaire.
Methods: Both compared study groups received the same 20 multiple-choice-question questionnaire about the respondent and one's technical knowledge and opinion about organ donation. Only the experimental group was also granted informative material on the subject. The questionnaire and attachments e-mailed to 16,675 university students that were randomly assignedt to study groups. All respondents agreed to a given a consent form. The study targeted only undergraduate students. An Odds ratio was used to quantify the impact of the informative material on the subject's answers.
Preliminary Results: 713 students responded to the questionnaire. Mean age was 23 years old. Respondents were mainly female (68.8% of total). There were differences on the answer pattern of the two groups on 6 out of 13 questions ($p < 0.05$). The experimental group tended to answers that expressed a better technical knowledge of the process of organ donation, as well as a more positive opinion to consenting to organ donation upon death of oneself or family members.
Preliminary Conclusions: At this stage of the study, differences in the response pattern between the two compared groups indicate that the access to informative material plays an important role in establishing a good knowledge base and favourable opinion on the subject of organ donation.

Clinical Ethics/law/psychosocial/public policy Allocation

P183 CAN I CHOOSE THE RECIPIENT FOR MY KIDNEY WHEN I DIE? A RE-APPRAISAL OF DIRECTED DECEASED DONATION

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The question whether directed deceased donation (DDD), that is: the possibility to allow an individual (or his representatives) to designate a recipient for his organ (s) after death, is ethically acceptable and should be implemented in our allocation policies, has been on the table since the 1980s, but has not received a conclusive answer as yet. Today only a few countries (US, UK, Province of Ontario/Canada, Australia) have accepted DDD, and made practical policies to implement it. However, when looking for a thorough ethical, social, legal and medical justification underpinning these countries' decision to allow DDD, it is hard to find. Most heard arguments are that a) legislation on donation does not explicitly rule out DDD, b) autonomy of a person wishing to donate should not be curtailed by formal and impartial allocation rules, and c) most people feel an obligation towards others with whom they share family ties/close emotional relationship. However, there is ample scientific literature out there, that analyzes elements and aspects of DDD, allowing one to create a coherent ethical and social justification for DDD and design a practical policy for implementation. This presentation will highlight issues crucial for DDD, and will determine the relevance for introducing a DDD policy.
Namely:

Social context in which organ donation takes place, and the meaning of donation as a personal social act

he existing (contradictory) divergence between the system that guides living donation (person-specific allocation), versus the post-mortem donation system, that favours altruistic, anonymous allocation based on equality and justice

The legal basis that underpins most donation laws: no formal ownership relation between donor and organ, but the right of negative exclusive control over one's organs

Question whether directed donation violates the requirement for equality and justice

Need for appropriate unconditional consent

An 'ethical' DDD policy is presented.

Clinical Ethics/law/psychosocial/public policy Allocation

P184 THE EUROPEAN NETWORK FOR COLLABORATION ON KIDNEY EXCHANGE PROGRAMS (ENCKEP)

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ENCKEP, a European Cooperation in Science and Technology Action, brings together kidney transplant medical experts (urologists, nephrologists, epidemiologists), public health scientists involved in organ allocation and optimization scientists (mathematicians and computer scientists) from 23 countries to foster dialogue, share experiences, exchange expertise and elicit best practices related to existing Kidney Exchange Programs (KEPs). ENCKEP has four main objectives: (i) Summarization of best practices: ENCKEP will deliver the first handbooks on existing KEPs policies involved, medical assumptions considered, legal and ethical aspects, mathematical models and optimization methodologies used; (ii) Models and optimization methods: ENCKEP's optimization scientists study the impact of different policies, models, assumptions on the solutions, together with policy makers, clinicians, legal and ethical scientists; (iii) Models and practical collaboration for Transnational KEPs: ENCKEP will develop and test a prototype transnational KEP, including standardized data representation models and database definitions. It will provide a set of clinical, ethical, legal and technological guidelines for consideration in a transnational KEP setup and propose models and optimization algorithms for transnational KEPs; (iv) Dissemination of results and Simulation tools: ENCKEP will provide an evidence-informed policy dialogue with national KEPs in the implementation of best practices. A website and a prototype for the transnational KEP simulation experiments will be use to disseminate our results. The key idea is to provide simulations for various KEP schemes including variations on pairs, triplets, chains, altruistic, DBD and/or donors, interaction with ABO incompatible transplant and desensitization programs so policy makers will realize the impact of regulation constraints on the efficiency and feasibility of KEPs at national and international level. See www.enckep-cost.eu for further details.

Basic Ethics/law/psychosocial/public policy Other

P185 THE CONFIRMED BENEFIT OF SPORT IN TRANSPLANT RECIPIENTS VERSUS THE HEALTH HAZARD CRISIS OF GLOBAL OBESITY MAURICE SLAPAK FOUNDING PRESIDENT WORLD TRANSPLANT GAMES FEDERATION

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Over the last 35 years there has been accumulated irrefutable evidence of the marked benefit which sport has conferred on people of all ages. The World Transplant Games has held international competition in 20 venues with 75 countries taking part in five continents. The athletes competing are all recipients of kidney, liver, heart and/or lungs, pancreas or a combination of all these organ transplants. Many thousands of competitors of all age groups who have previously been debilitated are seen to be fully physically active and demonstrating that activity both visually to those spectators who are watching and by effective media dissemination. We have previously documented in publications and at the 2007 Prague meeting of ESOT a variety of specific physiological effects which have included. In a global population of 7 billion both obesity and diminished physical activity has reached alarming proportions. There has been a 50% increase in obesity in the last 3 years. There was a estimated 500 million clinically obese people globally in 2015 and of these 25 million were in children aged under 5. In the 5.5 billion people in countries classed as economically developing the estimated WHO figure was 115 billion and rapidly rising due to the increase availability of cheap fatty high sugar containing foods. In countries classed as economically developed concomitant with obesity moderate to vigorous physical activity in 9–15 age group in San Diego USA decreased by 30%. Concomitant and intimately related has been the increase globally in Type II Diabetes Coronary Artery Disease, Hypertension, Stroke and certain malignancies. Thus this visual example of the effect of consistent athletic activity together with balanced nutrition in a segment of population – organ transplant recipients- which had been and still is handicapped (continuing immunotherapy, pre existing hypertension) must be utilised and publicised to counteract this health hazard of epidemic proport.

Clinical Kidney Other

P186 SURGICAL COMPLICATIONS WITHIN LIVING KIDNEY TRANSPLANTATION: FREQUENCY AND IMPACT ON GRAFT SURVIVAL

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Background: Surgical complications persist to be one of the most important complications which may threaten the graft survival after a living renal transplantation. The aim of this study was to assess the prevalence of surgical complications and to determine their impact on the graft survival.
Methods: We have carried out a retrospective study gathering 89 living kidney transplantations that were performed over a period of 10 years (2003–2012) at our unity of kidney transplantation in the military hospital of Tunis. The average follow up time a recipient had was 71.62 ± 34.47 months. To restore the continuity of the urinary tract, the « Barry » extravesical

ureteroneocystostomy technique was performed to all recipients. External iliac Vessels were the preferred sites of vascular anastomosis in our experience.
Results: We witnessed 29 early surgical complications in 22 patients (24.7%) which included 10 vascular, 13 urologic and 6 parietal complications. Vascular complications consist in renal artery stenosis (3.3%), peri-renal hematoma (5.6%), intra-operative bleeding (1patient) and one case of lymphocele. Urologic complications occurred in 13 recipients: urinary fistula (3 patients), urinary leakage (6 patients) and uretero-vesical junction obstruction (4 patients). In the late stage, we recorded 14 surgical complications among 13 patients (14.6%). Only one patient had a renal artery stenosis. We noted 11 urologic complications including ureteral stenosis (6 patients), ureteral reflux (3 patients) and calculi (2 patients).2 patients presented repetitive bouts of pancreatitis which have led to death. We didn't notice any significant association between either urologic (p: 0.271) or vascular (p: 0.632) complications and graft loss.
Conclusion: Although vascular complications were commonly recognized as associated with poor graft outcomes, graft survival was not affected in our study. Well mastered surgical technique, early diagnosis and suitable management are necessary to prevent this complications.

Clinical Kidney Other

P187 ELDERLY KIDNEY TRANSPLANT RECIPIENTS: SINGLE CENTER EXPERIENCE IN THE MIDDLE EAST

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Introduction: The number of elderly patients accepted in renal replacement programmes is increasing as the age per se does not constitute a contraindication to transplantation. The aim of this study was to investigate whether or not transplantation provides any survival benefit in this group of patients.
Subjects and methods: This study is a retrospective case controlled study comparing elderly transplant recipients, group I (n = 201; age>60 years) to a matched group of young adult recipients II (n = 1031; age<60 years). Data were collected from 11/1993 till 5/2014. Data were compared to those obtained in patients (Group II) who were matched for HLA mismatches and time of follow up. Primary end points were Graft loss and/or patient death, while secondary end points were cardiovascular events, malignancies or rejection.
Results: 201 patients with mean age 65.5 ($\pm$4.4), ranged from 60 to 81 years old (64.9% males) were compared with 1031 patients with mean age 41.1 $\pm$ 10.4, ranged from 19 to 59 (63.9% males) ($p = 0.82$). We found no significant difference between the two groups regarding basal graft function represented by serum creatinine ($p > 0.05$). However, graft function was significantly better in elderly group at 6 months, 1-year, 3-years of follow up ($p < 0.05$), but later on the 2 groups were comparable at 5, 10 years follow up ($p > 0.05$). Despite the significantly higher number of cadaveric transplants and more potent immunosuppression given in group II, we did not observe any significant difference between the 2 groups regarding patient or graft survival ($p > 0.05$). This could be attributed to significantly higher number of patients with cardiovascular risks (hypertension, diabetes, cardiac ischemia), lower mean number of rejection episodes in addition to higher number of cases with malignancies in elderly group ($p < 0.05$).
Conclusion: By less potent immunosuppression, elderly age experienced lower rejection rates with comparable graft and

Clinical Kidney Other

P188 RE-TRANSPLANTATION OF KIDNEY: EXPERIENCE AND ACHIEVEMENTS IN THE SINGLE CENTER

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Joint-Stock Company, Kazakhstan

Introduction: Repeated kidney transplantation is usually associated with a poor prognosis of graft survival. Patients undergoing re-transplantation have higher risk of graft dysfunction than recipients that are after the first transplantation. According to the international registry of transplantation UNOS 1 and 5-year survival rate for the first transplant is 91% and 70% respectively, while for the second transplant is 88% and 65%. However, recent studies have shown that the survival of the second transplant could be closer to survival of first transplant. In addition, retransplantation is more cost-effective than the dialysis programme. Given the shortage of cadaveric kidneys and the growing number of patients awaiting re-transplantation, it is important to evaluate long-term outcomes of re-transplantation.
Methods and materials: This publication presents the results of 6 patients with retransplantation of kidneys on the basis of JSC "National scientific center of oncology and transplantation" from 2014 to 2016. The age of the recipients ranged from 36 to 62 years. 5 patients had kidney transplantation from living donors in foreign clinics (Pakistan, China). One patient had a primary transplantation performed on our clinic from cadaveric donor. The average survival rate of primary graft in 5 patients was 8 (6–10) years. of these, 2 patients before retransplantation held transplantectomy, 3 patients had retransplantation the kidneys performed with the abandonment of primary nonfunctioning graft. In 1 patient after cadaveric transplantation, because of acute rejection, the graft was removed n the 4th day. In 5 months, patient underwent retransplantation from cadaveric donor. Tissue compatibility of donors and recipients for HLA system ranged from 16 to 50%, the cross match is negative. 3 patients had positive cross match due to sensitization on the background of primary transplantation. Of those, two had previously undertaken the removal of non-functioning graft, and

Basic Kidney Other

P189 THE USE OF COUNSELING SKILLS IN PREEMPTIVE KIDNEY TRANSPLANTATION

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The aim of this study was to evaluate the utility of counseling skills during the preparation of the patient for preemptive kidney transplantation. In our predialysis ambulatory a team of a nephrologist and a nurse with experience in health counseling, used listening skills and assertive communication to enhance a relationship with patients coming to replacement therapy. In this study we considered only the 18 patients with no absolute contraindication to kidney transplantation. The counseling skills adopted also included: empathy, unconditional positive regard, concreteness, encouragement. The team provided: a) information about kidney transplantation from living and deceased donor, b) worked with the patients to identify areas where change was needed, c) involved partners and relatives in meetings with transplant patients and kidney donors. The use of basic skills in counseling was important for patient outcomes, patient's ability to make changes and not in least for the increase of kidney donation. This study highlights the importance of a new approach to patients coming to replacement therapy and their care-givers. To obtain good results, nephrologists and nurses require a training in health counseling.

Clinical Kidney Other

P190 RENAL TRANSPLANT IN A CASE OF IDIOPATHIC THROMBOCYTOPENIC PURPURA

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Introduction and Aims: Idiopathic thrombocytopenic purpura (ITP) is rare disorder and such a condition with renal failure is extremely rare situation. Low platelet counts is a seemingly difficult condition for any surgery. We successfully performed a renal transplant in patient of ITP. AIM: Case report of renal transplant in a patient of idiopathic thrombocytopenic purpura.
Methods: A patient of ITP with renal failure was admitted to the institute. Patient had platelet count in range of 15,000–20,000. A fistula was created and patient started on hemodialysis. Prior to transplant, steroids with IV immunoglobulins 100 mg/kg were used for five days followed by Rituximab 200 mg as an induction agent. Patient was taken for transplant.
Results: Post renal transplant patient did well. S.Creatinine was 1.12 mg/dl and significant improvement in platelet counts was seen around 1.70 LAKHS/CUMM
Conclusions: Renal transplantation in a patient with ITP is recommended with a well-designed strategy to prevent potential complications. Our experience may thus, be helpful to manage patients with ITP waiting for renal transplantation.

Clinical Kidney Other

P191 THE STORY OF THE FIRST KIDNEY TRANSPLANT IN DUBAI

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Whilst kidney transplantation is accepted worldwide as treatment of choice for patients with renal failure, reginal circumstances can be challenging. We report on our first deceased donor kidney transplant performed in Dubai. M.A. is a 29 years old young woman, mother of 2, who developed renal failure due to type 1 diabetes. Since her transplant, her life is back to normal, and she has gone back to University to pursue a Law Degree. This case may not be unique in performance, but it is an outstanding example of a country embracing a new endeavor. The efforts from multiple agencies, nationalities and specialties, demonstrates the interdependence and coming together of various segments in society to achieve a unified vision and goal. The video will demonstrate how the local and regional entities exemplified the above.

Clinical Kidney Other

P192 A SINGLE CENTER 4 YEAR EXPERIENCE WITH 47 PEDIATRIC RENAL TRANSPLANT: EVOLVING TRENDS

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Background: Outcome of renal transplantation in children has improved over the last several decades.
Methods: We retrospectively reviewed our center pediatric KT outcomes. All patients received antibody induction (basiliximab or ATG) with tacrolimus, mycophenolate, and steroids.
Results: between 5/2013 till 11/2016, we performed renal transplantation in 47 children, 4 through 17 years of age (mean 10.9 ± 3.79) including 36 patients (76%) who were aged 14 and younger with average BMI and weight (kg) were 16.4 ± 3.29 and 24.9 ± 3.85 respectively. The study group included 30 (64%) males/17 (36%) females. 45 patients (95.7%) received kidneys from living donors. 24 (51%) and 14 (30%) patients were on HD and PD respectively. 9 patients (19%) had preemptive transplant. Average duration on dialysis was 18.3 months. 45 patients (95.7%) received kidneys from living donors. The commonest Etiology of ESRD were FSGS 19%, post urethral valve 8.5%, and congenital 8.5% respectively. All patients received triple immunosuppressive therapy; tacrolimus, prednisolone, and mycophenolate mofetil. With a mean follow-up of 54 months, 1 and 4 year graft survival rates were 95.7% and 91.5% respectively. 1 and 4 year patient survival rates were 100%. There is no retransplant. Outcomes were similar in patients $<$ or $\geq$ 10 years. The graft survival was comparable in laparoscopic versus open donor nephrectomy ($p = 0.72$). Average serum creatinine was 0.85, 0.79, 0.79, and 0.84 at 7, 30, 90, 365 days respectively. 4 patients lost their graft due to renal vein thrombosis, chronic allograft nephropathy (cadaveric donor), Antibody mediated rejection, and Hemolytic-Uremic Syndrome at 0.75, 9, 19, 24 months respectively. The incidences of acute rejection and major infection were 2% and 4%, respectively. One patient developed PTLD that was treated and still with excellent graft function. No major infections were reported. Living donors were 38 (83%) males and 9 (17%) females, mean age (yrs.) and BMI were 30.8

Clinical Kidney Other

P193 ACUTE KIDNEY INJURY FOLLOWING ORAL ADMINISTRATION OF VORICONAZOLE IN KIDNEY TRANSPLANTED PATIENT AFFECTED BY PULMONARY ASPERGILLOSIS

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A 51 year old male, body weight (BW) 70 kg, carrying a kidney transplant from eleven years, was hospitalized with a 3 days fever (up to 39°C). At admission, he had a productive cough, CRP was 30 mg/L, serum antigen (sAg) of Galactomannan, Legionella and Pneumococco were negative. The chest CT highlighted a ground-glass consolidation in the left lower lobe, while Quantiferon, Cryptococcal sAg and Beta-D Glucan were negative. A bronchoscopy with BAL showed positivity for Aspergillus antigen Galactomannan with an index = 1.4 (nv <0.5): a diagnosis of pulmonary Aspergillosis was made and therapy with Voriconazole oral (VO) was started: 400 mg on the first administration followed by 400 mg plus 200 mg, in the next day. In order to prevent the increase in serum Cyclosporine (CyA) (due to the concomitant use of VO), the dose of CyA was reduced by 50 mg per day (C0CyA = 58.4 ng/ml). The remaining therapy was left unchanged. Before starting VO, serum creatinine (sC) was 3.07 mg%, eGFR was 24 ml/min and 24 h urine collection was 2100 ml. sC progressively increased to 3.59 and 5.3 mg%, respectively on the next two days and the patient became oliguric (150 ml per day). Following the suspension of VO, both, diuresis and sC, within 5 days, returned to basal levels: 1600 ml per day and 3.33 mg%, respectively. VO was, therefore, again resumed (400 mg bd), but, the day after, sC and BW both increased (to 3.87 mg% and of 2 kg, respectively), while 24 h diuresis decreased to 600 ml. VO was stopped again and, from the day after, 24 h diuresis increased to 5.6 L while sC, was 3.28 mg%.

According to our knowledge, while the possible nephrotoxicity of intravenous (i.v.) Voriconazole was known (attributed to the excipient Sulfobutylether-β-Cyclodextrin), no previous report ever described acute kidney injury (AKI) following VO. What appears of interest was the return to the basal sC, when VO was stopped (a hemodynamic component?). Our case report demonstrates that even VO can lead to AKI.

Clinical Kidney Other

P194 PREDICTORS OF RECURRENCE OF FSGS AFTER LIVE DONOR RENAL TRANSPLANTATION AMONG EGYPTIAN POPULATION: SINGLE CENTER EXPERIENCE

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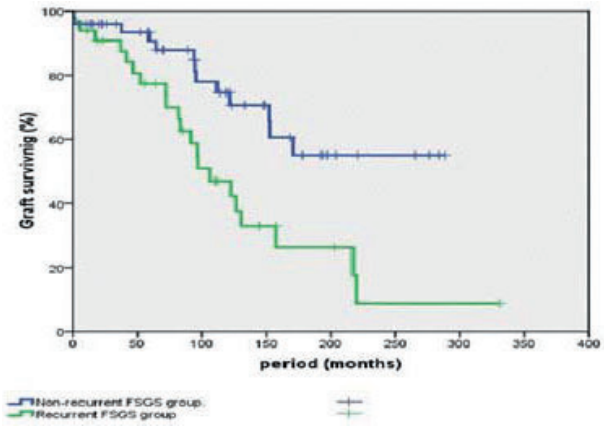
Introduction: Focal segmental glomerulosclerosis (FSGS) frequently recurs after kidney transplantation with the recurrence rate of 30% after first transplantation. Recurrent FSGS presents clinically with proteinuria or even full-blown nephrotic syndrome, although recurrence of FSGS negatively influences kidney allograft survival, it has also been noticed that some individuals with proteinuria have adequate kidney function for years.
Materials and Methods: This retrospective single Centre study included 88 kidney transplant recipients who were transplanted at Mansoura urology & nephrology Centre between June 1976 and December 2013 with FSGS as original kidney disease. Patients divided into two groups according to FSGS recurrence. Group I: Recurrent FSGS patients (35 patients). Group II: Non-recurrent FSGS patients (53 patients)
Results: The comparison between recurrent and non-recurrent FSGS groups showed statistically significant difference between both of them regarding age of patients at time of FSGS diagnosis and at time of transplantation. Otherwise, the remaining results were comparable.
Conclusion: The age at time of transplantation and at time of FSGS diagnosis are important risk factors for recurrence and should be taken in consideration carefully on transplantation to FSGS patients.

	Recurrent FSGS (No = 35) Frequency (%)	Non-recurrent FSGS (No = 53) Frequency (%)	p Value
Recipient age (years) (M±SD)	23.74 ± 8.4	27.8 ± 9.87	0.042
Age at diagnosis of FSGS (years) (M±SD)	19.13 ± 10.5	24.08 ± 10.22	0.03
Mesangial proliferation in the O.K.D* biopsy (36 patients)	13 (86%)	12 (63%)	0.23
Dialysis duration (Months) Median, range	12 (1, 48)	12 (0, 96)	0.831
Duration between FSGS diagnosis and starting dialysis (months) Median, range	24 (2, 168)	18 (2, 120)	0.224
Pre-transplant Plasma exchange	8 (22.9%)	7 (13.2%)	0.239
Cyclosporine based suppression regimen	26 (74.3%)	27 (50.9%)	0.029
Duration between Kidney Transplantation and starting Dialysis (years) (M ± SD)	7.4 ± 3.5	8.12 ± 3.59	0.705



Clinical Kidney Other

P195

THE MAXIMUM MAGNITUDE OF CLINICAL VALUES AT DIFFERENT STAGES OF SUCCESSFUL RENAL TRANSPLANTATION: EXPERIENCE FROM A SINGLE CENTER

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Background: The maximum magnitude of clinical values at successful renal transplantation was analyzed to determine acceptable risks.
Materials and methods: We performed 710 kidney transplants (KTx) from 1986 to 2017. The median recipient age was 42.6 years with M:F ratio of 1.6:1. Most of them were on hemodialysis (96%), 28 patients received pre-emptive transplant, 519 (73.1%) transplants were from deceased donors, 191 (26.9%) were from living donors. The 'Custodiol HTK Solution' was used for graft's storage.
Results: By the time of KTx recipients were of 6–72 years old, their weight were 12–120 kg. The maximum age of a living donor was 78 years. Maximal duration of anuria on hemodialysis was 13 years. The maximum insulin intake was 150 units/day. The maximum cold ischemia time with primary graft function was 47 h. Transplanted kidneys had maximum 3 arteries, 2 veins and 2 ureters. The greatest weight of polycystic kidney removed simultaneously with KTx was 4 kg. Maximum 4 KTx were performed to one patient. The maximum duration of anuria after KTx was 45 days. The largest volume of urine output immediately after KTx reached 51.3 liters per day. The most severe immunosuppression with depleting antibodies during the first month after KTx without any adverse events consisted of the basiliximab (20 mg in a day "0" and day "4" after surgery) and equine anti-thymocyte globulin (15 mg/kg/day, total of 21 doses). Last year's steroid-free protocols were used in 30% of all KTx. The longest immunosuppression-free protocol has been using for 4 years. The latest time of development of acute lymphocele (800 ml) was 5 years after KTx. The oldest recipient after KTx is 77 years old, monitoring continues 10 years. The maximum graft survival is more than 27 years. Monitoring continues.
Conclusions: Our experience of KTx confirms the possibility of effective rehabilitation of high risk patients, and allows reducing the list of contraindication for this operation.

Clinical Kidney Other

P196

PRE-TRANSPLANT HEMOGLOBIN LEVEL CAN BE A POTENTIAL PREDICT FOR PERIOPERATIVE TRANSFUSION IN RENAL TRANSPLANT PATIENT

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Bleeding in solid organ transplantation is a major challenge faced by transplant surgeons. In end-stage renal disease patient, chronic anemia is also common. So, major cause of perioperative transfusion is not clear between bleeding or chronic anemia. The aim of this study is to clarify the cause of perioperative transfusion requirements in renal transplant patients.

A retrospective analysis of renal transplant patients performed from March 2009 to January 2016 was done. All patient's clinical characteristics and he irradiated packed red blood cells (pRBC) usage during the perioperative period was obtained. Univariate analysis was performed and the significant factors identified were further analyzed through multivariate regression analysis. A total of 107 patients (68 males: 63.6%, and 39 females: 36.4%) ranging from 19 to 73 years in age were included in the study. of these, 47 (43.9%) patients were transfused. The mean pre-operative hemoglobin in the transfused group was 8.7 g/dl while in the non-transfused group it was 10.3 g/dl. Irradiated pRBC was the major blood component transfused during the perioperative period. Multivariate analysis revealed that pre-operative hemoglobin was a major predictor of intraoperative pRBC transfusion ($p = 0.034$). Mean estimated glomerulus filtration rate (eGFR) was 50.3. There was no significant difference in the eGFR between the transfused and non-transfused groups of patients ($p = 0.67$). Nearly 44% of patients undergoing renal transplant received transfusion. Pre-transplant hemoglobin was identified as strong predictor of blood consumption.

Clinical Kidney Other

P197

PERSISTENT ANEMIA IN A KIDNEY TRANSPLANT RECIPIENT WITH PARVOVIRUS B19 INFECTION

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Background: Anemia after kidney transplantation is not uncommon. This paper reports a case of unexplained anemia in a kidney transplant recipient (KTR) persisted for more than two months and did not respond to recombinant human erythropoietin treatment but was successfully treated after diagnosing Parvovirus B19 (PVB19) infection.
Case summary: A 49 years-old Middle Eastern male patient underwent a living unrelated kidney transplantation from Pakistan in April 2015 and was on triple immunosuppression therapy consisted of prednisolone, tacrolimus and mycophenolate mofetil. After two months he was admitted with symptomatic anemia with hemoglobin of 5 gm/dl, hematocrit of 14.3% and absolute reticulocyte count of 5600/mm^3. He was transfused 500 ml packed erythrocytes and darbepoetin with no improvement. Bone marrow aspiration plus trephine biopsy showed giant proerythroblasts with maturation arrest. The serum was highly positive for Parvovirus B19 DNA. The anemia resolved completely three weeks after the administration of intravenous immunoglobulin (IVIG) and reduction of immunosuppression. Hemoglobin reached 12.6 g/dl with well-preserved renal functions.
Discussion: PVB19 is a known cause of post-transplant anemia which may be transmitted at the time of transplantation and can be detected by polymerase chain reaction (PCR) assays. Patients with severe infection are treated with IVIG along with reduction of immunosuppression.
Conclusion: Parvovirus B19 infection should be considered in the differential diagnosis of anemia in kidney transplant recipients. An early PCR has to be performed In KTR with persistent anemia and low reticulocyte count. PVB19 related post-transplant anemia has special relevance in view of increasing commercial transplantation in this part of the world.

Basic Kidney Other

P198

EBV LYMPHOPROLIFERATIVE SYNDROME A CHILD KIDNEY TRANSPLANTATION 0.07 YEARS LATER

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Background: Lymphoid proliferation after transplantation is a major complication of the evolution of organ transplantation, the incidence is about 2% 1a. An increased incidence of lymphoma has been observed in the pediatric population due to the prevalence of seronegative EBV and the inherent risk of primary infections after transplantation.
Methods/Materials: Aged 08 years, treated with peritoneal dialysis before transplantation, up to the age of 8 years for indeterminate nephropathy, transplanted from a linked living donor in May 2008. She has a positive serum HCV, HHV6, And negative for EBV, HIV, 13 months later, TH developed progressively in two months: anemia, anorexia, digestive disorders, melena, liver and splenic mass, adenopathy, justified biological investigations And radiological studies.
Results: Biologically: Hb: 7 g/dl and inflammation/no malignant cells in its blood (transfused) AST/ALT: 70/80 IU/l radiological investigations: CT scan: tumor process ileo junction caecum, Adenopathy with small ADP satellites, and secondary hepatic localization. • Ebstein-Barr (EBV) titers: HIGH diagnosis of non-Hodgkin's lymphoma has been confirmed, conducted at: tacrolimus Stop Reduction of MMF dose Prednisone, low dose Rituximab 375 mg/m^2 weekly, 4

courses. Zovirax for one year Results After a few weeks: Good clinical course, good skin color, weight gain, no edema No liver mass, No splenic mass, No adenopathy Hypertension treated with captopril 25 mg/day 07 years Later Patient has good progression and complete remission, with good renal function, GFR: 112 ml/min. Morbid obesity BMI 33 kg/m^2 and here is the last EBV PCR was negative Conclusion lymphoproliferative syndromes have a complex and variable pathophysiology of presentation in time and in format. The therapeutic approach is not well codified, and the survival of patients depends on the type of lymphoma and its location.

Basic Kidney Other

P199 PEDIATRIC KIDNEY TRANSPLANTATION

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Background: Pediatric kidney transplantation is the preferred treatment for children with end-stage renal disease it Improves patient survival, growth and development, the quality of life avoids dialysis complications.
Materials and methods: We report pediatric renal transplantation performed in 15 children, aged less than 15 years, between December 2006 and June 2015.
Results: Donors age was between 28 to 50 years, mainly females (mother in 66%, father in 28%, and brother in 8%). The recipient aged from 8 years to 15 years, 46% male and 56% female. The initial nephropathy was hereditary nephropathy: 33%, malformative uropathy: 25%, membranous nephropathy: 8%, undetermined: 33%. The type of dialysis pretransplantation was hemodialysis in 53% and peritonial dialysis in 47%. Induction therapy, basiliximab: 77% thymoglobulin: 23%, and prednisolone: 100%. Maintenance therapy, tacrolimus: 92% with MMF: 60% or azathioprine: 40%, without steroids in 02 cases. The main complications were uretral stenosis: 01 case (8%), pyelonephritis: 02 cases (17%), obesity: 02 cases (17%), and hypertension in 03 cases (27%), 01 case (8%). During the follow-up we enregistred: nephrotic syndrome: one case (02 years after transplantation), lymphoma: 02 cases (the first: 01 year after transplantation favorable with rituximab, the second under chemotherapy), and visceral leishmaniasis: 01 case (favorable with amphotericin B). Actually, the graft survival rate after five years is 85%, with GFR at 100 ml/mn: 23%, between 60–100 ml/mn: 46%, 40 ml/min: -60 ml/min 15%. With 02 cases in ESRD respectively for neoplasic and vascular complication
Conclusion: Renal transplantation is the treatment of choice for ESRD child. Advances in the management care of children and new immunosuppressive treatments improved graft survival.

Clinical Kidney Other

P200 HEALTH CARE ADHERENCE BY ELAPSED TIME AFTER KIDNEY TRANSPLANTATION

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The purpose of this study was to survey the effects of time elapsed after kidney transplantation on health care adherence. The study included 235 patients; the data was collected.

Old age, female gender and duration of transplantation were identified as factors significantly affecting health care adherence. Health care adherence also showed significant differences depending on the elapsed time, and the decrease in health care adherence was most evident between 1 and 5 years after kidney transplantation. With respect to health care adherence, which includes drug administration domain health care adherence, diet domain health care adherence, everyday life domain health care adherence, had significant differences by elapsed time.

Therefore, development of a nursing strategy that would provide education and health care improvement programs is needed to improve health care based on convergence factors and elapsed time.

Clinical Kidney Other

P201 ISSUES OF HEMODYNAMIC MONITORING DURING KIDNEY TRANSPLANTATION IN HEART TRANSPLANT RECIPIENT

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General anesthesia for kidney transplantation is based on the creation of optimal hemodynamic conditions. Currently CVP is no longer considered as an appropriate and specific marker of preload and vascular bed filling. Dynamic parameters such stroke volume variation (SVV) and variations in pulse wave (PVV) are estimate as the most accurate tools.
Patient and Methods: We present a case of 56-year old patient with end-stage renal failure after heart transplantation performed 21 years ago. Hemodialysis was done using arteriovenous fistula (AVF) on the left forearm. Before the kidney transplantation cardiac assessment and Echo showed normal systolic function of the heart muscle. Transplanted heart experienced sympathetic and parasympathetic denervation. The presence of AVF induced volume overload of the right heart. We used CVP and the PiCCO2 (Pulsion Medical Systems, Munich, Germany) for post-surgical assessment of cardiac output.
Results: Clinical observations performed using PiCCO2 and CVP were insufficient to carry out proper treatment of the patient. Both CVP, other static exponents of preload obtained by PICCO: ELVI and GEDI (Extravascular Lung Water, End-Diastolic Blood Volume) were not sensitive enough to describe recipient's volume status. Also the dynamic parameters obtained by PiCCO2: PPV, SVV were constantly below the limit of 10%, describing the correct filling what was inadequate to the real clinical situation. Fluids infusion in this case was dependent only on the basic parameters: blood and perfusion pressures.
Conclusion: Clinical situation in which existing fistula evokes hemodynamic changes resulting in increased venous return in conjunction with the status after heart transplantation makes clinical tools as CCO monitoring and CVP parameter as well as SVV, PVV and GEDI, ELWI inadequate and unspecific for describing the hemodynamic situation of the heart transplant recipient.

Clinical Kidney Other

P202 UROLOGICAL AND SURGICAL COMPLICATIONS IN 789 CONSECUTIVE LIVING RELATED DONOR KIDNEY TRANSPLANTATIONS

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Background: Kidney transplantation complications are still a significant cause of morbidity and may result in graft failures. The early diagnosis and proper management of these complications are of paramount importance. The aim of this study is to review retrospectively the surgical and urological complications encountered in 789 cases of living related donor kidney transplantations (LRDTs).
Material & Methods: Between 1983 and 2017, 789 consecutive LRDTs were performed at our institution. The urological and surgical complications observed in these cases are discussed.
Results: Overall, urological and surgical complications were encountered in 89 (11.3%) of all cases. of the 789 patients; urological complications were detected in 44 of them (5.6%), including 8 urinary fistula (with 1 distal ureteral necrosis), 10 ureteric stenosis, 1 renal calculus, 9 symptomatic vesicoureteral reflux and 16 lymphocele requiring intervention. As surgical complications, vascular problems were developed in 10 patients such as renal vein thrombus in 3, renal arterial stenosis in 5 cases and pulmonary emboli in 2 cases. Wound infection was detected in 14 patients. Eighteen patients underwent surgical explorations due to perinephric hematoma during the early postoperative period. Renal allograft rupture due to accelerated rejection was developed in 2 cases. A lower segmental arterial injury occurred in 1 patient during the operation.
Conclusion: Our complication rates are admissible and in accordance with literature. Within years after some modifications in our surgical approaches as not dissecting the external iliac artery and meticulously ligating lymphatic vessels, the number of lymphoceles requiring intervention has decreased dramatically and with using ureteric stents a significant decrease

Clinical Kidney Other

P203 A COMPARISON OF EVOLUTION IN KIDNEY TRANSPLANT RECIPIENT DEPENDING ON PRE-TRANSPLANT DIALYSIS MODALITY

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Objectives: The outcome of patients undergoing kidney transplantation depending on dialysis modality previously received causes concern. Our aim is to describe and compare the evolution during the first 6 months post-transplantation in patients previously undergoing peritoneal dialysis (PD) vs patients undergoing hemodialysis (HD).
Methods: Observational, cross-sectional study of patients previously on PD vs HD receiving a first kidney transplant between January 2005 and December 2013, and receiving their graft from the same cadaveric donor. Parameters analyzed and compared using Fisher test (considering statistically significant $p < 0.005$) were: renal function, diuresis after surgery, hospitalization rate, incidence of acute rejection and mortality.
Results: Sixty-two patients underwent first kidney transplantation, 50% came from HD and 50% from PD. Mean nadir creatinine was 128ug/ml (SD 81) achieved with an average 90 days in the PD group (SD 64.90) and 169ug/ml in the HD group (SD 155) achieved with an average of 64 days (SD 44). The maximum diuresis achieved in the DP group was 3331 ml (SD 915 ml) and 2434 cc in the HD group (SD 1131 cc). The mean hospitalization rate associated with transplantation was 13.12 days (SD 7.7) in DP and 15.2 days (SD 14.3) in HD. The average of post-transplant infections related to hospitalization was 5% in both groups ($p = ns$). The percentage of graft rejection in DP was 3.8% and 19.2% in HD. There were 2 cases of death with functioning graft in the DP group, and 2 cases in the HD group.
Conclusion: In our experience, there were not statistically significant differences between two modalities of dialysis in: evolution of renal function in the first 6 months after transplantation, the incidence of rejection or mortality.

Clinical Kidney Other

P204 ATYPICAL HEMOLYTIC UREMIC SYNDROME (AHUS) POST KIDNEY TRANSPLANT (KT)

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Introduction: Post KT Hemolytic Uremic Syndrome (HUS) is reported with increasing frequency and may be primary (de novo) or recurrent. It is often associated with infection, calcineurin inhibitors, mTOR inhibitor toxicity or Humoral Rejection (HR) (C4b +). HUS occurs in 5–15% of KT patients (P) receiving cyclosporine and in about 1% of P under Tacrolimus (TAC). The recurrence rate of aHUS in KT is as high as 50%, with graft loss in more than 90% who have recurrence. Recurrence is higher in P with HF1 mutation. Santos showed mortality did not significantly differ between P whose native disease was HUS and KT P with other renal diseases in the 5 years following KT. Death-censored graft loss occurred 2 as often in HUS P. (graft survival 14.7% vs.77.4%, $p < 0.001$).
Case Report: A 24-year-old female who had Typical HUS (tHUS) diagnosis at the age of 2, developed end stage renal failure (ESRF), starting dialysis in 2011. She had had multiple arteriovenous thrombosis and received a KT in August 2015. Immunosuppression: Thymoglobulin for 5 days (d), Micofenolato Mofetil and steroids. TAC was added on the 5th d. Due to oliguria at the 7th d a kidney biopsy (KB) was performed, revealing thrombotic microangiopathy (TMA). TAC was stopped, being replaced by Belatacept. To rule out HR, antidonor antibodies were made, which were negative. After 14 days a new KB still showed TMA. Checking the blood tests, a few schistocytes were found and only 1 test showed thrombocytopenia. ADAMTS13 test was normal ruling out thrombotic thrombocytopenic purpura (TTP). Suspecting aHUS, fresh frozen plasma infusion was indicated 2 a week. Renal function (RF) improved. A new KB showed lack of TMA. A month later Eculizumab was introduced. At present her RF is 50 ml/min.
Conclusion: aHUS is a rare entity with complex diagnosis and treatment. In Argentina, where tHUS has an incidence of 20/100000 in children population, it is essential to re-evaluate P with tHUS diagnosis on the KT waiting list to rule out aHUS.

Clinical Kidney Other

P205 UREMIC THROMBOCYTOPENIA WAS TREATED WITH ELTROMBOPAG THAT HAS BEEN COMPLETELY RECOVERED AFTER KIDNEY TRANSPLANTATION: ONE CASE

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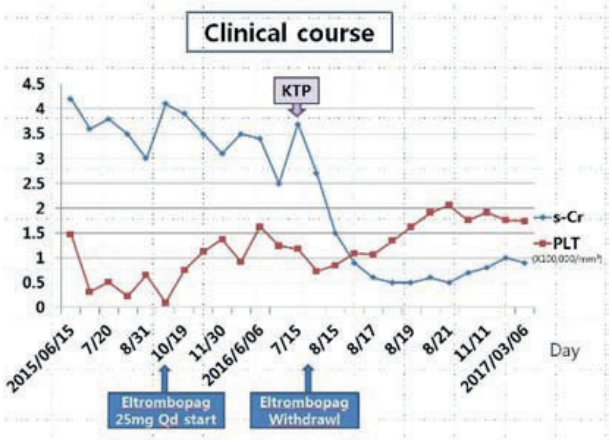

Introduction: Thrombocytopenia may occur for a variety of causes in end stage renal disease (ESRD) patients who receiving hemodialysis. Idiopathic thrombocytopenic purpura (ITP) refers to thrombocytopenia with an unknown cause despite bone marrow biopsy. Recently, Eltrombopag (GlaxoSmithKline, London, UK) has been used for treatment of ITP. It is an oral thrombopoietin-receptor agonist and initiates thrombopoietin-receptor, thereby inducing proliferation and differentiation of platelet. We announced one patient who was diagnosed with ITP and who was taking eltrombopag had a recovery of platelet count after kidney transplantation (KT) and discontinued the drug.
Case: A 60-year-old woman was diagnosed with diabetic ESRD in 2008 and underwent hemodialysis three times a week. The patient's platelet count decreasing to 10,000/mm^3 from around 2015. Her dialysis efficiency was normal. Lab test and Bone marrow biopsy were not shows abnormal findings. 25 mg of Eltrombopag was administered once a day since there was no response to steroid treatment. The drug price was 35,000 won (31 US dollars) in one tablet, and platelets remained around 100,000/mm^3 after taking. After that, the patient underwent deceased donor KT on August 16, 2016. Induction immunosuppressants (IS) were thymoglobulin 50 mg iv for 3 days, and maintenance IS were FK, MMF, and steroids. The patient maintained a normal platelet level after KT, and the Eltrombopag discontinued immediately. The patient maintained normal renal function 9 months later and platelet count maintained 200,000/mm^3.
Conclusion: Uremic thrombocytopenia is not responsive to conventional steroid therapy and should be administered Eltrombopag to increase thrombopoiesis. However, it should be given a high drug price of about 1000 dollars a month, and side effects such as gastrointestinal discomfort or liver dysfunction may occur. However, when KT is restored to normal renal function, thrombocytopenia can recovered without medication.

Clinical Kidney Other

P207 COST-EFFECTIVENESS ANALYSIS OF A KIDNEY TRANSPLANT PROGRAM IN A PRIVATE, PHILANTHROPIC AND TERTIARY HOSPITAL IN BRAZIL

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In 2015, according to Brazilian Transplant Register, there were 19.440 patients on kidney waiting list. Kidney transplantation (KT) remains the most effective treatment for end stage renal disease. However, there are few studies about

cost in transplant in Brazil and decided to conduct a cost-effectiveness analysis of our KT program
Methods: We conducted a retrospective analysis where we included all patients that underwent KT in 2015. We collected data about costs per patient including the pre transplant phase (eligibility evaluation for the transplant, listing and outpatient follow up), the transplant and post-transplant phases, until 1 year of follow up. The unit costs of materials and medicines correspond to the average direct costs of acquisition. For the survival analysis we used Cox model, including all KT performed from 2002 to 2016. The values of GDP per capta and dollar exchange rate were the ones from 12/2015, being U$ 6.963,94 and BRL 3.91, respectively. Cost-effective therapy was defined here when the cost for each year of life saved was lower than 3x GDP (U$20,891.82).
Results: In 2015, 95 renal transplants were carried out. The mean and median costs of KT were U$ 37,329.50 and U$ 29.375,29, respectively. For survival analysis 967 KT were included. The calculated survival was 14.3 years. The cost per year of life saved was U$2,606.81. Considering the limit of 3x of GDP, the KT was considered a cost-effective therapy and 5.3 years of lifespan would be necessary for the treatment to be paid off. There would still be 9 years for the recipient to produce wealth, generating U $62,675.46 during that time span.
Conclusions: The KT was considered cost-effective once it has generated enough survival results to cover the transplant costs and still generate wealth for the country.

Clinical Kidney Other

P208 MAJOR UROLOGICAL COMPLICATIONS AFTER RENAL TRANSPLANTATION

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Introduction: Urological complications after renal transplantation cause significant patient morbidity. The incidence of these complications varies from 2.5% to 30% in different studies. The aim of this study is to analyse the incidence of various urological complications, their treatment modalities and the outcomes of these kidneys over the following 5 years in our institution.
Methods: Between January 2005 and December 2009, a total of 336 patients had renal transplantation. This includes transplants from deceased (142) and living donors (191). The collected data was analysed retrospectively.
Results: Out of the 336 patients, 19 had major urological complications (5.65%). Eleven patients had ureteric anastomotic leak, 13 had ureteric obstruction and 5 patients had both the complications. These patients were treated either by nephrostomy and ante grade stenting or by surgical re implantation. After a period of 5 years, 10 of these patients were alive and their grafts still functioning. The mean GFR for the patients treated with nephrostomy and stenting and those who had surgical intervention at 6 months, 1 year and 5 years in mls/min are 60 vs 56, 48 vs 55 and 37 vs 59. Two patients who were treated with nephrostomy and ante grade stenting lost their grafts just after 5 years because of slow decline in renal function after surgical intervention and not because of rejection.
Discussion: Major urological complications after renal transplantation are common and can be managed by either radiological or by surgical means. Most of these kidneys regain their renal function after the initial insult, but patients can also lose their grafts

Clinial Kidney Other

P209 SUCCESSFUL TREATMENT OF TRANSPLANT RENAL ARTERY PSEUDOANEURYSM USING A COMBINATION OF A STENT AND EXPANDABLE HYDROGEL TECHNOLOGY COILS – A CASE REPORT

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Background: Transplant renal artery (TRA) pseudoaneurysm can result in bleeding, infection, graft dysfunction or loss. We present a case where the TRA pseudoaneurysm was treated using an expandable Hydrogel technology Coils (HTC) in combination with a stent.
Case Report: A 38-year- old male presented with deterioration in his renal functions (RF) five months following deceased donor renal transplantation. His initial and repeat ultrasound scans (USS) showed a well-perfused graft with normal Resistive Indices (RIs). A renal transplant biopsy showed features of acute cell-mediated rejection, which was treated with three pulses of Methyl Prednisolone without any success. A repeat USS showed new features of damped intrarenal arterial blood flow with RIs ranging between 0.4 and 0.45 and high velocities at the transplant artery origin very suspicious for TRA stenosis. A CT angiogram confirmed a tight TRA stenosis in addition to a 20 mm × 25 mm pseudoaneurysm of the aortic patch arising at the same level as the transplant renal artery compressing its origin. With the approval from multidisciplinary team meeting and patient's consent, he underwent radiological intervention as described below.
Procedure: Through a left common femoral artery access, the TRA was catheterised and the false aneurysm was embolised using two 20 mm Framing coils and packed with Hydrogel coils. Subsequently, the stenosed transplant RA was stented using a 6x 20 mm stent with good radiological results.
Follow Up: After a month of the intervention, a follow-up CT angiogram revealed good results with restoration of RF to baseline levels.
Conclusion: Hydrogel coils can be used to treat TRA pseudoaneurysms achieving excellent volumetric filling and targeted embolisation.

Clinical Kidney Other

P210 PARICALCITOL AFTER KIDNEY TRANSPLANTATION — ANALYSIS OF 2 TRANSPLANT CENTERS

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Introduction: The persistence and severity of hyperparathyroidism (HPT) after renal transplantation is relatively frequent. Paricalcitol is indicated in prevention and treatment of secondary hyperparathyroidism.
Material and Methods: Retrospectively, we evaluated the effect of treatment by paricalcitol in the group of patients after kidney transplantation. We monitored the effect of paricalcitol on: the value of bone density, the plasma levels of parathormon (PTH), calcium (Ca) and phosphorus (P), proteinuria, and calciuria. The individual parameters were compared with the values before treatment and 12 months after treatment.
Results: The group was composed of 88 patients, the average age at the time of transplantation was 47.1 years ± 10.5. On average, paricalcitol was included into treatment 48 months from transplantation (median 27 months from transplantation). The treated patients had significantly improved bone density ($p < 0.0001$), significantly lower value of PTH ($p < 0.0001$), and significantly decreased proteinuria ($p = 0.0249$). During treatment by paricalcitol, the immunosuppressive therapy, the dose of prednisone, the value of BMI and vitamin D were not significantly changed. Neither any significant change in the function of the graft occurred.
Conclusion: Paricalcitol is an effective therapy for secondary hyperparathyroidism in kidney transplant recipients.

Clinical Kidney Other

P211 EARLY OUTCOMES OF LOW RISK AB0 INCOMPATIBLE KIDNEY TRANSPLANTATIONS

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Background: AB0 incompatible (AB0i) kidney transplantation represents a viable tool to increase the donor pool for kidney transplantation with unanswered questions regarding safety and increased alloimmune response.
Methods: In this retrospective single center analysis, the early outcomes of 25 AB0 incompatible kidney transplantations in low risk patients (PRA<20%, no DSA, primary transplantation) were compared to thoroughly matched (gender and age of recipients, retransplantation, PRA, HLA mismatches and transplantation era) 50 AB0 compatible kidney transplants. Banff scores in 3-month protocol biopsies were compared.
Results: There were no significant differences in Banff scores between AB0i and AB0c cohorts. The peritubular capillary C4d deposition was a common finding in protocol biopsies in AB0i group while lacking other histological features of antibody mediated rejection. 3-month and 1-year eGFR were comparable similar between AB0i and AB0c groups.
Table: 3-month protocol biopsy Banff scores in AB0i and AB0c groups

	G	t	i	v	ptc-s	C4d
AB0i, n (%)	3 (12.5%)	9 (36%)	6 (24%)	2 (8%)	2 (8%)	19 (76%)
AB0c, n (%)	4 (8%)	18 (36%)	7 (14.3%)	3 (6.25%)	1 (2.1%)	7 (14%)
p value	0.675	1	0.3421	1	0.2685	<0.0001

Conclusion: The first year outcome of AB0i transplantation in low risk recipients is similar to matched AB0 compatible cohort.

Clinical Kidney Other

P212

DUPLEX ULTRASONOGRAPHY FOLLOWING TRANSPLANT URETERIC STENT REMOVAL SHOULD ONLY BE PERFORMED FOR CLINICAL CONCERN

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Introduction: St Georges Hospital provides renal transplant services for St Georges, Brighton and St Helier's patients. St Georges and Brighton patients (approx 50%) undergo routine US scanning 48 h following stent removal, patients from St Helier's hospital (approx 50%) are only scanned if there is clinical concern.
Methods: A retrospective audit of all renal transplant recipients was carried out using the Clinical Vision™ database from January 2015 for 12 months. The aim of this audit was to assess the value of routine duplex scanning following cystoscopic stent removal.
Results: 141 patients with renal transplant ureteric stents were identified through the St Georges transplant data base. 62 patients were in the St Georges and Brighton pool and underwent routine US scanning. 18 scans demonstrated a collection and or some degree of ureteric/pelvicalyceal dilation, however only 5% (4/18) patients required intervention. In the St Helier's group there were 59 patients of which only 20 patients underwent duplex scanning for clinical cause. 10% (2/20) of these scans resulted in intervention. Routine scanning costs the St Georges and Brighton group more than £28,000 v £9,000 for roughly equivalent numbers of patients in the St Helier's population.
Discussion: Duplex scanning costs the NHS approximately £460 per scan. In our practice it resulted in a significant number of negative scans for St Georges and Brighton patients. Our data suggests that duplex scanning should be performed only if clinically indicated in order to significantly reduce the overall costs of transplantation.

Clinical Kidney Other

P213

THE ROLE OF RADIOISOTOPE RENOGRAPHY (MAG3) IN RENAL TRANSPLANT PATIENTS WITH DELAYED GRAFT FUNCTION

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Introduction: Renal transplant imaging is routinely performed using duplex ultrasonography (duplex US). In our department patients exhibiting signs of delayed or slow graft function (DGF) will routinely undergo radioisotope renography Tc99 m (MAG3) despite normal duplex US imaging. We wanted to elucidate whether MAG3 scanning affects the management of renal transplant patients when duplex US has demonstrated normal perfusion.
Methods: We retrospectively audited 83 patients who underwent MAG3 imaging and duplex US following renal transplant with either slow or DGF. 8 of these patients had abnormal flow described on duplex US and were excluded from analysis. All abnormal MAG3 results from the remaining 75 patients were investigated using the Power Chart™ database to assess if the result affected patient management.
Results: 75 patients who had normal duplex US scans subsequently underwent MAG3 imaging following their renal transplant. 12% (9/75) demonstrated poor or reduced perfusion on MAG3 imaging; however this had no impact on overall patient management. The cost of MAG3 imaging in our unit is £183, an expenditure of over £13,000 in 18 months.
Discussion: From our audit it is clear that MAG3 imaging following a normal renal transplant duplex US rarely shows a contradictory result to the duplex US scan. Abnormal MAG3 results following a normal duplex US in our study did not alter patient management. Based on our results the cost of MAG3 imaging is not justified when duplex imaging is normal.

Clinical Kidney Other

P214

INTERVENTIONAL RADIOLOGY PROVIDES A GRAFT PRESERVING OPTION FOR JUXTA-ANASTAMOTIC TRANSPLANT RENAL ARTERY PSEUDOANEURYSM

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Juxta Anastamotic renal artery pseudoaneurysms (rPA) although uncommon are a potentially catastrophic complication in renal transplants. The rate of incidence is less than 0.5% (Bracale et al 2010). Numerous documented cases have revealed surgery as being high risk and often unsuccessful leading to graft loss. Significant advances in interventional radiology in the last decade has paved the way for an alternative to the higher risk open surgical approach to rPA. This single centre case series presents the outcomes of management of juxta anastamotic rPA in five transplant recipients. 4 male and 1 female patients with a mean age of 55. All donor kidneys were cadaveric; 4 from heart beating donors and 1 from donation after cardiac death. Mean donor age was 42. All transplants were done in a standard fashion with single arteries on a Carrel patch to the external iliac artery. All five patients were investigated for an elevated serum creatinine and or resistant hypertension. Abnormal ultrasound findings were followed up with magnetic resonance imaging. 3 out of 5 patients had co-existing renal artery stenosis (RAS), 2 patients had positive blood cultures and no RAS suggesting a mycotic aneurysm. The three patients with co-existing RAS had angioplasty of the stenotic segments followed by embolization using coils, onyx and PVA. One of these patients presented with evidence of active bleeding. All three patients are currently well with serum creatinine <150. Two patients had suspected mycotic aneurysms. One had an external iliac artery (EIA) stent inserted radiologically intra-op. The second patient was initially treated with thrombin injection followed by stents into RA and EIA. However due to on-going sepsis required a delayed nephrectomy.

Radiological treatment is feasible and effective for treating juxta-anastamotic pseudoaneurysms in renal transplants with graft preserving outcomes in non-septic patients.

Clinical Kidney Other

P215

RAPIDLY PROGRESSING GLOMERULONEPHRITIS SECONDARY TO ANCA ASSOCIATED VASCULITIS SUPERIMPOSED ON IMMUNE COMPLEX GLOMERULONEPHRITIS: A CASE REPORT

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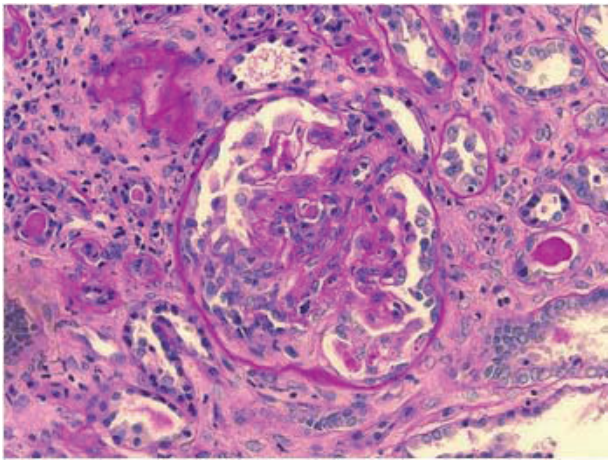
Introduction: Anti-neutrophil cytoplasmic antibody (ANCA) was first reported in patients with segmental necrotizing glomerulonephritis on biopsy and absent or scant, irregular deposits by direct immunofluorescence (IF). The word "pauci" is derived from Latin which means few, and the observation of crescentic glomerulonephritis with paucity of IF staining led to the original definition of pauci-immune glomerulonephritis. Although typically referred as "pauci-immune", it is NOT unusual for renal biopsies in some case to exhibit some immune complex deposition within glomeruli on IF and/or electron micrograph (EM).
Case report: We report a case of a 66 year old female, diabetic, with diagnosed diabetic retinopathy, who presented at the clinic with proteinuria. She was initially managed as a case of diabetic nephropathy and had been followed at an outside facility. However, she was noted to have progressively deteriorating renal function over several months. Her baseline creatinine is 1.6 mg/dl rose to 2.73 mg/dl in 4 months, and to 5.55 mg/dl after another 2 months. She was admitted due to generalized body weakness and skin infection and on the course of her admission, had pulmonary hemorrhage. P-ANCA was tested positive. Renal biopsy revealed IF staining for IgA and C3, cellular and fibrocellular crescents, acute tubular injury and 79% global glomeruloscrelosis. She was started on cyclophosphamide and IV methyl-prednisolone. Renal prognosis is poor.
Conclusion: Not all diabetic patients with proteinuria have diabetic nephropathy alone. Some may have concomitant immune complex glomerulonephritis, which in the presence of infection, may potentiate a more aggressive disease such as ANCA vasculitis. Patients with concurrent immune complex disease are treated similarly to patients with ANCA disease alone. A prompt diagnosis and early management is warranted. Renal transplantation can be an option and may be performed at least more than 12 months of remission.



Clinical Kidney Other

P216 A CASE OF SUSPECTED FREQUENT RELAPSING IGG4-RELATED LUNG DISEASE IN KIDNEY TRANSPLAN PATIENT

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Background: IgG4-related disease has been reported rarely in allotransplantation. We report the first case of a suspected frequent relapsing IgG4-related lung disease in profound immunosuppression state after kidney transplantation.
Case report: A 57 year male patient received kidney transplantation in April 2009. He maintained tacrolimus and prednisone.

Two years after transplantation he had a intermittent dyspnea on exertion. In November 2012, the patient complained about both leg edema and dyspnea. Chest computed tomography (CT) revealed bilateral interlobular septal thickening, tubular and branching nodular lesion in right upper lobe and left lower lobe (LLL), and ground glass opacity (GGO) in both lungs. Dose of Prednisone increased impressed by interstitial lung disease.

In May 2013, chest CT showed increase of mass like consolidation at LLL. Percutaneous core needle biopsy showed interstitial fibrosis and infiltration of IgG4-positive plasma cells was more than >20 per high power field but normal serum IgG4 concentration was found. We suspected IgG4-related disease and increased prednisone dose up to 40 mg/day. Follow up chest CT showed decreased size of the mass in LLL. In November 2015, the patient admitted with generalized edema and increased serum creatinine to 4.2 mg/dl. kidney biopsy showed acute tubular injury and interstitial fibrosis without IgG4-positive plasma cells and no findings of rejection. Chest CT showed developed GGO and interlobular thickening in right lung. Methylprednisolone 500 mg was injected and maintained prednisone 15 mg/day. One week after treatment urine output increased and serum creatinine decreased to 1.5 mg/dl. In January 2016, the patient readmitted with same clinical features. We suspected recurrent IgG4-related disease and treated with rituximab. His serum creatinine maintained around 2 mg/dl more than one year.
Conclusion: It is important to early suspect to IgG4-related disease even though profound immunosuppression state patient.

Clinical Kidney Other

P217 SAFETY ASSESSMENT OF THE PHARMACOLOGICAL BLOCKADE OF THE RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM IN KIDNEY TRANSPLANT RECIPIENTS FROM THE SAME DONOR

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Background: Renin-angiotensin-aldosterone system (RAAS) blockers have recently become the cornerstone of the hypotensive, cardio and renoprotective treatment in the group of chronic kidney disease patients. However there is no sufficient data for similar long-term outcomes of angiotensin converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) in the group of kidney transplant recipients (KTRs). The aim of the study was the safety assessment of pharmacological blockade of RAA system in KTRs. To avoid the donor related bias the paired kidney study was done.
Methods/Material: 53 pairs of KTRs from the same donor who were receiving RAA (+) or not receiving RAA (-) RAAS blockers were included into the study. The groups did not differ significantly in respect to age, HLA matching, total ischemic time, acute rejection incidents, delay graft function incidents and type of immunosuppression. The minimal and maximal time of observation was 36 and 118 months, respectively. In the present analysis early safety profile was assessed by means of the evaluation of serum creatinine, serum potassium and hemoglobin. Three measurements before and one on average 53.7 days after the RAAS blockers introduction, were performed.
Results: The changes in serum creatinine, potassium and eGFR between two groups were not statistically significant. Details are presented in table.
Conclusion: RAAS blockade did not influence graft function and serum potassium, although significant decrease in hemoglobin level was observed in treated patients.

Parameter	Patients RAA+, $n = 53$	Patients RAA-, $n = 53$	p
Amount of patients F/M	17/36	24/29	
Age (years)	44.79 ± 12.41	44.13 ± 13.84	ns
BMI (kg/m2)	24.12 ± 4.05	23.83 ± 3.96	ns
Δ Creatinine (mg/dl)	0.003 ± 0.21	0.05 ± 0.21	ns
Δ eGFR (CKD EPI) (ml/min/1.73 m2)	−0.78 ± 9.18	−1.11 ± 7.52	ns
Δ Hemoglobin (g/dl)	−0.29 ± 1.32	0.19 ± 1.08	0.042
Δ Potassium (mEq/l)	0.02 ± 0.42	−0.09 ± 0.47	ns

Clinical Kidney Other

P218 SUCCESSFUL RENAL ALLO-TRANSPLANTATION IN FACTOR VII DEFICIENT PATIENT USING NOVO SEVEN

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Introduction and aim: Recombinant activated factor VII enhances hemostasis in individuals, with its predominant action limited to areas of injury, apparently without systemic activation of the coagulation cascade. It has been approved for use in congenital Factor VII deficiency. We aimed to present a case report of factor VII deficient patient who underwent successful kidney transplantation and perioperative graft biopsy – using recombinant activated factor VII – without significant coagulopathy.
Case report: Renal transplantation is rarely performed in individuals with congenital hemorrhagic disorders. We performed a renal transplantation in a 19-year-old man with end-stage renal disease secondary to diabetic nephropathy (type 1 diabetes); and congenital coagulation factor VII deficiency. He received the graft from his father with basilixmab as induction and was maintained on steroid, cyclosporine and mycophenolate mofetil. Bleeding was successfully prevented by administration of recombinant activated factor VII in the perioperative period and even when the patient developed graft dysfunction that necessitated graft biopsy. Patient INR was ranging between 5 and 6 and within 35 min it was normalized. Dosage was adjusted by frequent INR follow up (every 2 h) and patient was re-dosed once it came above 2. In both situations, INR reached above 2 after 8 h from the basal dose. Dosage, administration rate and short term follow up are reported in detail. His graft biopsy showed acute tubular necrosis and his cyclosporine was converted to tacrolimus. For the present time, patient is enjoying stable graft function.
Conclusion: Our report confirmed the feasibility and safety of recombinant activated factor VII in renal transplant surgery and subsequent invasive investigations among deficient patients. Success requires evaluation of doses and therapeutic schedules as well as a multidisciplinary approach.

Clinical Kidney Other

P219 OUTCOMES OF HOME HEMODIALYSIS FOR 11 PATIENTS AFTER RENAL ALLOGRAFT LOSS

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Background: For patients with renal allograft dysfunction requiring the initiation of dialysis, there are various choices of renal replacement therapy (RRT). Home hemodialysis (HHD) patients only account for 0.2%

(approximately 570) of all those requiring chronic dialysis in Japan. However, we recommend HHD to patients after renal allograft loss with sufficient explanation to allow them to lead lives closest to those before graft loss. This study reports the outcomes of such therapy for 11 patients.
Subjects and Methods: The patients were 6 males and 5 females, with a mean age of 43.6 (22–62). We examined period of training for it, circumstances that led to the initiation, complications, overall course, and quality of life (QOL) in each stage.
Results and Discussion: The provision of related information by the doctor in charge of renal transplantation led to the initiation of HHD the most frequently. Comparing patients without renal allograft loss, the period of HHD training was shorter, self-management ability was higher, and complication management after the initiation of HHD tended to be easier in the former. Furthermore, their QOL after the initiation was relatively favorable and similar to that of their previous lives. On the other hand, graft-related complications developed after the initiation of HHD in 2 cases, highlighting the importance of appropriately managing renal grafts. In our facility, 26.2% of all patients requiring HHD have a history of renal transplantation. This value is markedly higher considering the approximately 0.6%, representing the rate of patients requiring the initiation of dialysis after transplantation among all those who newly receive it in Japan.
Conclusion: HHD is considered to be a useful choice of RRT for patients with renal allograft loss. As a future perspective, information regarding HHD should be actively provided, when presenting choices of RRT for patients with renal allograft loss in outpatient renal transplantation services.

Clinical Kidney Other

P220 CHRONIC PAIN TREATMENT WITH CANNABIDIOL IN KIDNEY TRANSPLANT PATIENTS IN URUGUAY

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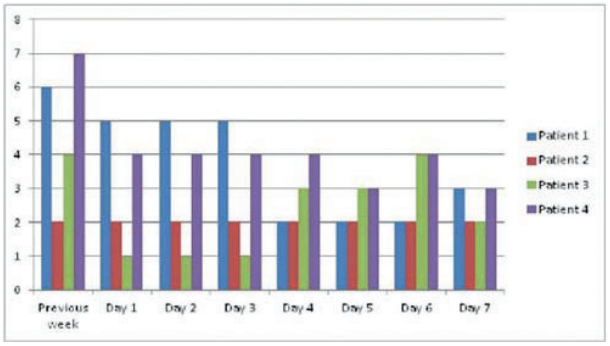
Chronic pain is frequent and a major therapeutic problem in kidney transplant patients due to the limitation in NSAID use caused by its nephrotoxicity. There is benefit of the modulation of the endocannabinoid system in the treatment of chronic pain. The use of cannabidiol (CBD) in kidney transplant patients has not been communicated previously.
Objective: We aimed to assess the effect, safety and possible drug interactions in kidney transplant patients treated with CBD for chronic pain.
Methods: We assessed patients who receive 50 mg twice a day of CBD. We assessed kidney transplant patients suffering from uncontrolled chronic pain who asked for CBD pain treatment
Results: We assessed 4 patients mean age 63.5 (54–76). Chronic pain cause was osteoarticular disease in both men and fibromyalgia in both women.
Table 1. Base line characteristics and by day of treatment per patient:

Patient	1	1	1	2	2	2	3	3	3	4	4	4
Day	1	4	7	1	4	7	1	4	7	1	4	7
Age	75			58			61			60		
Sex	F			M			F			M		
Tacrolimus (ng/ml)	10.1	8.2	10.7	7.4	9.2	7.9	14.4	14.5	17.4	9.7	10.1	10.3
Adverse Reaction		Nausea						Itch	Itch		Abdominal pain	
Creatinine (mg/dl)	1.10	1.13	1.07	1.03	1.24	1.09	0.92	0.93	0.92	1.14	1.17	1.15
Hemoglobin (g/dl)	11.4	11.6	11.7	13.4	13.8	13.6	12.4	12.9	12.3	15.0	14.3	14.2
Leukocytes (mm^3)	3990	4420	4340	7080	7360	7570	4480	4770	5470	8830	9140	9780
Platelets (mm^3)	185000	186000	179000	215000	216000	238000	182000	224000	232000	248000	227000	237000
GOT/GPT	14/11	16/12	16/12	14/18	29/24	16/19	20/12	17/12	16/12	16/09	17/10	18/10



Individual pain assessment (Graphic 1) and physical limitation perception was evaluated in daily bases.
Nauseas was a persistent symptom since the first dose of CBD in patient no 1, which determined dose reduction. Persistent itching was present in patient no 3 since the previous month which was associated twice previously with high levels of tacrolimus. An abdominal pain autolimitated episode was reported by patient no 4 in day 4. No other adverse events were reported. CBD dose reduction to 50 mg/day has been done on day 4 in patient no 1 due to persisting nausea. Tacrolimus dose reduction in patient no 3 has been done in day 4 and 7 due to persisting elevated levels and itching. This elevated levels were present from day 1 without CBD. No other intervention was made.
Conclusion: During this period of follow up, we didn't find any severe adverse effect. It is necessary to continue the follow up to assess effect, safety and possible drug interactions.

Clinical Kidney Other

P221 LYMPHOCYTIC COLITIS IN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: Chronic diarrhea is most commonly caused by infections and medications. Theoretically, LC (lymphocytic colitis) should not be a common cause of chronic diarrhea in patients with kidney transplantation because of the concomitant use of immunosuppressant therapy. In fact, commonly used immunosuppressant therapies in transplantation, such as corticosteroids and azathioprine, often are effective in the treatment of LC. Some studies found an increased risk of developing LC after a kidney transplantation, but small number of patients were diagnosed with this condition.
Methods: Two case reports.
Results: First patient, male, 55 years old, treated with kidney transplantation from deceased donor 9 years ago, previously treated with hemodialysis because of ESRD caused by membranous glomerulonephritis. He was on cyclosporine, mycophenolate mofetil and steroids regimen. He developed prolonged chronic diarrhea syndrome. Mycophenolate mofetil was replaced with azathioprine, but chronic diarrhea continued. He had negative small bowel and colon mucosa biopsies for celiac disease and CMV (cytomegalovirus) colitis and negative endomysial antibody and normal IgA level. Celiac disease and others causes of chronic colitis was excluded. Histopathology with immunohistochemistry confirmed LC. Second patient, male, 32 years old, treated with kidney transplantation from living related donor 2 years ago, previously treated with hemodialysis because of ESRD caused by IgA nephropathy. After developing chronic diarrhea mycophenolate mofetil was replaced with azathioprine in therapy, beside tacrolimus. Small bowel and colon mucosa biopsy confirmed LC, and celiac disease, CMV colitis and other causes of chronic colitis were excluded. Patients were treated with 5-ASA and budesonide with good clinical response.
Conclusions: Recognizing LC as a cause of diarrhea in kidney transplant recipient is important because there is often a delay in the diagnosis, but usually good response to therapy.

Clinical Kidney Other

P222

CASE STUDY: TUMOR OF A RENAL TRANSPLANT IN A FOUR YEARS AFTER CADAVERIC KIDNEY TRANSPLANTATION

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The cases of malignancy in kidney transplant are rare therefore it is crucial to choose suitable treatment for this category of patients. Here we represent the case of a male, age 40, with renal dysplasia. Kidney transplantation was performed in 2012. Initial immunosuppressive therapy included basiliximab, CsA, MPA, steroids. Renal function was decreased (serum creatinine 0.130–0.150 mmol/l). Level CsA 110–160 ng/ml. An ultrasonography of a kidney transplant that have been conducted 2 years after showed no pathological changes. However in 3.5 years after the operation on the face of a patient appeared a nevus which was resected afterwords. Thereby immunosuppressive therapy was individualized: the dose of CsA was decreased to 75 mg/day (level CsA 50–68 ng/ml), conversion MPA into EVE 1.5–1.25 mg/day (level EVE 5.4 ng/ml), MP 4 mg/day. Renal function has been improved (serum creatinine 0.130–0.106 mmol/l). 4 years after kidney transplantation a malignancy was found out in control ultrasonography of a kidney transplant. Tomography of a kidney transplant displayed a hypovascularized tumor (d = 3 sm). As metastasis had not been found, we decided to make a resection of the tumor. Before the operation conversion of EVE to MPA was temporarily performed. The tumor was resected and then we conducted a radiofrequency ablation (RFA). Morphological analysis revealed hypernephroma. The function of a kidney transplant slightly decreased after the operation but then stabilized (serum creatinine 0.153 mmol/l). 3 month after the resection immunosuppressive therapy was corrected again (CsA+EVE+steroids). In 6 month after the resection a control ultrasonography of a kidney transplant didn't reveal any pathological changes. Thus our data indicate that resection of a tumor in the absence of metastasis might be expedient. It is necessary to optimize an immunosuppressive therapy which permit to save a renal function of kidney transplant.

Clinical Kidney Other

P223

TECHNICAL CHARACTERISTICS, OPTIMIZATION AND OUTCOMES OF ULTRASOUND GUIDED BIOPSY PERFORMED ON KIDNEY TRANSPLANT PATIENTS

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From January 2014 to August 2016, 183 US-guided biopsies performed in our institution on renal transplanted patients. Decided to optimize our biopsy protocol, switching from 24 h hospitalization and observation period to an outpatient protocol of 6 h observation and discharge. We evolved from an initially shared technique made by radiologists and nephrologist together to the current US guided biopsy performed by the nephrologist alone. We also decided to change from 14 G biopsy needle to 16 G needle. We retrospectively analyzed results of those changes and compared each group. 183 renal graft biopsies. 79.8% radiologist and nephrologist together. 20.2% nephrologist alone. Outpatient protocol with 6 h of observation 51.4%. 48.6% admission and discharge after 24 h. Automatic gun 14 G used in 43.2%, 16 G in 37.7%, 18 G in 6%. Age 54 $\pm$ 14, 66.7% male. needle passes 2 $\pm$ 1, useful samples 1.5 $\pm$ 0.5. pre-biopsy hemoglobin 11.5 $\pm$ 1.8 gr/dl, post-biopsy 10.9 $\pm$ 1.75 gr/dl, mean Hb change was 0.65 $\pm$ 0.62. Mean obtained glomeruli was 18 $\pm$ 11. The 14 G biopsy gun for inpatient protocol (52%) and nephrologist and radiologist shared technique (54.8%), 16 G mainly used in outpatient cases (47%) and all nephrologist independent technique. Overall complications 7.7%. Higher shared technique vs. Nephrologist independent (8.2 vs 5.4%). No differences between complications inpatient vs. outpatient (7.8 vs. 7.4%). More complications in using 14 G n compared to 16 G (11.2 vs. 4.3). Only one case (0.3%) required intravascular segmental embolization of transplanted kidney due to severe active bleeding after biopsy. There were no nephrectomies or deaths.
Conclusions: Fewer complications w16 G. no differences inpatient vs. outpatient with 6 h observation. Less complications when biopsy performed by nephrologist alone compared with shared technique. Graft biopsy using 16 G with only 6 h of observation by nephrologist alone, efficient, cost-saving and optimizes the renal graft biopsy process

Basic Artificial Organ Other

P224

TRANSPLANTATION OF CELL ENGINEERING CONSTRUCTION AS A WAY FOR SUPPORTING DAMAGED LIVER IN PRETRANSPLANT PERIOD

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Background: Because of deficit organs liver transplantation cannot be carried out for everybody who is needed. Therefore support the liver function for patients, included in the waiting list, is an important problem.
Methods: Chronic liver failure (CLF) was modeled on Wistar rats (n = 160) by means CCl4. Wistar/August rats were used as donor cells. Liver cells (LC) 2.5–4.0 $\times$ 10^6cells/cm^3 and mesenchymal stromal cells (MSC) 0.5–0.8 $\times$ 10^6cells/cm^3 were immobilized on: tissue specific small-dispersed matrices (TSSDM), obtained from decellularizated liver; and on biocompartible heterogeneous collagen-hydrogel (BHCH). Formed cell engineering construction (CECs) were transplantated (TX) into damaged liver. The efficiency of cell therapy was studied in 8 groups:control-without treatment (gr.1); CECs on TSSDM (gr.2); CECs on BHCH (gr.3);CECs on BHCH with immunosuppression by Prograf (4gr);and by CsA (5gr). It was used also suspension: LC without CECs (gr.6), MSC without CECs (gr.7) and MSC (5 $\times$ 10^6cells/cm^3) intravenously (gr.8). Dynamics reduction of CLF, recovery liver, CEC morphology and TX cell viability were investigated within 90 days after TX.
Results: In gr.2–7 all biochemical indices have returned to normal levels within 30 days, but the rate of recovery of indices has been the most intensive in gr.2.Viable hepatocytes, neogenic bile ducts and vessels were detected in CECs. Morphological indices of liver damage were less expressed in gr.2–8 than in gr.1. Recovery of hepatic lobe structures was more expressed in gr.2, where liver morphology practically did not differ from the norm to the end of experiment.
Conclusion: CLF correction by TX of CECs with LC and MSC is an effective method to supporting damaged liver, especially in pretransplant period. CECs, prepared on rat decellularizated liver matrices, were more preferable. MSC as a component of CECs promoted the state of immunological tolerance and prevented their rejection.

Clinical Liver Other

P225

CHANGES OF LIVER STIFFNESS AND SERUM MARKERS OF FIBROSIS IN LIVER TRANSPLANT RECIPIENTS WITH SVR FOLLOWING INTERFERON-FREE TREATMENT

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Background: Nowadays, interferon-free regimens offer the prospect of treating the high risk patient groups (liver cirrhosis/liver transplant recipients) with high SVR rates across all genotypes.
Aim: To present our experience with DAA agents in LT recipients, as well as to compare pre and posttreatment liver stiffness and noninvasive fibrosis scores.
Methods: Our cohort consisted of 77 patients with recurrent hepatitis C after LT. All patients received associated ribavirin. The 3D regimen was administered 24 weeks. Fibroscan, NAFLD score, BARD, FIB4 and APRI scores were performed in all patients before and 12 weeks after DAA therapy.
Results: There were analyzed 42.9% females and 57.1% males with a mean age of 55.1 $\pm$ 7.0 years. Median time since LT was 26.2 months and median viral load at baseline was 1912135.5 IU/ml. 81.8% of patients received tacrolimus. At baseline 57.1% of patients had severe necroinflammation at Fibromax, advanced fibrosis (F3F4) was encountered in 37.7% of LT recipients and grade 3 steatosis in 39% of transplanted patients. End of therapy virological response was 100%. SVR12 rate was 98.7% in the ITT analysis and 100% in per protocol analysis. Liver stiffness (LS) differed statistically significant according to the activity grades ($p = 0.0001$), steatosis grade ($p = 0.02$) and fibrosis stages ($p < 0.0001$) at Fibromax. There was a significant improvement in LS between antiviral therapy start and SVR12: 11.2 $\pm$ 1.1 kPa vs 8.2 $\pm$ 0.6 kPa ($p < 0.0001$), as well as in APRI (2.4 $\pm$ 0.3 vs 0.4 $\pm$ 0.03, $p < 0.0001$) and FIB4 (4.6 $\pm$ 0.6 vs 2.3 $\pm$ 0.3, $p < 0.0001$) scores in LT recipients. In contrast, NAFLD (2.1 $\pm$ 0.1 vs 2.3 $\pm$ 0.1, $p = 0.01$) and BARD (1.6 $\pm$ 0.1 vs 2.2 $\pm$ 0.1, $p = 0.0001$) scores significantly increased between baseline and SVR12.
Conclusion: In HCV positive recipients screening for fibrosis progression should continue despite SVR. Associated metabolic syndrome should be also prevented in order to maintain fibrosis stage obtained after SVR.

Clinical Liver Other

P226 BILIARY COMPLICATIONS IN RECIPIENTS OF LIVING-DONOR LIVER TRANSPLANTATION: A SINGLE-CENTER REVIEW OF 120 PATIENTS

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Background: Biliary complications are common after living-donor liver transplantation (LDLT). This retrospective study aims to review our experience with biliary complications in recipients of LDLT.
Materials/Methods: One-hundred and twenty patients who underwent LDLT over a 9-year period were studied. Patients were divided into two groups [A: Patients with biliary complications; B: Patients without biliary complications]. Both groups were compared and different treatment modalities for biliary complications were evaluated.
Results: Group A included 45 patients (37.5%), whereas group B included 75 patients (62.5%). Biliary complications included bile leak [$n = 17$ (14.2%)], biliary stricture(s) [$n = 11$ (9.2%)], combined biliary stricture(s) with bile leak [$n = 15$ (12.5%)], sphincter of Oddi dysfunction [$n = 1$ (0.8%)] and cholangitis [$n = 1$ (0.8%)]. Cold ischemia time was significantly longer in group A ($p = 0.002$). External biliary drainage (EBD) was less frequently used in group A ($p = 0.031$). Technical success rates of endoscopic biliary drainage and percutaneous transhepatic biliary drainage were 68.3% and 41.7% respectively. Survival rate following relaparotomy for biliary complications was 62.5%.
Conclusions: Graft ischemia is an important risk factor for biliary complications. Bile leaks can predispose to anastomotic strictures. The use of EBD seems to reduce the incidence of biliary complications. Endoscopic and percutaneous transhepatic approaches can successfully treat $>^{2}/_{3}$ of biliary complications. Relaparotomy can improve survival outcomes and is usually reserved for patients with intractable biliary complications.

Translational Liver Other

P227 DE NOVO MALIGNANCY WITHIN ONE YEAR AFTER LDLT; CASE REPORT

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Biliary obstruction is a common morbidity after liver transplantation. The anastomotic failure of biliary reconstruction is the leading cause. When the patient with hepatocellular carcinoma (HCC) underwent liver transplantation and developed a jaundice, the recurrence of HCC is suggested as the main cause. Here we describes a case of biliary obstruction due to pancreatic head cancer at 11 months after LDLT. The patient was a 54-year-old male with HBV related cirrhosis and hepatocellular carcinoma (HCC) within Milan criteria. Our patient previously underwent liver resection for HCC two times in 1998 and 2002. Recurrence of HCC revealed and LDLT using the right lobe from his 23-year-old daughter was performed in December 2008. Immunosuppressive treatment was administered with basiliximab, tacrolimus, corticosteroids and mycophenolate mofetil. He discharged on postoperative 28th day with uncomplicated course. At eleven months after operation, the patient showed icterus. Ampullary stricture below the anastomosis site was found by MRCP and finally diagnosed in adenocarcinoma with endoscopic biopsy. Pylorus-preserving pancreaticoduodenectomy (PPPD) was performed for complete resection of pancreatic head cancer on 14 months after LDLT. The patient revealed favorable outcomes except for superior mesenteric arterial (SMA) pseudoaneurysmal bleeding controlled by endovascular graft postoperatively. However, the patient died from recurred pancreatic head cancer two year after LDLT. Our experience suggest that high suspicion of de novo malignancy is needed for the patient with HCC who has undergone liver transplantation.

Clinical Liver Other

P228 LIVER TRANSPLANTATION FOR HEPATITIS B AND D VIRUS COINFECTION RELATED CIRRHOSIS IN KAZAKHSTAN

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A.N. Syzganov's National Scientific Center of Surgery, Kazakhstan

Background and aim: Hepatitis B (HBV) and D (HDV) virus coinfection leads to chronic liver disease and have poor treatment results and poor prognosis. Liver cirrhosis due to HBV and HDV coinfection is the leading indication for liver transplantation (LT) in Kazakhstan. A present study was intended to assess the clinical and virologic outcomes in such patients following LT.
Methods: Between December 2011 and August 2016, 64 LTs (54 living donor liver transplantations (LDLT) and 10 deceased donor liver transplantations (DDLT)) were performed at A.N. *Syzganov's* National Scientific *Center* of Surgery and City Clinical Hospital ■7. We retrospectively analyzed the clinical and virologic outcomes of 40 patients who had undergone LTs viral hepatitis related liver cirrhosis. The indications for LTs were: HCV related cirrhosis – 17, HBV related cirrhosis – 4 and HBV-HDV coinfection related cirrhosis – 19. Prior to LT, 16 patients had DNA-negative status, and another 7 patients had DNA-positive status with contraindications for antiviral therapy. After LT, all patients with HBV alone and HBV-received nucleoside analogues.
Results: There was no recurrence of HBV or HDV reinfections after LTs. PCR for viral hepatitis B after transplantations was negative in all patients, including 4 patients with DNA-positive status. This fact could be explained as an impact of HHBI usage. The patients who did not receive human hepatitis B immunoglobulin had positive HBsAg until 6 months according to results of immunological analysis. In patients who received human hepatitis B immunoglobulin HBsAg disappeared within 7 days after LT.
Conclusion: Antiviral therapy in liver cirrhosis of viral etiology is a key aspect of postoperative treatment of patients, along with immunosuppressive therapy. Usage of nucleoside analogues in combination with HBIG allows to reach the complete elimination of hepatitis B virus. Patients with contraindications for carrying

Clinical Liver Other

P229 INCISIONAL HERNIA AFTER LIVER TRANSPLANTATION – AN UNSOLVED PROBLEM

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Introduction: Incisional hernia (IH) after liver transplantation (LT) is still an unsolved problem. Thus we evaluated our LT cohort in regard to both incidence of incisional hernia and techniques of abdominal wall closure.
Methods: 270 patients (79% male) underwent LT between 1998 and 2016. All patients were included and techniques of abdominal wall closure at LT as well as clinical factors were analyzed. Further IH closure techniques were compared. Patients who underwent incisional hernia repair were classified as IH patients. Patients without hernia were referred to as NIH patients.
Results: Fourteen percent (39/270) of all patients developed an IH. Median age did not differ between NIH and IH patients (65 vs 68 years, $p = 0.5$). Significantly more patients with IH were immunosuppressed with mTOR-inhibitor (NIH: 54% (124/231), IH: 79% (31/39), $p = 0.03$). Closing techniques at LT did not differ between NIH and IH patients (rate of continuous closure at LT: 63% NIH, 65% IH; $p = 0.1$). Different techniques were used for IH repair

(33% direct closure 13/39, 46% synthetic mesh onlay technique 18/39, 21% biological mesh sublay technique 8/39). IH recurrence rate was 33% (13/39) that was mainly closed using a synthetic mesh in onlay technique (61% – 8/13).
Conclusion: Incisional hernia after LT are still one of the main restraints altering patients' quality of life and well being in the long term. The best closing technique has still to be determined in this special patient population.

Clinical Liver Other

P230 GIANT ARTERIOPORTAL FISTULA IN A LIVER TRANSPLANT RECIPIENT

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A 35 year old women with Wilson's disease and orthotopic liver transplantation (OLT) and splenectomy 15 years ago as well as a cesarean section (after OLT) 12 years ago presented with 14 days of thoracic and abdominal pain as well as diarrhea and a distended abdomen. The last liver biopsy was performed 5 years ago. Blood tests revealed no changes to prior follow-up examinations, the abdomen was distended but soft. A CT scan suspected newly developed venous mesenteric thromboses and ascites without any other suspicious findings. She was put on therapeutic anticoagulation, received adequate pain medication and was discharged four days later. Two days after discharge, the patient presented again with severe abdominal pain in the emergency department. Clinical examination revealed a soft abdomen again, another immediately performed ultrasound examination and CT scan showed an extended arterioportal fistula of unclear origin. Blood tests revealed an elevated thrombocyte count, elevated inflammation parameters, normal liver transaminase levels but impaired coagulation parameters. She was admitted to the ward and received antibiotic therapy and ascites drainage before undergoing interventional coiling of her giant fistula 6 days later with two coiling sessions being necessary. After the coiling, pain and abdominal discomfort resolved, laboratory values normalized and the patient was finally discharged. The patient recovered well, ascites resolved and she has not had any complications until now (2 years later).

Clinical Liver Histology

P231 FIRST LIVING DONOR LIVER TRANSPLANTATION FOR CONGENITAL HEPATIC FIBROSIS IN AZERBAIJAN

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Introduction: Congenital hepatic fibrosis (CHF) is a rare autosomal recessive disease. Cases have been reported from all over the world but the exact incidence of the disease is not known. The diagnosis sometimes is difficult to establish and one of the main diagnostic method is histological evaluation.
Case report: 21-year-old man was admitted with slowly progressive distension of abdomen and fullness in upper abdomen of 7 months duration, and history of 3 time hematemesis during last 7 months and 3 times of EVL. General examination revealed pallor and conjunctival xerosis without any signs of liver cell failure or icterus. Temperature, pulse and BP were normal. Peripheral blood smear revealed thrombocytopenia, leukopenia, normal erythrocytes and no malarial parasite (MP). Liver function tests was normal. Bone marrow aspiration showed erythroid hyperplasia with normoblastic reaction and no abnormal cells, LD bodies or MP. HBsAg, anti HCV, ANCA, ASMA and serology malaria were negative. Alpha 1 antitrypsin was 2.01 gr/L. Abdominal contrast CT shows the signs of chronic liver decease without any mass and splenomegaly. Liver biopsy showed liver tissue with distorted architecture composed of nodules of different sizes surrounded by fibrous septa. Inflammatory infiltration is minimally on fibrous septa. These histological features confirmed the diagnosis of CHF and possibility of inactive cirrhosis. This patient was treated by living donor liver transplantation. Procedure was performed without any deviations from standard technique.
Conclusion: Hallmark of diagnosis is liver biopsy which shows bands of fibrous tissues often containing linear or circular spaces lined by cuboidal epithelium. The management and prognosis of CHF is dependent on alimentary bleeding secondary to PH. Prognosis may be greatly improved by shunt surgery but survival in some patients may be limited by degree of renal failure. In our case choice of treatment was living donor liver transplantation.

Clinical Liver Other

P232 LIVER TRANSPLANTATION IN KAZAKHSTAN: CURRENT STATUS

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Background and aim: Living transplantation (LT) is a life-saving procedure for recipients with end-stage liver disease. In Kazakhstan, living donor liver transplantation (LDLT) has been performed since 2011. As a December 2016, liver transplants have been performed in 7 institutions in Kazakhstan. Liver cirrhosis due to HBV with or without HDV coinfection are leading indications for LT in Kazakhstan. A present study was intended to assess the clinical course and outcomes of patients following LT in two most experienced clinics in Kazakhstan.
Methods: Between December 2011 and August 2016, 64 LTs (54 LDLTs and 10 deceased donor liver transplantations) were performed at A.N. *Syzganov's* National Scientific *Center* of Surgery and City Clinical Hospital ■7. The most frequent indications were viral hepatitis related liver cirrhosis: HCV related cirrhosis – 17, HBV related cirrhosis – 4 and HBV – HDV coinfection related cirrhosis – 19. After LT, all patients with HBV alone and HBV-received nucleoside analogues. Clinical course and the outcome were retrospectively reviewed.
Results: As for the graft liver in living-donor cases, right lobe graft was the most popular (64%). Patient survival following transplantation was(1 year, 84.2%; 3 year, 78.9%; 5 year, 78.9%). Graft survival was almost same as patient survival. There was no recurrence of HBV or HDV reinfections after LTs. PCR for viral hepatitis B after transplantations was negative in all patients, including 4 patients with DNA-positive status. This fact could be explained as an impact of HHBI usage. The patients who did not receive human hepatitis B immunoglobulin had positive HBsAg until 6 months according to results of immunological analysis. In patients who received human hepatitis B immunoglobulin HBsAg disappeared within 7 days after LT.
Conclusion: Over the past 5 years, LT program has been established and we hope that increased experience of this procedure will lead to further.

Clinical Liver Other

P233 HEMOSTASIS STATUS IN A PEDIATRIC FULMINANT HEPATIC FAILURE: BENEFIT OF THROMBOELASTOMETRY (ROTEM)

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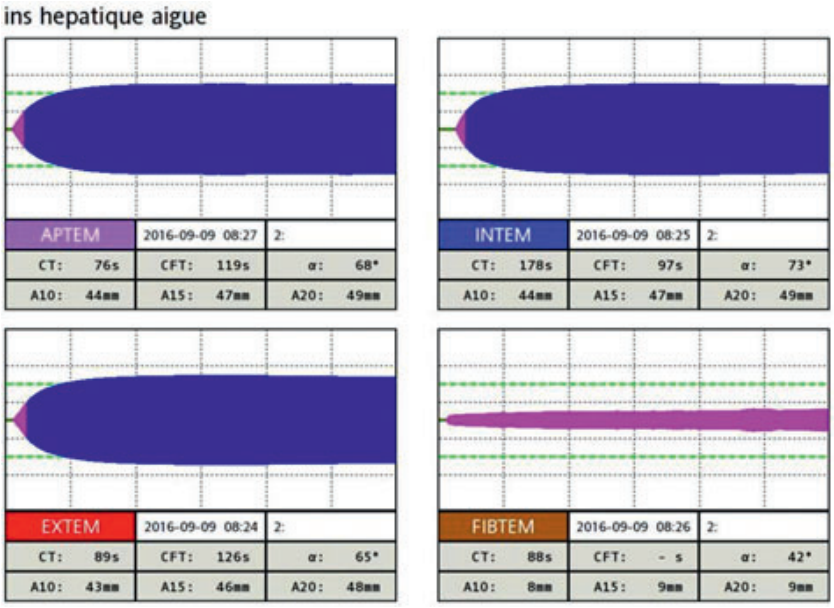
Background: Pediatric acute liver failure is an indication of liver transplantation in 10 to 15% of the cases and a big challenge in hemostasis management. The coagulation impairment in acute liver failure has been studied in adults' patients, and when thromboelastogram was used simultaneously to biologic testing, the results were not comparable.
Material and Method: We report here the case of a young boy, 14 month old, with undetermined fulminant hepatic failure. He was admitted to ICU with acute hepatic insufficiency, progressive encephalopathy. Six days after his admission in ICU, We have the opportunity of a graft. The biological evaluation pointed important hemostasis disorders and an important risk of bleeding.

Hemoglobin 9.2 g/l,
Platelets count 244 giga/l,
Activated cephalin time 93 s
Prothrombin time < 10%, INR7.9,
Fibrinogen 1.01 g/l,
Factor V 17%, Factor II 10%



The tromboelastometry realized at the same time showed a normal coagulation profile.

The patient didn't received coagulation supply before the liver transplantation. The surgery was done without abnormal bleeding (20 ml/kg of blood supply), the patient received 1.5 g of Fibrinogen during the procedure. This case report reflects the interaction of pro and anticoagulants synthesized in the liver. In case of acute hepatic insufficiency, both of the syntheses are probably altered.

Conclusion: he testing with Thromboelastometry (ROTEM) could be a good indicator of the coagulation status of patient with acute liver disease. The ROTEM is useful to manage the patient's bleeding risk before and during liver transplantation.

Clinical Liver Rejection

P234 HOW CAN WE TREAT ACUTE GRAFT VERSUS HOST DISEASE AFTER LIVER TRANSPLANTATION? 2 CASE REPORTS

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Background: Acute Graft-versus-host disease (GVHD) after liver transplantation (LT) is a rare but serious complication. We experienced 2 cases of acute GVHD after LT at our institution and present our treatment modality herein.
Methods: Among our 53 LT recipients, we retrospectively reviewed the medical records of 2 patients who were diagnosed acute GVHD pathologically.
Results: One patient was a 53-year-old female with hepatitis B related liver cirrhosis who underwent living donor LT. Five weeks after LT, the patient presented with severe headache and lower back pain. After readmission, she developed fever and skin rash in her both palm which was rapidly progressed to whole body with desquamation. We performed skin biopsy and started intravenous methylprednisolone (200 mg/d), immunoglobulin for 3 days and stopped calcineurin inhibitor. But, Skin rash and pancytopenia were rapidly progressed and she died of sepsis at 46 days after LT. The other patient was 64-year-old male with hepatitis B related liver cirrhosis who underwent deceased donor LT. At 8 weeks after LT, he presented with fever and erythematous papular skin rash over his trunk and arms. With high index of clinical suspicion for acute GVHD, we started intravenous methylprednisolone (250 mg/d) followed by 200 mg for 6 days. Blood level of tacrolimus was maintained between 5–8 ng/dl and 750 mg of mycophenolate mofetil was added twice daily. After pathologic confirmation of GVHD by skin biopsy, we started etanercept (0.4 mg/kg twice a week, subcutaneously) and maintained for 4 weeks. The skin rash was disappeared gradually within 2 weeks after etanercept treatment. The patient was discharged on postoperative day 54 with good condition and has been followed for 10 months without recurrence of symptom.
Conclusion: Due to low incidence of disease, diagnosis and treatment of acute GVHD after LT are difficult. Therefore, high clinical suspicion and early treatment will be needed for a favorable outcome.

Clinical Liver Immunology

P235 ELECTIVE WEANING OF IMMUNOSUPPRESSION IN LIVING DONOR LIVER TRANSPLANT RECIPIENTS

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Background: Although the absolute withdrawal of immunosuppression is one of the goal of organ transplantation, the possibility of immunologic tolerance in clinical liver transplantation has not been elucidated yet.
Aim: The aim of this study is to show the possibility of elective weaning of immunosuppression after living donor liver transplantation (LDLT).
Patients and Methods: of 245 LDLT recipients in Nagasaki University from August 1997 to February 2017, 58 (23.7%) met the following criteria of the elective weaning of immunosuppression; more than 2 years after transplantation, normal liver function, no episode of liver dysfunction in preceding 1 year, no autoimmune disease as original diagnose, no de novo autoimmune disease after transplantation, not undergoing interferon therapy for recurrent hepatitis C virus hepatitis. of these, 44 patients who were followed-up more than 1 year after the start of weaning were enrolled in this study. Thirty-eight (86%) were adult cases older than or equal to 18 years. All patients had received calcineurin inhibitor (CNI) twice a day at the start of weaning, and it was gradually reduced as once a day, followed by once every other day finally.
Results: Eleven patients (25%) developed liver dysfunction during weaning, and all of them were easily reversed with reinforce of CNI without requiring steroid bolus. During study period, 12 patients (27%) were administered CNI less than or equal to once a day, including 3 pediatric patients with absolute withdrawal of immunosuppression. Remaining 21 patients are on weaning with variety of reduced dose of CNI, without developing liver dysfunction.
Conclusion: Elective weaning of immunosuppression was safely achieved in LDLT patients according to our protocol.

Clinical Liver Other

P236 CASE REPORT: ABO INCOMPATIBLE ORTHOTOPIC LIVER TRANSPLANTATION IN A PATIENT WITH ACUTE HEPATIC FAILURE SECONDARY TO ALPHA-METHYLDOPA DURING SECOND TRIMESTER OF PREGNANCY

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Liver transplantation is the last treatment alternative for patients with acute non-recoverable hepatic failure. If we add this condition to a pregnant patient, it becomes an aggravating factor to the mother and the fetus. We present the first case reported in Costa Rica and Central America of orthotopic liver transplantation with ABO incompatibility in a 35-year pregnant woman with 19 weeks of pregnancy due to an alfametildopa induced acute liver failure, obtaining satisfactory results from both the mother and fetus. The patient switched her chronic antihypertensive treatment to alfametildopa, starting with jaundice, coluria and abdominal pain 8 days after starting the medication, with elevation of transaminases and direct hyperbilirubinemia. Obstetric ultrasound and splenoportal Doppler were normal. Serologies for Hepatitis A, B and C, cytomegalovirus and human immunodeficiency virus were negative, seruloplasmin and alpha-1-antitrypsin in normal value. The patient presented progressive deterioration with coagulopathy, hyperammonemia and encephalopathy that required assisted mechanical ventilation. The patient was valued with a MELD of 37 points, and Child Pugh 11, with a viable fetus. An urgency cadaveric liver transplant with ABO incompatibility was performed. The pathological report of the native liver indicated acute hepatitis with massive hepatic necrosis. Immunosuppression was initiated with baciliximab, tacrolimus and methylprednisolone. Rituximab was initiated due to suspicion of an immunological ABO reaction, obtaining clinical improvement, allowing discharge in postoperative number 24. Obstetrical ultrasound at 22 weeks of gestation documented mild oligohydramnios, with allopathic holoprosencephaly, mild pericardial effusion, hypertelorism, hypertrophic cardiomyopathy, and ductus arteriosus stenosis in a probable association with trisomy 13. The patient had a vaginal delivery with 33 weeks of gestation with a live product, and satisfactory recovery.

Clinical Liver Other

P237 LOW DOSES OF ANTICOAGULATION WITH CONTINUOUS RENAL REPLACEMENT THERAPY IN LIVER TRANSPLANTED PATIENTS

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Introduction: Continuous renal replacement therapy (CRRT) is an effective way of dialysis in hemodynamically unstable patients. Routinely, high doses of heparin is used for anticoagulation in this method. In this study we used low doses of heparin with excellent results.
Material and Methods: In this retrospective study, 29 patients from needed CRRT in postoperative course in liver transplanted patients with various etiologies. We mostly used CVVHD mode for dialysis.
Results: In 29 patient, 16 were female and 13 were male. All of them were whole organ transplanted with median age of 42. Low doses of heparin from 5000 to 10000 units were used in all liver transplanted patient in this center with no technical failure. Also, we had fewer heparin side effects.
Conclusion: Contrary to other patients which need high doses of heparin during CRRT, liver transplanted patients need low doses of heparin and anticoagulation during CRRT.
Key words: CRRT, Liver Transplantation, Anticoagulation

Clinical Liver Other

P238 OUTCOMES AND RENAL PROGNOSIS OF LIVER TRANSPLANTATION FOR PATIENTS WITH HEPATORENAL SYNDROME

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Background: Hepatorenal syndrome (HRS) is one of the critical complications in liver failure, and liver transplantation is the only fundamental treatment for HRS. However, clinical outcomes and factors predicting renal prognosis of HRS patients after liver transplantation have not been clearly elucidated. The aim of this study was to evaluate outcomes and renal prognosis of HRS patients after liver transplantation.
Methods: Between October 2003 and March 2016, 82 adult liver transplantation were performed at our hospital. HRS was diagnosed according to International Ascites Club criteria. Recipients were divided into HRS group ($n = 11$) and non-HRS group ($n = 71$). Patients background, operative factors, complication and survival rate was compared between the two groups. Moreover, renal prognosis of HRS group was assessed.
Results: HRS vs non-HRS
Background: There were no significant difference between two groups in age, sex, ABO-incompatible, MELD score and GRWR.
Operative factors: There were no significant difference between two groups in operation time, amount of bleeding, WIT and CIT.
Complication: There were no significant difference between two groups in postoperative bleeding, biliary complication, rejection. There was significant difference in infection (81.8% vs 40.9%, $p = 0.02$)
Survival: There were no significant difference in 1/5/10 year survival (83.3%/75.0%/46.9% vs 90.0%/80.9%/62.9%, $p = 0.20$), but long-term survival was lower in HRS than non-HRS.
Renal prognosis of HRS: HRS was reversal in 7 patients, but was not reversal in 4 patients and maintenance dialysis was needed after liver transplantation. The duration between the onset of HRS and liver transplantation was significantly longer in HRS reversal group than non-HRS reversal group.
Conclusion: Long term survival rate was lower in liver transplantation for HRS group than non-HRS group. The important factor of HRS reversal was the duration between the onset of HRS and liver transplantation. A timely liver

Clinical Liver Other

P239 INVESTIGATION OF DONOR-RECIPIENT RELATIONSHIP AFTER LIVING-DONOR LIVER TRANSPLANTATION

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Aim: The aim of the study was to determine what changes occur in the donor-recipient relationship after living-donor liver transplantation (LDLT).
Method: This study adopted a qualitative research design. Data were collected from liver transplant recipients ($n = 17$) and their living donors ($n = 11$) at individual interviews between April and December 2016. The maximum variation sampling method was used. The transcribed data were analyzed manually by using content analysis. In the theoretical framework of the study the "gift change process" was used.
Results: The mean age of the recipients and donor were 54.41 $\pm$ 8.00 (min-max = 39–71), 36.36 $\pm$ 7.69 (min-max = 28–57) years respectively. While 9 of the recipients received the organ from their 1st degree and 3 from their 2nd degree relatives. There was no blood relation between 5 recipients and their donors (2 spouses, 1 the daughter-in-law, 1 the son-in-law, 1 cousin). of the 9 recipients and 6 donors who stated that they had a normal kin relationship before LDLT, 7 recipients and 4 donors stated that the nature of the relationship between them changed after LDLT. The recipients and donors who were spouses reported that their relationships deteriorated after LDLT. Two donors stated that their spouses divorced them after transplantation because they donated their organs. Three main themes and five subthemes emerged: decision-making process for the donor, decision-making process for the recipient and post-transplant relationships (no change in the donor-recipient relationship, feeling remorse, becoming closer due to feeling of indebtedness, becoming distance due to feeling of indebtedness, effect of donation on social and family life).
Conclusion: No or positive changes were observed between the relationships of the vast majority of the recipients and donors before and after transplantation. The recipients' feelings of indebtedness and regret negatively affected post-transplant relationships between recipients and donors.

Clinical Liver Other

P240 LIVING LIVER DONOR OF LIVER TRANSPLANTATION FOR LIVER HAEMANGIOMA

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Background: In liver haemangiomas, the risk of complication rises with increasing size. However, complications such as abdominal pain or fullness, coagulation disturbances, and inflammatory syndrome may occur. When the haemangiomas exceeds a certain volume, often surgical treatment is inevitable.
Methods/Materials: We retrospectively reviewed the patient who recurrent the haemangiomas with non-resectable after received partial hepatectomy, and living liver donor of liver transplantation (LDLT) was identified as the only treatment option.
Results: A 60-year-old woman received haemangiomas with partial hepatectomy involving left and middle lobe twenty years ago. Before one year, the patient suffered from abdominal fullness and poor appetite with body weight loss. Further computerized tomography image showed a haemangiomas of 24.4 cm $\times$ 20.5 cm $\times$ 4 cm in size located primarily in the right liver lobe. Liver enzymes, serum creatinine, and tumor markers were all within their normal ranges, and serology for viral hepatitis was also normal. Only alkaline phosphatase andγ-glutamyltransferase slightly elevated. Her model for end-stage liver disease assessment revealed a score of 6. Nineteen days after diagnosis, she underwent LDLT. The surgical time was 320 min and there was an estimated blood loss of 2100 ml. Then, the patient was transported to the intensive care unit in stable condition. After eight days, the patient transferred to the transplant ward and was discharged on hospital day 19. At 7-month follow-up on outpatient, the patient presented well with normal liver function, and had begun to resume a normal level of every day activity.
Conclusions: Liver transplantation should be considered early in patients with non-resectable, symptomatic benign haemangiomas of the liver.

Clinical Liver Other

P241 IS IT NECESSARY FOR BILIARY DRAINAGE IN CASE OF INTRAHEPATIC BILE DUCT DILATION WITHOUT HYPERBILIRUBINEMA IN LIVER TRANSPLANTATION?

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Biliary drainage during operative procedure in liver transplantation is important and necessary for preventing postoperative biliary complications. However, it is not clear plan for intrahepatic bile duct dilation during outpatient follow up without elevation of bilirubin, ALP, and GGT. We report a case of intrahepatic dilation, which was not treated, have dismal progress after liver transplantation

Clinical Liver Other

P242 EFFECTIVE PREPARATION OF AUTOLOGOUS FIBRIN SEALANT IN HEPATIC SURGERY – A PROSPECTIVE OBSERVATIONAL PILOT STUDY

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Background: The autologous fibrin sealant (Vivostat®) is obtained from 120 ml of patient's own blood, after removing the cellular components and exposure to very low pH. In the final product, the fibrin concentration is standardized, but the quantity of fibrin sealant obtained can vary due to patient characteristics. The aims of the study are to evaluate if the coagulation status influences the quantity of fibrin sealant obtained after processing the blood and if higher fibrinogen level before blood draw would be beneficial for increasing the quantity of fibrin sealant obtained
Methods/Materials: Liver cirrhosis patients undergoing liver transplant were included in the study group (SG). The control group included non cirrhotic patients undergoing major hepatectomy for liver tumors (CG). In both groups standard coagulation tests and rotation thromboelastometry (ROTEM®, Germany) were determined before blood draw for fibrin sealant preparation.
Results: After Ethics Committee approval, 15 patients were included in each group. Patients in the SG had lower fibrinogen levels ($p = 0.04$), lower maximum clot firmness (MCF) on EXTEM and FIBTEM ($p = 0.03$ and 0.04) and lower volume of fibrin sealant obtained compared to the CG. The amount of fibrin sealant obtained was not correlated with plasmatic fibrinogen levels ($p = 0.195$), but correlated significantly with MCF in EXTEM and FIBTEM ($p = 0.015$ and 0.024). Obtaining at least 95% of the maximum possible quantity of fibrin sealant was correlated with MCF on EXTEM and FIBTEM values of at least 45 mm and respectively 8 mm.
Conclusion: As liver surgery patients often need fibrinogen concentrate administration and fibrin sealant preparation is usually simple and rapid, we can choose the moment for blood drawing for obtaining a higher volume of fibrin sealant. The results of this study will be used to elaborate a protocol regarding the optimal timing of blood draw for fibrin sealant preparation. For firm conclusions, the completion of this pilot study is required.

Clinical Liver Other

P243 SUCCESSFUL TREATMENT OF FIBROSING CHOLESTATIC HEPATITIS WITH DACLATASVIR AND ASUNAPREVIR AFTER LIVER TRANSPLANTATION

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Fibrosing cholestatic hepatitis (FCH) is an aggressive form of hepatitis C virus (HCV) recurrence after liver transplantation (LT). Most FCH cases are fatal secondary to rapidly progressive liver dysfunction followed by graft failure and death. We report a case of early-onset FCH after LT, who was successfully treated using daclatasvir and asunaprevir. A 59-year-old-woman underwent living donor LT for HCV-related liver cirrhosis, however, the liver function was not improved after LT and gradually got worse. Liver biopsy was performed at 30 and 47 days after the LDLT to identify the cause of the liver dysfunction. First biopsy showed no specific finding, however, combined treatment with pegylated interferon and ribavirin was started due to high HCV viral load greater than 8.0 log IU/ml. Nevertheless, liver function and HCV viral load deteriorated, and the second biopsy performed on post-operative day 47 revealed FCH. We converted the antiviral agents into daclatasvir and asunaprevir, and performed plasmapheresis twice. Since then, the liver dysfunction and HCV viral load has gradually improved, the HCV RNA clearance occurred at week 11 after treatment. The patient achieved sustained virological response at week 24 after completion of the treatment. Daclatasvir combined with asunaprevir can be a useful treatment option in potentially fatal FCH after LT.

Translational Liver Other

P244 FUNCTIONAL ULTRASOUND IMAGING AS AN INNOVATIVE TOOL TO ASSESS HEPATIC MICROCIRCULATION PERFORMANCES DURING AND AFTER LIVER TRANSPLANTATION PROCEDURES

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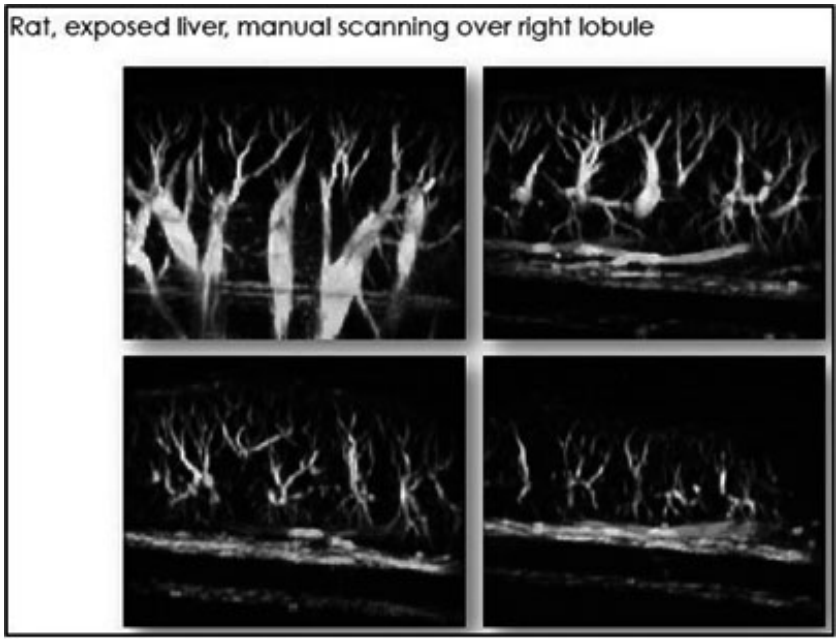
Background: In the context of hepatic transplantational surgery, microvascular failure has been regarded as a key-element in the etiopathology of tissue damage and a powerful indicator of post-transplant liver conditions. Currently, three methods are used for monitoring the hepatic microvascularization:Near-Infrared Spectroscopy, Orthogonal polarized Spectral Imaging and Sidestream Dark-Field Imaging. All these 3 techniques are characterized by a small field of view and a very shallow penetration power making these methods more for research purposes than for surgical applications. The ideal diagnostic tool to survey the functional conditions of hepatic microvasculature should be endowed with high spatial resolution (<100 μm), deep penetration (around 10 cm), large field of view (> 1 cm^2) and sensitivity to sinusoidal blood speeds (< 1 mm/s). A tool endowed with such features has recently being developed for functional brain imaging, in the form of a high-speed and high-definition ultrasound system. In the present form, the system features high spatial resolution (100 μm) deep penetration, large field of view (> 2 cm^2) and motion sensitivity down to 0.77 mm/s.

Methods: We performed preliminary experiments on 5 rats to verify the ability of the system to get high resolution images of hepatic microvasculature and to estimate sinusoidal perfusion rates.
Result: As expected from the technical details of functional ultrasound, we easily succeeded in both the tasks, producing high quality static and Doppler images of the internal microvasculature of the liver, as in the example in Figure.



We were able to generate such a high-quality images both on the organ surface and percutaneously.
Conclusion: Given the promising preliminary results and the fact that the system performance will improve upon optimization for liver imaging, we are very confident that functional ultrasound will provide a significant contribution in predicting deleterious micocirculatory dysfunctions during transplants.

Clinical Liver Rejection

P245

OUTCOME OF ANTIBODY-MEDIATED REJECTION AFTER LIVER TRANSPLANTATION

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Background: Antibody-mediated rejection (ABMR) after liver transplantation (LT) is associated with the presence of preformed donor-specific antibodies (DSA) or development of *de novo* DSA and may cause early acute or chronic allograft failure. Although diagnostic criteria for AMR after LT have been sharpened, recommendations for treatment strategies are still lacking.
Methods: Patients visiting our outpatient liver transplant service since Jan 2014 with suspected ABMR were included in the analysis and followed until December 2016. ABMR was diagnosed upon the presence of elevated transaminases/cholestasis, detectable anti-HLA DSA (MFI ≥1000), and liver histology. Clinical presentation, efficacy of applied treatment strategies, as well as graft survival and patient outcome is reported.
Results: Six patients fulfilled the criteria for ABMR (m:f = 4:2, median age 54, range:43–61). Five of six patients developed ABMR within the first year after LT, one thereafter. Indication for LT was chronic hepatitis C or alcoholic liver disease in either half of patients. As a first step, all patients received steroid bolus therapy and mycophenolic acid/mycophanolat mofetil (MMF) was added. Maintenance immunosuppression was switched to tacrolimus in four patients. Three patients now show stable graft function. In the remaining three patients further treatment with ATG and/or immunoadsorption/plasmapheresis/IvIG was necessary. Despite this treatment, one patient had to be re-transplanted (no signs of rejection after re-LT for 1.5y now). In the further two patients liver function and cholestasis significantly improved and both patients could be discharged, but died due to infections within the follow-up period.
Conclusion: In case of response to steroids and MMF outcome of ABMR after LT is favourable. Yet, in difficult-to-treat patients early re-transplantation should be considered rather than aggressive immune cell and antibody depleting treatment strate.

Basic Kidney Other

P246

SERUM AFP GREATER THAN 200 NG/ML AS A RISK FACTOR TO HEPATOCELULLAR CARCINOMA RECURRENCE IN A BRAZILIAN MULTICENTRIC STUDY

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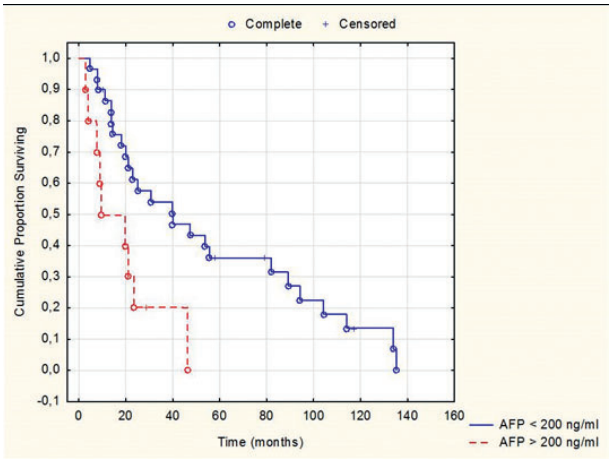
Background: Liver transplantation (LT) is the only potential curative treatment for hepatocellular carcinoma (HCC) and, despite the impressive results obtained from LT, HCC recurrence is diagnosed in 16%. The objective of this study was to evaluate which factors influence HCC relapse.
Methods: The study was based 40 patients transplanted from 2001 to August of 2016, at HC – Unicamp, Base Hospital from Faculty of Medicine – São Jose do Rio Preto/SP and Clinical Hospital at Minas Gerais Federal University with histological confirmation of the relapse disease. Clinical and surgical information, radiological and pathological reports and information about the donor contained in the medical records were analyzed.
Results: Most of the patients were male and had chronic liver disease caused by viral hepatitis. Only 37.5% were submitted to chemoembolization and 50% had time of cold ischemia > 8 h. In the explant analysis, most of the patients were beyond the Milan criteria and classified as stage II/III of Edmonson – Steiner and 37.5% had microvascular invasion. The donors were mostly male and the ICU time was longer than 3 days. Only in 25% of cases the levels of serum alpha-fetoprotein (AFP) > 200 ng/ml. The survival curve according to serum AFP demonstrated that there was difference between patients with high values to those with AFP < 200 ng/dl ($p = 0.037$) (Figure 1). It was also demonstrated that the value of serum AFP > 200 ng/ml was associated with lower survival ($p = 0.02$), IOP transfusions ($p = 0.008$), and donor age ($p = 0.037$) (Table 1).
Conclusion: The results shown are similar to the literature. The survival curve according to serum AFP demonstrated that there was difference between patients with high values to those with AFP < 200 ng/dl and also demonstrated that the value of serum AFP > 200 ng/ml was associated with lower survival, IOP transfusions, and donor age.

	Mean	Mean AFP < 200	Mean AFP > 200	p
Survival time (months)	41.2	49.2 ± 41.6	17.2 ± 13.6	0.02
Age (years)	54.6	54.9 ± 6.4	53.5 ± 9.1	0.6
MELD	14.7	14.8 ± 4.7	14.2 ± 3.4	0.7
IOP transfusions (u)	2.9	1.9 ± 2.8	5.9 ± 6.5	0.01
Donor age (years)	38.3	38.3 ± 13.5	38.1 ± 12.8	1.0



Clinical Liver Other

P247 EVALUATION OF TREATMENT OF ARTERIAL THROMBOSIS IN LIVER TRANSPLANTATION TROUGH THE DEVELOPMENT OF ISCHEMIC CHOLANGIOPATHY

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Introduction: Described in 1–12% patients who developed arterial thrombosis (AT), ischemic cholangiopathy (IC) is a very important morbimortality cause. The objective is to analyse the effectivity of the treatment they received in relation with the development of IC.
Material and Methods: Single-center, observational, retrospective study of patients undergoing liver transplantation in our hospital between January 2002 and December 2014. The study included 343 grafts in 324 recipients. AT were considered early during the first month post-transplant and late thereafter. The minimum follow-up period was six months. Therapeutic approaches were classified as surgical (thrombectomy with reanastomosis, graft revascularization, chemical thrombolysis with reanastomosis, or thrombectomy and graft revascularization), medical (antiaggregants, anticoagulants, intravenous prostaglandins, or combinations of the three), interventionist (balloon angioplasty and/or endoprosthesis placement), or conservative (mainly observation).
Results: The incidence of AT was 10.2% (34 cases). They were diagnosticated 17 early thrombosis (4 partial y 13 complete) and 17 late (3 partial y 14 complete). The incidence of arterial IC was 5% (16 cases), 7 early and 9 late.

Table 1 displays the treatment of the thrombosis that they receive and the current status of patients. Eleven (68.6%) died, although the cause of death was related to this complication in only five (8.2%).
Conclusions: In our case, the most number of therapeutic failures is recorded in the conservative treatment options. We opted for this option due to collateral circulation at the diagnosis of thrombosis demonstrate with imaging techniques, however, in this study we can conclude that a more active role is needed to avoid ischemic cholangiopathy as the end result of arterial thrombosis.

	Ischemic	Cholangiopathy
Thrombosis Treatment	Alive	Death
Surgical +/- medical	3 (18.6%)	2 (12.5%)
Medical	2 (12.5%)	1 (6.4%)
Conservative	0	8 (50%)
Total (n = 16)	5 (8%)	11 (17.8%)

Clinical Liver Other

P248 SURVIVAL ANALYSIS OF VASCULAR COMPLICATIONS IN LIVER TRANSPLANTATION: HEPATIC ARTERY THROMBOSIS VERSUS PORTAL THROMBOSIS

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Introduction: Thrombosis in hepatic transplant determine the recipient survey in a significant way. The objective is to compare the survival between patients who developed portal or hepatic arterial thrombosis in our series.
Material and Methods: Single-center, observational, retrospective study of patients undergoing liver transplantation in our hospital between January 2002 and December 2014. The study included 343 grafts in 324 recipients. Complications were considered early during the first month post-transplant and late thereafter, also they were classified as partial or complete. The minimum follow-up period was six months. The survival analysis were performed looking at one, three and five-year survival rates. IBM SPSS Statistics was used for data analysis.
Results: The incidence of arterial thrombosis (AT) was 10.2%, and portal thrombosis (PT) was 6%. The frequency, distribution, and management of cases are exhibited in Table 1. One, three and five-year survival rates were 66%, 53% and 38%, respectively, for the recipients who developed AT versus 74%, 67% and 50% for the recipients who developed PT.
Conclusions: Our findings are similar to other current reports on the incidence of vascular complications. There was a minor one, three and five-year survival rate in the recipients who developed AT, that might be related to a best established treatment for PT.

	Arterial thrombosis				
	Early	Thrombosis 17 (50%)	Late	Trombosis 17 (50%)	
Complication Treatment	Partial	Complete	Partial	Complete	Total (n = 34)
Surgical +/- medical	0	8 (47%)	0	0	8 (23.6%)
Interventionist +/- medical	1 (5.9%)	0	0	0	1 (2.9%)
Medical (antiaggregants +/- anticoagulants)	2 (11.7%)	3 (17.7%)	2 (11.7%)	5 (29.4%)	12 (35.4%)
Conservative (observation)	1 (5.9%)	2 (11.7%)	3 (17.7%)	7 (41.2%)	13 (38.1%)
		PORTAL THROMBOSIS			
Complication	Early	Thrombosis 10 (50%)	Late	Thrombosis 10 (50%)	Total
Treatment	Partial	Complete	Partial	Complete	(n = 20)
Surgical +/- medical	0	4 (20%)	0	0	4 (20%)
Medical (antiaggregants +/- anticoagulants)	3 (15%)	1 (5%)	6 (30%)	0	10 (50%)
Conservative (observation)	2 (10%)	0	2 (10%)	2 (10%)	6 (30%)

Basic Liver Other

P249 THE EXPERIENCE OF ANAESTHESIOLOGISTS FOR A LIVER TRANSPLANTATION: STRESS FREE OR DISTURBING?

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Background: Every year, more and more liver transplantations are performed in Lithuania[1]. The LUHS KK is one of the national transplantology centres, where liver transplantation surgeries have been successfully performed since 2002[2]. Each surgery requiring great professional skills involves specially prepared anaesthesiologists – an integral part of a team of liver transplantology [3]. The work in the team of transplantologists includes many emotional and professional challenges [4], therefore it is appropriate to examine the problems faced by anaesthesiologists of the LUHS KK.
Methods: The analysis was performed with the help of the anonymous questionnaire which included 16 closed and 3 semi-closed questions. The research involved the survey of the team of anaesthesiologists of the LUHS KK: 11 physicians-anaesthesiologists and 2 anaesthesia nurses.

Results: The survey revealed that during the liver transplantation the most difficult task for 76.9% of respondents was to maintain the stable condition of the patient (according to the Chi-square test df = 2, $p < 0.004$). 84.6% of physicians indicated that possible complications were the most common cause of stress/anxiety (according to the Chi-square test $p < 0.001$, df = 1). 75% of physicians always felt stress working with patients suffering from contagious viral illnesses. 76.9% of respondents indicated that they relied on themselves and their team. All physicians team felt free regardless of their sex, age or length of service.
Conclusion: The main difficulties faced by anaesthesiologists include the maintenance of the stable condition of the patient the management of possible complications and the potential exposure to dangerous viral diseases. The work in liver transplantation surgeries causes stress, however, there is no correlation between the physicians' age, sex and the cause of stress. The self-confidence and reliance on the team, non-tense working relations ensure more efficient and smoother work of anaesthesiologists.

Clinical Liver Other

P250 EFFECT OF PERIOPERATIVE TERLIPRESSIN INFUSION ON RECIPIENT'S HEPATIC AND RENAL FUNCTIONS IN LIVING DONOR LIVER TRANSPLANTATIONS

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Background: Patients with end stage liver disease are prone to hemodynamic disturbances which may be aggravated with liver transplantation. Blood pooling in splanchnic area and portal hypertension cause reduction in central blood volume. Terlipressin reduces mesenteric and hepatic blood flow, causing vasoconstriction in the smooth muscles of the arteries in the splanchnic region. We investigated the efficacy of perioperative terlipressin infusion in LDLT patients on hepatic and renal functions.
Method: The study included 86 adult patients who received LDLT, due to end-stage hepatic disease, between April 2014 and July 2016 in our Institute. Data were collected by searching the medical archives of patients. A standard anaesthesia protocol was administered to all patients. In a randomly selected group of patients, terlipressin infusion was initiated at 3 mcg/kg/h, immediately after anaesthesia was induced. The dose was halved following arterial anastomosis and was continued at this dose for the subsequent 3 days. Patients who received terlipressin infusion were compared to the patients who did not receive it.
Results: Patients in the terlipressin group were statistically significantly older. Central venous pressure, cardiac index, global end diastolic volume and extravascular lung volume did not show significant differences between the groups. Urine output was similar in both groups however regarding the use of packed red blood cells and fresh frozen plasma terlipressin group patients needed more packs. Perioperative liver function tests were similar between the groups except for AST and ALT values on the 1st and 3rd postoperative days (Table).
Conclusion: Terlipressin infusion was not observed to be significantly effective among the liver and kidney function tests. This may be a result of randomization defect of our retrospective study design. However, we think that prospective randomized studies may be planned to reach more accurate results.

Clinical Liver Histology

P251 LONG TERM ASSESSMENT OF HEPATIC FIBROSIS AFTER DIRECTLY ACTING ANTIVIRAL THERAPY FOR HCV RECURRENCE POST LIVER TRANSPLANTATION BY TRANSIENT ELASTOGRAPHY

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Background: Recurrence of hepatitis C virus (HCV) infection following liver transplantation (LT) is a major source of morbidity and mortality.
Aims: Assessment of hepatic fibrosis in patients with HCV recurrence post liver transplantation after viral clearance using the direct acting antiviral agents (DAAs)
Methods: This prospective study included 40 adult patients (35 males and 5 females) with HCV recurrence post living donor liver transplantation (LDLT). 34 patients were treated by sofosbuvir (400 mg once daily) plus ribavirin (600–1200 mg daily) for 24 weeks and 6 patients by sofosbuvir (400 mg once daily) plus simeprevir (150 mg once daily) for 12 weeks. Transient elastography using FibroScan device (EchoSens, Paris, France) was performed for each patient where a comparison of liver stiffness improvement in those patients was done using data before and 12 months after antiviral therapy.
Results: Out of the 40 patients, 37 (92.5%) achieved SVR12 and SVR24. Mean age of those who achieved SVR was 55.35 and mean BMI was 28.6 kg/m^2. The mean liver stiffness measurement using transient elastography before treatment was 11.2 KiloPascal (KPa), the mean Fib-4 score was 3.01 denoting significant fibrosis while the APRI score showed a mean of 0.49. The mean interval between LT and the beginning of antiviral therapy was 45.57 months. There was a significant improvement in liver enzymes, Fib-4 and APRI scores after receiving antiviral therapy. Also, improvement of liver stiffness defined by reduction in kilopascal occurred in 22 patients (59.45%), while no improvement occurred in 8 patients (21.62%). Liver stiffness was shown to be increased in 7 patients (18.9%), out of which 5 were diagnosed to have chronic rejection. Liver stiffness improvement was inversely proportional with the time between LT and antiviral therapy.
Conclusion: The results of our study showed that SVR in patients with HCV recurrence post LT using DAA therapy led to significant fibrosis markers regression.

Basic Liver Other

P252 VARIATONS OF PROPER HEPATIC ARTERY

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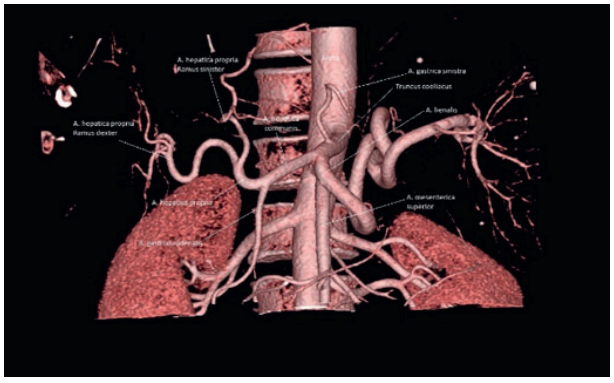
Background: Identification of anatomy of liver's vascular structures and biliary ducts is crucial for liver transplantation or liver resection surgery. Having knowledge of the anatomy of these structures of the liver is very important for planning the surgery procedure and the success of the surgery, and finally for the patients' health. Today, liver transplantation is performed either from deceased donors or from living donors. The variations of proper hepatic artery, as well as portal vein, hepatic veins and biliary ducts should be well known in liver transplantation procedures.
Materials and Method: We determined the Abdominal CT (Computed Tomography) Angiography data of 200 patients who were admitted to Dicle University Medical Faculty between 01.01.2012 and 01.06.2016. The patients were excluded who had previous liver resection, congenital anomalies, liver tumors, Hydatid cyst disease. The anatomic variations of proper hepatic artery of the patients were noted. The variations of the proper hepatic artery was grouped according to Michels classification.
Results: One hundred and six patients (53%) were male and 94 (47%) were female. Mean age of the patients was 49.9 $\pm$ 16.1 years. Michels Type 1 variation of proper hepatic artery was detected in 54% of the patients (Figure 1).



The most frequent variations other than normal anatomy were Michels Type 5 variation (13%) (Figure 2) and Michels Type 2 variation (11%). Unclassified variations were defined as Michels Type 11 variations and 5% of our patients were in this group (Table 1).

Type	Definition	*n* (%)
1	Classical anatomy of proper hepatic artery	108 (54%)
2	Replaced left hepatic artery that originates from left gastric artery	22 (11%)
3	Replaced right hepatic artery that originates from superior mesenteric artery	15 (7.5%)
4	Replaced right and Replaced left hepatic arteries	4 (2%)
5	Accessory left hepatic artery that originates from left gastric artery	26 (13%)
6	Accessory right hepatic artery that originates from superior mesenteric artery	3 (1.5%)
7	Accessory right and Accessory left hepatic arteries	1 (0.5%)
8	Replaced right or left hepatic artery and accessory right or left hepatic artery	8 (4%)
9	Common hepatic artery originates from superior mesenteric artery	3 (1.5%)
10	Common hepatic artery originates from left gastric artery	0
11	Unclassified variations	10 (5%)

Conclusion: To improve the success rate of surgical procedures and to prevent complications, anatomical knowledge of liver's vascular structures and bile ducts is essential. Our study demonstrates the vascular and biliar variations of liver in our study population. This knowledge of these variations should help surgeons in planning the surgical procedures.

Translational Liver Other

P253 DIFFERENTIATION INTO HEPATOCYTE-LIKE CELLS TO STUDY THE LIVER PROTEOSTASIS ENVIRONMENT AFFECTING TRANSTHYRETIN

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Background: Familial amyloid polyneuropathy (FAP) is caused by mutations of transthyretin (*TTR*), which is primarily expressed in the liver. Phenotypic presentation of FAP is diverse and variation in symptoms is noticed among individuals. Recently, several genes of the protein quality control (PQC) were implicated to be associated with FAP. We used induced pluripotent stem cell-derived (iPSC) hepatocyte-like cells (HLCs) to study the gene expression of various PQC genes previously identified to have a role in FAP.
Methods/Materials: Hepatocyte-like cells were generated from FAP patients using iPSCs. Patients had different TTR mutations and showed different clinical phenotypes. Differentiation toward HLCs was achieved using a 3-step in-house protocol. The hepatic character of HLCs was assessed by functional analysis, gene expression profiling and immunostainings. qRT-PCR was used to analyse gene expression. Protein expression was determined by western blot and ELISA.
Results: Patient-specific HLCs showed high expression of hepatic markers. 45 genes related to PQC were analysed in HLCs, with 37 genes coding for chaperones that are predominantly located intracellularly and 8 located extracellularly. Out of these genes, seven showed significant alteration of mRNA levels in at least two FAP HLCs as compared to healthy controls. A high correlation (R>0.7) between the level of the PQC genes and *TTR*mRNA was observed in four out of the seven genes in FAP and healthy controls. Intriguingly, a knockdown of TTR resulted in the loss of this correlation for the FAP HLCs but not for healthy donor-derived HLCs.
Conclusion: The use of patient-specific iPSCs represents an excellent approach to assess the disease mechanisms of FAP in the genuine genetic background. Identification of PQC genes involved in chaperoning of variant TTR might illume the amyloidogenic pathways and pave the way to new therapeutic approaches for treatment of FAP.

Clinical Liver Rejection

P254 IMPACT OF TACROLIMUS INTRA-PATIENT VARIABILITY ON LONG-TERM OUTCOME AFTER LIVER TRANSPLANTATION

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Background: We aimed to evaluate the influence of tacrolimus (TAC) intra-patient variability (IPV) on graft loss and mortality after liver transplantation (LT).
Methods: 486 consecutive primary LT recipients (2008–2013) who received tacrolimus-based immunosuppression were recruited. Patients with death/TAC withdrawal early after LT were excluded. All measurements of TAC trough concentrations (TC) within the first 90 days after LT were recorded to calculate parameters of IPV: standard deviation (SD), variance (V) and coefficient of variation (CV). Cox's regression was used for long-term outcomes evaluation.
Results: Average recipient age was 52.1 (29% women). Predominant etiologies of liver cirrhosis were hepatitis C (34.8%) and alcohol (33.1%). Primary immunosuppression consisted in tacrolimus and corticosteroids ± antimetabolites for most patients (n = 429; 86.4%). Basiliximab was used in 37 patients (7.6%). Median follow-up after LT was 58 months (IQR 42–82). Graft survival at 3 and 5 years was 84.7% and 78.1% respectively. Mortality rates were 12.6% and 19.6% at 3 and 5 years respectively. Among 100 deaths at maximal follow-up (20.5%), 58 were potentially associated with over-immunosuppression (ie. due to infections, malignancy or cardiovascular events). A median of 20 measurements of TAC TC were recorded per patient within the first 90 days. TAC IPV had no impact on graft loss (SD: p = 0.61; V: p = 0.76; CV: p = 0.51), overall mortality (SD: p = 0.65; V: p = 0.81; CV: p = 0.43), or mortality potentially associated with over-immunosuppression (SD: p = 0.39; V: p = 0.78; CV: p = 0.70). However, a peak of TAC TC>14 ng/ml within the same period was an independent predictor of graft loss (RR = 1.59; p = 0.018), overall mortality (RR = 1.52; p = 0.046) and mortality potentially related to over-immunosuppression (RR = 1.75; p = 0.047).
Conclusions: Although the impact of TAC IPV on long-term outcome after LT seems limited, dose adjustments should be carefully performed to avoid peaks of TC>14 ng/ml

Clinical Liver Other

P255 SIX NATIONAL UNIVERSITY CONSORTIUM IN LIVER TRANSPLANT PROFESSIONALS TRAINING PROGRAM (SNUC-LT PROGRAM) IN JAPAN

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Background: How to train youth transplant surgeons is an important issue for each facility. However, there has been no public educational program for transplant surgeons in Japan. The aim of this program is to train youth professionals in liver transplantation through inter-institutional training curriculum.
Methods: We developed the first training program, called six national university consortium in liver transplant professionals training program (SNUC-LT program). This program was based on strong cooperation among six national universities consisting of Kumamoto, Okayama, Nagasaki, Kanazawa, Niigata, and Chiba University, assisted by other high-volume

centers in Japan. This program provided various courses for trainees to learn transplant theory and practice. Primary outcome was set to make transplant with capability to perform transplant operation safely.
Results: This program has started in 2014. In the first year, three surgeons were selected. They received lectures of transplant theory for at least 40 h, and transplant practice for at least 100 h. Concerning transplant theory, trainees learned the principles of transplantation and surgical techniques. They also attended the Basic Courses in Liver Transplantation organized by European Society for Organ Transplantation. Regarding transplant practice, trainees learned procedures of living and deceased liver transplantation at each institution, and performed transplantation as primary surgeons. Even trainees from low-volume centers could obtain enough chances of attending operations in other high-volume centers. After finishing three-year training, they were certified as talent-proven transplant surgeons.
Conclusion: Our multicenter program promotes youth surgeons to have more abundant knowledges, more extensive experiences, better surgical skills and smoother communication skills in the field of liver transplantation. Our program is the first educational program in Japan with strong professional supports.

Clinical Liver Other

P256 INDUCTION OF ARTIFICIAL ENDOCRINE PANCREAS IN LIVER TRANSPLANT RECIPIENT: PRELIMINARY EXPERIENCE WITH AN INSIGHTFUL MESSAGE

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Introduction: In liver transplant domain, surgeons should take care for not only surgical technique, but also perioperative management for better outcomes. We introduced some contrivances including artificial endocrine pancreas (STG-55, Nikkiso, Tokyo, Japan) for perioperative glycemic control from 2014.
Patients and Methods: Nine liver transplant recipients were treated with application of artificial endocrine pancreas with target blood glucose range of 80 to 110 mg/dl. We retrospectively analyzed clinical course of these recipients.
Results: The donors were 2 cadaver and 7 living donors. We applied artificial endocrine pancreas in 13 sessions, acute phase of perioperative period: 9 sessions, infectious episode: 2 sessions and induction of bolus steroid as pulse therapy: 2 sessions. Total dose of insulin and ideal blood sugar control rate after application of artificial endocrine pancreas were 114.8 IU/22.7%. In detail, acute phase of perioperative period, infectious episode and induction of bolus steroid, dose of insulin and control rate were 113.9 IU/23.7%, 165.7 IU/28.0% and 156.5 IU/20.2%, respectively. From these results, poor glycemic control in perioperative period was pointed out, instead of high dose insulin administration. No adverse event was experienced by application of artificial endocrine pancreas, including hypoglycemia (blood sugar < 70 mg/dl). Morbidity of these recipients above Clavien Dindo classification 3a were after bleeding in 3 cases and postoperative pancreatic fistula in 1 case. But no mortality and graft loss was experienced during this period.
Conclusion: In perioperative period of liver transplantation, severe impaired glucose tolerance of recipient was occurred. The results of this study suggest importance of therapeutic intervene for liver transplant recipients about severe insulin resistance.

Clinical Liver Other

P257 LONG-TERM RISK OF DE NOVO HEPATITIS B USING HBCAB POSITIVE LIVER GRAFTS IN ACCORDANCE TO THE GUIDELINES

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Background: HBcAb positive livers (cAbLg) can lead to de-novo HBV-hepatitis (DNHB) after liver transplantation (LT). The aim of our study is to describe the long-term rate of DNHB.
Methods/Materials: We retrospectively analysed our database from 01/2003 to 12/2014, sorting all pre-LT HBsAg negative recipients of cAbLg who survived at least 2 years. According to the literature, HBsAb and HBcAb positive patients (pts) did not received post-LT prophylaxis, while the others received single lamivudine (LAM).
Results: Data from a total of 75/490 (15%) pts receiving cAbLg and with a mean follow-up of 87 months (mo) were analysed. Their primary liver diseases were HCV (36/75; 48%), ETOH (14/75; 18%) and others (25/75; 33%). Only 9/75 (12%) pts were pre-LT both HBsAb and HBcAb positive. 5 (5/75; 7%) pts showed DNHB after a mean of 48 (19–84) mo. Their pre-LT HBV status was as follows: naïve (3), HBcAb positive (1), and anti-HBs and HBcAb positive (1). The first 4 pts were under LAM (1 patient self-discontinued LAM), and the other was under surveillance. In 3 pts a YMDD mutation was detected >53 mo post-LT. Anti-HBV therapy after DNHB onset consisted in: continue LAM (1), add-on tenofovir (TDF) (1), stop LAM and start TDF (2) or entecavir (1). At the last follow-up (a mean of 67 mo since DNHB) 3 pts are HBsAg positive under treatment and 2 pts showed HBsAg seroconvertion, becoming HBsAg negative and HBsAb positive (7 and 16 mo after DNHB, respectively). In both of them the antiviral therapy (TDF and LAM+TDF, respectively) was permanently discontinued after 42 and 31 mo, respectively, without problems.
Conclusions: In our series a prolonged time of post-LT observation was able to show that the risk of DNHB persists year by year. Particularly, under single LAM long-lasting prophylaxis we observed three cases of late YMDD mutant selection, an event never reported yet. In pre-LT HBsAg negative recipients of cAbLg both antiviral therapy and HBV surveillance need to be maintained lifelong.

Clinical Liver Other

P258 PRE-OPERATIVE ANAEMIA AND BLOOD TRANSFUSION IN LIVER TRANSPLANTATION

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Background: The utilisation of patient blood management (PBM) strategies have been instrumental in reducing the usage of blood products in liver transplantation. Pre-operative recognition and optimisation of anaemia, with IV iron supplementation pathways, should intuitively reduce the burden of transfusion in this population. However, pre-operative Hb has been a variable transfusion predictor in many studies. We audited the pattern of anaemia on the impact of transfusion within our own centre.
Methods: We undertook a retrospective case note review of 100 patients in 2015–16 undergoing liver transplantation. Information was not available for one patient. Data collected included intra-operative blood product usage and baseline haemoglobin (Hb) at start of transplant. The Mann-Whitney U test and a two-tailed Chi-square test were used for analysis.
Results:

Baseline Hb (g/l)	Median intraoperative RBC transfusion (IQR)	Number of 0, 1 or 2 RBC units transfusions (% of total transfusion)	Number of 3 or more RBC units transfusions (% of total transfusion)	Rate of transfusion-free transplants
Hb <90	2 (0–4)	2/20 (10%)	18/20 (90%)	0%
Hb 90–100	2 (0–4)	11/24 (46%)	13/24 (54%)	17%
Hb 100–110	2 (0–4)	10/16 (63%)	6/16 (37%)	25%
Hb >110	2 (0–4)	35/39 (90%)	4/39 (10%)	54%

The median Hb was 104 g/l (IQR 90–117). An association between baseline Hb and transfusion requirements was evident. The rate of transfusion-free transplants significantly increased as the baseline Hb increased ($p < 0.001$). All patients with an Hb<90 g/l required allogenic blood with 90% requiring three or more unit transfusions. In contrast, patients with an Hb>110 g/l had lower intra-operative allogenic transfusion requirements, 54% of transplants were RBC-free and only 10% required three or more RBC units. There was a significant difference ($p < 0.001$) in the baseline Hb of patients who required >6 RBC units ($n = 15$ median Hb 89 IQR 75–93) and those who did not require any transfusion ($n = 29$ median Hb 118 IQR 90–117) with a 9x increase in the risk of massive transfusion if baseline Hb was below the mean.
Conclusion: Within our population, transfusion requirements increased incrementally with anaemia. Pre-operative pathways aimed to support an Hb>110 g/l for patients on the transplant waiting list may reduce transfusion rates. Massive transfusion, although difficult to mitigate, was more common in those with an Hb<90 g/l.

Clinical Liver Other

P259

AB0-INCOMPATIBLE LIVER TRANSPLANTATION FOR HIGHT URGENCY PATIENTS: THE CZECH EXPERIENCE WITH 20 CASES

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Introduction: The AB0-incompatible liver transplantation (LTx) is alternative method which can be used in some of the fulminant liver failure (FLF) cases or primary graft non function (PNF), in some countries even for elective transplants. For overcoming the blood group barrier various techniques can be used.
Methods: Czech Republic is country with 10 million inhabitants and some 200 deceased donors per year. At our institution we performed some 127 LTx in 2016, our LTx program counts over 1200 LTx since 1995. As the number of decease donors per year is limited, with aim to increase the chance for survival, in some of the FLF or PNF cases we used the AB0i graft. In all except one case we used plasma-exchange, in one case non-specific immunoadsorption.
Results: In total 20 patients received AB0i liver graft, 3/20 received hemiliver, 2 patients as auxiliary graft (one left lobe, one whole liver), 3/20 died shortly after the LTx, none due to the incompatibility-related complications, 1/20 was re-transplanted 16. POD for acute humoral rejection. One of the auxiliary cases was re-transplanted with compatible graft because the native liver did not recover, 17/20 patients are alive with well functioning graft.
Conclusions: In a small country with limited number of liver grafts per year, the AB0i LTx is justified in FLF/PNF setting. Such technique gives reasonable chance for survival, the final outcome depends on severity of the FHF as well as primary diagnosis. Both apheretic as well as plasma-based techniques can be used with success to overcome the AB0i barrier. Both full size and hemiliver grafts can be used for transplant, one case was full split liver for two adults because two FHF patients occurred at the same time, both these two patients (husband and wife) are alive and well. One case was left hemiliver as auxiliary graft, the patient is well, already after graft removal. For majority of cases the AB0i graft is final destination not bridge to compatible LTx.

Clinical Liver Immunology

P260

THE COMBINATION THERAPY OF GLUTAMINE AND BCAA IMPROVE CYTOMEGALOVIRUS INFECTION IN THE PATIENT OF LIVING DONOR LIVER TRANSPLANTATION

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Background/purpose: Cytomegalovirus (CMV) was one of the important infectious complications in the living donor liver transplantation (LDLT). The atrophy of intestinal mucosa was reported to decrease the immune function. Glutamine is important to maintain the intestinal mucosa and it is produced at the muscle. We began the combination therapy of glutamine and BCAA in the LDLT expecting BCAA strengthen the muscles to increase the glutamine production. Increased glutamine maintain the intestinal mucosa and strengthen the immune function. The aim of this study was to investigate that the combination therapy of glutamine and BCAA improve the immune function by researching CMV infection.
Methods: Between 2009 and 2016, 20 patients underwent LDLT at Kanazawa University Hospital. The patients were divided 2 groups: those who received the combination therapy of glutamine and BCAA (Gln/BCAA group; $n = 6$) and those who did not (Control group; $n = 14$). We compared the clinical characters, operational factors, CMV antigenemia, and their immunosuppressants.
Results: There were no difference in clinical characters and operational factors in these two groups. As for positive rate of CMV antigenemia, there was no difference (Gln/BCAA group; 67%, Control group; 71%). Gln/BCAA group tended to be less number of positive cells of CMV antigenemia (Gln/BCAA group; 4.5, control group; 12). As for immunosuppressants, As for trough of tacrolimus and dose of mycophenolate mofetil, there no difference, while as for predonisolone Gln/BCAA group was administered at higher dose.
Conclusions: The combination therapy of glutamine and BCAA reduced CMV antigenemia. It might improve the immune function in LDLT patients.

Basic Liver Other

P261

COMPLICATIONS ASSOCIATED WITH LIVER TRASPLANTATION IN RECIPIENTS WITH BODY MASS INDEX ≥ 30 KG/M²

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Background: Obesity is a global epidemic which is increasing in a great number of countries, and it has become a major public health problem in Spain. Unfortunately, the impact of obesity on survival in liver transplantation (LT) recipients is underestimated and controversial.
Methods/Material: A single-center, observational-cohort, retrospective study was conducted in patients undergoing LT from January 2002 to December 2014 in obese recipients with Body Mass Index (BMI) >= 30Kg/m² divided according to the obesity categories. Central tendency, dispersion measures and absolute and relative frequencies were calculated in the statistical analysis. Patients were followed for >= 6 months. IBM SPSS Statistics 19.0 software was used for the analysis. $p < .05$ was considered significant.
Results: The results are shown in the Table 1. The comparative analysis did not show differences between groups on the complications appeared ($p > 0.05$).

	Obesity type I (BMI 30–34.9 kg/m²)	Obesity type II (BMI 35–39.9 kg/m²)	Obesity type III (BMI>=40 kg/m²)
N	94 (86.2%)	13 (11.9%)	2 (1.8%)
BILIARY COMPLICATIONS	19 (20.21%)	2 (18.2%)	0
Biliary leak	3 (3.19%)	1 (7.69%)	0
Early biliary stenosis	3 (3.19%)	0	0
Late biliary stenosis	13 (13.82%)	1 (7.69%)	0
ARTERIAL COMPLICATIONS	12 (12.76%)	1 (7.69%)	0
Early Arterial Thrombosis	6 (6.38%)	0	0
Late Arterial Thrombosis	5 (5.31%)	1 (7.69%)	
Early Arterial Stenosis	1 (1.06%)	0	0
Late Arterial Stenosis	0	0	0
VENOUS COMPLICATIONS	9 (9.57%)	1 (7.69%)	0
Early Portal Thrombosis	5 (5.31%)	0	0
Late Portal Thrombosis	1 (1.06%)	0	0
Early Portal Stenosis	3 (3.19%)	0	0
Late Portal Stenosis	0	1 (7.69%)	0
Early ISCHEMIC CHOLANGIOPATHY	3 (3.19%)	0	0
Late ISCHEMIC CHOLANGIOPATHY	5 (5.31%)	1 (7.69%)	0
Acute REJECTION	21 (22.34%)	5 (38.46%)	0
Chronic REJECTION	2 (2.13%)	0	0
"Post-reperfusion syndrome"	17 (18.08%)	0	0
RETRASPLANTATION	4 (4.25%)	1 (7.69%)	0
DEATH	38 (40.4%)	4 (30.8%)	2 (100%)

Conclusions: According to our experience, the type of obesity does not influence in the development of complications after liver transplant.

Clinical Liver Allocation

P262

PREVALENCE AND APPLICABILITY OF LIVER TRANSPLANTATION FOR PATIENTS WITH ACUTE ON CHRONIC LIVER FAILURE

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Liver transplantation (LT) for acute on chronic liver failure (ACLF) may become the only chance to survive when other therapeutic measures fail. However, to reach a LT in this condition is difficult given its high short term mortality. Prevalence rates were reported between 24 to 34%. This data has not been described in our population.

Aim: To evaluate the prevalence and outcome of ACLF patients (pts) listed in our LT unit. Patients and Methods: Adults pts with chronic liver disease that were consecutive listed for LT between Jan/15 and Jun/16 were included and divided in two groups: ACLF and Non-ACLF. Age, gender, etiology of liver disease, presence of hepatocellular carcinoma, comorbid conditions, Child-Pugh and MELD, and pre and post LT outcome were compared on both groups. The chronic liver failure (CLIF) Consortium Organ Failure Score was used in the diagnosis and grading of ACLF, and the CLIF Consortium ACLF score (CLIF-C ACLF) was used to estimate probability of dying.
Results: Prevalence of ACLF was 15%, 13 of 86 pts fulfilled ACLF criteria, 4 at the time of inclusion in the waiting list and 9 after 52 (13–360) days Precipitating events were bacterial infection (31%), gastrointestinal bleeding (15%), active alcoholism (8%), hemoperitoneum (8%) and non identified in the remaining 38%. Resolution of ACLF, access to LT or death for ACLF grade 1 ($n = 6$) were 33%/50%/17%, for grade 2 ($n = 2$) 0%, 50%, 100% and for grade 3 ($n = 5$) 0%, 0%, 100% respectively. The real waiting list mortality and the predicted by CLIF-C ACLF on ACLF pts at 28 days were 36%/42% and at 90 days 62%/56% (p = NS). Post-LT survival for non-ACLF/ACLF pts at 28, 90 and 180 days were 96%/75%, 92%/75% and 88%/75% (p = NS).
Conclusions: 1) Patients with ACLF grade 1 had the higher chance of resolution and/or transplantation 2) CLIF-C ACLF had a good correlation with our mortality 3) Post-LT survival was lower in pts with ACLF compared to non-ACLF, however, this difference was not statistically significant

Clinical Liver Histology

P263

PATHOLOGICAL EVALUATION OF THROMBOTIC MICROANGIOPATHY LIKE DISORDER AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background: Thrombotic microangiopathy (TMA) is a rare but life-threatening complication. TMA pathogenesis after living-donor liver transplantation (LDLT) is thought to be caused by release of unusually large von Willebrand factor multimers (UL-vWFMs) resulting from sinusoidal endothelial cell damage, and induction of platelet adhesion and aggregation. A decrease in a disintegrin-like domain and metalloproteinase with thrombospondin type 1 motifs-13 (ADAMTS-13) that cleave UL-vWFMs might cause excessive UL-vWFMs activity and result in platelet thrombus formation. However, the pathological analysis of TMA in the allograft has not been fully assessed.
Method: We evaluate the localization of CD42b as a platelet marker, vWF, and ADAMTS-13 in the allograft tissue of LDLT recipient with TMA-like disorder (TMALD) immunohistochemically. In addition, the clinical significance of ADAMTS-13 expression in allograft tissue is evaluated.
Result: CD42b expression was observed as platelet aggregates attached. VWF expression was observed mainly as deposited compact clusters, and ADAMTS-13 expression resembled distinct dots. Positive rate of vWF expression as deposited compact clusters in ADAMTS-13 positive group (55%) was higher than that of ADAMTS-13 negative positive group. Platelet counts after LDLT were significantly lower in ADATMTS-13 positive group than in ADAMTS-13 negative group. Total bilirubin and PT-INR were significantly higher in ADAMTS-13 positive group. In-hospital mortality and 1-year mortality rates were significantly higher in ADAMTS-13 positive group than in the ADAMTS-13 negative group.
Conclusion: We present LDLT recipient diagnosed with TMALD using blood tests, which showed the presence of TMA pathogenesis in the allograft. ADAMTS-13 might be consumed in the allograft tissue to cleave UL-vWFMs. ADAMTS-13 expression may be associated with sinusoidal endothelial cells damage and deterioration of graft function.

Basic Liver Other

P264

THE FIRST SUCCCESSFUL SPLIT LIVER TRANSPLANTATION IN OUR TRANSPLANTATION CENTER AND ANESTHETIC MANAGEMENT

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Introduction: Liver transplantation (LT) is the primary treatment for end-stage liver disease. Transplantation of the liver after bipartition (split LT (SLT)) is to increase the donor pool. We aimed to present the anesthetic management the first successful SLT in our center.
Case presentation: The LT from a cadaver was planned in two cases who were 8 and 57 years old diagnosed with Alagille syndrome (C1) and primary biliary cirrhosis (C2), respectively. In operating room, 5-channel ECG, pulse oximetry and radial artery cannulation were performed. On C1, right femoral artery cannulation and right internal jugular vein (RIJV) catheterization were performed post-intubation. Catheterization was performed on C2 via RIJV using triple-lumen 8.5F central venous catheter, 8.5F introducer and triple-lumen Edwards catheter. During 9.5-h-long left-lobe LT, C1 received infusions of 300 ml erythrocyte suspension (ES), 400 ml fresh frozen plasma (FFP), 5 ml/h human albumin (HA; 20%) and 1200 ml crystalloid. C2 received infusions of 5 units of ES, 7 units of FFP, 6xHA (20%) and 6000 ml crystalloid during 8-h-long right-lobe LT.
Conclusion: The SLT is performed generally on an adult and infant receiver. Liver bipartition increases the survival rate by shortening the recipient list when performed in compatible pediatric patients.

Clinical Liver Other

P265

RISK FACTORS FOR GRAFT DYSFUNCTION FOLLOWING LIVER TRANSPLANTATION

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Background and aim: Graft dysfunction after liver transplantation (LT) still occurs despite all improvements on the field of surgery and immunosuppression regimens. Until now, sparse data are available exploring potential risk factors associated with graft dysfunction in liver transplant recipients. We therefore conducted this retrospective study exploring risk factors for graft dysfunction following LT.
Material and methods: During the time period between 1986 and 2014, 500 patients received liver (LT) at the University hospital of Muenster. Further 12 patients were transplanted at other centers in Germany with post-LT follow-up at our center. Graft dysfunction was defined as re-cirrhosis, need for re-listing on LT waiting list, and graft associated death. Both donor and recipient related risk factors associated with graft dysfunction were statistically investigated using multivariate binary regression analysis.
Results: A total of 152 patients with complete follow-up were enrolled into this retrospective study. Binary logistic regression analysis showed male gender, hepatitis C (HCV), hepatocellular carcinoma (HCC), biliary complications and progressive fibrosis on liver biopsy following LT to be statistically significant recipient related risk factors for graft dysfunction after LT. Cytomegalic virus (CMV) mismatch with positive donor CMV status was identified to be a significant donor related risk factor for graft dysfunction following LT.
Conclusion: Our results show LT recipients transplanted for primary HCV and HCC as well as patients developing biliary complications and the constellation of positive CMV donor and CMV negative recipient to be at major risk for graft dysfunction. Therefore, careful selection of donor and recipient with regard to CMV match prior to LT is of great importance. Furthermore, LT recipients should be carefully monitored and closely followed up after LT with respect to recurrence of HCC, HCV and the development of biliary disorders.

Clinical Liver Other

P266

A CASE OF SUCCESSFUL LIVER TRANSPLANTATION AS A TREATMENT OF VASCULOBILIARY INJURY AFTER CHOLECYSTECTOMY, COMPLICATED BY CHOLANGITIS, HEPATIC FAILURE AND SEPSIS

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Introduction: The frequency of the vasculobiliary injury following laparoscopic cholecystectomy is not more than 0.3%. In the presence of hepatic failure development this complication leads to mortality in 50–70% cases. In this situation only liver transplantation (LTx) may rescue the patient but the presence of sepsis is contraindication to LTx procedure. Here we describe a case of successful liver transplantation as a treatment of vasculobiliary injury after cholecystectomy, complicated by cholangitis, hepatic failure and sepsis.
Case Description: A patient S., aged 59, was transferred from a regional hospital to the ICU of Republican scientifical and practical center for organ and tissue transplantation (Minsk, Belarus) in a critical state. Her anamnesis data, clinical picture and additional laboratory and instrumental analyses showed vascularbiliar damage, ischemic cholangiopathy with necrosis of intrahepatic

biliary arbor after surgical treatment of acute calcular cholecystitis (cholecystectomy), cholangitis with multiple bilobar hepatic abscesses, multiorgan failure and sepsis. The patient was listed on LTx as it was decided to be the only possible way of treatment. Before LTx the patient underwent plasmapheresis (6 sessions), intensive care, as the result sterile blood culture was gained. After 14 days of her stay in our center the DBD LTx was performed. Postoperative period was complicated by wound infection and peritonitis (as expected) treated by planned relaparotomies, plasmapheresis, hemosorption with the usage of antilipopolysaccharidic sorbent. On the 28th postoperative day she was discharged for out-patient treatment. Immunosuppressive treatment was only steroids (in clinic), at the outpatient department Tacrolimus-based scheme was introduced. 6 months after LTx patient is doing well.

Translational Liver Other

P267

SURVIVAL PREDICTION OF PATIENTS AFTER LIVER TRANSPLANTATION IN SHIRAZ ORGAN TRANSPLANTATION CENTER USING MACHINE LEARNING

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Background: This study aimed to identify predictive factors one-year survival prediction of liver transplant patients by machine learning techniques.
Methods: retrospective cross-sectional study conducted. All patients who received liver for the first time from March 2011 to March 2014 in Shiraz Organ Transplant Center; Shiraz, Iran included. We include patients older than 18-year-old and who received the organ from a deceased donor. Patients who died due to non-organ transplantation complication or patients who their records had not sufficient quality excluded. We followed up patients for a year exactly. Dataset randomly assigned to model building set (n = 628) or validation set (n = 266). A three step machine learning method was performed on dataset with 55 variables. In first step, we analyzed data using F statistics, likelihood ratio and Pearson's chi-square. In step two, data were analyzed using multilayer perceptron, C5.0 decision tree, Bayesian networks, support vector machine, and K-nearest neighbors. In step three, a well performed technique that had high area under the ROC curve and sensitivity applied on the dataset used for model building.
Results: The subjects after excluding were 894 (mean $\pm$ SD age 41.5 $\pm$ 13.3) with 87% survival rate. The final model predicted patient survival based on 18 factors that identified in step two of analysis. Post-transplantation graft failure, malignancy and its type, vascular, acute renal and aspergillosis infection, donor cardiac arrest in ICU, recipient received packed cell units and MELD with 0.465, 0.118, 0.074, 0.027, 0.099, 0.023, 0.024, 0.017 and 0.016 importance values, respectively were identified as patient survival predictors. The area under the ROC curve, accuracy and sensitivity of the final model were 0.94, 0.94 and 0.71, respectively.
Conclusion: Other predictors such as donor risk factors, post-transplantation complications and surgery-related factors may are more importance predictors of patient

Clinical Liver Ischemia-reperfusion and preservation

P268

PREDICTIVE SCORE FOR ACUTE KIDNEY INJURY IN DCD VS. DBD LIVER TRANSPLANTATION. UK SINGLE CENTRE STUDY

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Background: Acute kidney injury (AKI) is a major cause of mortality after liver transplantation (LT). Furthermore, liver transplant recipients with post-operative AKI are more likely to develop chronic kidney disease, compared to the transplant recipients without AKI. Liver transplantation from Donation after Circulatory Death (DCD) is a model with increased occurrence of AKI compared to Donation after Brain Death (DBD). This is likely to be related to a more severe ischaemic reperfusion injury sustained by the graft. Aim of the study is to identify a predictive score for AKI in DCD and DBD liver transplant.
Methods: Retrospective single-centre study of 1150 patients undergone LT at Queen Elizabeth Hospital Birmingham from 2007 to 2014. Exclusion criteria: urgent transplantation (=66), combined with other organs (=16), living donor liver transplants (=7) and previous renal (=1) grafting. We considered: renal function pre-transplant and daily within one week post-transplant, characteristics of recipient and donor, graft variables and indicators of initial graft function. AKI was defined and classified on the basis of KDIGO Guidelines (2012).
Results: 1060 LT patients (247 DCD and 813 DBD) were included in the analysis. Predictive variables of AKI development in DCD patients were donor height, warm ischaemia time, plasma transfusions during transplant, recipient BMI and diabetes. We performed internal validation of the equation using bootstrapping methods: this model correctly classified the 67.4–81.7% of patients with sensitivity of 77.9–91.6% and specificity of 27.6–73.5%. Variables in the DBD equation included MELD, plasma transfusions during transplant, donor age and recipient BMI. This model correctly classified the 61.1%-69.4% of patients with sensitivity of 69.7–86.6% and specificity of 30.9–58.9%.
Conclusion: We produced risk prediction equations that may be used to improve our understanding of the risk of AKI after DCD and DBD liver transplantation.

Clinical Liver Other

P269

ACUTE LIVER FAILURE (ALF) CAUSED BY ACETAMINOPHEN OVERDOSE. SOCIAL PROBLEM WITH AVAILABILITY OF THE MEDICATION WITHOUT PRESCRIPTION

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Background: Acetaminofen hepatotoxicity remains a global issue. The availability of medication without prescription, so-called over the counter (OTC), and the rapid development of health consciousness of Poles is associated with limited access to medical care. This causes patients to recognize their own disease, and begin self-treatment. The aim of this study is to provide solutions such as pharmacologically treatment, albumin dialysis and liver transplantation, which represents less than 1% of all transplantations at Department of General, Transplant and Liver Surgery in Warsaw.
Material and Methods: In 2002–2016, 51 patients were hospitalized due to acute acetaminophen poisoning: 26 female and 25 male patients aged between 17–59 years. Patients were treated in the surgical intensive care unit, where their liver parameters and renal function were continuously monitored. If there was no improvement in the liver function, patients underwent albumin dialysis with the Prometheus system and were qualified for liver transplantation (LTx).
Results: 37 patients were treated pharmacologically, 14 underwent LTx. Overall, 11 out of 51 patients had 26 albumin dialysis in total, 7 out of dialysed patients underwent LTx ; 7 patients died – 2 post-transplant and 5 pre-transplant, waiting for a liver transplantation.
Conclusions: Acetaminophen is the cause of many non-intensional poisonings resulting from the lack of public awareness about toxic interactions with alcohol, and suicide attempts. Acetami.

P270

OUR ONE-YEAR EXPERIENCE FOR LIVER TRANSPLANTION

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Background: To demonstrate our experience about liver transplantation during 2016.
Material and method: In this study 48 pediatric and adult cases who had living and cadaveric liver transplantation in our organ transplantation center during 2016 were evaluated. The demographics, indications, technical data, complications, the hospital stay lengths, time of follow-up and prognosis were assessed, retrospectively.
Results: The patients (male = female) average (±standard deviation) age was 40.6 (±20.1). HBV-related and cryptogenic cirrhosis were the most frequent indications. The count of cadaveric and living donors were 19 and 29, respectively. The mean (±SD) hospital stay length and follow-up time were 23.5 (±20.7) days and 5.4 (±3.7) months, respectively. The portal vein thrombosis was seen in one patient (%2.1) at the fourth postoperative hour and the decreased flow of hepatic artery was seen in one (%2.1) patient in the third postoperative month. The biliary complication rate was %16.6 and the survival rate was calculated % 87.5.
Conclusions: Living and cadaveric donor liver transplantations are performed effectively in our organ transplantation center.

P271

QUALITY OF LIFE AFTER LIVER TRANSPLANTATION: A SINGLE-CENTER EXPERIENCE IN GREECE

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Introduction: Recording of postoperative complications after liver transplantation in Greece and study of the quality of life of these patients over a period of more than 7 years after liver transplantation.
Material and Methods: Retrospective study of 32 patients who underwent orthotopic liver transplantation (OLTx) in Laiko Hospital of Athens during a period of three years. For the determination of the related quality of life we used the protocol SF36, which is filled through a telephone interview with the patients.
Results: During the recording of the quality of life of patients after liver transplantation found that the score on the "Role Physical" dimension was significantly lower in the general population and patients said they had better "Mental Health".
Conclusion: Beyond survival, OLTx patients should be taken into account and the expected quality of life, so that the patient receives better information on how the disease treatment and subsequent life after liver transplantation.

Clinical Lung Donation and donor types

P272

INFLUENCE OF DONOR LUNG PNEUMOPROTEIN EXPRESSION ON THE DEVELOPMENT OF PRIMARY GRAFT DYSFUNCTION AFTER LUNG TRANSPLANTATION: A PILOT STUDY

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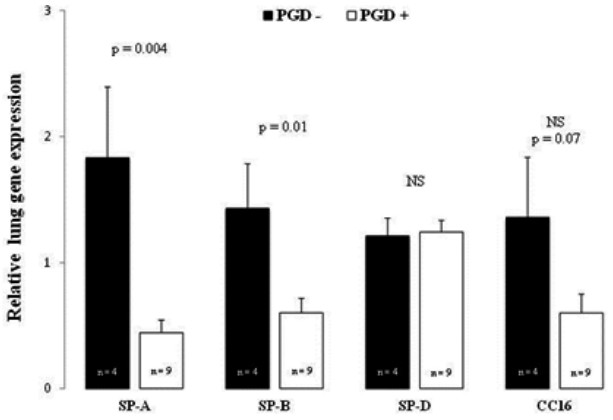
Introduction: Primary graft dysfunction (PGD) is a major cause of early mortality in patients after lung transplantation. We measured the rate of pneumoproteins in the organ donor, and we observed the occurrence of lung primary graft dysfunction in the recipient. The co-relation between these two parameters was evaluated.
Methods: In this pilot study, we prospectively collected blood samples and lung biopsies in thirteen donors at the time of recovery of organs before preservation. Gene expression of SP-A, SP-B, SP-D and CC16 was evaluated by real-time quantitative PCR. Pneumoproteins plasma levels were evaluated by ELISA. Post-transplant assessments included hemodynamic, arterial blood gas measurements and radiographic evaluation to determine PGD and lung biopsies.
Results: Nine of the thirteen recipients (69%) developed lung infiltrates and 4 (31%) developed PGD at either stages 2 or 3. SP-A and SP-B expressions were dramatically reduced in lung allografts of these patients, while lung expression of SP-D and CC16 remained unchanged. Plasma levels of SP-A, -B, -D and CC16 did not differ.
Conclusion: Primary graft dysfunction may be initiated in the donor. Lung allografts with low lung SP-A and SP-B gene expression prior to implantation are associated with increased incidence of lung infiltrates after transplantation.



Clinical Heart Cardiovascular complications

P273

PREDICTIVE FACTORS FOR SEVERE PRIMARY HEART TRANSPLANT DYSFUNCTION REQUIRING VENO-ARTERIAL MEMBRANE OXYGENATION (VA ECMO)

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Introduction: Primary graft dysfunction (PGD) is a serious complication after heart transplant. The aim of this retrospective single center study was to identify potential predictive factors for PGD and hemodynamic parameters associated with severe PGD.
Patients and Methods: One-hundred and nineteen heart transplantation were performed between 2008 and 2015. Severe PGD was defined as patients requiring mechanical support with VA ECMO. Variables concerning donors, recipients and the perioperative period (including hemodynamic parameters recorded in the first hours after ICU admission) were collected. Mortality of patients was compared between severe PGD and the other transplant recipients (no PGD or moderate PGD). Mortality and morbidity were also compared in the following sub-groups: early VA ECMO (within the operating theater) vs delayed VA ECMO (in ICU setting).
Results: The incidence of severe PGD was 22% ($n = 26$). Independent factors associated with severe PGD were: recipient elevated Vascular Pulmonary Resistances [OR 1.03, (1.012–1.053)] a smaller donors height [OR 0.888, (0.799–0.967)], and a longer warm ischemia time [OR 1.03, (1.001–1.08)]. A right atrial pressure (RAP) exceeding 21 mmHg, a difference between RAP and left atrial pressure (LAP) (RAP-LAP) > 5 mmHg and a cardiac index < 2.5 l/min/m² at ICU admission were associated with severe PGD. Mortality at 1 month was higher in case of severe PGD compared to other transplant recipients (30.8% versus 2.2% $p < 0.001$). Survival was similar in case of early ($n = 11$) versus delayed VA ECMO ($n = 15$), but ICU neuromyopathy and renal replacement therapy were more frequent in case of delayed VA ECMO (respectively 67% vs 18%, and 100% vs 64%, $p = 0.02$).
Conclusion: This study suggested that usual hemodynamic data assessed at the end of surgery may identify severe PGD requiring VA ECMO, leading to decision for early implantation. This might result in reduced morbidity compared to delayed implantation.

Clinical Lung Cardiovascular complications

P274

USE OF CONTINUOUS HEMODIAFILTRATION AFTER LUNG TRANSPLANTATION FOR PULMONARY HYPERTENSION

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Background & Objective: Pulmonary hypertension (PH) is one of major diseases for lung transplantation (LTx), however the mortality of PH was very high. We often apply mechanical life supports such as continuous hemodiafiltration (CHDF) after LTx in order to rescue the recipients. The risk factors of CHDF induction after LTx for PH are unclear, so the purpose of this study is to investigate the risk factors for CHDF induction after LTx for PH.
Materials & Methods: Twenty one cases (25%) of 85 LTx in our program were for PH. We analyzed the data of the cases in pre and post LTx by statistical methods.
Results: Primary diseases of the 21 recipients included 16 idiopathic pulmonary arterial hypertension, 4 Eisenmenger's syndrome, one PVOD and one pulmonary hypertension with collagen disease. Thirteen cases were treated with CHDF (CHDF group), and the other 8 did not use CHDF (non-CHDF group) after LTx. The average period until CHDF induction was 3.0 ± 0.7 (mean $\pm$ SEM) days, and the average continuance of CHDF was 34.3 ± 4.7 days. There was no difference in renal function and left ventricular ejection fraction before LTx between these two groups. However, mean pulmonary arterial pressure before LTx was significantly high in CHDF group compared to non-CHDF group (72.3 ± 4.4 vs. 56.1 ± 4.4 mmHg, $p < 0.05$, respectively). All recipient underwent lung transplant on cardiopulmonary bypass. There were no differences in operating time and volume of blood loss, although the average ischemic time was longer in CHDF group compared to non-CHDF group (697.5 ± 29.9 vs. 610 ± 33.2 min, $p < 0.05$, respectively). PGD score in 24 h of CHDF group tends to be high compared to non-CHDF group. All cases in CHDF group were weaned from hemodialysis.
Conclusion: CHDF after LTx was useful to reduce lung edema due to long ischemic time and preload due to decrease the circulating blood volume, therefore severe pulmonary hypertension and graft dysfunction are risk factors for induction of CHDF after LTx.

Clinical Lung Surgical technique

P275

EX VIVO LUNG PERFUSION: ESTABLISHMENT AND OPERATIONALIZATION IN IRAN

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Objectives: Although the number of lung transplants is limited because of general shortage of organ donors, ex vivo lung perfusion is a novel method with 2 main benefits, including better evaluation of lung potential and recovery of injured lungs. The main aim of this study was to establish and operationalize ex vivo lung perfusion as the first experience in Iran.
Materials and Methods: This was a prospective operational research study on 5 cases, including 1 pig from Vienna Medical University and 4 patients from Masih Daneshvari Hospital. All organ donations from brain dead donors were evaluated according to lung transplant or ex vivo lung perfusion criteria from May 2013 to July 2015 in Tehran, Iran. 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, their lungs were included for ex vivo lung perfusion.
Results: A successful trend in the difference between the pulmonary arterial Po2 and the left atrial Po2 was observed, as well as an increasing pattern in other functional parameters, including dynamic lung compliance and a decreasing trend in pulmonary vascular resistance.
Conclusions: These initial trials indicate that ex vivo lung perfusion can lead to remarkable progress in lung transplant in Iran. They also provide several important pieces of guidance for successful ex vivo lung perfusion, including the necessity of following standard lung retrieval procedures and monitoring temperature and pressure precisely. The development of novel methods can provide opportunities for further research studies on lungs of deceased donors and lead to undiscovered findings. By keeping this science up to date in Iran and developing such new and creative methods, we can reveal effective strategies to promote the quality of donor lungs to support patients on transplant wait lists.
Keywords: Brain dead donor, Lung transplant, Organ preservation

Basic Heart Other

P276

INVESTIGATION OF SELF-CARE AGENCY AND AFFECTING FACTORS IN HEART TRANSPLANT PATIENTS

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Aim: The research was performed to determine self-care agency and affecting factors of those heart transplant patients.
Methods: The survey was descriptive. Heart transplanted patients in a university hospital were constituted the universe of the study. The participants were 50 people. Data were gained both by using a questionnaire form for determining demographic properties and a self-care agency scale. For statistical analysis Kruskal-Wallis test and Mann-Whitney U test were used.
Results: Self-care agency score was found to be as 97.10 ± 11.31 in heart transplanted patients. It was detected that age, sexuality, marital status, education, transplantation time, accompanied person who helps for patient, cardiac assist device before heart transplantation and receiving information before transplantation did not affect self-care agency, but financial income affects.
Conclusion: Self-care agency score was found to be low in heart transplant patients. Other factors except financial income had no influence on self-care agency. It can be suggested that qualitative researches should be performed to find out affecting factors on self-care agency among heart transplant patients.
Keywords: heart transplant, self care, self care agency

Clinical Heart Other

P277

CHRONIC PAIN 1 AND 4 YEARS AFTER HEART TRANSPLANTATION – A MULTICENTRE STUDY

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Introduction: Self-management is considered the gold standard for long-term follow-up after thoracic transplantation. Pain might be a possible obstacle that limits self-management by means of decreased ability to manage physical and psychosocial consequences inherent in being a heart recipient.
Methods: In a total 35 heart recipients, 23 men and 12 women, that were due for their yearly follow-up one ($n = 20$) and four ($n = 15$) years after heart transplantation were included. We used the Pain-O-Meter (POM), which provides information about pain intensity, quality, location and duration. In addition personal models of explanation of pain were explored as well as consequences in everyday life.
Results: Pain is prevalent after heart transplantation, 55 % ($n = 11$), five men and six women, after one year and 40 % ($n = 6$), four men and two women after four years. The median pain intensity measured by POM-VAS was 9.5 (range 0.5–19) after one year and 7.25 (range 2.5–13.5) after four years. The median POM-words was 13 (range 3–91) after one year and 25.5 (range 4–76) after four years suggesting a strong affective component. The median PIS was 28.5 (range 4.5–110) after one year and 28.25 (range 8.5–84.5) after four years. The three most prevalent pain locations were feet, back and legs. The pain were mainly described as dull or stabbing. A majority of the heart recipients do not know the reason behind the pain or believe it is caused by side-effects of the medication.
Conclusion: The affective component is more pronounced than the sensory or intensity aspect of pain, with a wide range of scores in all pain areas. One reason behind the strong affective pain experience might be the uncertainty regarding what causes the pain.

Translational Heart Immunology

P278 DISTRIBUTION OF HLA ANTIGENS IN PATIENTS WITH DILATED CARDIOMYOPATHY

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Background: Dilated cardiomyopathy (DCM) is a myocardial disease characterised by the development of dilation of the heart cavities, with the occurrence of systolic dysfunction. This disease associated with more than 20 loci and genes due to its genetic heterogeneity. Associations between HLA genes and the development of DCM have never been studied in Kazakhstan. Hence, it is important to study the characteristics of HLA alleles and conduct research to study the connection between the development of this disease and HLA genes. Therefore, the aim of this study was to investigate the rate of frequency of HLA class I (HLA-A, B) and class II (HLA-DRB1*) genes among healthy blood donors and patients with dilated cardiomyopathy, residing in Kazakhstan.
Methods/Materials: The study enrolled 3850 participants: 3621 healthy blood donors considered as a control group (of them HLA-A – 3621; B - 3607; Cw - 3582; DRB1-3595; DQB1-3576) and 229 patients with DCM (of them HLA-A - 229; B – 229; DRB1 – 206). HLA-typing (HLA-A, B, C, DRB1, DQB1) for both groups was performed by a molecular genetic method using a set from Protrans (Protrans, Germany).
Results: The analysis revealed a distribution profile of HLA system in patients with heart failure in the Kazakh population. The alleles positively associated with the development of heart failure were: HLA-A*34, 66*; HLA-B*58; HLA-DRB1*12. In addition, the following HLA-A*03, *25, *32**;** HLA-B*42, *59**;** HLA- DRB1*01,*15 alleles might have a protective role in the development of cardiac abnormalities.
Conclusion: In conclusion, HLA-A*34, 66 *; HLA-B*58; HLA-DRB1*12 alleles associated with the development of heart failure, whereas HLA-A*03, *25, *32**;** HLA-B*42, *59**;** HLA- DRB1*01,*15 alleles might be associated with protection against cardiac abnormalities. Furthermore, this study adds useful information to study a variety of diseases associated with HLA genes including dilated cardiomyopathy and other cardiac abnormalities.

Clinical Lung Infection

P279 CMV: REACTIVATION AND PREMATURELY DISCONTINUED PROPHYLAXIS

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Cytomegalovirus (CMV) prophylaxis is one of the most controversial and challenging aspect in the management of patients underwent lung transplantation (LuTx). The aim of this study was to report the experience in terms of incidence of early discontinuation of CMV prophylaxis and of CMV reactivation in our LuTx center.

A retrospective study was conducted including all LuTx recipients from January 2009 to December 2015. Clinical and virologic data were collected in a dedicated database. Two groups of patients were identified according to CMV reactivation or not: Group A and B, respectively.

From 2009 to 2015, a total of 115 LuTx were performed. Table 1 shows our results. The main reason for early discontinuation was leukopenia and anemia. Forty-height out of 115 patients were affected by at least one episode of CMV reactivation; of those, 8 were diagnosed with CMV disease. Median time of CMV reactivation was 183 (43; 642) days from LuTx. Among those who underwent reactivation, 40 (83%) prematurely discontinued prophylaxis: more specifically, CMV viremia occurred in 36% of the cases within the first 30 days from prophylaxis discontinuation, in 36% between 30 and 90 days and the rest after 90 days. Finally, CMV reactivation was associated with a higher risk of ALAD.

Our data confirm the difficulty of CMV management after LuTx. We have patients who reactivated during prophylaxis and subjects who did not reactivate CMV even if prophylaxis was early discontinued. Such results support the urgent need of new diagnostic tools and prophylactic strategies.

	Population = 115 pts (%)	Group A = 48 pts (%)	Group B = 67 pts (%)	p
D-/R-	4 (3)	0 (0)	4 (6)	n.s.
D+/R+	58 (51)	27 (57)	31 (47)	n.s.
D–/R+	19 (17)	5 (10)	14 (21)	n.s.
D+/R–	18 (16)	11 (23)	7 (11)	n.s.
D (not available) /R+	9 (8)	3 (6)	6 (9)	n.s.
D (not available) /R–	6 (5)	2 (4)	4 (6)	n.s.
CMV prophylaxis, premature discontinuation	61 (53)	40 (83)	21 (31)	0.001
Indication: CF|IPF|ILD, other than IPF|CTD|COPD|Other	53 (46)|27 (23)|13 (11)|11 (10)|7 (6)|9 (8)	14 (29)|14 (29)|7 (15)|5 (10)|6 (13)|2 (4)	33 (40)|13 (20)|6 (9)|6 (9)|1 (1)|7 (12)	n.s.
Everolimus	23 (20)	9 (19)	14 (20)	n.s.
ALAD	30 (26)	18 (38)	12 (18)	0.018
CLAD	22 (19)	10 (21)	12 (18)	n.s.

Table 1. D, donor; R, recipient; CF, cystic fibrosis; IPF, idiopathic pulmonary fibrosis; ILD, interstitial lung disease; CTD, connective tissue disease; COPD, chronic obstructive pulmonary disease; ALAD, acute lung allograft dysfunction; CLAD, chronic lung allograft dysfunction.

Clinical Heart Ischemia-reperfusion and preservation

P280 EX-VIVO PERFUSION OF THE DONOR HEART FOR CLINICAL TRANSPLANTATION: A SINGLE CENTER PRELIMINARY EXPERIENCE

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Background: The standard technique for donor heart preservation consists in cold static storage (CSS). The "Organ Care System (OCS)- Heart" is the only clinical platform for ex-vivo perfusion of human donor hearts. The system preserves the heart in a warm beating state.
Methods: From 2015 to 2016, 6 patients received a donor heart preserved with the OCS-Heart system. Mean recipient and donor age was 48.2 and 39.8 years. Ischemic, cardiopulmonary (CPB) bypass time and day-0/day-1 CK-MB levels (TM group) were compared with those of 95 patients transplanted with standard CSS from 2009 to 2012 (ST group). The OCS was used for expected long ischemic times or for adverse donor (cardiac arrest)/recipient features (infected LVAD, ECMO and unusual anatomy). HTx was performed in "elective" conditions in 1 case.
Results: Technical complications did not occur. Mean out of the body perfusion time was 282 min. Mean ischemic and CPB time was 117.8 and 246.8 (TM group) vs 187.1 and 202.3 in the ST group ($p = 0.009$ and 0.70). The OCS allowed to spare 153 min of estimated ischemia. D0/D1 CK-MB was 112.2 and 35.2 vs 125.2 and 47.9 ng/ml in the ST group ($p = 0.85$ and 0.48). ICU stay was 22.5 days. Two patients died for hemorrhagic shock (LVAD recipient, 1 day after HTX) and for multiorgan failure (58 days). One patient developed a severe right failure, treated by mechanical assistance, weaned after 8 days. Four recipients are alive at a mean FU of 12 months.
Conclusions: Heart transplantation using donor hearts preserved with the "OCS Heart" is technically safe. It allows a "real time" control of hemodynamic and metabolic parameters and permits a significant reduction of the ischemic time. A trend toward reduction of myocardial damage was observed when compared to CSS. More cases are needed to evaluate the real impact on the clinical outcomes, particularly in cases of unfavourable donor-recipient combination. A potential expansion of donors' pool is predictable with this innovative system.

Translational Lung Other

P281

THE RELATIONSHIP BETWEEN EMOTIONAL EXPERIENCE AND EVENTS BEFORE LUNG TRANSPLANTATION: A CHRONOLOGICAL PRESENTATION

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Background: During pre-transplantation waiting-time, lung patients experience the negative consequences of illness evolution. Psychological balance is often described in stressing negative emotions and psychological fragility: anxiety, depression and distress are psychological dimensions, which are more frequently studied.
Methods: The aim of this study was to explore the illness experience of 15 patients awaiting lung transplantation (LTx). Semi-structured interviews were proposed from registration on the waiting-list (T1), 6, 12 and 24 months after transplantation. Qualitative analyses of the transcribed interviews were performed: results at T1 are presented, focusing on the emotion-related discourse.
Results: At T1 patients experience diversified emotions: primary and secondary emotions, emotions associated with evaluation processes, emotional-cognitive focused coping strategies, personal characteristics or qualities, emotional states related to physical status. These different categories of emotions can be found in positive, negative or neutral valences, and refer to situational, relational, representational, and existential contexts.

This presentation focuses on situational context at T1, and proposes a chronological description of some important events, with their emotion-related categories. These events are: 1) the evolution of illness, 2) the diagnosis, 3) the proposition of LTx, 4) the decision of LTx, 5) the pre-transplantation evaluation, 6) the registration on the waiting-list, 7) the waiting-time, 8) the call for LTx, 9) surgery, 10) the post-transplantation life.
Conclusion: At T1, patients experience a very rich array of emotions, which are not only negative. The balance between emotions/valence/events translates the stakes patients are confronted to, and how these experiences influence the tonality of their psychological status: understanding the emotional experience of the patients in different important situations before Ltx can help defining strategies for support.

Basic Artificial Organ Other

P282

QUALITY OF LIFE AMONG PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICE: COMPARISON BETWEEN TWO SOCIETIES

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Purpose: The objective of this study is to evaluate and compare quality of life (QOL) after left ventricular assist device (LVAD) in two center from Turkey and Germany.
Method: This cross-sectional study was carried out between January and October 2016. Participants comprised 60 LVAD patients, 40 from a center in Germany and 20 from a center in Turkey, having completed the third month of follow-up after implantation and aged 18 years and over. An information sheet was used to gather sociodemographic and medical information data. "Euro Quality of Life-5D Questionnaire (EQ-5D)" and "Kansas City Cardiomyopathy Questionnaire-12 (KCCQ-12)" was used to evaluate QOL. Patients health status pre- and post-LVAD was assessed by a visual analog scale. Questionnaires were administered by the same person in Germany and Turkey.
Results: According to the results of the VAS before and after LVAD, it seems an increase in the quality of life in both societies. KCCQ mean scores were significantly higher in the Turkish society ($p < 0.05$). EQ-Visual Analog Scale scores was 62.38% and 70.50% in Germany and Turkey, respectively. According to the EQ-5D questionnaire results, the LVAD patients have some problems related usual activities was found 75% and 57.5% in Turkey and Germany, respectively. 65% of the LVAD patients from Turkey have some problems related self care and 37.5% of the LVAD patients from Germany have the same problem. It was found that while major of the patients from German (%65) continues to work after LVAD implantation, none of the patients from Turkey return to work ($p < 0.05$).
Conclusion: There are some differences on the QOL based on cultural differences and the perception of QOL may be different according to the societies. To improve the QOL of patients with LVAD, cultural differences and life-styles related to society characteristics should consider.

Basic Lung Donation and donor types

P283

ESTRADIOL TREATMENT REDUCES LUNG INFLAMMATION INDUCED BY BRAIN DEATH IN FEMALE RATS

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Background: Studies evidenced brain death (BD) impact on organ viability. Studies highlight greater risk in lung transplants from women donors to male recipients. Also previous results indicated a more relevant lung inflammation in BD female rats, combined with acute reduction of female sex hormones. Our aim was to study the effects of 17β-estradiol (E2) treatment on lung inflammatory response in female rats submitted to BD.
Methods: Female Wistar rats were submitted to BD using intracranial balloon rapid inflation and maintained for 6 h. Sham-operated (S) rats were used as controls. Groups of rats were treated with E2 (50 μg/ml i.v. 2 ml/h immediately after BD induction (E6), or starting after 3 h of BD (E3)). Bronchoalveolar lavage (BAL) was performed and lung vascular permeability (LVP) was assessed by Evans blue dye extravasation method. BAL and white blood cell (WBC) counts were analyzed. VEGF, IL-1β and IL-10 were quantified in lung tissue homogenates.
Results: BD rats presented increased leukocyte number in BAL relative to sham and both E2 treatments were able to reduce cell counts (S: 17.6 ± 2.5; BD: 36.6 ± 6.4: E6: 13.6 ± 2.8; E3: $17.8 \pm 4.7 \times 10^5$ cell/ml; $p = 0.0044$). WBCs increased 6 h after BD and E2 prevented this increase, affecting mainly granulocytes. On the other hand, E2 did not altered the increased LVP induced by BD (S: 81.3 ± 8.3; BD: 254.9 ± 70.4; E6: 162.7 ± 23.3; E3: 230.8 ± 69.5 μg/mg dry weight; $p = 0.04$). Also lung VEGF increased after BD without E2 modulation (S: 227.8 ± 25.7; BD: 480.6 ± 53.4; E6: 390.4 ± 52.2; E3: 470.4 ± 83 pg/ml/g, $p = 0.04$). Conversely, lung IL-1β and IL-10 were reduced by E2 (IL-1β - S: 651.5 ± 276; BD: 1.979 ± 233; E6: 443 ± 104.4; E3: 762.4 ± 193.9 pg/ml/g; $p = 0.0005$; IL-10 - S: 42.4 ± 19.7; BD: 113 ± 13.6; E6: 35.7 ± 11.3; E3: 59.4 ± 12.2 pg/ml/g; $p = 0.006$).
Conclusion: Our results indicate that E2 treatment after BD reduced lung inflammation by modulating leukocyte traffic and local cytokine release.

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Clinical Heart Immunosuppressive agents

P284

BELATACEPT AS PRIMARY IMMUNOSUPPRESSION IN HEART TRANSPLANT PATIENTS BARRANCO V, RODRIGUEZ S, POY C, FERRER J, PEREYRA R, VAZQUEZ MC, SGROSSO JL DPTO TRASPLANTES. SANATORIO PARQUE. ROSARIO.ARGENTINA

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Introduction: Calcineurin inhibitors are nephrotoxic and have wide drug interaction, which may be a major problem in the management of transplant patients who use them. Belatacept is a non-nephrotoxic immunosuppressant whose function is the selective co-stimulation blockade with no proved interaction with other drugs.
Aim: To present two orthotropic heart transplant patients (OHT) who received Belatacept as primary immunosuppression in a CNI free regimen, one of them due to previous renal failure and the other under antiepileptic treatment.
Cases: A 65-year-old man with ischemic necrotic cardiomyopathy was transplanted in September 2014, having a GFR of 45 ml/min (MDRD-4). A 58-year-old man with Chagasic myocardiopathy, received an OHT in June 2015. He had seizures and stroke history, and was under phenytoin treatment. Due to these problems the team decided to propose them the use of Belatacept. After informed consent from the families was obtained, both of them received: thymoglobulin in a daily dose of 1.5 mg/kg for five days and three methyl prednisone boluses as induction. They also received Mycophenolate Mofetil 2 gr/ day from the first day and steroids were tapered as scheduled. Belatacept was initiated at a dose of 10 mg/kg on day 6th post-transplantation (to be considered as the 1st dose). The following doses of 10 mg /kg were given on days 14, 28, 56 and 84. From day 112 up to now they have been receiving Belatacept at a dose of 5 mg/kg every 28 days. So far (24 and 16 months of follow up, respectively) acute rejection has not been observed in the myocardial biopsies performed.
Conclusions: Belatacept tolerance was acceptable and patients have not developed acute allograft rejection episodes. Important improvement in GFR and seizures treatment management was observed. However, clinical trials are necessary to evaluate its efficacy and safety in heart transplant patients.

Clinical Heart Other

P285

PERCUTANEUOS TREATMENT OF FUNCTIONAL MITRAL REGURGITATION IN A HEART TRANSPLANTED PATIENT

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We present the case of a 52 Yo male referred to Heart transplant in 2007 for Dilatative Cardiomyopathy. In August 2015 he had an acute coronary syndrome treated with angioplasty on Circumflex artery. Echocardiogram documented severe hypokinesia in medium-basal infero-lateral wall and normal ejection fraction. A severe mitral regurgitation (VC 0.7 cm, RegVol calculated with PISA method: 71 ml) due to posterior leaflet tethering causing loss of valve cooptation (A2-P2) with pulmonary hypertension (PAPs 49 mmHg) was detected. In the following months the patients complained despite optimized medical therapy reduction of effort tolerance (NHYA III) and orthopnea. NT-Pro-BNP (5/16):2718 pg/ml. Two admissions for acute cardiac decompensation occurred. In May 2016 the case was discussed during our Heart Team meeting and indication to percutaneous mitraclip placement was given. After general sedation and under transesophageal echocardiographic guidance, the patient underwent to percutaneous placement of two clips. Post-procedural course was regular. Predischarge echocardiographic evaluation showed: correct placement of the clips, mild-to-moderate insufficiency, mitral flow with G Med 8 mmHg; at 3D evaluation planimetric area of the two orifices were respectively 1.3 and 0.5 cmq. During follow up patient remained stable in NHYA I and no episodes of decompensation occurred. Comment: Percutaneous mitral valve clip placement is a new emerging procedure for both functional and degenerative mitral regurgitation treatment. Indications to the procedure are still not well defined but it is increasingly used in case of high risk surgery. Heart transplant patients have a perioperative increased risk for cardiac surgery due to re-operation and increased risk of infection secondary to immunosuppressive therapy. The present case suggests that mitralclip could represent a good therapeutic option as an alternative to traditional cardiac surgery in transplanted patients.

Clinical Heart Cardiovascular complications

P286

THROMBOSIS AND OTHER CARDIOVASCULAR COMPLICATIONS AFTER HEART TRANSPLANTATION

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Objective: to estimate the frequency of thrombosis and other cardiovascular complications (CVC) after heart transplantation (HT).
Methods: From 2010 to February 2017 we performed 83 HT (mean age – 46.2 ± 13.9 years). Causes of heart failure (HF) were ischemic heart disease (IHD) (47%, $n = 39$), dilated cardiomyopathy (34%, $n = 28$), non-compacted myocardium (11%, $n = 9$) and others (8%, $n = 7$). Before HT thrombophilia (TP) was diagnosed in 13% ($n = 11$) of recipients, hyperhomocysteinaemia - 11% ($n = 9$). Also 31% ($n = 26$) of patients had pulmonary embolism (PE) history prior HT. All recipients treated by triple-drug therapy (steroids, calcineurin inhibitors, mycophenolic acid), induction (basiliximab – 77% ($n = 64$), thymoglobulin – 23% ($n = 19$. We estimated post-transplant outcomes, results of CAG and ultrasound investigations.
Results: Five days after HT 1 recipient with diagnosed TP and PE-history died due to PE. In 1 yr there was 5 cases of PE in patients with no thrombosis history. Also during 1st month after HT 2 patients died, thrombosis of mesenteric vessels took place. After CAG upper extremity arterial thrombosis was found in 19% ($n = 12$ from 62 who underwent CAG) of recipients. In long-term follow-up progression of lower-extremity peripheral artery disease (PAD) was found in 5% ($n = 4$: 1 – non-IHD with thrombophilia, hyperhomocysteinaemia) patients, 1 of them underwent surgical treatment on both legs with positive outcomes. After HT upper-extremity deep vein thrombosis (DVT) was diagnosed in 7 recipients (3 – in 1 month, 2 – in 1 yr, 2 – in 5 years) and lower-extremity DVT – in 8 (3 – in 1 month, 5 – in 1 yr). Cardiac allograft vasculopathy (CAV) was found in 12% ($n = 10$) of patients, 2 of them with no IHD-history got myocardial infarction due to CAV. Acute cerebrovascular events took place in 5 recipients ($n = 3$ – IHD-group) and transient ischemic attack (TIA) - in 3.
Conclusion: After HT all patients need to be under control in case of thrombosis or CVV, especially those who had risks.

Clinical Lung Cardiovascular complications

P287

A CASE IN WHICH PERICARDIAL SMALL HEMATOMA AROUND A PULMONARY ARTERY LED TO GRAFT INFARCTION

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We present a case in which pericardial small hematoma around a pulmonary artery led to graft infarction.
Case report: A 40-year-old woman with interstitial lung disease due to lung involvement in systemic sclerosis underwent double lung transplantation under V-A ECMO support. After operation, we switched to V-V ECMO support. One day after operation, V-V ECMO was decannulated. On postoperative day 4, aggravation of the left lung haziness was observed on a chest radiograph and the oxygen demand increased. We performed reinsertion of the V-V ECMO, and chest CT and echocardiography.TEE revealed an invisible flow from the left pulmonary vein. Chest CT revealed abrupt disruption and total occlusion of the left pulmonary artery at the intrapericardial portion and pulmonary infarction. We performed reoperation for exploration on postoperative day 10. We observed a small hematoma around the left pulmonary artery, and pulmonary infarction and congestion, so we performed left pneumonectomy. We found no emboli and thrombi in the main trunk of the pulmonary artery and segmental artery. Five days after the reoperation, ECMO was decannulated. Ten days after the reoperation, the patient was weaned from the ventilation support. She was discharged in a good condition at 51 days after reoperation.
Summary: Transplant pneumonectomy is rarely performed, especially for pulmonary infarction. Only a few cases of pulmonary infarction with pulmonary embolism after lung transplantation have been reported. However, our patient had pulmonary infarction without pulmonary embolism due to compression with periarterial hematoma and pericardium. In post-transplant patients with poorly developed collateral bronchial circulation, pulmonary circulation is dependent on the pulmonary artery. Thus, interruption of pulmonary artery flow is important. For subsequent cases, in our institution, we insert an additional drainage catheter in the pericardium to prevent pulmonary artery compression.

Clinical Heart Rejection

P289

MANAGEMENT OF IMMUNOSUPPRESSIVE THERAPY DURING PREGNANCY IN A HEART TRANSPLANTED PATIENT

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We present the case of a 33 YO female affected by severe Heart Failure caused by Left Ventricle Non Compaction who was urgently transplanted in April 2010 while on arterio-venous Extracorporeal Membrane Oxygenation (ECMO) support after an episode of cardiogenic shock. Peri-operative course was uncomplicated and patient started immunosuppressive therapy with Tacrolimus, Mycophenolate Mofetil (MMF) and Prednisone, the latter suspended one year later, according to our protocol. In January 2012, MMF was suspended for evidence of myelosuppression. During 2013, she experienced repeated episodes of acute cellular rejection (grade 2R) requiring treatment with IV methylprednisolone and thymoglobulin. Everolimus was also added to chronic therapy to prevent new episodes of rejection. In June 2015 patient told us that she wanted to get pregnant. We discussed the case during our Heart Team meeting and considering the risk of teratogenicity of Everolimus we decided to suspend it. In October she became pregnant. During pregnancy repeated clinical and echocardiographic evaluations showed stable hemodynamic condition and normal cardiac function. Tacrolimus blood levels remained stable with a median value of 5.2 ng/ml after mild increase of dose compared to that assumed before pregnancy. Periodic gynecologic evaluations revealed normal fetal growth. 21 Jun 2016 she underwent to cesarean delivery without any issue for both the baby and the mother. Comment: A standard immunosuppressive protocol for pregnant Heart Transplanted patients does not exist. Consensus documents suggest to avoid teratogenic drugs unless necessary. In our opinion a strategy with a single immunosuppressant drug together with a monthly clinical and echocardiographic evaluation can be suggested. Calcineurin inhibitors should be preferred for their low teratogenic risk as previously reported in recipients of different organs and frequent checks of their blood levels should be carried out.

Clinical Heart Immunosuppressive agents

P290 MAINTENANCE IMMUNOSUPPESSIVE THERAPY WITH BELATACEPT AFTER HEART AND KIDNEY TRANSPLANTATION

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Background: Belatacept is a selective T-cell costimulation blocker indicated for prophylaxis of rejection in CNI-free immunosuppression after kidney transplantation (KTx). Currently, however, there is only limited published information on the use of Belatacept in heart transplant recipients.

In 2012 a 46-year old male man received a heart transplantation (HTx). His first lane immunosuppressive therapy after HTx was Cyclosporine A (CsA), MMF and steroids. Due to multiple complications before and after HTx the patient developed severe renal insufficiency which rapidly progressed to end stage renal disease although immunosuppressive therapy was switched from MMF to Everolimus (ERL) to allow low trough levels of CsA. Starting in January 2013 the patient was on regular dialysis until March 2014 when a living related KTx was preformed. Maintenance immunosuppressive therapy was continued with CsA, ERL and steroids after KTx. Renal function was excellent with creatinine levels of 1.5 mg/dl from April 2014 until March 2016 when eGFR declined and creatinine increased to 2.6 mg/dl. As no DSA, BK- and CMV-virus were detected in blood and no albuminuria developed a kidney transplant biopsy was not performed. Immunosuppressive therapy was changed from CsA and ERL to Belatacept and ERL assuming that kidney function was reduced due to cyclosporine-nephrotoxicity. Belatacept was given at a dose of 5 mg/kg bw once monthly and ERL trough levels are between 5 and 8 ng/ml. Kidney function improved to creatinine levels ranging from 1.9 to 2.1 mg/dl. No DSA were detected upon the last examination in December 2016. Function of the heart allograft was excellent during the 6 months follow up period after switch to Belatacept.

This case demonstrates that Belatacept can be considered as maintenance immunosuppressive therapy in patients after heart and kidney transplantation and might be a new and promising opportunity to treat patients after HTx with reduced renal function to spare kidney function.

P291 SIMPLIFICATION OF CYCLOSPORINE A DOSING STRATEGY TO IMPROVE MEDICATION ADHERENCE

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Introduction: The number of daily pills is crucial for medical adherence of patients after heart transplantation (HTx). For cyclosporine A (CsA) not all drug dosages are available, therefore patients sometimes have to take several pills a day to achieve the targeted blood concentration. Thus, we identified whether a simplification and systematic adjustment of CsA intake could help to reduce the daily count of pills.
Methods: Immunosuppression of all HTx patients from 2009 - 2015, was taken from our database. From all patients the daily CsA dosage were analyzed and the daily pill amount was counted. These data were compared to the available dosages of CsA (10, 25, 50 and 100 mg). In our mathematical model A, we reduced the daily pill count, just by systematic and targeted adjustment of partial CsA-dosages, without changing the cumulative daily dose of CsA. In model B, we reduced the daily pill count furthermore, by allowing a change of the cumulative daily dose of <5%.
Results: 26/63 HTx patients (41.3%) were treated with CsA. 2/26 patients (7.7%) were female and mean age was 51.9 $\pm$ 13.2 years. The average CsA dosage was 148.9 $\pm$ 42.6 mg/day; the daily pill count was 4.3 $\pm$ 1.1, respectively. For example, a cumulative daily dose of 140 mg, led to a daily pill count of six (2 $\times$ 50 mg + 4 $\times$ 10 mg). By using model A, the daily pill count was reduced to five (1 $\times$ 100 mg + 4 $\times$ 10 mg) and by using model B (change of daily dosage of 3.57%), the daily pill count was 3 (1 $\times$ 100 mg + 1 $\times$ 10 mg + 1 $\times$ 25 mg). In general, by using model A, a 28% reduction of daily pill intake was achieved. Allowing an average change of the cumulative daily dose of 0.6 $\pm$ 2.0% (model B) resulted in a 45% reduction of the daily pill-count of CsA.
Discussion: We showed that a simplification of CsA dosing adjustment leads to a significant reduction of the daily pill count, which will enhance adherence of immunosuppressive therapy. Good adherence of immunosuppression will reduce rejection and, therefore, health costs.

Translational Lung Ischemia-reperfusion and preservation

P292 A TRANSLATIONAL RAT MODEL FOR EX VIVO LUNG PERFUSION OF BRAIN DEAD DONOR LUNGS

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For lung transplantation, only about 20% of the brain dead donor lungs are available for transplantation. Ex vivo lung perfusion (EVLP) makes previously unsuitable donor lungs, with pulmonary edema, available for transplantation. Secondly, outcome of marginal donor lungs is comparable to standard donor lung transplantation when placed on the EVLP. Nevertheless, the success of lung transplantation is still below other solid organ transplantations. The aim of this study was to set up translational model to test additional treatment opportunities. Therefore, heart-lung blocks were procured from healthy Lewis rats or 3 h after explosive brain death induction. Brain dead donor lungs were cold preserved for 1 h in Perfadex. The lungs were either immediately procured for wet/dry ratio and qPCR or after placement for 6 h in normothermic EVLP. In the EVLP, lungs were ventilated with a tidal volume of 7 ml/kg of body weight, a Pulmonary end expiratory pressure of 5 cmH_2O, a frequency of 60 and FiO2 of 21%. Perfusion was performed with a modified Steen solution and cefuroxime at a continuous mean pulmonary arterial pressure of 12 mmHg. Ventilation parameters, flow and oxygen capacity were noted over time. One brain dead donor lung had to be removed from EVLP due to severe pulmonary edema, prematurely. PIP increased significantly during EVLP in the brain dead donor group compared to the healthy donors. Flow was reduced in the brain dead donor lungs. There was no respective difference in cytokine expression between groups before and after EVLP. Wet dry ratio was significantly increased after EVLP. That the rat lungs do not improve during EVLP is described in literature before and considered to be the result of the small size. But to our knowledge, this is the first time reporting about the placement of brain dead donor lungs on a rat EVLP. Therefore, we consider this to be a valuable model for the research of new treatment opportunities.

Clinical Heart Immunosuppressive agents

P293 FIRST EXPERIENCE WITH MELTDOSE®-TACROLIMUS IN HEART TRANSPLANTATION

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Background: Tacrolimus retard formulations have shown an improvement of patient adherence in liver and kidney transplantation. MeltDose-Tacrolimus has been shown to be associated with increased absorption and bioavailability in prospective studies. Our study shows the first experience with Envarsus (ENV) in the heart transplantation.
Patients and Methods: Between 11/2015 and 03/2017, 35 patients were converted to a new retard formulation (ENV). We have analyzed cause for switch, dose and trough level changes, efficacy, side-effect profile and renal function.
Results: 5 pat (14%) were female, the median age was 60 years at the time of switch. Median time to switch was 28 months post transplant. Median follow-up was 10 months. 13 pat (37%) were switched due to polyneuropathy (PNP), 10 (29%) due to tremor, 9 (26%) following patient wish, and 3 (8%) due to other reasons. 3 pat (9%) had a combination of ENV and Everolimus, all others a combination with Mycophenolate-Mofetil. After switch, drug doses could be significantly reduced and remained lower up to 9 months post switch (pre:4.2 $\pm$ 2.2 mg vs. post:2.6 $\pm$ 1.3 mg vs. 9 m post:2.5 $\pm$ 1.1 mg; $p < 0.001$), while trough levels decreased not significantly (pre:8.2 $\pm$ 3.11 ng/ml vs. post:8.0 $\pm$ 3.0 ng/ml; $p = ns$; vs. 9 m post:6.4 $\pm$ 2.4; $p = 0.06$). During the follow-up period there were no rejections. eGFR levels were stable (pre:60.6 $\pm$ 31.1 vs. post:57.3 $\pm$ 18.3; $p = ns$; vs. 9 m post:59.0 $\pm$ 23.6; $p = ns$). 4 pat (11%) had to be switched back due to side effects. At last follow-up 42% of pat reported improvement of side effects. In 73% of pat with tremor there was an improvement in symptoms, while only 23% of pat with PNP experienced an alleviation of symptoms.
Conclusions: These preliminary results indicate that the conversion to the new Tacrolimus retard formulation (ENV) is associated with a reduction in the dose of medication by constant trough levels and renal function. There were no

rejections. Tremor as side effect was improved markedly in most pat after switch.

P294 HOW TO WALK THE LINE BETWEEN REJECTION AND BK VIRUS NEPHROPATHY AFTER HEART TRANSPLANTATION

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Background: BK virus (BKV) reactivation is a sign of over-immunosuppression, rates of BK viruria and viremia were reported with up to 42.8% and 21.4 % post-heart transplantation (HTx), respectively. Optimal therapy of harmful BKV infections after HTx remains unclear. Here we present an unusual case of BKV infection in a patient with rejection.
Results: After initially eventful course post HTx our 32 years old patient suffered from severe cytomegalovirus (CMV) pneumonia induced sepsis and developed renal failure after 4 months. At month 6 the patient had sudden onset of heart failure, ultrasound showed severely impaired graft function. Cellular-mediated rejection (CMR) was verified by biopsy (ISHLT 2R) and antibody-mediated rejection (AMR) by detection of donor specific antibodies, ultrasound results and clinical symptoms. Rejection therapy was performed with methylprednisolone pulse therapy, 4 cycles of plasmapheresis, immunoglobuline and rituximab. While graft function recovered renal impairment deteriorated further requiring dialysis with evidence of BK viruria first (copies max. 1 $\times$ 109) and BK viremia (copies max. 7000) later. Consequently, we added leflunomide, administrated CMV-IgG (cumulative 40.000 IE / 6 weeks) which also contains antibodies against BKV, lowered Tac-levels (6–8 to 4–6 ng/ml) and stabilized everolimus (ERL) levels (3–8 ng/ml). Under this treatment RF recovered to almost normal (creatinine 1.6 mg/dl), BK viruria could be reduced (copies min. 2 $\times$ 108) and viremia of BKV vanished.
Conclusion: Our case demonstrates how to walk the line between intense and reduced immunosuppression to treat rejection and BKN, respectively. It remains unclear if acute rejection or sepsis (2nd hit theory), or intense anti-rejection in combination with risk factors for BKN was the trigger. However, detection of BKV in patients with either anti-rejection therapy or new onset of nephropathy should become a standard after HTx.

Clinical Kidney Histocompatibility

P295 ZERO-HLA MISMATCHES RENAL TRANSPLANT RECIPIENTS: KUWAIT EXPERIENCE

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Background: The higher the HLA match the better the renal graft outcome. Therefore the compatibility at all three HLA loci is desirable for optimal graft outcome.
Aim: To assess the long-term outcome of HLA zero-mismatched renal transplant recipients in Kuwait.
Materials and methods: From 1993 to 2010, 1050 renal transplants were performed in Hamed Al-Essa Organ transplant center, including 40 (3.8%) kidney transplant recipients with zero-HLA mismatches with their initial transplants. There were 21 (52.5%) males, 19 (47.5%) females with their mean age 28.8 $\pm$ 7.1 years (range 7–53 years). The primary renal disease was chronic glomerulonephritis (GN) in 17 (42.5%), chronic tubule-interstitial nephritis in 12 (30%), diabetes mellitus in 2 (5%) and idiopathic in 9 (22.5%). All recipients had negative lymphocytotoxicity cross match prior to transplantation. Without induction, they were maintained on triple immunosuppressive protocol based on steroid, anti-proliferative agent and calcineurin inhibitor (cyclosporine or tacrolimus).
Results: Mean follow up period was 8.76 $\pm$ 2.1 years and the mean serum creatinine on last follow-up was 112 umol/l. Graft survival was 100%, 97.2%, 93.9% and 84% at 1, 3, 5 and 10 years respectively with 100% patient survival during the whole follow up period. Four grafts were lost during the follow up period due to chronic rejection. Biopsy proven acute rejection represented 5% (2 episodes) during the 1st year after transplantation with complete response to pulse steroid. There were in total, 3 (7.5%) cases of post-transplant GN, 2 being recurrent diseases (lupus nephritis and IgA nephropathy) and the third, a case of de-novo membranous GN. Post-transplant diabetes and hypertension were reported in 6 and 2 patients respectively .There were no cases of post-transplant malignancy.
Conclusion: Favorable patient and graft outcome was observed in zero-mismatched renal transplant recipients possibly related to less post-t.

P296 HLA CLASS I AND CLASS II ANTIGEN FREQUENCIES IN THE ALGERIAN POPULATION

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Background: The Human Leukocyte Antigen (HLA) system is divided into class I (HLA-A, HLA-B and HLA-C) and class II (HLA-DP, -DQ and -DR). Being one of the most polymorphic genetic systems, it is often used as a genetic marker in the analysis of populations. The aim of this study is to describe the distribution of HLA class I and class II antigens in Algeria.
Methods: Our study included 88 healthy and unrelated Algerian individuals (41 women and 47 men with a mean age of 40 $\pm$ 13.5 years) native from different Algerian areas. They were addressed in our laboratory for HLA typing as potential kidney donors. HLA typing included HLA-A, B, C loci for the class I, DRB1 and HLA-DQB1 loci for the class II using a low resolution polymerase chain reaction-sequence specific priming (PCR-SSP) method.
Results: The most common allele groups were: HLA A*02 (22.7%), A*01 (12.5%), A*03 (11.9%), for the A locus, B*18 (8.5%) and B*35 (8.5%) for the B locus, C*07 (18.2%),C*04 (14.8%) and C*06 (14.2%) for the C locus, DRB1*03 (20%) , DRB1*15 (14.2%), DRB1*07 (13.6%) and DRB1*04 (12.5%) for the DRB1 locus, DQB1*02 (33.5%), DQB1*03 (25%) and DQB1*06 (23.3%) for the DQB1 locus. Our results reflect the great diversity of HLA class I and II antigens distribution in the Algerian population. The comparison of our data to that of other countries shows interesting common findings between the Algerian and other Mediterranean populations as Tunisian, Moroccan, Libyan and Lebanese populations.
Conclusion: This study suggests that both HLA class I and class II polymorphism specificities demonstrate a high diversity in Algerian population, which reflects its historical and recent admixture with neighborhood populations. Our results provide useful information for further studies of the Algerian population anthropology and would serve as a reference for the future national kidney and bone marrow registry programs in our country. Moreover, they can be used in the HLA-diseases association studies in Algeria.

P297 THE CLINICAL EFFICACY AND SAFETY OF INDIVIDUALIZED PRECONDITIONING TO REDUCE ABO ANTIBODIES IN ABO-INCOMPATIBLE LIVING DONOR KIDNEY TRANSPLANTATION

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Background: To investigate the efficacy and safety of individualized preconditioning in ABO-incompatible living donor kidney transplantation.
Methods/Materials: Thirty living donor kidney transplants of ABO blood group incompatibilities using individualized preconditioning protocols were obtained from September 2014 to August 2016 in our hospital. Preconditioning protocols included oral immunosuppressants with/without the administration of rituximab, plasma exchange (PE) or double filtration plasmapheresis (DFPP). Medical records and electronic databases were reviewed for isoagglutinin titers, patient and graft survival, graft function, rate of rejections, infections and surgical complications.
Results: ABO incompatibilities were AB to B (2 cases), A to B (3), B to A (3), AB to A (4), B to O (8), A to O (10). Median initial titers were 1:32 (1: 2-1: 156) (IgM) and 1:8 (0-1: 64) (IgG). Individualized preconditioning protocols included: immunosuppressants alone (11 cases), immunosuppressants + PE (4), immunosuppressants + rituximab + PE (12), immunosuppressants + rituximab + PE + DFPP (2),and immunosuppressants + rituximab + DFPP (1). An acceptable titer ($\leq$1:16) was obtained on the date of transplantation, and no recipients of titers rebounded over 1:16 within two weeks after transplantation. In total, there was one episode of hyperacute rejection (leading to graft loss), acute cellular-mediated rejection, and urinary tract infection, two episodes of delayed graft function, wound fat liquefaction, bone marrow suppression and pneumonia, and three episodes of acute antibody-mediated rejection, in the perioperative period. Median followup duration was 11 months (1–24.5); graft and patient survival were 96.7% and 100%; median value of recent serum creatinine was 96 umol/l (39–655 μmol/l).
Conclusion: Our initial experience indicates that individualized preconditioning protocols based on initial titers is technically feasible and leads to excellent short-term survival.

P299 THE IMPACT OF HLA COMPATIBILITY ON 10 YEAR KIDNEY GRAFT FUNCTION AND SURVIVAL

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Background: HLA incompatibility is associated with post-transplant adverse consequences in renal transplantation. In this study, the effects of HLA incompatibility on 10-year kidney graft function and survival were assessed.
Methods/Materials: Outcome analysis was performed in 165 deceased (96) or living (69) donor renal transplantations during 2004–2007. Patients were grouped according to the level of HLA (A, B, DR) mismatching into two groups, A with 0–3 incompatibilities ($n = 121$) and B with 4–6 incompatibilities ($n = 44$). Serum creatinine levels (mg/dl), 24 h urine protein levels (mg/24 h) in 1st, 5th and 10th year post-transplantation were measured along with graft survival, cold ischemia time, donor and recipient age and donor type (deceased or living). HLA antibody reaction frequency (% PRA) was also measured. Groups A and B were compared in association with the previous parameters. Statistical analysis was performed through IBM SPSS statistics version 19 using t-test, chi-square and Fisher's exact test at a level of $p < 0.05$.
Results: The total graft survival was 89.1%, 84.8% and 76.4% in 1st, 5th, 10th year, respectively. Graft survival was higher in group A in 1st, 5th and 10th year post-transplantation (92.3%, 89.0%, 80.2%, respectively) versus group B (78.8%, 72.7%, 69.7%) ($p = 0.036$, 0.026, 0.216 respectively). Graft survival was much higher in group A in 10th year when combined with living donor (90.6%) vs 66.7% in group B combined with deceased donor ($p = 0.021$). No statistically significant differences were observed between the groups in serum creatinine levels, 24 h urine protein, cold ischemia time (12.42 h in group A vs 16.13 h in group B), donor and recipient age, donor type and % PRA.
Conclusion: Although only 5.6% of patients had PRA > 50% with no differences in presensitization between the groups, graft survival was significantly superior in group A. This may indicate that HLA incompatibility is an independent risk factor affecting the 10-year survival rate.

P300 TRANSPLANTATION AGAINST POSITIVE CROSSMATCH DUE TO HLA DP DONOR SPECIFIC ANTIBODIES WITHOUT PRIOR DESENSITIZATION

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Background: Clinical outcome of kidney transplant recipients with human leucocyte antigen (HLA) DP donor specific antibodies (DSAs) still unclear and controversial.
Methods: We reported 2 cases of highly sensitized patients due to previous kidney transplantation with high DSAs against HLA DP3 with high Mean Fluorescence Intensity (MFI) of 9763 and 22073 respectively with positive T and B cells Flow Cytometry Cross Match (FCXM). Both received kidney from a donor after brain stem death (DBD). Both cases were treated with depletion therapy of Anti-thymocyte Globulin (ATG) followed by our standard protocol of tacrolimus, mycophenolate mofetil (MMF) and prednisolone.
Results: Successful DBD kidney transplantation. Post transplantation follow up over 2 years for first case and 3 months for second case demonstrated an acceptable outcome (Creatinine 170 μmol/l and 200 μmol/l respectively) without single episode of rejection.
Conclusion: Transplantation against positive crossmatch due to HLA DP DSA can be managed successfully without prior desensitization.

P301 INPACT OF PREFORMED DSA C1Q-BINDING DONOR-SPECIFIC ANTI-HLA ANTIBODY IN KIDNEY TRANSPLANTATION

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Various studies have reported that C1q-binding donor-specific anti-HLA antibodies (DSA) positive kidney transplantation is poorer graft survival. But analysis of importance in the preoperative examination of preformed C1q-binding DSA is insufficient. We report the analysis of the relationship between C1q-binding DSA and Histocompatibility testing that so far has been a useful in kidney transplantation.

We retrospectively studied 28 preformed DSA positive patient before kidney transplantation. between April 2010 and March 2015. We performed multivariate analysis for the C1q-binding DSA and Histocompatibility testing such as LCT, FCXM, Flow PRA. And about MFI value, we analyzed the correlation between C1q-binding DSA and DSA classI, ClassII.

In relation DSA and MFi value, It showed a strong correlation in the relationship ClassI (cut off value:10865, $p = 0.04$), and ClassII (cut off value:6858 $p < 0.001$). We performed multivariate analysis for the C1q-binding DSA and LCT-T positive group,C1q positive became a contributing factor in LCT positive than DSA MFI value. There was no independent contributing factors to the LCT-B. And there was no independent contributing factors to both FCXM-T and B positive. There was a strong correlation only MFI value of classI.At the same time the presence of preformed C1q binding DSA is an independent factor contributing to LCT-T positive, strong correlation was observed in the C1q positive and MFI value. In the postoperative course, the cumulative incidence of biopsy proven acute rejection with C1q-binding DSA was no difference (with C1q 33.5% vs without C1q 32.5%). And Death-censored cumulative graft survival rates after renal transplantation was no difference too.

In the present circumstances, LCT-T positive transplantation is abandoned, actually is a possibility that a higher risk factor with the presence of preformed C1q binding DSA. Based on this study, it seems to be necessary to review the explanation currently histocompatibility tests.

Clinical Kidney Immunosuppressive agents

P302 FLOWPRA SCREENING OF ANTIHLA ANTIBODIES IN THE WAITING LIST SIGNIFICANTLY REDUCES THE OCCURRENCE OF ACUTE REJECTION AFTER KIDNEY TRANSPLANTATION

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Introduction: Presence of the preformed human leukocyte antigen (HLA)–reactive antibodies in recipient serum before transplantation has long been recognized as a prominent risk factor for a generally worse graft outcome. Screening and identification of HLA antibodies can be used to stratify patients into high and low risk categories.
Material and Methods: This is a prospective analysis with determining the antiHLA antibodies by flowPRA (with adding the specification after positive screening – more than 5 %). According to the result of the screening test, the patient was allocated, according to the actual immunologic risk, the induction immunosuppressive protocol.
Results: In the group of 78 patients, we realised 2 times per year the screening of flowPRA of anti HLA antibodies. According to the immunologic risk, the patients were divided into 2 groups (low, medium), and according to the risk, we applied the induction immunosuppressive protocol. Stratification of the risk was correct, because predictor for development of acute rejection in the monitored period of 12 months was only the delayed graft function [odds ratio 33.2501; 95% CI 10.0095–110.4508 ($p < 0.0001$)]. The occurrence of acute rejection upon implementing the screening was reduced in our Transplant Center from 44 % to 19 % ($p < 0.0001$). No difference was recorded in the 12-month survival of grafts and patients according to the applied induction immunosuppressive protocol.
Conclusion: We confirmed significantly reduced occurrence of acute rejection in the monitored period of 12 months in case of applying individualised induction according to flowPRA screening of antiHLA antibodies. FlowPRA represents a suitable alternative for screening and specification of antiHLA antibodies in case the Luminex methodology is unavailable.

Clinical Liver Immunosuppressive agents

P303 EFFECT OF CONVERSION TO LONG ACTING TACROLIMUS ON RENAL FUNCTION IN LONG-TERM-FOLLOWED PATIENTS AFTER LIVER TRANSPLANTATION

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Favorable effects of long acting tacrolimus (Tac-QD) on renal function compared to regular Tac has been reported in de novo transplantation. Effects of conversion for long-term-followed patients has not been clarified. We converted Tac to Tac-QD in 21 adult patients (14 females and 7 males) and analyzed clinical courses and renal functions. The length of period between transplantation to conversion ranged from 247 days to 7521 days (median, 821 days). The reasons were renal dysfunction in 12, convenience with stable

condition in 7, and noncompliance of evening dose in 2 patients. The trough level at conversion ranged from <2.0 to 6.8 ng/ml. The dose of Tac-QD ranged from 0.5 to 4.5 mg. Trough level (C0) and concentration at 2 h after administration (C2) were measured 77 to 385 days after conversion. C0 ranged from <2 to 6.2 ng/ml and C2 ranged from 2.4 to 17.4 ng/ml. The ratio of C2 to Co was classified to 4 groups; 3 times or greater in 5 patients, between 2 times and 3 times in 4 patients, between one time to 2 times in 6 patients, and, less than 1 in one patient. Adverse effects possibly relating to Tac-QD were liver dysfunction in 2 patients, kidney dysfunction in 2 patients, headache in 1 patient, and skin rash in 1 patient. No patient developed rejection. Tac-QD was continued in 15 patients and discontinued and converted to Tac in 6 patients. The reasons of re-conversion were too high C2 in 3 patients, liver dysfunction in 2 patients, and skin rash in 1 patient. Renal function improved in 7 patients, unchanged in 11 patients, and deteriorated in 3 patients during the period of follow-up from 161 days to 805 days (median, 497 days). The C0 and C2 of the 3 patients with renal deterioration was 4.1/10.2 ng/ml (C0/C2), 5.6/12.3 ng/ml, and 5.5/17.4 ng/ml. In conclusion, Tac-QD conversion is acceptable in long-term-followed patients and C2 could be useful to avoid renal dysfunction.

Clinical Kidney Immunosuppressive agents

P304 THYMOGLOBULIN VERSUS BASILIXIMAB INDUCTION THERAPY FOR KIDNEY TRANSPLANT FROM DECEASED DONOR WITH ACUTE KIDNEY INJURY

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Background: In the era of donor shortage, using kidneys from deceased donors with acute kidney injury (AKI) has significantly increased. However, there has been concerns for the high incidence of delayed graft function (DGF) and acute rejection (AR), negatively affect graft survival. Previous studies have suggested that thymoglobulin may delay the introduction of calcineurin inhibitors (CNI) with effective prevention of AR and reduce the incidence of DGF. Therefore, this study aimed to compare the safety and efficacy of thymoglobulin and basiliximab induction therapy for kidney transplant from deceased donor with AKI.
Methods: A total of 82 cases of deceased donor kidney transplant were performed between March 2009 and September 2014 in our center. 51 cases (62.2%) received the kidney from the AKI donors. Among the 51 cases (mean age, 47.14 year), 32 received basiliximab and 19 received thymoglobulin as the induction therapy. The clinical outcomes were compared between these two groups
Results: The renal functional status of recipients at 1, 3, 6, and 12 months after kidney transplant and graft survival were not significantly different between thymoglobulin and basiliximab group. And the incidence of delayed graft function (DGF) and slow graft function (SGF) between two groups also did not show significant difference. (21.1% vs 18.7%, $p = 0.557$). However, there was a trend of lower rejection rate in thymoglobulin group without statistical significance (15.7% vs 28.2%, $p = 0.497$). In addition, CMV infection rate was statistically higher in thymoglobulin group (26.3% vs 0%, $p = 0.005$).
Conclusion: The patients received kidney transplant from AKI donors may have benefit from the thymoglobulin induction therapy due to somewhat reduced rejection rate. However, appropriated prophylaxis and close monitoring for CMV infection are required.

P305 TACROLIMUS REDUCES MAGNESIUM SERUM LEVEL IN KIDNEY RECIPIENTS

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Calcium sensing receptors modulate calcium and magnesium homeostasis. Calcineurin inhibitors affect mineral metabolism. Factors influencing magnesium levels were investigated in kidney transplant recipients. In 130 kidney recipients (M 74, F 56, estimated GFR > 50 ml/min), the following parameters were estimated 3–213 months posttransplant: serum Mg, Ca total and ionized, Pi, iPTH, total and bone alkaline phosphatase, crosslaps, 25(OH)D_3, cyclosporineA/tacrolimus/sirolimus/everolimus trough levels, and 24-h urine calcium and phosphate. The ratio of renal calcium clearance to renal creatinine clearance and tubular maximum reabsorption of phosphate per litre of GFR were calculated.

Results (median, interquartile range); Mg 0.775 (0.53–0.96), reference range 0.65–1.05 mmol/l. Magnesium levels correlated significantly positively with posttransplant period duration, negatively with tacrolimus daily dose (mg/kg and total daily dose) and trough levels. Eighty-one patients were on tacrolimus. IPTH and tacrolimus trough levels correlated positively. Urine calcium correlated negatively with tacrolimus daily dose (mg/kg). Magnesium serum levels were higher in women (0.79, 0.75–0.825) than in men (0.76, 0.72–0.81), in patients after the first posttransplant year (0.79, 0.76–0.83) than in those during the first posttransplant year (0.74, 0.695–0.785), and in patients on cyclosporine (0.80, 0.77–0.84) than in those on tacrolimus (0.75, 0.71–0.79). Magnesium serum levels in patients on cyclosporine were higher than in those on tacrolimus in the whole patient group and also in those after the first posttransplant year. Tacrolimus doses and levels were higher in the first posttransplant year than thereafter. p Values < 0.05 were considered statistically significant.

Among the investigated factors, only tacrolimus has been shown to be related to magnesium serum levels.

Tacrolimus reduces magnesium serum levels in kidney transplant recipients.

P306 PRE-TRANSPLANT ASSESSMENT OF CYCLOSPORINE BLOOD LEVEL CONCENTRATION AS A PREDICTOR OF CYCLOSPORINE DOSE REQUIREMENTS AFTER KIDNEY TRANSPLANTATION

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Background: The high variation of pharmacokinetic profile and short limited time during early post-transplantation(Tx) period make it hard to adjust the cyclosporine dose that can reach that target level on time.
Material & methods: A retrospective design was adopted for this study. It was conducted on 60 patients selected randomly, subdivided into 3 groups; group1 ($n = 20$) received a single dose of cyclosporine pre-Tx (C2 levels 800–1500), group 2 ($n = 20$) received cyclosporine induction by 4 mg/kg 48 h before Tx (C2 levels 450–800) & group 3 ($n = 20$) received cyclosporine induction by 2 mg/kg 48 h before Tx (C2 levels 800–1200). All groups received steroids & mycophenolates according to standard protocol.
Results: We found that pre-transplant administration of cyclosporine helped to achieve therapeutic level of cyclosporine earlier post-Tx (65% in group 1, 100% in group 2, 100% in group 3) with the need of low doses to maintain cyclosporine level within the therapeutic range during 1-year follow up (p value < 0.01). That was reflected upon the lower number of cases complicated by cyclosporine nephrotoxicity (25%, 0%, 5% in group 1, 2, 3 respectively) (p value < 0.039). As regards graft rejection, there was no significant effect (occurred in 4, 2, 3 patients of group 1, 2, 3 respectively) (p value 0.67). In addition, we found that early withdrawal of cyclosporine had a better effect on graft function than lower dose with late withdrawal. That was evidenced by lower serum creatinine levels all through the 1-year follow up period in group 2 than group 3 (mean creatinine level after 1-year was 1.28, 1.63 respectively).
Conclusion: Pre-Tx assessment of cyclosporine blood level concentration is a predictor of cyclosporine dose requirements after kidney Tx. Forty-eight hour induction with cyclosporine with early dose reduction post-Tx was associated with a better 1-year graft function than induction with late dose reduction.

P307 SIROLIMUS INDUCED BRAIN AND LUNG COMPLICATIONS IN A RENAL TRANSPLANT RECIPIENT: CASE REPORT AND REVIEW OF LITERATURE

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Introduction: The mammalian target of rapamycin inhibitor (mTORi) sirolimus was to avoid toxicity of calcineurin inhibitors. We aimed to present the 1st report –up to our knowledge- concerning reversible neurological side effects of sirolimus which were provisionally diagnosed as brain tumors.
Case report: Our patient is a 21-year- old girl with cadaveric kidney transplant on 23/11/2011 followed by delayed graft function possibly due to vasculopathy of intra-renal graft arteries that resulted in upper and lower polar infarcts. She received thymoglobulin as induction and she was maintained on steroid, tacrolimus and mycophenolate mofetil. In view of delayed graft function and biopsy proven graft thrombotic micro-angiopathy, we changed tacrolimus to rapamycin with faster recovery and she was enjoying mildly impaired graft function. On March 2015, she started to suffer vomiting, headache, diplopia and papilledema was confirmed, and therefore magnetic resonance imaging of the brain showed multiple heterogeneous iso-intense mass lesions associated with vasogenic edema for which dexamethasone and epanutin were given and neurosurgeon advised to proceed for brain biopsy. Chest and abdomen computed tomography (CT) showed two pulmonary nodules. We decided to proceed for endoscopic lung biopsy which revealed fibrinous and organizing pneumonia with lymphocytic interstitial pneumonia. Viral, fungal infections were excluded. Meanwhile, we minimized her immunosuppressive medications over two weeks. Within 2 months, she was improving clinically and radiologically and resumed her steroid and MMF. Now she is enjoying more stable graft function with creatinine around 170 umol/l without any neurological or pulmonary symptoms or lesions on imaging studies.
Conclusion: Early and gradual sirolimus withdrawal can reverse posterior reversible encephalopathy syndrome and lymphocytic pneumonitis with preservation of stable graft.

P308

CALCINEURIN INHIBITORS ELIMINATION: WHICH M-TOR TO BE CHOSEN?

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Introduction: The mammalian target of rapamycin inhibitor (mTORi) are used to achieve adequate immunosuppression while decreasing the dose and possible toxicity of primary agents, such as calcineurin inhibitors. Aim of our work to compare which mTOR is better to convert from calcineurin inhibitors (CNI) based regimen among renal transplant recipients.
Patients and methods: Twenty renal transplant recipients were converted from CNI to everolimus based immunosuppressive (group 1) were compared with another group of patients who were converted from CNI to sirolimus based regimen (group 2, $n = 77$). All patients were followed up during the period between 2000 till 2015 in Hamed Al-Essa Organ transplant center of Kuwait. All patients were adults and received lymphocyte depleting agents as induction. We evaluated the patient and graft outcomes after 1 year of conversion. The primary endpoint was a composite endpoint of graft survival (non-death censored) and biopsy proven acute rejection at 1 year.
Results: The two groups were comparable regarding demographic data, patient sex, original kidney disease and virology screen were not different in both groups. However, cadaveric donors and overweight patients (BMI > 25) were significantly more prevalent among group 2($p < 0.05$). Moreover, we observed that despite the higher number of acute rejections (pre and post-conversion) and higher cholesterol (post-conversion) in group 2 ($p < 0.05$), graft and patient outcome were comparable in both groups after 1 year follow up ($p > 0.05$).
Conclusion: CNI minimization can be successfully contemplated with either sirolimus or everolimus with equal and similar outcome.

Clinical Liver Immunosuppressive agents

P309

PRELIMINARY EXPERIENCE WITH ENVARSUS IN DE NOVO LIVER TRANSPLANTED PATIENTS

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Aim: The aim of this single-center study is to analyze our experience with Envarsus® (a new formulation of Tacrolimus) in de novo liver transplanted patients.
Material and methods: Liver transplanted patients receiving Envarsus® have been included in the study. Demographics characteristics of recipient, donor and surgery have been analyzed, as well as postoperative complications and follow-up events. Special attention has been focused on pharmacokinetic exposure curves, 3 after first dose and 2 after one week.
Results: From April 2016 seven patients received Envarsus®, 5 de novo and 2 early conversions at 20 and 24 days post-transplant. Mean age was 54 ± 12 (28–63). All were men. Main indication for liver transplantation was hepatocellular carcinoma on liver cirrhosis in 5, alcoholic cirrhosis in 1 and Biliary atresia + Steinert Syndrome in 1. Mean clinical Meld was 15 ± 3. Mean pre-LT serum creatinine was 0, 7 ± 0, 2 mg/dl. Mean donor age was 52 ± 14. Mean preservation time was 339 ± 34 min. Liver steatosis (<30%) was present in one donor. Median hospital stay was 20 days(r: 6–74). Two patients had moderate preservation injury. Renal function was normal in all except one (serum creatinine 1.8 mg/dl). Two patients suffered arterial hypertension and three diabetes mellitus. One patient (14, 3%) had acute rejection. Pharmacokinetic profile in day 1 showed a Cmax under 15 ng/ml in two patients and a Cmax of 38 ng/ml in one, between 2 and 4 h post-doses. Pharmacokinetic profile in day seven showed a Cmax level under 20 ng/ml between 4 and 6 h post-dose. The dosing tapering adjustment of Envarsus® was maximum (between 50 to 80% of total dose receiving at discharge) in the 1 to 3 first months in the out-patient clinic. All patients are alive and the mean Follow-up was 8 ± 3, 4 months (r: 2–11).
Conclusion: In our experience Envarsus® is a one-daily extended release Tacrolimus that shows safety and efficacy in de novo liver transplanted patients.

Clinical Kidney Immunosuppressive agents

P310

INFLUENCE OF AGE AT CONVERSION TO EVEROLIMUS WITH CALCINEURIN INHIBITOR MINIMIZATION IN STABLE KIDNEY TRANSPLANT RECIPIENTS

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Background: Our previous pilot study showed that kidney transplant recipients with good graft function may benefit from conversion to everolimus with calcineurin inhibitor (CNI) minimization at a late post-transplant stage, because graft function in the patients in whom everolimus was maintained improved compared to baseline graft function. The aim of this study was to identify the risk factors for everolimus discontinuation after conversion to CNI minimization with everolimus at a late post-transplant stage.
Patients and Methods: This study analyzed retrospectively the risk factors for everolimus discontinuation after late conversion of stable kidney transplant recipients from antimetabolites with standard exposure CNIs to everolimus with very low exposure CNIs as a 1-year pilot study. A total of 38 recipients of kidney transplantation at our institution were converted from antimetabolites to everolimus and followed for 1 year. We divided the patients into two groups to evaluate the factors affecting everolimus discontinuation after conversion: everolimus continuation group ($n = 23$), patients in whom everolimus maintained, and everolimus discontinuation group ($n = 15$), patients in whom everolimus were stopped within 1 year after conversion. We evaluated the clinical parameters between the two groups.
Results: The patients in the everolimus discontinuation group were significantly older than those in the everolimus continuation group. Multivariate cox proportional hazard regression analysis revealed that age at conversion significantly correlated with everolimus discontinuation. Receiver operating characteristic curve of age at conversion showed that the cut-off value was 55 years for the everolimus discontinuation group [area under curve 0.804, 95% confidence interval (0.654–0.954), sensitivity 86.7%, specificity 65.2%].
Conclusions: Our results indicated that late conversion to everolimus with CNI minimization.

P311

VISUAL EVOKED POTENTIALS IN STABLE KIDNEY TRANSPLANT RECIPIENTS TREATED EITHER WITH CYCLOSPORINE A- OR TACROLIMUS-BASED REGIMENS

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Background: Uraemia may cause a central nervous system disturbances, which result in visual evoked potentials (VEP) alterations, both in pre-dialysis and dialysis patients. After kidney transplantation, uraemia-induced changes partly subside, whereas the effects of long-lasting exposure to neurotoxic calcineurin inhibitors (CNI) – cyclosporine A (CyA) or tacrolimus (Tc) – remains unknown. The aim of the present study was to analyse VEP in a selected cohort of stable kidney transplant recipients (KTR), treated either with CyA or Tc based regimens.
Methods: This prospective study was performed in stable KTR at least a year after transplantation, treated with the same type of CNI since the transplantation procedure, without history of diabetes, cerebrovascular episodes, neural or optic disturbances. Flash and pattern VEP were performed, and trough CNI blood levels were measured in all patients.
Results: We enrolled 62 patients (31 in CyA group and 31 in Tc group), with a mean age 50 ± 10 years and mean post-transplant period of 92 ± 39 months (similar in both groups). Mean CyA trough level was 99 ± 28 ng/ml, mean Tc trough level was 6.1 ± 1.7 ng/ml. Similar mean values of latencies and amplitudes were observed in both groups, with a high percentage of pathologic values (Table). When analysing results of pattern VEP, a significant correlation was found between maximal latency (measured in both eyes) after 15 min (but not maximal amplitude) and CyA trough level ($r = 0.56$, $p = 0.001$). Contrary, in Tc group we did not observe such an association. In flash VEP, there was a correlation between maximal P2 component and Tc ($r = 0.34$, $p < 0.05$), but not CyA trough level.
Conclusions: 1. Pathologic values in VEP examination are frequently found in kidney transplant recipients, treated with CNIs. 2. Both CyA and Tc may exert similar disadvantageous effects on visual evoked potentials. 3. The observed correlations for both CNIs may suggest that optic pathway dysfunction is dose-dependent.

P312 INFLUENCE OF METHYLPREDNISOLONE TREATMENT ON SERUM CYSTATIN C CONCENTRATION IN KIDNEY TRANSPLANT RECIPIENTS

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Background: Concentration of serum cystatin C (s-cystatin C) in the circulation is mainly determined by glomerular filtration rate, but some drugs can affect its level. The results concerning the reliability of s-cystatin C in determination of renal function in patients treated with glucocorticoids are contradictory. Some authors found that methylprednisolone (MP) could have an impact on the increase in s-cystatin C.
Methods: In this clinical study 100 kidney transplant patients were included. They all had measured glomerular filtration rate with chromium-51-ethylene-diaminetetraacetic acid (^{51}Cr-EDTA) clearance and at the same day the s-cystatin C was determined. Partial analysis was used to evaluate the influence of MP on s-cystatin C concentration.
Results: At the time of the study patients were treated with different immunosuppression protocols: 34% received triple, 61% double and 5% single immunosuppressive therapy with calcineurin inhibitor; 44% of all patients were on MP (group A, 27 men, 17 women, average age 54 years) and 56% with no MP (group B, 26 men, 30 women, average age 58 years). The average concentration of s-cystatin C in group A was 1.71 $\pm$ 0.86 mg/l and in group B 1.46 $\pm$ 0.71 mg/l. Glomerular filtration rate evaluated with ^{51}Cr-EDTA clearance was in group A 45.0 $\pm$ 27.5 ml/min/1.73 m^2 and in group B 47.6 $\pm$ 22.2 ml/min/1.73 m^2. Partial analysis showed, that MP had no influence on s-cystatin C concentration (correlation coefficient in group A was -0.699 ($p < 0.001$) and in group B -0.758 ($p < 0.001$).
Conclusion: Although some previous studies have shown that MP can increase s-cystatin C level, our results do not support such findings. We did not observe influence of MP on s-cystatin C in our renal transplant patient's population.

P313 RECIPIENT AGE IS A SIGNIFICANT FACTOR IN IMMUNOLOGICAL AND INFECTIVE COMPLICATIONS FOLLOWING KIDNEY TRANSPLANTATION

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Background: The number of older patients (>65 years) undergoing kidney transplantation (KTR) is increasing. Many centres do not have age-specific protocols for immunosuppression(IS) despite increasing evidence of immunosenescence. We aimed to examine the effect of recipient age on the development of complications of over- and under-IS post-transplantation.
Methods: We investigated the outcomes of 90 KTRs performed in our centre between April 2009-March 2016 in recipients aged >65, 42 of whom were >70; these patients were compared to 57 controls matched for number of HLA mismatches and divided into groups according to age at transplantation (18–34, 35–49 & 50–64).Recorded variables included rejection, development of de novo donor-specific anti-HLA antibodies (DSA), development of CMV or BK viraemia and death.
Results: There were significant differences in the mean %cRF pre-transplant across the groups:18–34, 17.75%; 35–49, 29.65%; 50–64, 36.29%; 65–69, 17.1%; and >70, 8.4%; $p = 0.008$. Episodes of rejection were highest in the youngest (31.3% & 20% of patients aged 18–34 & 35–49) with a marked decrease in the older groups (9.5%, 10.4% & 11.9% in those aged 50–64, 65–69 & >70).Rates of de novo Class I DSA were also significantly higher in the younger age groups (18.8%, 0% & 23.8% in patients aged 18–34, 35–49 & 50–64, compared to 4.2% & 7.1% in recipients aged 65–69 & >70; $p = 0.025$), while the development of de novo Class II DSA followed a similar trend (6.3%, 20% & 14.3% in patients aged 18–34, 35–49 & 50–64, vs 2.1% & 4.8% in recipients aged 65–69 & >70; $p = 0.077$). Conversely, the rates of CMV viraemia were strikingly elevated in recipients aged 60–69 (77.1%) and >70 years (73.8%) compared to those <65 (50.9%).
Conclusion: Older recipient age is associated with reduced rates of rejection and de novo DSA but significantly increased infectious complications post-KTR. Given the significant morbidity consequent to over-IS, age specific protocols for IS should be developed to overcome this.

P314 EFFICACY AND SAFETY OF EVEROLIMUS PLUS REDUCED-DOSE CYCLOSPORINE IN RECIPIENTS OF LIVING-RELATED AND UNRELATED KIDNEY DONORS: A 24-MONTH SUB-ANALYSIS FROM THE A1202 STUDY

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Background: Living-donor kidney transplantation (KT) provides a valuable treatment option for patients with end-stage kidney disease. In a 24-month (M) subanalysis from A1202 study, outcomes of adult KT recipients (KTR) with living-related donors (LRD) and living-unrelated donors (LURD) receiving everolimus (EVR) plus reduced-dose cyclosporine (rCsA; EVR+rCsA) vs mycophenolate mofetil (MMF) plus standard-dose CsA (MMF+sCsA) were evaluated.
Methods: A1202 was a 12 M, multicentre, randomised, open-label, core study comparing the efficacy and safety of EVR (1.5 mg/d)+rCsA vs MMF (2 g/day)+sCsA in Japanese *de novo* KTR with a 12 M extension follow-up. Renal function (eGFR [MDRD]), composite efficacy failure (treated biopsy-proven acute rejection [tBPAR], graft loss, death, or loss to follow-up), and overall safety were assessed at M24 in recipients from LRD (LRD-R) and LURD (LURD-R).
Results: At M24, 30 and 34 LRD-R and 19 and 15 LURD-R were available for evaluation in EVR+rCsA and MMF+sCsA arms, respectively. Among LRD-R, mean eGFR was numerically higher in EVR+rCsA vs MMF+sCsA arm, but not significantly different ($p = 0.055$; Table). Moreover, higher proportion of patients in EVR+rCsA arm had eGFR $\geq$60 ml/min/1.73 m^2 vs MMF+sCsA arm (51.7% vs 38.2%). Among LURD-R, mean eGFR was comparable between arms. Mean CsA trough levels were lower among LRD-R (EVR+rCsA, 40.3 ng/ml; MMF+sCsA, 97.2 ng/ml) vs LURD-R (EVR+rCsA, 68.7 ng/ml; MMF+sCsA, 127.4 ng/ml). Incidence of composite efficacy failure events was comparable between arms irrespective of donor groups and mainly driven by tBPAR. No new safety signals were noted; however, incidence of cytomegalovirus infections was lower in EVR+rCsA vs MMF+sCsA arm for both donor groups.
Conclusion: Although limited by sample size, these findings suggest that EVR+rCsA yields comparable efficacy and safety as MMF+sCsA regardless of donor relatedness.

Table: Renal function, composite efficacy, and safety at month 24

	Living related			Living unrelated		
	EVR+rCsA (N = 30)	MMF+sCsA (N = 34)	*P* value	EVR+rCsA (N = 19)	MMF+sCsA (N = 15)	*P* value
Renal function, mL/min/1.73 m²						
eGFR, mean ± SD	65.4 ± 21.6	56.1 ± 15.7	0.055	57.5 ± 18.7	56.9 ± 11.6	0.862
eGFR strata [n (%)]	**N = 29**	**N = 34**		**N = 19**	**N = 15**	
<30 mL/min/1.73 m²	1 (3.4)	2 (5.9)		1 (5.3)	0 (0.0)	
30–<60 mL/min/1.73 m²	13 (44.8)	19 (55.9)		10 (52.6)	9 (60.0)	
≥60 mL/min/1.73 m²	15 (51.7)	13 (38.2)		8 (42.1)	6 (40.0)	
			Difference in rates (95% CI)*			**Difference in rates (95% CI)**
Composite efficacy endpoint, n (%)	2 (6.7)	2 (5.9)	0.8 (−11.1, 12.7)	2 (10.5)	3 (20.0)	−9.5 (−34.0, 15.0)
tBPAR	1 (3.3)	2 (5.9)	−2.5 (−12.7, 7.6)	2 (10.5)	3 (20.0)	−9.5 (−34.0, 15.0)
Graft loss	0 (0.0)	0 (0.0)	-	0 (0.0)	0 (0.0)	-
Death	0 (0.0)	0 (0.0)	-	0 (0.0)	0 (0.0)	-
Loss to follow-up	1 (3.3)	0 (0.0)	3.3 (−3.1, 9.8)	0 (0.0)	0 (0.0)	-
Safety, n (%)						
Any AE/infection	**30 (100)**	**34 (100)**	**ND**	**19 (100)**	**15 (100)**	
AE of interest#						
CMV infection	2 (6.7)	12 (35.3)		1 (5.3)	4 (26.7)	
CMV disease	2 (6.7)	2 (5.9)		0 (0.0)	0 (0.0)	
Hyperlipidaemia	15 (50.0)	9 (26.5)		11 (57.9)	7 (46.7)	
Constipation	7 (23.3)	11 (32.4)		8 (42.1)	12 (80.0)	
Nasopharyngitis	16 (53.3)	23 (67.6)		11 (57.9)	10 (66.7)	
Toxic nephropathy	7 (23.3)	5 (14.7)		5 (26.3)	1 (6.7)	
Hypertension	10 (33.3)	13 (38.2)		7 (36.8)	3 (20.0)	

*Z-test based 95%CI for difference; #AE specific to mammalian target of rapamycin inhibitors class and/or with incidence ≥40%
AE, adverse events; CI, confidence interval; CsA, cyclosporine A; CMV, cytomegalovirus; eGFR, estimated glomerular filtration rate; EVR+rCsA, everolimus plus reduced-dose CsA; M, number of evaluable patients at M24; MMF+sCsA, mycophenolate mofetil plus standard-dose CsA; ND, not determined; SD, standard deviation; tBPAR, treated biopsy-proven acute rejection

P315

HIGH-DOSE RITUXIMAB, PLASMA EXCHANGE WITH TREATED POOLED HUMAN PLASMA, AND AGGRESSIVE MONITORING OF ISOAGGLUTININS IN ABO INCOMPATIBLE KIDNEY TRANSPLANTATION: 2-YEAR RESULTS OF A PROSPECTIVE TRIAL

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Background: ABO incompatible (ABOi) kidney transplantation (Tx) can theoretically expand the living donor pool by 30% but complex logistics, high rate of peri-operative complications, and increased risk of premature graft loss restrict this type of Tx to selected high-volume centers. Moreover, the ideal therapeutic scheme for ABOi Tx candidates is still debated. We herein report the outcomes of our ABOi desensitization/immunosuppression protocol.
Methods: In this single-centre prospective observational study with 2 years of follow up, we analyzed data from 32 adult ABOi kidney Tx recipients treated with the following regimen: rituximab 375 mg/m^2 IV on pre-Tx day 21, tacrolimus 0.15 mg/kg/day POS + mycophenolate mofetil 2000 mg/day POS from pre-Tx day 14, plasma exchange (PEX) 1.5 volume albumin on pre-Tx day 7 and 5, PEX 1.5 volume solvent/detergent treated pooled human plasma on pre-Tx day 3 and 1, basiliximab 20 mg IV on day 0 and post-Tx day 4, methylprednisolone 500 mg IV on day 0 and post-Tx day 1 and 2, prednisone 20 mg/day POS from post-Tx day 3 (tapered to 5 mg by post-Tx day 45). Isoagglutinin levels were assessed on pre-Tx day 14, 7, 5, 3, 1, on day 0, and on post-Tx day 1, 2, 3, 4, 5, 7, 9, 11, 13, 15, 21, 28, 35. Graft biopsy was performed for serum creatinine rise $\geq$ 30% from baseline, two-fold increase of agglutinin titer from baseline, and at 30, 90, 360 days after Tx.
Results: Baseline characteristics of the cohort of patients enrolled into the study and main results after 2 years of follow up are detailed in the Table.

Patients (#)	32
Male/Female	20/12
Caucasian ethnicity (%)	87.5
Recipient age (years)	45 (23–67)
Donor age (years)	43 (25–62)
HLA mismatch (#)	4.5 (0–5)
Isoagglutinin titer (#)	16 (2–1024)
Patient survival (%)	100
Graft survival (%)	97
Cumulative biopsy-proven acute rejection (%)	28 (antibody-mediated 25; cell-mediated 75)
Need for post-Tx PEX (%)	9
Serum creatinine concentration (μmol/l)	130 (74–212)
Peri-operative bleeding (%)	6
Peri-operative infectious complication (%)	12.5
Biopsy-proven CNI toxicity (%)	19
CMV tissue-invasive disease (%)	0
Polyomavirus-associated nephropathy (%)	3
PTLD (%)	3

Conclusion: Our ABOi protocol shows excellent short-term patient and graft survival with minimal surgical complications, low cumulative rejection rates and acceptable incidence of infections. Premature signs of chronic calcineurin inhibitor toxicity on protocol biopsies suggest to further reduce tacrolimus exposure after the first 3 months. Extended follow up is needed to confirm these preliminary findings.

P316

CONVERSION FROM TWICE-DAILY TO ONCE-DAILY IN THAI PATIENTS WITH AND WITHOUT CYP3A4 INHIBITORS: EFFECT ON DOSAGE CHANGE AND INTRA-PATIENT VARIABILITY

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Background: Conversion to once-daily tacrolimus (Advagraf®) in renal transplant patients has benefit in better drug adherence. High intra-patient variability (IPV) in tacrolimus exposure is associated with worse allograft outcome. Data regarding dosage and IPV changes after conversion in patients with CYP3A4 inhibitors (CYPinh) is lacking.
Method: Retrospective chart review in all kidney transplant recipients at Siriraj Hospital had been performed. Patients who had been on standard released (Tac bid) and subsequently replaced with once-daily tacrolimus (Adv) for at least 6 months with no change in CYPinh type or dosage were enrolled. IPV was calculated based on the dose-adjusted tacrolimus trough level (C0).
Result: Among 90 patients received Adv, 50 patients were eligible for this study. Conversion occurred at mean time after transplantation of 53.87 $\pm$ 42.84 months. Ten patients (20%) did not receive CYPinh, while 17 (34%), 11 (22%) and 9 (18%) received diltiazem, ketoconazole and fluconazole, respectively. Three patients (6%) received both ketoconazole and diltiazem. At accomplishment of stable tacrolimus level after conversion, daily dose was increased from 0.053 $\pm$ 0.050 of Tac bid to 0.061 $\pm$ 0.050 mg/kg of Adv ($p = 0.009$). Mean increment of tacrolimus dosage was 31.0 $\pm$ 54.63% (−50% - 167%). Percentage of increased tacrolimus dosage is lower in patients who were on compared to not on CYPinh (23.27 $\pm$ 50.46% vs 61.94 $\pm$ 62.35%; $p = 0.04$). No significant change in IPV after conversion Tac bid to Adv was demonstrated (Tac 17.14 $\pm$ 10.99% vs Adv 14.77 $\pm$ 6.95%, $p = 0.15$). However, 12 of 14 patients (86%) had significant reduction of IPV to less than 20% after conversion but 6 of 36 patients (17%) had increase of IPV to more than 20%. CYPinh had no effect on IPV change.
Conclusion: Conversion from Tac bid to Adv in renal transplant recipients needs increment of daily dosage by 31% to achieve the same C0 level. There is a trend towards improvement in IPV after conversion.

Basic Others Immunosuppressive agents

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PROTECTIVE MECHANISM OF HEME OXYGENASE -1 ON MPA INDUCED APOPTOSIS HUMAN JURKAT CELLS

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Purpose: Heme oxygenase-1(HO-1) is a rate-limiting enzyme of heme catabolism. However, the role of HO-1 in the immunosuppressive response system remains elusive. This study demonstrates that pharmacologic induction of HO-1 along with catalytic activation significantly modulated apoptosis of Jurkat cells induced by mycophenolic acid(MPA).
Method: Cell viability, reactive oxygen species(ROS) generation, and mitochondrial membrane potential transition(MPT) change were measured by flow cytometry. Western blottings of HO-1, Bcl-2, and Bax were also performed.
Results: MPA decreased the viability of Jurkat cells in dose and time dependant manners by the apoptotic nuclear fragmentation. 20 μM cobalt protoporphyrin(CoPPIX; HO-1 inducer) significantly increased HO-1 expression in MPA treated cells. Apoptosis rate is 3.53% in media only, 23% in MPA treated cells, 5.8% in MPA treated cells with CoPPIX. The cell viability was reduced 77% under MPA, but combination with CoPPIX, there was no increased MPA induced apoptosis. CoPPIX inhibited generation of ROS in MPA treated Jurkat cells. CoPPIX protected MPA induced MPT change in Jurkat cells. Induction of HO-1 decreased expression of Bax protein.
Conclusion: This result suggests that induction of HO-1 by CoPPIX protects against MPA induced apoptosis is associated with direct inhibition of ROS generation and protection of MPT loss via inhibition of Bax protein.

Clinical Kidney Immunosuppressive agents

P318

EVEROLIMUS PLUS TACROLIMUS IN DE-NOVO RENAL TRANSPLANTATION RECIPIENTS: PROSPECTIVE CLINICAL STUDY

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Background: The most frequent immunosuppression protocol used in kidney transplantation is formed by tacrolimus, mycophenolic acid derived and steroids. The use of mTOR inhibitors is low. The aim of this study is to show the results of the everolimus use "de-novo" and to compare them with a control group.
Methods: We studied 40 patients, immunosuppressed with everolimus from the immediate post-transplant period and we compared these results with 80 patients, immunosuppressed with mycophenolic acid derived. Both groups received tacrolimus, steroids, basiliximab or thymoglobulin. Variables: age, sex, type of donor, primary disease, cold ischemia time, days of permanence at hospital, urological complications, acute rejection, diabetes after transplantation, CMV and BK infection, cholesterol, tryglycérides, EPO, renal function, proteinuria, withdrawal of therapy, patient and renal survival.
Results: There were more patients with polycystic disease and cancer in the everolimus group ($p < 0.001$), and more patients with donors after circulatory death in the control group($p = 0.04$).After 12.89 $\pm$ 5.8 months of follow up, we didn´t observe differences between groups in urological complications(25 vs 28.2%), delayed graft function(55 vs 44%), days with dialysis (17.5 vs 22.8), acute rejection (7.5% vs 11.2%) diabetes (10 vs 19.4%), BK infection (15 vs 16.2%), withdrawal of therapy (15 vs 25%), cardiovascular events (5 vs 11.3%), apparition of a new cancer, need for EPO, renal function, proteinuria or patient and renal survivals. In control group three patients died. Infection CMV was lower in the everolimus group (5% vs 37, 5%; $p <= 0.001$).Cholesterol was higher in the everolimus group ($p = 003$).
Conclusions: Everolimus "de Novo" can be a valid alternative to actual immunosuppression protocol. We didn´t find more complications in the

everolimus group than in the control group. There was a significant reduction in CMV infection in the everolimus group.

P319 CLINICAL EXPERIENCE WITH THE USE OF LCP-TACROLIMUS IN DE NOVO KIDNEY TRANSPLANT RECIPIENTS

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LCP-tacrolimus (LCPT) is an extended-release formulation of tacrolimus produced by MeltDose technology to improve the bioavailability. Experience with its use in de novo renal transplantation is limited. The primary objective of the present study was to evaluate dosing, safety and efficacy of LCPT in the real-life clinical setting.

17 patients were included in investigation. Data were obtained from charts and medical records. Drug dose, trough levels, glomerular filtration rate and side effects were recorded on day 4, 8, 14, 30, 90 and 180 after the transplantation.

There were 11 male and 6 female patients, mean age 53.9 (range 28 to 68) years, 9 treated with peritoneal dialysis, 8 with haemodialysis for 20 (3–62) months. Three patients had diabetic nephropathy, 2 ADPKD, 6 glomerulonephritis, 2 nephroangiosclerosis and 4 had unknown primary kidney disease. 16 transplantations were from the deceased donors, and one from the living donor. Initial drug dose was 0.09 mg/kg BW (range 0.07–0.12), with the trough level at day four 13.47 (range 3.5 to 30) μg/l. Delayed graft function was recorded in 4 patients. Over the observed period drug dose decreased to 0.04 mg/kg BW (range 0.03–0.04) with the average trough level 7.5 (range 5.3–10.1) μg/l. Glomerular filtration rate at 6 months was 56 (range 36 to 112) ml/min. One patient developed thrombosis of the subclavian vein, two had E.coli sepsis, one Clostridium difficile infection. Graphtectomy was performed in one patient 2 months after the transplantation because of the pseudoaneurysm of the external iliac artery.

In conclusion, despite the improved bioavailability obtained by the MeltDose technology, significant inter and intraindividual variation exist which require careful follow-up of the patients. Our results demonstrate that very low doses of LCPT are necessary to obtain desired trough levels. Further investigations with longer follow-up are needed to determine the significance of these findings.

Translational Kidney Immunosuppressive agents

P320 TACROLIMUS-BASED IMMUNOSUPPRESSION ONLY MARGINALLY AFFECTS MONOCYTE ACTIVATION AFTER KIDNEY TRANSPLANTATION

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Introduction: Monocytes significantly contribute to ischemia reperfusion injury and allograft rejection after kidney transplantation. However, the knowledge about immunosuppressive drug effects on monocyte activation is limited. Here, the phosphorylation profile of 3 signaling proteins was measured to determine the effects of immunosuppression on monocyte activation in kidney transplant patients.
Material/Methods: Peripheral blood samples ($n = 20$ patients) were monitored before and during the first year after transplantation. Patients received maintenance therapy consisting of tacrolimus, mycophenolate mofetil and prednisolone in combination with basiliximab induction therapy. Phosphorylation (median fluorescence intensity) of p38MAPK, ERK and Akt was measured by phospho-specific flow cytometry on whole blood samples. Isotype controls were used as negative controls.
Results: After transplantation, in *ex vivo* whole blood samples, p-p38MAPK was inhibited after transplantation compared to pre-transplantation (mean inhibition ±30%; $p < 0.05$). The other MAPK family member, ERK, showed a predominant decrease in phosphorylation in the first month after transplantation (mean inhibition 35% and 45% at day 4 and 30; $p < 0.05$ and $p < 0.001$, respectively). Finally, p-Akt was also inhibited at all time points after transplantation (mean inhibition ±20%; $p < 0.05$). Interestingly, maximal inhibition was 45% for the tested signalling proteins. At day 4 after transplantation, when the highest whole blood trough levels were measured, p-p38MAPK and p-Akt, but not p-ERK, inversely correlated with tacrolimus ($rs = -0.65$; $p = 0.012$ and $rs = -0.58$; $p = 0.030$, respectively) and not with MPA concentrations.
Conclusion: Immunosuppressive drug combination therapy partially inhibits monocyte activation pathways after kidney transplantation. This inhibition can be determined by phospho-specific flow cytometry, which enables the assessment of the pharmacodynamic drug effects in a cell-type-specific manner.

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P321 TACROLIMUS INTERACTION WITH ORAL ESTROGEN IN KIDNEY TRANSPLANT RECIPIENTS

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Parameter	Before conjugated estrogen administration	During conjugated estrogen administration	After conjugated estrogen termination	p
Tacrolimus daily dose (mg/kg)	0.07 ± 0.04 (0.03–0.14)	0.07 ± 0.04 (0.02–0.14)	0.07 ± 0.04 (0.02–0.13)	0.966
Tacrolimus concentration (ng/ml)	7.58 ± 2.88 (1.50–10.90)	12.07 ± 5.42 (6.30–24.60)	5.51 ± 1.72 (2.00–7.90)	0.006
Dose adjusted tacrolimus concentration ((ng/ml)/(mg/kg/d))	140.33 ± 89.89 (37.50–296.67)	240.44 ± 167.76 (57.27–595.00)	121.69 ± 90.26 (41.54–275.00)	0.006
Serum creatinine (mg/dl)	2.89 ± 1.29 (1.10–5.30)	3.59 ± 1.72 (1.60–6.40)	3.22 ± 1.98 (1.30–7.20)	0.496

Introduction: Tacrolimus interaction with oral conjugated estrogen was assessed in kidney transplant recipients that received conjugated estrogen as bleeding prophylaxis before kidney biopsy.
Methods: Trough tacrolimus blood concentrations were measured before, during and after conjugated estrogen therapy. Patients who received any drugs with potential to inhibit or induce tacrolimus metabolism were excluded. Dose-adjusted tacrolimus concentration was calculated by dividing tacrolimus concentration by its daily dose.
Results: Nine patients with indication biopsy (8 patients due to increased serum creatinine and one for proteinuria) were included. All patients received conjugated estrogen dose of 3.75 mg/day for 4.78 ± 0.83 days. With constant doses of tacrolimus, its concentration increased during concomitant administration of conjugated estrogen (from 7.58 ± 2.88 to 12.07 ± 5.42 ng/ml) and decreased after termination of conjugated estrogen (5.51 ± 1.72 ng/ml) ($p = 0.006$). Dose- adjusted tacrolimus concentration increased from 140.33 ± 89.89 before taking estrogen to 240.44 ± 167.76 by concomitant administration of conjugated estrogen and again decreased to 121.69 ± 90.26 after cessation of estrogen ($p = 0.006$). There were no differences in serum creatinine concentrations between the three phases of the study. Only one patient suffered nausea while taking conjugated estrogen without change in liver function chemistries.
Conclusion: Concomitant administration of oral estrogen increases tacrolimus blood concentrations that necessitate more closely monitoring of tacrolimus levels.

P322 EFFECT OF EVEROLIMUS PLUS REDUCED-DOSE CYCLOSPORINE ON GRAFT OUTCOMES IN KIDNEY TRANSPLANT RECIPIENTS WITH ≥3 HLA MISMATCHES: 24-MONTH RESULTS FROM THE A1202 STUDY

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Background: Human leukocyte antigen (HLA) mismatch between donors and recipients is a key predictor of graft outcomes in kidney transplant recipients (KTR). This 24-month (M) subanalysis from the A1202 study compared the efficacy and safety of everolimus+reduced-dose cyclosporine (EVR+rCsA) vs mycophenolate mofetil+standard-dose cyclosporine (MMF+sCsA) regimens in a subpopulation of KTR with ≥3 HLA mismatches.
Methods: A1202 was a 12 M, multicentre, randomised open-label, core study comparing the efficacy and safety of EVR (1.5 mg/day+rCsA vs MMF (2 g/day)+sCsA in Japanese *de novo* KTR with a 12 M extension follow-up. This subanalysis was performed to assess composite efficacy failure events (treated biopsy-proven acute rejection, graft loss, death, or loss to follow-up), renal function and safety in a subpopulation with ≥3 HLA mismatches at M24.
Results: In this HLA-mismatch subpopulation, each treatment arm comprised 37 patients. The composite efficacy was comparable between the EVR+rCsA and MMF+sCsA arms at M24. Although not statistically significant, mean estimated glomerular filtration rate was numerically better with EVR+rCsA vs MMF+sCsA arm (eGFR, 62.1 vs 56.4 ml/min/1.73 m^2, $p = 0.240$). Serum creatinine and creatinine clearance were similar between arms ($p = 0.631$ and 0.34, respectively). The incidence of hyperlipidemia and proteinuria was more frequent, while cytomegalovirus (CMV) infection was less frequent with EVR+rCsA than with MMF+sCsA (Table).

Conclusion: Among KTR with ≥3 HLA mismatches, EVR+rCsA regimen had comparable efficacy and safety, with lower rate CMV infections as MMF+sCsA regimen up to 24 M post-transplantation.

Table: Efficacy, renal function, and safety outcomes of EVR+rCsA vs MMF+sCsA at M24 in KTR with ≥3 HLA mismatches

Parameter	EVR+rCsA N = 37	MMF+sCsA N = 37		
Efficacy, n (%)			Treatment difference (EVR-MMF), % (95% CI)#	*P*-value
Composite efficacy endpoint	4 (10.8)	4 (10.8)	0.0 (−14.1, 14.1)	-
tBPAR	3 (8.1)	4 (10.8)	−2.7 (−16.0, 10.6)	-
Graft loss	0 (0.0)	0 (0.0)		-
Death	0 (0.0)	0 (0.0)	-	-
Loss to follow-up	1 (2.7)	0 (0.0)	2.7 (−2.5, 7.9)	-
Renal function, mean ± SD	**N = 36**	**N = 37**		
eGFR (MDRD) at M24 (mL/min/1.73 m^2)	62.1 ± 21.6	56.4 ± 14.6	-	0.240
Change from M1 in eGFR (MDRD) mL/min/1.73 m^2	−3.7 ± 17.8 (N = 35)	−8.7 ± 18.6 (N = 37)	-	0.228
Serum creatinine (mg/dL)	1.4 ± 0.7	1.4 ± 0.4	-	0.631
Creatinine clearance (Cockcroft-Gault, mL/min)	60.1 ± 20.4	55.0 ± 14.0	-	0.340
Safety, n (%)	**N = 37**	**N = 37**		
Any AE/Infection	37 (100.0)	37 (100.0)	-	-
AE (>40%)				
Constipation	10 (27.0)	19 (51.4)	-	-
Nasopharyngitis	21 (56.8)	23 (62.2)	-	-
Hyperlipidaemia	18 (48.6)	11 (29.7)	-	-
CMV test positive	4 (10.8)	15 (40.5)	-	-
AE of interest				
Proteinuria	8 (21.6)	3 (8.1)	-	-
Nephrotic syndrome	1 (2.7)	0 (0.0)	-	-
CMV infection	2 (5.4)	12 (32.4)	-	-

#Z-test based 95% CI for difference

AE, adverse event; CI, confidence interval; CMV, cytomegalovirus; eGFR, estimated glomerular filtration rate; EVR+rCsA, everolimus+reduced-dose cyclosporine; HLA, human leukocyte antigen; MDRD, modification of diet in renal disease; KTR, kidney transplant recipients; M, month; MMF+sCsA, mycophenolate mofetil+standard-dose cyclosporine; SD, standard deviation; tBPAR, treated biopsy-proven acute rejection

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IMPACT OF EARLY ADDITIONAL MAMMALIAN TARGET OF RAPAMYCIN INHIBITORS WITH LOW-DOSE CALCINEURIN INHIBITOR IN RENAL TRANSPLANT PATIENTS: A SINGLE-CENTER PILOT STUDY

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Background: Calcineurin inhibitors (CNIs), the standard immunosuppressants used in renal transplantation, can have a negative effect on long-term prognosis.
Methods: This was a prospective study of 95 kidney transplant recipients between November 2012 and December 2016. Protocol biopsies were performed 3 months after transplantation. The patients were divided into an EVL group ($n = 49$) and a conventional group ($n = 46$). In the EVL group, EVL (1.5 mg/day) was added 90–180 days after transplantation, steroids were withdrawn, and 50% reductions in CNI and mycophenolate mofetil were initiated.
Results: The mean ages of the patients in the EVL ($n = 49$) and conventional groups ($n = 46$) were 48.2 and 48.8 years, respectively. Cyclosporine was received by 20 (20/49; 40.8%) and 22 patients (22/46; 47.8%) in the EVL and conventional groups, respectively. In the EVL group, 11 patients had acute T-cell-mediated rejection (ATMR) within 3 months after transplantation, 5 developed ATMR after the addition of EVL, and 6 had acute anti-body-mediated rejection (AAMR) within 3 months after transplantation. Three patients developed AAMR after the addition of EVL. In the conventional group, 12 patients had ATMR within 90 days. After 90 days, 5 patients developed ATMR. Pre-AAMR occurred in one patient; and post-AAMR, in 2 patients. Renal function in terms of estimated glomerular filtration rate at 6, 12, and 24 months were respectively as follows: 47.9, 48.8, and 48.2 ml/(min·1.73 m^2) in the EVL group and 48.5, 50.1, and 44.4 ml/(min·1.73 m^2) in the conventional group. No statistically significant differences were found. In the EVL and conventional groups, 20 and 7 patients had interstitial fibrosis and tubular atrophy (IF/TA), respectively, showing a statistically significant difference ($p < 0.01$). Multi

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INCIDENCE OF LEG NUMBNESS AFTER LIVER TRANSPLANTATION

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Background: Leg numbness is one of the most common symptoms of peripheral neuropathy. Besides, it is one of neurological complications that is significant side effect of immunosuppressive treatment after solid organ transplants. However, the drug interactions causing peripheral neuropathy after liver transplantation have not been well studied. In this study, we aimed to investigate the incidence of leg numbness after liver transplantation.
Methods: We retrospectively evaluated the medical records of 176 patients who had undergone liver transplantation between 2013 and 2016. The patients suffering from leg numbness were matched at a 1:1 ratio to controls by gender, age (± 5 years) and duration of follow-up after liver transplantation (± 1 month). A modified neuropathy symptom score (NSS) was used for classifying symptom severity. Categorical variables were compared using the chi-square test or Fisher's exact test when appropriate. For continuous variables, the Mann-Whitney U test was used to examine differences between the two groups.
Results: Ten patients (5.7%) had leg numbness. Among them, 8 patients (80%) were male. The mean age was 61.7 ± 6.1 years and the mean duration of follow-up after liver transplantation was 35.4 ± 10.7 months. Two patients had severe neuropathic symptoms (NSS=7 scores), and the others had moderate (NSS=5~6 scores). Cause of liver disease prior liver transplantation had a statistically significant difference between two groups ($p = 0.049$). Hepatitis B infection was the majority in patients with leg numbness (80%), but alcoholism was the majority in patients without leg numbness (40%). All patients in both groups used tacrolimus and there was no statistically significant difference in blood trough levels of tacrolimus between two groups.
Conclusion: Leg numbness most occurred in patients with >1 year duration of follow-up after liver transplantation. Causes of liver disease might be associated with the presence of leg numbness.

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EVALUATING STEROID SPARING IMMUNOSUPPRESSION BASED KIDNEY TRANSPLANTATION IN SAUDI PATIENTS – A SINGLE CENTER STUDY

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Background: In kidney transplantation, steroids have been the mainstay of both induction(IIS) and maintenence immunosuppression (MIS). But given their many undesirable side effects, attempts have been made to restrict their use in kidney transplantation. The present study aimed at determining the safety of steroid sparing immunosuppression(SSI) in our ethnically distinct Saudi recipients of kidney transplants. The study will be important as ethnicity is a known determinant of the immunological milieu of the recipients.
Methods & materials: 57 patients undergoing renal transplantation in our unit, during 2013–2016, were studied. Of these, 15 had (SSI) and the rest (42), steroid based immunosuppression(SBI). Selection for SSI was based on HLA matching, PRA, DSA,& presence of comorbidities. The outcome measures were graft survival, patient survival and graft function. The last was assessed by trend in post-transplant serum creatinine(s.cr), incidence of slow graft function(SGF), delayed graft function(DGF) and rejections(R). T test was applied for comparing the outcome. Relative risk of adverse events in the two groups was also determined.

Result: Patients in SSI were significantly older and had greater comorbidities than SDI. They also had better HLA matching and PRA/DSA profiles.IIS was same in the two, comprising of methylprednisolone(MP)and ATG.MIS in SDI was oral prednisolone, FK & Cellcept. SSI received same FK & Cellcept but steroids were totally withdrawn after 4–5 days after induction MP. In SSI, s.cr dropped to normal after 1- 6 days (mean 3.5 ± 2 SD), while in SDI, it took 2- 26 days (mean 12 ± 6 SD), (p *value* 0.06). Mean s.cr on 7 post- transplant day was 99 ± 20 SD in SSI and 87 + /- 56 SD in SDI(p *value* 0.2). In SSI, there were no SGF, DGF or R. In SDI, respective values were 2, 3 & 1 {$p < 0.05$}. In SSI, there was no graft failure or death; in SDI, failed grafts one & deaths none.
Conclusion : Outcome in Saudi renal transplant recipients on SSI is comparable to those on SDI.

P327 TREATMENT WITH ABATACET IN RECURRENT FOCAL SEGMENTAL GLOMERULOSCLEROSIS AFTER KIDNEY TRANSPLANTATION

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Primary idiopathic focal segmental glomerulosclerosis (FSGS) is leading cause of end stage renal disease. After renal transplantation, recurrent FSGS is occurs in 23 – 53% of patients, it has inferior graft survival. Recurrent FSGS treated with rituximab, plasmapheresis, but prognosis is poor. Recently, recurrent FSGS patients treated with abatacept could achieve successfully partial or complete remission. We present two cases with recurrent FSGS after renal transplantation.
Case 1: A 57-year-old female patient with diabetic mellitus, hypertension, had ABO incompatible kidney transplantation. Donor was her husband aged 60 with blood group B. Her blood group is O and the anti-B titers of the recipient were 1:128 preoperatively. Preoperative medication was rituximab 200 mg, 6 plasmapheresis procedure, basiliximab, tacrolimus, mycophenolate mofetil (MMF), corticosteroid.
A 1 h biopsy was no abnormal finding. But proteinuria was over 6 g after post operative day 12. Graft biopsy was done on day 16, was suggestive of recurrent FSGS. She received 6 plasmapheresis procedure, steroid pulsing, but she did not respond to therapy and still showed proteinuria. Graft biopsy on day 76 was recurred FSGS. She treated with abatacept 500 mg on day 82.
Case 2: A 40-year-old female patient with diabetic end stage renal disease, had deceased donor kidney transplantation. Induction immunosuppressants were thymoglobulin, tacrolimus, MMF and corticosteroid. A 1 h biopsy was no abnormal finding. But proteinuria was higher than 5 g after postoperative days 15, biopsy was done. Biopsy's result was recurrent FSGS. She was treated with rituximab 200 mg, 8 plasmapheresis procedure, but massive proteinuria detected. She treated with abatacept 500 mg on day 36.
Conclusion: The patients were unsuccessfully treated with abatacept. They were received abatacept 10 mg/kg body weight once, the proteinuria and decreased graft function remained unchanged, and they never reached remission.

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P328 EVALUATION OF THE IMPACT OF DIFFERENT RISK FACTORS ON THE DEVELOPMENT OF NEUROLOGICAL COMPLICATIONS FOLLOWING LIVER TRANSPLANTATION

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Background: Neurological problems are common after orthotopic liver transplantation (13 – 47%). They mostly occur early after surgery.
Aims: To study risk factors affecting development of neurological complications post living donor liver transplantation (LDLT).
Methods: A retrospective study done on 90 adult patients (80 males and 10 females) with end stage liver disease due to HCV (84 patients, 93.33%), cryptogenic cirrhosis (3 patients), autoimmune hepatitis (1 patient), HBV (1 patient) and primary biliary chaolangitis (1 patient) undergoing LDLT in Kasr Al Ainy hospital (Cairo university, Egypt). Patients were followed up for 3 months post liver transplantation.
Results: The median age was 49.30 years. Immunosuppressants used were Tacrolimus (86 patients) and cyclosporine (4 patients). 28 patients (31.1%) had neurological complications and all of them were receiving tacrolimus. 89.3% of those complications occurred during the 1st month post transplantation. Hallucinations occurred in 60.7% of patients, tremors in 17.9%. Rest of the 28 patients developed headache, agitation, convulsions, hypersomnia and confusion. Child and MELD scores were significantly correlated with occurrence of neurological complications (p value = 0.032 and 0.014 respectively). Tacrolimus level was within therapeutic range in all patients. Yet, Tacrolimus associated neurotoxicity was suspected, as patients improved following changing Tacrolimus to Cyclosporine (25 patients) or after reduction of Tacrolimus dose (3 patients). None of these 28 patients had CNS infection. None of demographic criteria, etiology of liver disease or pre-transplant laboratory data had impact on development of neurological complications.
Conclusions: Our study showed that severity of end stage liver failure prior to transplantation might be the most common risk factor for the development of post transplant neurological complications. Still use of Tacrolimus is associated with risk of neurological complications.

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P329 LONG TERM FOLLOW UP OF STEROID-FREE IMMUNOSUPPRESSION PROTOCOL IN LIVE-DONOR KIDNEY TRANSPLANT RECIPIENTS

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Objectives: Corticosteroids have commanded a central position in clinical transplantation. Corticosteroids are currently widely used as part of the immunosuppressive regimen after transplantation, but steroids have well documented multiple adverse effects involving many body systems, including effects on blood pressure, Lipid profile and glucose tolerance. The steroid-free immunosuppression is feasible and allows good graft survival in the long-term and a low rate of rejection. Steroid avoidance was the standard not only in low-risk patients (Cole et al., 2001), but also in those undergoing their second or more transplantation. Because the side effects of steroids are a result of the high doses given early postoperative period, there is good reason to focus efforts on avoiding their administration altogether.
Materials and methods: This retrospective single Centre study included 480 kidney transplant recipients who were transplanted at Mansoura urology & nephrology Centre between June 2004 and December 2013. Patients divided into two groups according to the original kidney disease (OKD); group I: 240 patients with steroid-free protocol as a primary immunosuppression plan, group II: 240 patients with steroid-based protocol as a primary immunosuppression plan.
Results: Steroid free regimen was used more frequent with younger recipient. The difference was statistically significant. The results were comparable as regard induction therapy but the difference was statistically significant as regard total dose of steroid taken in the 1st three months. Acute humoral rejection incidence occurs more frequent with steroid-based protocol. There is no statistically significant difference as regard the cost for induction therapy or management of acute rejection episodes.
Conclusion: The usage of steroid free immunosuppression protocol after renal transplantation decreases the incidence of steroid complications without increasing rate of acute rejection.

P330 LIVING-DONOR KIDNEY RETRANSPLANT: RISK FACTORS AND LONG TERM FOLLOW UP

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Background: The chronic kidney disease (CKD) affects 3% of women of childbearing age. Pregnancy is a rare event in patients on dialysis. For women with pre-existing renal failure, pregnancy is associated with increased rate of fetal complications and considerable risk of pregnancy complications. Women regain fertility a few times after renaltransplantation. However, viability of pregnancy and maternal complications are still unclear.
Patients and methods: Between March 1976 and the end of 2015, In Mansoura urology and nephrology center, we had 2701 live-donor renal transplant recipients. Female recipients in child-bearing period were recruited in to groups: Group 1: (study group) all female patients who had been pregnant with functioning renal graft either continue or discontinue pregnancy. Group 2: (control group) all female patients who had not been pregnant with functioning renal graft.
Both groups were matched according to age, duration and method of dialysis before transplantation, duration of renal transplantation before getting pregnant and other comorbidities accompanied. Preconceptional conselling was done by both nephrologist and obstetrician. Follow up was done in outpatient clinic.
Results: We had analyzed data according to SPSS version 16.1, finding no statistically difference between both groups as regard graft function, patient and

graft survival. but in group 1, nearly 40% developed premature rupture of membrane. One recorded case of cleft palate and lip. One case developed biopsy based rejection that was successfully managed by pulse steroid. Only two cases had graft dysfunction late in pregnancy and so received empirical pulse steroid.
Conclusion: Pregnancy after renal transplantation is relatively unsafe. Restrict follow up is crucial for better outcome.

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P331 MINIMIZATION OF IMMUNOSUPPRESSION AFTER LIVER TRANSPLANTATION FROM THE PERSPECTIVES OF 'DE NOVO MALIGNANCY' AND 'NEPHROTOXICITY'

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Introduction: Immunosuppressive drug after liver transplantation (LT) can induce malignancy, infection, and other complications. We intended to try immune minimization for much more patients after LT. We present our policy for immune minimization after LT and its results at Ajou University Medical Center in Korea from the perspectives of '*de novo* malignancy' and 'nephrotoxicity'.
Methods and Materials: We collected data of 401 patients who underwent LT from January 2005 to August 2015. Inclusion criteria is patients 1 year after LT, who have persistent normal liver function tests in the last 6 months. Exclusion criteria are 1) autoimmune hepatitis, 2) recent history of acute rejection, 3) active hepatitis B or C after LT. Two hundred and seventy-eight patients of them (69.3%) were enrolled in this study. For nephrotoxicity, we defined severe chronic kidney disease as stage 4 and 5, using estimated glomerular filtration rate (eGFR).
Results: A total of nine patients had stopped (complete withdrawal) their immunization. Ten 'de novo malignancy' happened. Cumulative 1-year rate of '*de novo* malignancy' was 0.7%, 5-year rate was 3.6%, and 10-year rate was 6.2%. For nephrotoxicity, cumulative 1-year severe chronic renal disease was 4.0%, 3-year was 9.0%, and 5-year was 10.9%.
Conclusions: These results show that immune minimization can be achieved safely in terms of risk for graft loss, only if we monitor the patients closely during the minimization period. We believe that one of the reasons for the lower '*de novo* malignancy' and 'nephrotoxicity' rate than other reports would be our policy of immune minimization for all the cases in inclusion criteria after LT.

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P332 HOW WELL TOLERATED IS FULL DOSE MYCOPHENOLATE MOFETIL IN RENAL TRANSPLANT RECIPIENTS?

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Background: Renal transplant is an effective treatment for many patients with end stage renal disease, irrespective of age. Older recipients are more likely to die with a functioning graft, due to co-morbidity and immunosuppression burden. However, many centres, including ours, do not routinely tailor immunosuppression based on age. In Scotland, standard immunosuppression consists of tacrolimus, 1 g BD mycophenolate mofetil (MMF), and prednisolone. We sought to determine the number of patients intolerant of full dose MMF, stratified by age.
Methods: In 2015, 245 renal transplantations were carried out across Scotland (deceased donor transplants, $n = 168$). Of these, 20 patients were ≥ 65 years old (8%). Mean follow up was 361 days. We focused on complications of immunosuppression (infection, leucopenia, gastrointestinal intolerance) and death.
Results: At follow-up, 227 patients (93%) were alive with a functioning graft and 6 (2%) had died (2 ≥ 65 years, 4 < 65 years). Acute rejection (AR) occurred in 42 (17%) patients and 12 grafts had failed (5%), all in patients <65 years.

	1 g BD MMF	720 mg BD mycophenolate sodium	Reduced dose MMF/mycophenolate sodium	Changed drug/stopped
All Patients	109 (44%)	10 (4%)	90 (37%)	36 (15%)
≥65	8 (40%)	0 (0%)	6 (30%)	6 (30%)
<65	101 (45%)	10 (5%)	84 (37%)	30 (13%)

Of 124 patients <65 years requiring a change in MMF (55%), adverse drug reactions (ADRs) were the cause in 45 (31%), infections in 29 (20%), leucopenia in 25 (17%) and other causes in 47 (32%). There were multiple factors responsible for some. Of 12 patients ≥65 years requiring a change in MMF (60%), causes were ADRs in 8 (62%), leucopenia and infection in 2 patients each (15%) and other causes in 1 (8%).
Conclusion: Our results demonstrate that many patients are intolerant of intended immunosuppression, and suggest that older patients are less likely to develop acute rejection but more likely to suffer adverse drug reactions to full dose MMF.

P333 IMPACT OF CONVERSION FROM ONCE-DAILY BRAND TO TWICE-DAILY GENERIC TACROLIMUS IN KIDNEY TRANSPLANT RECIPIENTS: A SINGLE-CENTER STUDY – A THREE YEARS FOLLOW-UP

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Background: Conversion between tacrolimus formulations raises concerns due to its well-known narrow therapeutic index with a diminutive difference between therapeutic and toxic concentrations. Twice-daily brand tacrolimus to once-daily brand tacrolimus conversion was proved to be safe as was twice-daily brand to a generic tacrolimus preparation. Our group previously published the first study comparing the clinical outcomes of renal transplant patients switched from once-daily brand to generic tacrolimus with good results at 9-month follow-up. The aim of this study was to evaluate if the conversion was still considered safe at 36-month follow-up.
Methods: We conducted a prospective study after once-daily brand conversion to generic tacrolimus over a 36-month period. We included 109 kidney transplant recipients with stable renal function, serum creatinine <2.0 mg/dl and kidney transplant for ≥6 months at conversion.
Results: The serum creatinine levels were not statistically different at conversion and 36-month follow-up ($p = 0.737$). There were no episodes of acute rejection. There were three deaths from unrelated causes, three chronic rejections, one graft loss due to infection and three immunosuppression switches, two due to tacrolimus-related adverse effects.
Conclusions: The twice-daily generic tacrolimus seems to provide similar efficacy and safety to once-daily brand at 36-month follow-up. We cannot exclude that the chronic rejections and adverse reactions to tacrolimus were due to the conversion although it seems unlikely.

P334 TEN-YEAR OBSERVATIONAL FOLLOW-UP OF A RANDOMIZED TRIAL COMPARING TACROLIMUS AND CYCLOSPORINE WITH STEROID WITHDRAWAL IN LIVING-DONOR RENAL TRANSPLANTATION

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Background: Steroid avoidance or withdrawal strategies have been attempted, however, long-term results of steroid withdrawal regimen in renal transplantation are rarely published. We have conducted and published a 5-year prospective, randomized, single center trial comparing the safety and efficacy of cyclosporine plus mycophenolate mofetil (CsA group) with tacrolimus plus mycophenolate mofetil (TAC group) after steroids were withdrawn 6 months after kidney transplantation in low risk patients. We now report the 10-year observation data on the study population.
Methods: This was a retrospective observational study. We have collected the data from the database of the Organ Transplantation Center, Samsung Medical Center for 5 years after completion of the original study (TAC group $n = 62$; CsA group $n = 55$). End points were patient and graft survival, and the incidence of acute rejection, changes of kidney function and comorbidities after renal transplantation such as new-onset diabetes after transplantation (NODAT).
Results: The 10-year patient and graft survival rate did not differ between groups (98.4% vs. 98.2%; $p = 0.49$ and 78.0% vs. 85.0%; $p = 0.75$ in TAC group and CsA group, respectively). The incidence of acute rejection was similar between the CsA group and the TAC group (23.6% vs. 14.5% respectively; $p = 0.14$). The incidence of NODAT tended to be higher in TAC group compared with CsA group (22.6% vs. 10.0%; $p = 0.08$).
Conclusions: Long-term graft and patient survival, the incidence of acute rejection and post-transplant de-novo comorbidity were similar between CsA- and TAC-based regimens with 6- month steroid withdrawal in low risk renal transplantation.

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INDUCTION AGENTS AND BK POLYOMAVIRUS IN THE ASPECT OF USING EXTENDED CRITERIA DONOR WITH ACUTE KIDNEY INJURY

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Background: The use of extended criteria donors (ECD) with acute kidney injury (AKI) have been increased because of donor shortage. The use of anti-thymocyte globulin (ATG) has been also increase to prevent delayed graft function (DGF) and rejection. We investigated the prevalence and outcome of BK polyomavirus.
Material and Method: We performed 75 kidney transplantations from Mar. 2012 to Dec. 2016. We reviewed retrospectively 68 patient's data except of graft failure and mortality cases.
Results: Forty patients received ATG as induction agent ($n = 11$) or treatment of DGF ($n = 29$) and 28 patients received basiliximab and triple regimen. Among the ATG group, there were more patients with AKI ($n = 6$, 21.4%, $p = 0.046$). Total 7 patients showed biopsy-proven rejection. The patients who showed DGF, suffered from significantly higher rate of rejection ($p = 0.004$). Although six patients were belonged to the ATG group, among the patients who received ATG as an induction agent, only two patients showed rejection ($p = 0.475$). BK viremia was identified in ATG group ($n = 6$, 21.4%) and no ATG group ($n = 2$, 5%). It was not significantly different ($p = 0.288$). Last follow-up creatinine and estimated glomerular filtration rate (eGFR) were not significantly different in aspect of BK virus status. However, the patients with rejection and BK virus infection showed significantly lower eGFR ($p = 0.015$).
Conclusion: BK viremia was more frequently identify in the patients who receiving ATG. However, the Selection of ATG as an induction agent may prevent DGF and rejection show good result despite BK viremia.

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LONG-TERM OUTCOMES OF STEROID WITHDRAWAL BETWEEN 3 AND 6 MONTHS AFTER KIDNEY TRANSPLANTATION WITH INDUCTION THERAPY AND TACROLIMUS AND MYCOPHENOLATE MOFETIL

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Background: Because of many side effects of the long-term use of steroids, the introduction of more potent immunosuppressive agents motivated clinicians to get rid of steroids from the maintenance regimen in kidney transplantation (KT). Many studies including our previous study have shown that late steroids withdrawal (6 months after KT) had comparable patient and graft survival. Based on these findings, we applied the late steroids withdrawal protocol in practice. This study was a single-center, retrospective study to efficacy and safety of late steroid withdrawal with induction therapy and tacrolimus and mycophenolate mofetil (MMF) compared with steroids maintenance group.
Methods: Among the patients who had KT between Feb 14, 1995, and Dec 14, 2014, we selected the patients with induction therapy and tacrolimus and MMF. Steroid withdrawal (SW) group was defined as tapering out of steroids between 3 ~ 6 months after KT. The others were classified to steroids maintenance (SM) group. Patient death and graft failure, biopsy-proven acute rejection (BPAR) episodes, and adverse events were assessed.
Results: Of 704 patients, SW group was 68 and SM group was 636 patients, with median follow-up duration of 55 (28.5 – 75) and 43.5 (23 – 73) months, respectively. In the multivariate analysis, patient death and graft failure were not significant different between the two group [HR = 0.724 (0.16 – 3.284), HR = 0.678 (0.259 - 1.776), respectively]. The incidence of BPAR was significantly higher in steroid maintenance group [HR = 1.926 (1.161 – 3.196)]. However, the incidence of BPAR after 3 months after KT was no difference between group [HR = 1.479 (0.84 – 2.607)]. There was no difference in adverse events such as post-transplant diabetes, hypertension, avascular necrosis, and cancer.
Conclusion: Late steroid withdrawal with induction therapy and tacrolimus and MMF did not increase the risk of acute rejection and had comparable graft and patient survival in selected recipients.

Clinical Liver Immunosuppressive agents

P337

EVALUATING PATIENTS' PERCEPTION OF THEIR IMMUNOSUPPRESSIVE TREATMENT: A SIMPLE TOOL TO ENHANCE PATIENT ADHERENCE

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Background: Patients' perception of their immunosuppressive (IS) drugs, including adverse effects (AEs), influences their quality of life and may be a trigger for poor adherence. Improving adherence is possible only if barriers, including negative experience of the treatment, are identified and alleviated. The aim of this study was to evaluate the patients' experience of their IS treatment.
Methods/Materials: An observational study was conducted in 50 liver adult transplant patients included prospectively between November 2016 and February 2017. Patients' experience of their IS treatment were evaluated using the MESI auto-questionnaire and AEs were collected simultaneously. Patients' experience was considered negative for a MESI score >15. Logistic regression, Pearson chi-square test, one way ANOVA and t-tests were used to study the relationship between the MESI score and covariates. Results were considered significant for $p < 0.05$. Statistical analyses were performed in R software.
Results: Patients were 57.2 ± 11.1 year-old and 76.5% were men (time from transplantation 6.2 ± 6.6 years). The MESI score was >15 in 27% of the patients. No significant association was found between the MESI score and age, sex, post-transplantation delay or living environment. Patients with a high MESI score considered that their treatments were essential but harmful, and suffered from discomfort and severe AEs, which they thought would never disappear. The highest MESI scores were associated with the following AEs: musculoskeletal disorders (in particular, joint pain), edema, neurological and sexual disorders ($p < 0.05$).
Conclusion: In this study, one-third of the patients reported a negative experience towards their IS treatment, mostly because of AEs. The MESI questionnaire is a handful tool, usable in therapeutic education programs, as it helps healthcare providers screening patients at risk of poor adherence because of the presence of barriers such as AEs.

Clinical Kidney Immunosuppressive agents

P338

SWITCH FROM TWICE-DAILY TACROLIMUS TO ONCE-DAILY PROLONGED RELEASE TACROLIMUS IN KIDNEY TRANSPLANTATION:LONG-TERM OUTCOME

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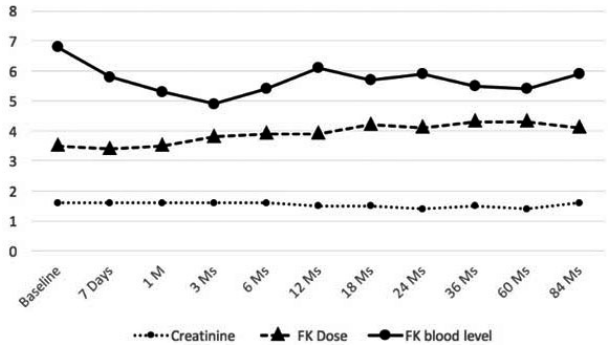
Background: One daily dose (QD) of tacrolimus (Tac) improves adherence in kidney transplant (KT) recipients. Switch from twice daily Tacrolimus amount (BD) to QD showed similar efficacy and safety.
Methods/Materials: The aim of our study was to demonstrate the long term efficacy and safety after the switch from BD Tac to QD Tac in KT recipients. Early results were already published. Forty-one patients (pts) (M/F: 34/7), mean age at KT of 43.9 ± 12.7 years, underwent a 1:1 dose switch from BD to QD Tac; the mean time from KT to switch was 36.6 ± 16.1 months. Among our population, 4 pts received a living-donor KT and 2 pts received a second allograft.
Results: The mean follow-up was 86.8 ± 13 months from the switch and 126.2 ± 22.3 months from KT. Graft and pt survival were respectively 90.2% and 95.1%. All pts maintained stable renal function during the follow-up. Serum creatinine (mg/dl), blood Tac level (ng/ml) and Tac doses throughout the follow up, are reported in graphic. Fourteen pts who stopped steroids under Tac BD treatment and 16 pts who stopped steroids after the switch are steroids free at present.
Conclusion: Our study showed the safety and efficacy of the switch from BD Tac to QD Tac. After early (<1 year) dose adjustment, Tac blood levels remained stable throughout follow up. Moreover QD Tac represented a valid alternative for patients showing steroids side effects.



P339

THE INFLUENCE OF THE IMMUNOSUPPRESSIVE REGIMEN ON THE INCIDENCE OF POST-TRANSPLANT CMV IN HIGH-RISK RECIPIENTS

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Background: Cytomegalovirus (CMV) is a frequent and important cause of clinical disease in kidney transplant recipients (KTRs). Observational data suggest that D+/R− KTRs are at the highest risk of developing severe CMV disease compared to all other KTRs. In the absence of antiviral prophylaxis, symptomatic CMV disease can be seen in approximately 8% of KTRs, although older estimates placed it at 10–60% of KTRs. In a recent published study it was shown that reduced-dose tacrolimus and everolimus was associated with a significant reduction in the incidence of CMV infection/disease compared to standard tacrolimus dose and mycophenolate in patients in low-risk patients.
Methods: This was a single center, retrospective study in de novo kidney transplant recipients. We included patients older than 18 years transplanted between August 2014 and December 2015, recipients of first transplants and CMV IGg negative pre transplant. All patients received induction therapy whit 3 mg/kg dose of rabbit antithymocyte globulin (r-ATG) in a single dose on the first day after transplantation. All patients received tacrolimus and prednisone. No pharmacological prophylaxis for CMV infection was used. Per local practice, all patients CMV IGg negative pre transplant were monitored for CMV viral replication once a week for 3 months.
Results: From the 1270 transplants, 70 (5.5%) were CMV IGg negative pre transplant. In this cohort 51% (36) received azathioprine (AZA) as maintenance therapy, 35% (24) mycophenolate sodium and 14% (10) everolimus (EVR). In patients who received AZA as maintenance therapy the incidence of CMV was 72% (26), in patients who received MPS 92% (22) and in patients receiving EVR was 50% (5) (p:0.028). The recurrence rate was 80% (21) in AZA group vs 100% (22) MPS group vs 40% (2) EVR group (p:0.002).

Conclusion: Despite the high incidence of CMV, we can note that the use of everolimus post-transplant decreased the incidence of CMV even in high-risk patients.

P340

LONG-TERM CONSEQUENCES OF EARLY MAMMALIAN TARGET OF RAPAMYCIN-INHIBITOR-BASED IMMUNOSUPPRESSION AFTER KIDNEY TRANSPLANTATION

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The early use of mammalian target of rapamycin- (mTOR-) inhibitors in kidney graft recipients increases the risk of donor-specific HLA-antibody-formation and rejection. This led to the hypothesis that mTOR-inhibitor-use compared with a standard calcineurin inhibitor- (CNI-) based immunosuppression impairs graft- and patient-survival.

To proof this hypothesis we have retrospectively analyzed all kidney graft recipients in our center who received at least 1 month of an mTOR-inhibitor (CNI-free) during the first year and compared this cohort with CNI-treated (mTOR-inhibitor free) and CNI + mTOR-inhibitor treated patients. Figure 1 describes the treatment groups.

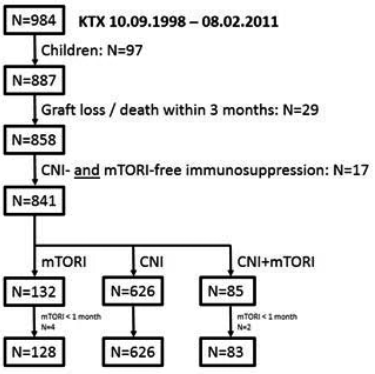

Figure 1
Kidney graft recipients between 10.09.1998 (i.e. first use of mTORI) and 08.02.2011 (i.e. last use of mTORI) and their early immunosuppression
CNI – calcineurin inhibitor, mTORI – mammalian target of rapamycin-inhibitor

Death censored graft survival was inferior in recipients with early mTOR-inhibitor based immunosuppression compared to CNI-based or CNI+mTOR-inhibitor based treatment (Figure 2). Patient survival in our analysis was not different between treatment groups.

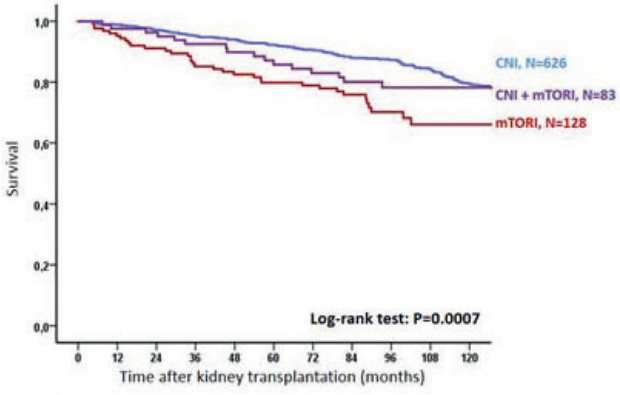

Figure 2
Death-censored graft survival after kidney transplantation dependent on early immunosuppression
CNI – calcineurin inhibitor, mTORI – mammalian target of rapamycin-inhibitor

Subgroup(s) of patients who benefit from mTOR-inhibitor-based, CNI-free immunosuppression after kidney transplantation remain to be defined.

P341 IMPACT OF EVEROLIMUS ADDED TO TACROLIMUS/MYCOPHENOLATE/PREDNISONE ON CMV DISEASE AND ACUTE REJECTION IN SENSITIZED KIDNEY TRANSPLANT RECIPIENTS. A SINGLE CENTER, RANDOMIZED AND CONTROLLED, PILOT STUDY

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Sensitized kidney patients (pts) have an increased risk of acute rejection (AR), receive higher load of immunosuppression, which predisposes them to more CMV infection. Everolimus (EVR) has a different mechanism of action to be added to triple therapy, in order not only avoid rejection but also to reduce the risk of CMV disease.

This is a single-center, prospective, randomized, controlled pilot study aiming to compare CMV disease and AR (efficacy) as well as to analyze adverse events (safety) in sensitized pts (PRA > 30%), receiving EVR added to the tacrolimus/MMF/pred (quadruple therapy-QT) compared to the regular triple therapy group (TT).

All pts received ATG induction and no CMV prophylaxis. CMV-preemptive therapy was started with any positive test (p66-DNAemia ≥4 cells) or blood qPCR≥ 2000 UI/ml). AR were biopsy-proven.

Were enrolled 30 pts: 16 in TT and 14 in QT group. Pts who withdrew (1 TT vs 2 QT) informed consent were excluded. Mean f-up was 319 ± 21 days. Demographics, sensitizing events and pre-tx PRA were similar. There were more pts with pre-transplant DSA in TT than in QT groups (7 × 3), however median of highest pre-tx DSA-MFI was lower in TT group (4044 vs 8282, p = 0.03. Overall AR rate was 47% in TT vs 17% in QT (7 vs 2; p=NS). There were 4 acute AMR in TT (2 type I; 2 type II) and 1 (type I) in QT (p=NS).

Rates of preemptive treatment for CMV infection were similar: 75% (QT) and 73% (TT). CMV diseases occurred in the TT group: 1 syndrome and 1 invasive GI. In the QT group, CMV treatment duration was shorter (14 × 22 days) and pretreatment qPCR was lower (2271 × 7493 UI/ml).

There were 1 graft loss in each group and 2 deaths in the QT. Among the remaining pts, eGFR (MDRD-4) and urinary Prot/Creat were similar at last f-up: 42 vs 39 ml/min and 0.5 vs 0.3, TT and QT, respectively. Adverse events were similar in both groups.

Conclusion: In this pilot analysis, QT appears to be an interesting approach to reduce CMV disease and acute rejection in sensitized patients.

P342 TREATMENT OF SEVERE ANTIBODY MEDIATED KIDNEY ALLOGRAFT REJECTION WITH ECULIZUMAB AND RITUXIMAB COMBINATION THERAPHY; A CASE REPORT

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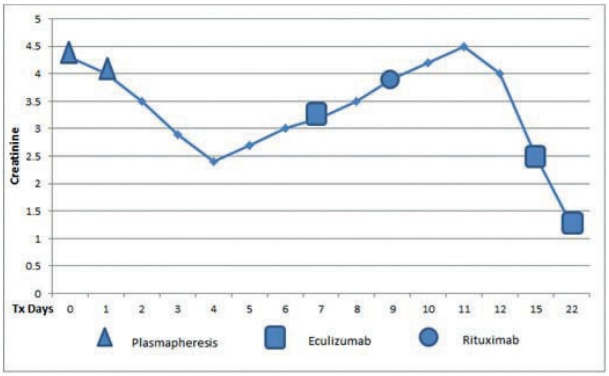
Introduction: Antibody mediated rejection (AMR) due to preformed donor specific antibodies (DSA) is one of the most catastrophic situation in kidney allograft transplantation. Herein we present the successful treatment of a resistant AMR with Eculizumab and Rituximab combination.

Case: 51-year-old woman was in our waiting list for 11 years, medical history had refusal for several donors due to positive CDC and flow-cytometric cross match (FCXM). She was called for a 43-year-old men brain death donor due to subarachnoid haemorrhage. Her CDC and FCXM were negative, however PRA was positive for Class I 82%, and Class II 67%. She had DSA towards the HLA B*35 with mean fluorescence intensity (MFI) of 1500. Preoperative plasmapheresis (TPE) with IVIG (0.4 g/kg) was administered in addition to 1 g methyl prednisolone and 1.5 mg/kg ATG to prevent AMR. Allograft was functioned immediately; creatinine progressively declined (4.3 mg/dl to 2.4 mg/dl) in four days. However, at fifth day creatinine levels began to increase. Kidney allograft biopsy was compatible with C4d positive AMR accompanying severe cortical necrosis. Her DSA (HLA B*35) was increased from 1500 MFI to 7200 MFI. We used Eculizumab (900 mg, seventh day) and Rituximab (375 mg/m^2, ninth day). TPE and low dose IVIG was continued, the renal function and treatment interventions are presented in Figure 1. Although her control DSA was still positive (MFI:7380) one week later, became completely negative at the other week. Patient discharged from clinic end of the first month with a creatinine 1.25 mg/dl and her creatinine was 0.92 mg/dl at sixth month of transplantation.

Conclusion: Severe AMR could be treated successfully by targeting multiple pathologic mechanisms such as removal of the preformed DSA with plasmapheresis, suppression of the ongoing antibody production with Rituximab, and blocking the complement dependent allograft injury with Rituximab, and blocking complement dependent allograft injury with Eculizumab.



P343 EARLY SWITCH TO BELATACEPT AS RESCUE THERAPY IN STEROID FREE KIDNEY TRANSPLANT RECIPIENT

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In kidney transplant recipients, costimulation blockade associated with CNI-withdrawal has emerged as a promising therapeutic strategy to improve glomerular filtration rate (GFR). Indeed, Belatacept has been successfully used as soon as the time of transplant and also as recue therapy in patient experienced an early allograft dysfunction, most often in a context of delayed graft function occurring with kidney transplants from extended criteria donor. Conventional use of Belatacept is associated with anti-metabolite drugs and steroids, and attempts to avoid this latter have showed huge rate of acute rejection. Regarding Belatacept use as a part of an early CNI-withdrawal strategy, no data involving steroid free kidney recipients are available. We report 14 cases of patients with poor graft function (mean GFR at switch of 20 ± 8 ml/min/1.73 m^2), early converted (mean time to switch 91 ± 32 days) to Belatacept. Ten had a deceased donor, who had most often extended criteria (80%). After the switch, we observed a rapid and significant GFR improvement (26.7 ± 4.2 ml/min/1.73 m^2 and 33.4 ± 4.2 ml/min/1.73 m^2 after 1 and 3 months respectively, p < 0.05), results were maintained long term without further improvement. Biopsies analysis revealed that the percentage of GFR increase, between the switch and 3 months, was significantly higher in patient with acute tubulopathy (109.1% ± 28.1 vs 31.1% ± 9.6, p = 0.02). While seven patients were steroid-free upon the conversion, and two others had stopped steroids three weeks and two months after the conversion beginning, no acute rejection were observed. In an era in which steroid avoidance is emerging as the gold standard in patients with a low immunological risk, regardless induction therapy, our data suggest that in patient steroid-free with a poor graft function, early Belatacept conversion could be safe.

P344 THE EFFICACY AND SAFETY OF MAMMALIAN TARGET OF RAPAMYCIN INHIBITOR USE – LONG-TERM FOLLOW-UP OF THE FIRST TUBEROUS SCLEROSIS PATIENT TREATED DE NOVO WITH SIROLIMUS AFTER KIDNEY TRANSPLANTATION

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Mammalian target of rapamycin inhibitors (mTORI) are increasingly used in the treatment of tuberous sclerosis complex (TSC) and also as immunosuppressive drug after organ transplantations. mTORI are considered as the treatment of choice in TSC patients after kidney transplantation. It is still under debate if benefits from long-term mTORI use will not be limited by mTORI side effects.

Here we report the long-term follow-up data of the first TSC patient after kidney transplantation treated with sirolimus de novo.

In 2005, the female patient after bilateral nephrectomy due to angiomyolipoma, was transplanted with kidney graft from deceased donor. The initial immunosuppressive treatment consisted of anti thymocyte globulin, methylprednisolone, tacrolimus, and due the diagnosis of TSC, sirolimus. The creatinine level at discharge was 1.4 mg/dl. The long-term mTORI use resulted in significant regression of skin lesions (angiofibromas, Confetti skin lesions, Shagreen patch). The brain, abdominal, chest MRI/CT scans revealed stabilisation of disease. Pulmonary function tests showed improvement in restriction and slow deterioration in obstruction and diffusion parameters.

Sirolimus related adverse reactions were hyperlipidemia and hypertriglyceridemia (with statin use since 2008), respiratory and urinary tract infections. No gastrointestinal or hematologic symptoms were observed. Sirolimus concentrations ranged from 1.7 to 8.2 ng/ml (mean 4.01 ± 2.09 ng/ml). Since 2009 proteinuria and slow increase in creatinine level have been observed. No biopsy was performed to establish the aetiology, and potential association with mTORi. In 2017 the creatinine level is 2.2 mg/dl.

In conclusion, the case of the patient confirms clinical effectiveness and acceptable safety of long-term mTORI treatment. Long-term mTORI use requires meticulous patient's observation to optimise dosage and achieve immunosuppressive effect, improvement in TSC manifestations with possibly minimal side effects.

Clinical Others Immunosuppressive agents

P345 IMMUNOSUPPRESSIVE THERAPY OF RECURRENT CORNEAL GRAFT REJECTION

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Introduction: Corneal transplantation has a high graft survival rate at 1-year, which might be due to the fact that the cornea is an immune-privileged site. Pre-existing inflammation, infection or vascularization confers high risk for rejection. Systemic immunosuppressive therapy to prolong the long-term survival of high risk keratoplasty (KP) has been suggested.

Case report: A 49-year-old patient suffering from flares of ocular herpes since 1993, resistant to antiviral and steroid therapy underwent his first KP in 2006. Few months later he rejected the graft. Prior to KP, lymphocytosis was observed and lymphoproliferative disease was discarded. Additionally to standard steroid therapy, oral mycophenolate mofetil (MMF) was indicated without recovery. Due to positive interferon gamma test he required anti-TBC prophylactic treatment. In 2007 he underwent a second KP and regardless of treatment with MMF, he rejected the graft. Persistent lymphocytosis was observed. In November 2016 a third KP was performed after HLA match at three loci. A pretransplant panel consisting of peripheral blood lymphocyte subpopulations count, immunoglobulin and complement levels, antinuclear antibodies, HCV and HIV testing, anti HLA antibodies and chest X-ray was scheduled. Early therapy with MMF, steroids and antiviral therapy was indicated. Due to sudden significant increase of lymphocyte count, low dose tacrolimus was added. After 1 month, oral steroids were withdrawn, lymphocyte count reached normal count while obtaining a low through levels of MMF (1.49 μg/l) and tacrolimus (3.9 μg/l) without adverse effects, signs of rejection or infection.

Conclusion: A stable condition of the third corneal graft in a patient with previous graft rejections was achieved only after enhanced triple immunosuppressive therapy. This case shows how occasionally, a more aggressive immunosuppression is necessary in order to obtain optimal outcome in high-risk KP including HLA matching and immune monitoring.

Clinical Kidney Immunosuppressive agents

P346 COMPARISON OF TWO DOSAGES OF THYMOGLOBULIN USED FOR INDUCTION IN DECEASED DONOR KIDNEY TRANSPLANTATION

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Background: Thymoglobulin is useful induction agent in deceased donor kidney transplantation (KTP) due to lower rejection and delayed graft function rates. Lower dose thymoglobulin induction may be effective, but the optimal dose is not well established. Therefore, we compared the safety and efficacy of induction treatment with low doses of thymoglobulin.

Method: We evaluated 26 deceased donor KTP patients. Induction medications were used thymoglobulin and methylprednisolone 500 mg. We were divided two groups depending on dose of thymoglobulin (1 mg/kg/day for 3 days vs. 1 mg/kg/day for 4 days). Maintenance medications were tacrolimus, mycophenolate mofetil and prednisolone. We performed 1 h, 3 weeks, 3 month graft protocol biopsy and monitored lymphocyte counts, renal function, infection history.

Result: 14 patients received 3 mg/kg thymoglobulin for induction of KTP while 12 patients received 4 mg/kg thymoglobulin. One acute cellular rejection, one cytomegalovirus infection, one tuberculosis infection, one cardiovascular disease, two deaths, two delayed graft functions and two slightly graft functions were showed on 3 mg/kg group. One acute antibody mediated rejection, one BK virus nephroapthy, two urinary tract infections and five delayed graft functions were showed on 4 mg/kg group. CD3 + count was 112 ± 2.6 on 2 week, 205.9 ± 38.4 on 12 week on 3 mg/kg group. 53.8 ± 32.7 on 2 week, 187.0 ± 41.3 on 12 week. Creatinine was 1.4 ± 0.9 mg/dl on 3 mg/kg, 1.2 ± 0.4 mg/dl on 4 mg/kg at 24 week. Graft biopsy was g+ptc 0.4 ± 0.7, ci 1.8 ± 0.9, ct 1.4 ± 1.1 cv 1.2 ± 1.5, c4d 0.3 ± 0.6 on 3 mg/kg, g+ptc 0.5 ± 1.2, ci 0.2 ± 0.5, ct 0.2 ± 0.5, cv 0.0 ± 0.0 on 4 mg/kg at 3 month.

	1 h biopsy			3 week biopsy			12 week bx		
Dose	4 mg/kg	3 mg/kg	p	4 mg/kg	3 mg/kg	p	4 mg/kg	3 mg/kg	p
g+ptc	0	0	0.637	0.1 ± 0.3	0.2 ± 0.6	0.0552	0.5 ± 1.2	0.4 ± 0.7	0.816
ci	0.2 ± 0.5	0.5 ± 0.7	0.402	0.4 ± 0.7	0.6 ± 0.7	0.62	0.2 ± 0.5	1.8 ± 0.9	0.011
ct	0.1 ± 0.4	0.2 ± 0.4	0.693	0.4 ± 0.7	0.6 ± 0.7	0.62	0.2 ± 0.5	1.4 ± 1.1	0.084
cv	0	0	0.637	0.4 ± 1.1	0.8 ± 1.2	0.512	0.0 ± 0.0	1.2 ± 1.5	0.194
c4d	0	0	0.637	0.6 ± 1.1	0.4 ± 1.1	0.645	0.6 ± 0.9	0.3 ± 0.6	0.665

Conclusion: CD 3 + count is lower on 3 mg/kg thymoglobulin induction groups than 4 mg/kg group, but renal function, rejection, infection history are significantly not different. But chronic score on biopsy is higher on 3 mg/kg group, so long term graft function should be evaluated.

P347 HIGHER INTRAPATIENT TACROLIMUS VARIABILITY IN KIDNEY TRANSPLANT PATIENTS WHO CONVERT FROM MYCOPHENOLIC ACID TO MTOR INHIBITORS IN SIRIRAJ HOSPITAL

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Background: Immunosuppressive regimen that includes mammalian target of rapamycin inhibitors (mTOR-i) and low-dose tacrolimus is the alternative regimen for the patients who could not take or could not tolerate mycophenolic acid (MPA) side effect. However, the information of intra-patient variability (IPV) of tacrolimus when patients convert MPA to mTOR-i is lacking. IPV of tacrolimus in the patients who receive MPA is one of the factors that associated with long-term outcome after kidney transplantation.

Method: Retrospective chart review in all kidney transplant recipients who followed at Siriraj Hospital. Patients who were on tacrolimus and had MPA converted to mTOR-i at more than 3 months after transplantation were enrolled. IPV was calculated in both periods using consecutive tacrolimus level based on the dose-adjusted tacrolimus through level (C0).

Result: This study included 19 renal transplant recipients. Mean age at kidney transplantation was 37.43 + 10.6 years. Eleven patients (58%) were male. Median time of conversion from MPA to mTOR-i was 10.2 months (min-max, 4.2–154.5 months). Everolimus is the only mTOR-i use in this study. Mean tacrolimus level in MPA-based regimen was significantly higher than everolimus-based regimen (7.4 + 1.67 vs. 3.8 + 1.0, $p < 0.001$). Intrapatient tacrolimus variability after conversion showed significant increase from 17.9% in MPA-based to 24.6% in everolimus-based regimen ($p = 0.036$).

Conclusion: Kidney transplant patients who received tacrolimus and mTOR-i have higher IPV than tacrolimus and MPA. The result can be from either the tacrolimus level in the mTOR-i group was lower or the mTOR-i itself had the effect on tacrolimus IPV. If the higher tacrolimus IPV in tacrolimus and mTOR-i

regimen have an effect on long-term outcome after kidney transplantation, further studies will be required.

P348 EARLY CONVERSION TO EVEROLIMUS AS TO THE BASIC COMPONENT OF IMMUNOSUPPRESSIVE THERAPY FOR THE KIDNEY TRANSPLANTATION FROM EXPANDED CRITERIA DONORS. FIRST RUSSIAN SYSTEMATIC EXPERIENCE

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Introduction: Kidney grafts from expanded criteria donors (ECD) are more sensitive to the toxic effects of calcineurin inhibitors (CNI). Immunosuppressive therapy (IST) included m-TOR inhibitors in case of KTx from the ECD lead to decreasing levels concentration of cyclosporine (CsA). Despite of presence international pilot studies we have not found strong recommendation for combination of CsA and Everolimus (Evr).
Materials and methods: The group of recipients (n = 41) was formed during the operation, received a bilateral KTx from the same ECDs. Comparison group (n = 19) received standard IST consisting of CsA, MMF and steroids. Study group included 22 recipients who received an another kidney from the same ECD and IST, based on early (starting from the 90th day after Tx) conversion from MMF to Evr-1.5 mg/day (target concentration – 3–6 ng/ml). Simultaneously with the appointment Evr, dosing occurred immediately CsA decrease by 50% and then, the target concentration (C0 – 30–50 ng/ml). Implementing a program of gradual minimization of the dose steroids in patients of the study group.
Results: Both groups were comparable in terms of level of serum creatinine (Cr) and GFR rate of up to 3 months after Tx. As a result of the introduction of a new scheme of CNI in the study group, for the 12th month after Tx, Cr in the comparison group was 185.7 ± 45.8 mmol/l, in the study –141.81 ± 43.8 mmol/l ($p < 0.05$). By 60 months, Cr in the comparison group – 209.87 ± 39.59 mmol/l, in the study – 149.27 ± 42.68 mmol/l ($p < 0.05$). By the 60-month observation GFR study group was 46.21 ± 15.17 ml/min/1.73 m^2, the control is reduced to 27.5 ± 7.39 ml/min/1.73 m^2 ($p < 0.05$).
Conclusion: Early administration of Evr is strongly recommended in all cases of the use of grafts from the ECDs. This approach helps to minimize of CNI-nephrotoxicity, provides the prevention of chronical transplant nephropathy, the stable renal function, to the survival and renal transplant recipients.

P349 POST RENAL TRANSPLANT HEMOLYTIC ANEMIA SECONDARY TO POLYCLONAL ANTIBODIES

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Background: Hemolytic anemia (HA) usually results from donor-derived antibodies against recipient's erythrocytes, hemolytic-uremic syndrome and immunosuppression (IMS). Although polyclonal antibodies (pAbs) can cause anemia it has rarely been described as HA.
Methods: Single-center evaluation of HA incidence in the first 30 days of renal transplant (RT) in patients (pts) who randomly received ATG-*Fresenius* (ATG-F) or Thymoglobulin-*Genzyme* (TMG-G) between 01/2009 and 04/2016. HA was defined as decrease of at least 1 g/dl hemoglobin (Hb) in 24 hours and a haptogloblin <30 mg/dl.
Results: pAbs were given to 180 pts; 59.4% males; mean age 50 ± 11 years; Six per cent obtained a living donor graft, 16% a 2nd RT and 2 were pre-emptive. Induction IMS with ATG-F was used in 106 pts/58.9% (mean cumulative dose (mCD): 17.9/kg) and TMG-G in 74 pts/41.1% (mCD: 8.4/kg). Out of 180, 11.7%(n=21) developed HA. Demographic data, RRT modality, kidney failure etiology, type of organ donor, ischemic period, presence of irregular ab, anemia, erythropoietin (EPO) use and blood transfusions (BT) before RT were similar in both HA and non-HA (NHA) and ATG-F and TMG-G groups. In HA pts, ATG-F was used in 20 pts/95.2% ($p<0.001$) in similar doses to NHA group. HA group had lower Hb by day 3 (8.3 vs 9.3 g/dl; p=0.003), day 7 (8 vs 9.3 g/dl; $p<0.001$) and day 15 (8.1 vs 9.1 g/dl; $p<0.001$) and required more BT than NHA group (median 2 vs 0; p=0.006). Higher EPO dose (19238 vs 12952 UI/week; p=0.005) was needed for identical Hb at day 30. No differences were found concerning graft function by 30 days, blood group type, number of HLA-mismatches, donor specific ab, irregular ab and % of panel reactive ab. In a multivariate analysis, ATG-F was the only predictor of hemolysis (p =0.006; OR 2.9 [2.3 - 139]).
Conclusion: ATG-F was a strong predictor of HA in RT pts. Of all those who developed HA, 95% were treated with ATG-F. Overall, 18% (n=20) of ATG-F pts developed HA compared to 1% (n=1) with TMG-G.

Basic Kidney Immunosuppressive agents

P350 THE EFFECT OF EVEROLIMUS ON THE INTRACELLULAR TACROLIMUS CONCENTRATION IN THE HK-2 CELLS

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Background: It was reported that everolimus in combination with varying levels of Tacrolimus is efficacious and associated with good kidney function. The aim of this study was to investigate the effect of everolimus on the intracelluar tacrolimus concentration in the kidney cells when it is used concomitantly.
Methods: HK-2 Cells(kidney cells) were treated with tacrolimus. After 30 minutes, we treated with everolimus additionally for 1 hour. Low dose(3 μM) of everolimus was treated with absence and presence of tacrolimus at the dose of 3 μM and 30 μM and high dose(30 μM) of everolimus was treated in the same way. We measured the intracelluar concentrations of the two drugs using LC/MSMS.
Results: Intracellular tacrolimus accumulation was significantly decreased by everolimus in a concentration dependent manner. At the concomitant treatment with the high dose (30 μM) of everolimus and tacrolimus (3, 30 μM), the intracellular tacrolimus concentration was significantly decreased compared with absence of everolimus, 0.06± 0.017 μM/1 ×10^6 cells vs0.315± 0.056 μM/1 ×10^6 cells(p =0.025), 0.477± 0.008 μM/1×10^6 cells vs 0.879± 0.116 μM/1×10^6 cells(p =0.039),respectively. At the concomitant treatment with the low dose(3 μM) of everolimus and tacrolimus (3, 30 μM), the intracellular tacrolimus concentrations showed no statistical difference compared with absence of everolimus, 0.191± 0.023 μM/1×10^6 cellsvs0.315± 0.056 μM/1×10^6 cells, 0.697± 0.085 μM/1×10^6 cells vs 0.879± 0.116 μM/1×10^6 cells (p >0.05).
On the contrary, intracelluar everolimus accumulation was not affected by tacrolimus. At the concomitant treatment with 30 μM of tacrolimus and everolimus (3, 30 μM), intracellular everolimus concentrations revealed no statistical differences compared with absence of tacrolimus, 0.184± 0.083 μM/1 ×10^6 cells vs 0.411± 0.025 μM/1×10^6 cells, 1.295± 0.308 μM/1×10^6 cells vs 1.247± 0.192 μM/1×10^6 cells (p >0.05).
Conclusion: From this data, we suggest that everolimus has high affinity to kidney cells than tacrolimus.

Clinical Kidney Immunosuppressive agents

P352 OVERCOME ADVERSE EVENTS OF EVEROLIMUS IN MAINTENANCE IMMUNOSUPPRESSION OF KIDNEY TRANSPLANTATION

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Background: As for the immunosuppression protocol with Everolimus (EVR), the expression restraint of the virus infectious disease, the risk reduction of cardiovascular disease, possibility of the malignant tumor restraint are expected. On the other hand, the measures to EVR related adverse events are also indispensable.
Methods: This retrospective study included 101 patients using EVR as for maintenance immunosuppression protocol. 69 patients underwent three medicine-using therapy (Calcineurin inhibitor (CNI), EVR and Steroid (St)), 32 underwent four medicine-using therapy (CNI, MMF, EVR and St). The frequency of adverse event, the patient background between adverse group and non-adverse group and EVR trough concentration were considered. Measures to adverse event and the possibility of combination drugs were also examined.
Results: There was no significant differences in the patient background between three medicine-using group and four-medicine using group. As for adverse events, 10 edema (9.9%), 6 increase of proteinuria (5.9%), 5 severe stomatitis (5.0%) and 5 elevation of blood glucose level (5.0%) were recognized. In addition, elevation of creatinine, general fatigue and thrombosis were recognized. When compared the patient background, there were significant differences in the duration of dialysis and the initial proteinuria between EVR related adverse event group and non-adverse group. There were no significant differences in EVR trough concentration between both groups. The measures to edema was withdrawal or reduction of EVR. The mean time to improvement was 3.9 months, all cases were improved. In the examination

about the combination of calcium channel blocker, there was significant differences between edema group and non-edema group (p=0.039).
Conclusion: Edema is reversible and independent to EVR trough concentration. The possibility that the combination with Ca channel blocker particpated in onset of edema was suggested.

Clinical Kidney Infection

P353 PERITONITIS AFTER SOLID ORGAN TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

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Background: Over the last century, solid organ transplantation (SOT) has proven to be one of the most remarkable therapeutic advances in medicine. Technical progress in surgery, organ preservation techniques, anaesthetic management, regulation of the immune response and immunosuppression therapy, represent major milestones of this multidisciplinary clinical science. Nevertheless, there are many ongoing challenges during postoperative management of solid organ transplant recipients (SOTR). In that event, the peritonitis after solid organ transplantation (PSOT) represents a serious post-transplant complication. The goal of this study was to define the incidence and outcome of PSOT in SOTR treated at our Department.
Materials and Methods: We reviewed medical records of all kidney, heart and liver transplant recipients between January 1, 2015, and January 1, 2016. We included all patients requiring surgical intervention after the date of SOT. Event of PSOT was based on surgeon's perioperative findings and postoperative pathological reports. Patients were excluded from the study if the surgical intervention(s) occurred before SOT.
Results: There were 141 SOTs at our Department. The majority of patients (n=108) underwent kidney, followed by heart (n=21) and liver transplantation (n=12). Two PSOT events were diagnosed in SOTR after undergoing SOT, for an overall incidence of 1.42%, with a mortality of 0%. PSOT incidence in heart transplant patients was 4.77% and 0.93% in kidney transplant patients, respectively.
Conclusion: Although, SOT has evolved to a respectable clinically effective and life saving practice, variety of serious life-threatening problems, such as PSOT, further complicating transplant recipients course of the disease have been documented. Our Department's PSOT low incidence and mortality rates demonstrate that reduction of this complication may be achieved by preventive measures, prompt work-up on all abdominal complaints, and early surgical management.

P355 PREDICTORS AND OUTCOME OF INFLUENZA A/H1N1 INFECTION IN KIDNEY TRANSPLANT RECIPIENTS

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Introduction: Following the pandemic of Influenza A/H1N1 in 2009, reports describing the epidemiological and clinical data in solid organ transplantation from different centers were variable. The correlation between patient's transplant characteristics, medical co-morbidities and presentation is crucial to predict the overall outcome.
Patients and methods: We collected the demographic and transplant data for 241 kidney transplant recipients (KTR) who presented with symptoms of probable H1N1 infection including presenting symptoms and co-morbid conditions. The outcome was assessed and compared between positive and negative cases.
Results: There was no significant difference between the demographic characteristics for the positive (n=69) and negative (n=172) groups. Although the type of induction immunosuppression and the use of mycophenolate or tacrolimus did not affect the incidence of the infection, steroids (p=0.001) and cyclosporine (p=0.003) did increase and sirolimus did reduce the incidence (p=0.053). Calcineurin inhibitor free regimens were associated with less incidence of infection (p=0.001). Among medical co-morbidities, diabetes was found to be less likely associated with infection (p=0.013). Presenting symptoms of significance were cough (p=0.0001), headache (p=0.0001) and malaise (p=0.0001). Out of the positive group, 24 patients required hospitalization. Fever was a presenting symptom (p=0.001). Four patients developed complications in the form of pneumonia in three and urinary tract infection in fourth. One of the pneumonia patients required endotracheal intubation and ventilatory support, and two patients developed renal graft rejections. All complications were treated adequately without any graft or patient loss.
Conclusion: Influenza A/H1N1 is more likely in KTR receiving cyclosporine or steroid but less likely in patients on sirolimus. Cough, headache and malaise are more likely presenting symptoms in.

Basic Kidney Infection

P356 DIAGNOSTIC AND TREATMENT DIFFICULTIES OF POSTTRANSPLANT TUBERCULOSIS AND WAYS TO OVERCOME THEM

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Kidney transplant is the treatment of choice for patients with end-stage renal disease (ESRD). This type of renal replacement therapy provides the greatest survival, retains the quality of their life, and allows reaching high levels of socio-economic rehabilitation of patients. At this stage in clinical transplantation are still a number of unresolved problems, one of which is control of communicable complications. Infections are the most important of all fatal complications in the first year after transplantation. Its often differ severe course and unusual symptoms. It significantly impedes diagnosis and treatment selection. Tuberculosis is unique among infections in the post-transplant period. This disease is accompanied by significant difficulties in the detection, treatment and prevention.

The aim of the study was to propose measures to improve the organization of care for patients with tuberculosis after transplantation in the Samara region.

The study was performed based on two centers: Samara Center of Organ and Tissue Transplantation (SCO&TT) and scientific base of Organ Transplant Program Boris Petrovsky's Scientific Center of Surgery Russian Academy of Medical Sciences. Post-transplant tuberculosis was identified in 25 patients (4.1%) .We analyzed the methods by which tuberculosis was identified. .The percentage of post-mortem diagnosis of TB- 22.4%. These findings indicate the absence of early medical apprehension about this disease. The forms of TB are different.

Effective schemes of diagnosis and treatment of tuberculosis after transplantation are not available, so the most rational measure is the use of a special approach to the prevention, detection and treatment of this disease. Clinical application of decision support system (ERP) that can predict the likelihood of developing post-transplant tuberculosis in percentage can be considered promising.

Translational Liver Infection

P357 A RARE INFECTIOUS COMPLICATION AFTER LIVING DONOR LIVER TRANSPLANTATION

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Despite the remarkable advances of liver transplantation, infections are still the most common and often life-threatening postoperative complications. Methicillin-resistant Staphylococcus aureus (MRSA) infection frequently complicates the postoperative course of liver transplant recipients. It has been well described that MRSA associated bacteremia, pneumonia and surgical site infection are common. But, MRSA infection manifesting as pyogenic spondylodiscitis is very rare. To our knowledge, pyogenic spodylodiscitis due to MRSA in lumbar spine after living donor liver transplantation (LDLT) has not been previously reported. Here, we report a 50-year-old man who developed pyogenic spondylodiscitis caused by MRSA after LDLT. Our patient underwent LDLT for HBV related cirrhosis. Immunosuppressive treatment was administered with basiliximab, tacrolimus, corticosteroids and mycophenolate mofetil. He discharged on postoperative the 28th day with uncomplicated course. At one week after discharge the patient was readmitted for abdominal pain and high fever. Bile leakage at the anastomosis site was found by ERCP and managed successfully with endoscopic nasobiliary drainage (ENBD). The culture of drained fluid showed MRSA and he was treated with vancomycin for 4 weeks. These treatment resulted in resolution of the infection. However, one month later the patient presented with severe back pain. At this time, MRI showed massive spondylodiscitis of lumbar 2–3 spine and paraspinal abscess formation. Our patient underwent surgical debridement and primary bone graft. MRSA was cultured from the abscess. Postoperatively, the patient received intravenous vancomycin for 2 weeks and revealed complete outcome with no neurological sequelae. Presently he is followed up and doing well without rejection and other complications.

Clinical Others Infection

P358

EFFECT OF SCY-078 ON THE PHARMACOKINETICS OF IMMUNOSUPPRESIVE AGENTS: RESULTS FROM A PHASE 1 DRUG–DRUG INTERACTION STUDY WITH TACROLIMUS

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Background: SCY-078 is a novel oral and IV semi-synthetic triterpenoid in development for the treatment of fungal infections caused by Candida and Aspergillus species. Transplant patient who are on immunosuppressive agents, such as Tacrolimus, Sirolimus and Cyclosporine are prone to invasive fungal infections (IFIs). These immunosuppressive agents are metabolized by the CYP3A pathway of the liver and some antifungal agents interact with the same metabolic pathway and increase plasma levels of these agents thereby inducing immunosuppressive agents' toxicities.
Material/methods: A Phase 1, open-label, study in 24 healthy adult male subjects was conducted to assess the effects of multiple doses of SCY-078 on the pharmacokinetics of Tacrolimus. The study had 2 sequential periods, the first period, measuring the pharmacokinetic of single dose of Tacrolimus and the second, after a 15-day wash-out period, measuring the pharmacokinetics of Tacrolimus when concomitantly given with oral SCY-078 (loading dose of 1250-mg SCY-078 followed by a once-daily dose of 750-mg SCY-078 for 7 additional day with concomitant 2-mg dose of Tacrolimus administered on day3, predicted to be steady-state exposure of SCY-078.
Results: The co-administration of tacrolimus with SCY-078 did not effect Tacrolimus' maximum exposure (Cmax) and only mild effect was observed on AUC. Single administration of Tacrolimus alone resulted in a Cmax of 8.03 ng/ml, AUC0–24 of 46.16 h*ng/ml and Tmax 2 h. The co-administration of Tacrolimus + SCY-078 resulted in a Cmax of 8.29 ng/ml, AUC0–24 of 63.22 h*ng/ml and Tmax 2 h.
Conclusions: The concurrent co-administration of Tacrolimus and SCY-078 had no effect on the maximum blood levels of tacrolimus (no change in Cmax) with only mild effect in tacrolimus' overall exposure (1.4 fold increase in AUC). This results indicate a low risk for a clinically meaningful interaction and support the co-administration of SCY-078 and tacrolimus.

Clinical Kidney Infection

P359

URINARY TRACT INFECTIONS DURING THE FIRST YEAR AFTER RENAL TRANSPLANTATION: SINGLE CENTER EXPERIENCE

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Introduction: Urinary tract infection (UTI) is the most common infectious complication after kidney transplantation. We aimed to investigate the incidence of infections, the causative pathogens, and risk factors contributing to this complication during the first year after renal transplantation in our center.
Materials and Methods: Between October 1985 and December 2016 we performed 2689 kidney transplantation procedures at our centers. The follow-up was standard for all recipients. We included demographic and clinical data of 987 patients who underwent renal transplantation (RT) in our hospital for statistical analysis.
Results: In 987 patients, we observed 521 episodes of UTI in 221 (22.3%) patients. These were classified as asymptomatic bacteriuria (56%, n = 124), uncomplicated UTIs (25%, n =56), or complicated UTIs (18%, n = 40), which included allograft pyelonephritis (4.9%, n=11). Fourteen patients (18%) developed recurrent UTIs (> 3 episodes). Thirteen patients had biopsy-proven allograft pyelonephritis. The most frequently isolated uropathogen was E. coli (58%). Renal graft function measured by GFR was significantly worse in patients suffering from UTIs from the baseline. However, the evolution of renal graft function did not differ significantly between patients with and without UTIs.
Conclusions: We would like to underline that defining risk factors allows more rapid diagnosis in patients with predisposing characteristics such as female gender, history of recurrent UTIs, vesico-ureteral reflux comorbidity and episodes of AR. Because E. coli is the predominating pathogen during the first year after RT, we should consider introducing an antibiotic intraoperative prophylaxis, which would act against these bacteria or would not promote their growth.

P360

BK VIRUS AMONG RENAL TRANSPLANT RECIPIENTS: KUWAIT SINGLE CENTER EXPERIENCE

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BK viremia and nephropathy are increasing problems in renal transplant recipients. The lack of safe and effective antiviral therapy made screening-based prevention a recommended strategy. Aim of the work:

Our objective was to determine the prevalence of BK virus (BKV) infection among renal transplant recipients.
Methods: All renal transplant recipients followed up in Hamed Al-Essa Organ transplant center clinics between 2011 and 2015 (n = 1523) were screened. Blood quantitative real-time polymerase chain reaction (PCR) for the BKV was performed in all of the study patients. Patients who showed positive BKV PCR were evaluated by quantitative PCR for viral load. Renal biopsy was performed only in patients with deteriorating renal function associated with positive PCR.
Results: Among the 1523 kidney transplant recipients studied, 956 (62.8%) were males, 40% were non-kuwaiti; with mean age 46.6 $\pm$ 15.6 years. During the screening period, we found that the prevalence of positive BK virus patients was fluctuating between 2 to 8.3% while those with significant viral load represented 6.1 to 34% of positive cases. Renal biopsy confirmed the diagnosis of BK nephropathy in 31 cases. Cases that were managed by reducing the immunosuppressive treatment showed more stabilization of their graft function compared to those who actively managed by leflonamide, ciprofloxacin, IVIG. Till the end of 2015, diagnosis of BKN was documented in 58 patients with 21 rejection episodes, 21 graft failure and 3 mortalities.
Conclusion: Our screening program suggested that BKV is not uncommon in our kidney transplant recipients. It could help minimize its detrimental impact on the patient and graft outcome.

Clinical Others Infection

P361

ESTIMATION OF MAXIMAL DAILY DOSE TO AVOID ADVERSE REACTION OF VORICONAZOLE -A PRELIMINARY STUDY FOR JAPANESE RECIPIENT IN STEM CELL TRANSPLANTATION

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Objective: Voriconazole (VRCZ) is a novel azole antifungal agent that exhibits large intra- and inter-individual variability in plasma concentration. Reasons for this include non-linear pharmacokinetics due to its saturated metabolism and genetic polymorphism in *CYP2C19*. Because VRCZ has the potential to produce adverse reactions such as hepatotoxicity and visual disturbances, therapeutic drug monitoring is required to optimize treatment. Therefore, this study aimed to estimate the maximal daily dose of VRCZ (Vmax) to avoid these adverse reactions.
Method: We retrospectively collected eight stem cell transplant recipients who underwent VRCZ treatment between August 2012 and February 2013 at Kagawa University Hospital. VRCZ concentrations were taken on the trough level and were determined by high performance liquid chromatography. Michaelis-Menten kinetic model was postulated to estimate the parameters such as Vmax and Michaelis constant (Km), and the equation was converted into a linear function as C/Dw = C/Vmax + Km/Vmax. Trough concentration was normalized by weight based dose (Dw).
Results: All patients administered VRCZ intravenously, and did not receive concomitant drugs that affect VRCZ disposition. Dw and C ranged from 4.3 to 8.0, and from 0.8 to 5.0, respectively. Relationship between C and C/Dw were significantly correlated and could be expressed approximately as C/Dw = 0.126C + 0.056. (n = 9, r = 0.982, $p < 0.05$) From this result, Vmax and Km were estimated as 7.94 mg/kg/day and 0.44 mg/ml, respectively.
Conclusions: The present study was retrospective and had a small population, we could not take genetic polymorphism into account. Our findings provide useful information for adjusting the VRCZ dosage to improve clinical safety and effectiveness. We proposed a suggested safe dose adjustment of VRCZ for the immunocompromised patients.

Clinical Kidney Infection

P362 CLINICAL MANIFESTATION OF BK VIRUS-ASSOCIATED NEPHROPATHY AND ALLOGRAFT OUTCOME IN RENAL TRANSPLANT RECIPIENTS: A SINGLE CENTER EXPERIENCE

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Background: Although BK virus nephropathy (BKVN) after kidney transplantation (KTx) is often asymptomatic during its early phase, without any clinical or laboratory signs, BK virus (BKV) is an important pathogen affecting allograft survival after kidney transplantation. However, a specific anti-viral treatment does not yet exist.
Methods: We reviewed renal transplant patients with biopsy proven BKVN at our institution and assessed the risk factors, the effects of various treatment options, and the clinical outcomes.
Results: Thirteen patients were diagnosed as having BKVN based on a renal allograft biopsy among 1150 kidney transplant recipients between 2004 and 2016. All 13 patients were men with a mean age of 53.7 years (36–69 years) at the time of KTx. The mean time until the diagnosis of BKVN from transplantation was 14.1±9.8 months (2–33 months). Preceding decoy cells in a urine sample were found in all but one patient, and the mean time of the appearance of such cells was 6.9 months before a definitive biopsy-proven diagnosis of BKVN. Two patients had a concomitant diagnosis of antibody-mediated rejection, and T-cell mediated rejection occurred after the disappearance of BKV in one patient. A quantitative serum or urine BKV-PCR (polymerase chain reaction) was positive at the time of the diagnosis of BKVN in six cases. Reduction in renal allograft function occurred in 4 of 13 cases, but graft loss resulting from BKVN occurred in only 1 of the 4 patients, who had received a second renal allograft from a deceased donor. The mean time until negative viremia and/or viruria findings were obtained was 7.5 months (4–11 months).
Conclusion: BKVN in renal transplant recipients can lead to serious complications resulting in renal allograft failure. However, the efficacy of actual treatment strategies involving various therapeutic agents for BKVN remains challenging. Further investigation aimed at establishing a specific treatment.

P363 BELATACEPT USE IN COMPLEX RENAL TRANSPLANT RECIPIENTS

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Belatacept is the first biological agent licensed as maintenance immunosuppression but is not used widely in UK.

We demonstrate successful use of Belatacept in 2 challenging renal transplant recipients who did not tolerate standard immunosuppression.

First case is a 54 year old woman who developed multiple infarcts in transplant kidney within 2 months of surgery. She lost first graft to pneumonia and renal artery thrombosis. Underlying disease was chronic pyelonephritis and she was on Tacrolimus, Azathioprine(intolerant to MMF) and Prednisolone. Thrombophilia screen was entirely negative. Multiple biopsies done were normal and CT angiogram showed tortuous renal artery and multiple infarcts.

In absence of another cause, Tacrolimus was switched to Belatacept but within two weeks, she developed acute cellular rejection (Banff IIA) which was successfully treated with Antithymocyte globulin(ATG). The patient's graft function has been stable for 24 months and Belatacept continues as maintenance immunosuppression. Cellular rejection occurring under Belatacept is probably mediated by cytotoxic memory T cells, which are less susceptible to co-stimulatory blockade by Belatacept, or from incomplete CD80/86 blockade at the tissue level.

Second case is of a 55 year old woman with ADPKD and pre-emptive live related transplant from husband. She developed profound thrombotic microangiopathy on day 1 post transplant on standard immunosuppression and required 8 sessions of plasma exchange. DSA and ABO titres were repeatedly negative.HIT screen, ADAM 13 and complement genotyping results were negative. Tacrolimus and MMF were converted onto sirolimus and myfortic respectively.

Within 6 weeks post transplant, she developed a large retroperitoneallymphocele that required repeated drain insertions. Marsupialisation was considered but she developed neutropaenia and troublesome diarrhoea. After this, Sirolimus was switched to Belatacept and the lymphocele healed without further interventions.

P364 COMPLEX RENAL TRANSPLANT RECIPIENT WITH NON HEALING PERIANAL FISTULA

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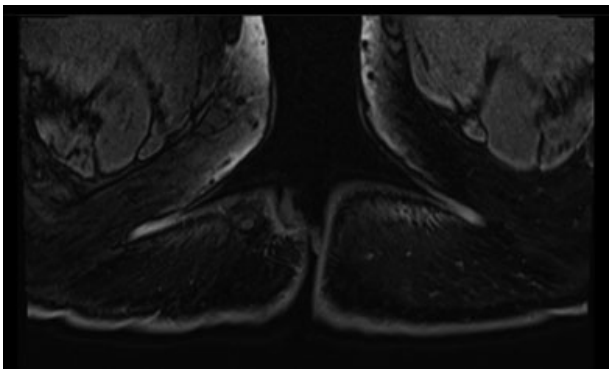
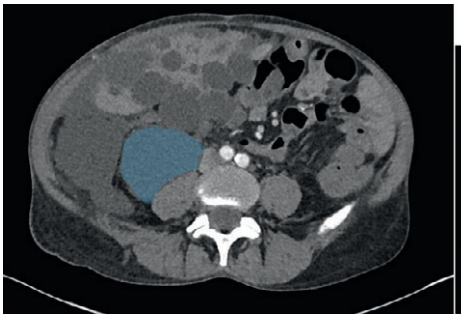
Differential diagnoses of granulomatous inflammation in renal transplant recipients

1. Skin malignancies
2. Mycobacterium tuberculosis and atypical mycobacteria
3. Viral warts
4. Leishmaniasis
5. Malakoplakia
6. Lymphogranuloma venereum
7. Deep fungal infections
8. Kimura's disease
9. Sarcoidosis
10. Necrobiotic granuloma





Opportunistic infections in transplant recipients manifest in unusual ways and either precede or present concomitantly with malignancy. Risk of anogenital infections and malignancy is significantly high in renal transplant recipients (100 fold as per Israel Penn registry) and diagnosis is often delayed.

We present the case of a 55 year old dairy farmer with non-healing perianal fistula 10 years after receiving a deceased donor renal transplant. Immunosuppression consisted of Cyclosporine, MMF and Prednisolone. He initially presented with eczematous skin changes and nail discolouration, which developed into widespread Tinea pedis infection. This was followed by impetigo and abdominal wall cellulitis. 6 months later, he presented with a painful perianal swelling. Repeated cultures grew faecal organisms (Morganella, Klebsiella and E Coli). Tests for HIV, Treponema and Lymphogranuloma venereum and TB were negative although Mycobacterium bovis and Mycobacterium malmoense could not be excluded. The lesion ulcerated and there were accompanying symptoms of abdominal pain, altered bowel habit and incontinence.

Rectal biopsy showed evidence of non- necrotising granulomatous inflammation but no acid fast bacilli, CMV, or evidence of epithelial dysplasia or invasive malignancy. Differential diagnoses of infections, sarcoid or inflammatory bowel disease was suggested. MRI showed a complex extrasphincteric perianal fistula bilaterally forming an H shaped configuration. He underwent examination under anaesthetic, seton insertion and several colonic biopsies none of which showed definite features of Crohn's disease. After several specialist multidisciplinary discussions, he started empiric TB treatment and is undergoing defunctioning colostomy 18 months after initial presentation with perianal lesion.

This case shows the diagnostic challenge of identifying obscure opportunistic infections and the associated morbidity in chronic renal transplant recipients.

Clinical Liver Infection

P365 INFLUENCE OF IMMUNOSUPPRESSION ON CONVERSION OF CYTOMEGALOVIRUS INFECTION TO DISEASE IN LIVER TRANSPLANT PATIENTS

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Introduction: Cytomegalovirus (CMV) is one of the most common complications in liver transplant patients. It is the cause of many morbidities and mortalities postoperatively. The main purpose of this study is to define factors influencing, conversion of CMV infection to disease in liver transplant patients.
Material and Methods: This retrospective study is evaluating 66 adult patients who were liver transplanted in Shiraz Transplant Center between March 2014 to March 2016 in which 842 adult liver transplantation has been done. Of these, 50 patients had CMV infection and 16 had CMV disease. They were all evaluated for different probable factors influencing conversion of CMV infection to CMV disease.
Results: Different factors such as MELD score, Cold Ischemic Time, Warm Ischemic Time, Intraoperative Bleeding, Immunosuppressive drugs and regimen, operative time, number of blood product transfusion, CMV titer, CMV IgG donor and recipient were evaluated for probable influence on conversion of infection to disease.
Conclusion: Between different probable variables, there was a significant correlation between Tacrolimus level, rejection, steroidal pulse therapy, donor CMV IgG and conversion of CMV infection to CMV disease.
Keywords: CMV, Liver Transplant, Immunosuppression

Clinical Kidney Infection

P366 TREATMENT OF HEPATITIS C VIRUS IN RENAL TRANSPLANT PATIENTS. RESULTS FROM A SINGLE CENTRE WITH THE USE OF DIRECT ANTIVIRAL AGENTS

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Background: Hepatitis C Virus (HCV) infection determines a lower survival of renal graft, as well as a lower survival of the Renal Transplant (RT) patient. The aim of this study was to evaluate the efficacy of the direct antiviral agents in RT patients in our centre.
Methods: Retrospective analysis of demographic data, antiviral treatment, changes of IT during the treatment of HCV infection, plasma levels of immunosuppressive treatment (IT), evolution of renal function and complications due to HCV treatment.
Results: Patients: *n*=8 (7 men). Median age: 56.5 (32–69) years. Renal disease aetiology: 2 glomerulonephritis, 1 vasculitis, 1 nephroangiosclerosis, 1 diabetic nephropathy, 1 renal agenesis, and 2 unknown nephropathy. Median viral load at the beginning of the treatment was: 452744.5 (46490–2332136) U/l. Genotype: 7 genotypes 1b (3 patients treated with Sofosbuvir + Lepidasvir during 12 weeks; 1 treated with Sofosbuvir + Lepidasvir during 8 weeks; and 3 treated with Viekirax+Exviera during 12 weeks); 1 genotype 3 (treated with Sofosbuvir + Daclatasvir during 24 weeks). Median creatinine at the beginning of the treatment was 1.42 (1.13–1.75) mg/dl, and median creatinine at the end was 1.27 (1.14–1.87) mg/dl. Median proteinuria at the beginning of the treatment was 217.5 (85–273) mg/24 h, and median proteinuria at the end was 112 (69.7–281) mg/24 h. 5 cases (3 treated with Viekirax + Exviera, and 2 with Sofosbuvir + Lepidasvir) required dose adjustment of IT (mycophenolic acid, tacrolimus and everolimus) in order to maintain therapeutic levels in range, because of the pharmacological interaction of IT with the antiviral agents. Neither complications nor secondary effects have been described.
Conclusions: We observed a very good tolerance with the direct antiviral agents against HCV. All patients who have finished HCV treatment, have negative viral load. During the treatment, renal function and proteinuria have been stable, even those cases which required changes in IT dose.

P367 CLINICAL OUTCOMES OF PATIENTS WITH BK VIREMIA IN ABO-INCOMPATIBLE KIDNEY TRANSPLANTATION COMPARED TO ABO-COMPATIBLE KIDNEY TRANSPLANTATION

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Background: ABO-incompatible kidney transplantation (ABOiKT) recipients may have increased risk of BK virus allograft nephropathy (BKVAN), which is a major cause of renal dysfunction and allograft loss. We investigated BK viremia and BKVAN in ABOiKT recipients compared with ABO compatible kidney transplantation (ABOcKT)recipients.
Method: All 1275 patients underwent renal transplantational Asan Medical Center, from January 2012 to December 2015 ($n = 245$ ABOiKT and $n = 1030$ ABOcKT).For desensitization, ABOiKT recipients received anti-CD20 antibody (200 mg rituximab) two weeks before the transplant and received plasmapheresis3 to 4 times until the isoagglutinin anti-ABO antibody ratio was $\leq$ 1:4).High BK viremia was defined as serum BK viral load with peak $\geq$10,000 copies more than once after transplantation and low viremia was defined as serum BK viral load with peak < 10,000 copies. BKVAN was confirmed by biopsy.
Results: The incidence of BK viremia was 12.7% ($n = 31$) in ABOiKT and 8.2% ($n = 84$) in ABOcKT ($p = 0.028$). BKVAN was diagnosed in 4.9%($n = 12$) of ABOiKT recipients and 1.7%($n = 17$) of ABOcKT recipients ($p = 0.005$). At 3 months after transplantation, BKV load was the highest and BKV load in ABOiKT recipients was higher than in ABOcKT recipients (4.62 log copies/ml vs 3.57 log copies/ml, $p = 0.008$).In recipients with high BK viremia, graft survival was not different between ABOiKT recipients and ABOcKT recipients ($p = 0.794$). About 80% of recipients with high BK viremia were used tacrolimus-based immunosuppression and there was no difference in through levels of tacrolimus between ABOiKT recipients and ABOcKT recipients. Among ABOiKT recipients, the mean estimated glomerular filtration rate of high BK viremia group (group A) was lower than that of a viremia or low viremia group (group B)at 6 months and 12 months (63.8 ml/min/1.73 m2 vs 79.3 ml/min/1.73 m2 and 67 ml/min/1.73 m2 vs 81.3 ml/min/1.73 m2, p =001 and p =0.003, respectively). Graft sur

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TERTIAN MALARIA AFTER COMMERCIAL KIDNEY TRANSPLANTATION, COULD BE MISTAKEN AS A MORE SERIOUS DIAGNOSIS

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Introduction: Due to the marked demand-supply mismatch for kidney donors, many patients travel abroad for transplant tourism. This an ethical practice is associated with a many infectious and noninfectious complications. Importing of an outlandish disease to an area where physicians unfamiliar with it could represent a diagnostic and therapeutic dilemma.
Case presentation: We are presenting a 36 years old female patient who presented after one month of a commercial kidney transplant with fever, impaired allograft function, anemia, and thrombocytopenia. The transplantation was carried out in Pakistan. Her past medical history is remarkable for a history of end-stage renal disease of unknown etiology, she was treated by hemodialysis for 2 years. History of partial treated military tuberculosis diagnosed 5 months prior to transplantation. Our three main differential diagnoses were, Hemolytic uremic syndrome /thrombotic thrombocytopenic purpura (HUS/TTP), acute rejection, and severe sepsis. Considering HUS/TTP, during peripheral blood smear examination, malaria parasites were detected by chance and it was confirmed by a special stain as Plasmodium Vivax. The patient received anti-malaria therapy with dramatic improvement.
Discussion: Transplant tourism not only has as bad consequences for the piteous donor, recipients might also get many series complications. Unusual microorganism that transmitted during the perioperative period and brought to a different community might lead to catastrophic outcome.

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BK VIRUS IN RENAL TRANSPLANT RECIPIENTS – SINGLE CENTRE EXPERIENCE

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Background: Modern immunosuppressive therapy in renal transplantation is based on the use of calcineurin inhibitors (CNI). In the last decade, increased use of tacrolimus enhanced the incidence of graft dysfunction caused by BK virus. In most patients, BK reactivation manifests as asymptomatic BK viruria and/or viremia with or without deterioration of graft function. The aim of our study was to investigate the incidence of BK reactivation in our patients and the efficacy of different therapy approaches.
Materials And Methods: We analyzed medical records of 1960 patients in our transplant center. In the past year, we started screening of all newly transplanted patients for BK virus in blood and urine (B/U) 1, 3, 6, 9 and 12 months after transplantation. In all other cases BK virus (B/U) is assessed if, any sign of graft deterioration is found. We selected patients with BK positive blood and/or urine samples, and retrospectively assessed the change in their immunosuppressive therapy regarding BK virus and the efficacy of the intervention.
Results: In 59 patients (78% male), BK virus was detected in urine and/or blood. Average patient age was 47 years. Nine patients (32%) had isolated viruria, 10% had viremia and 58% had both viruria and viremia. At the time of diagnoses 68% of patients received tacrolimus, 15% received cyclosporine with corticosteroids and mycophenolic acid. Different therapy approaches were selected: reduction of dose of immunosuppressive therapy, introduction of ciprofloxacin, conversion of tacrolimus to cyclosporine and/or conversion of CNI to everolimus.
Conclusion: With this study, we present that 3% of our patients has BK virus reactivation which is treated with different therapy approaches. Introducing planned screening of BK virus reactivation in newly transplanted patients allows timely therapy intervention.

Clinical Liver Infection

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DECEASED DONOR LIVER TRANSPLANTATION FOR ALVEOLAR ECHINOCOCCOSIS: A THREE-CASE REPORT

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Background: Alveolar Echinococcosis is a hepatic zoonotic infection which behaves like a slow growing liver cancer. Conventional surgical treatment can be performed in only 40% of patients due to the long clinical latency and Liver Transplant (LT) remains as the only alternative treatment when AE exceeds the resectability limits. We herein present three cases of hepatic echinococcosis who successfully underwent deceased-donor LT in our institution.
Case Presentation: A 24 y/o male, two 23 and 38 y/o female underwent deceased donor LT in March and September 2016 and February 2017, respectively. Explorative laparotomy was done but the mass was unresectable due to hilar invasion in the first case. 3 months later LT was done for this case. The right main portal vein and intrahepatic branches were significantly occluded in the second case and the entire right lobe was atrophic due to decreased portal venous supply. She underwent liver transplant because of extensive involvement and Budd-chiari syndrome. Surgical resection was also tried in the third case which was not successful due to major hepatic veins and parenchymal involvement. Debulking surgery was done to alleviate symptoms and endoscopic stenting decreased severe jaundice and pruritus. The patient underwent liver transplant 2 years after the first operation. All patients received LT from deceased donors and Lymph node dissection from liver hilum to the celiac trunk was performed. All three patients discharged with good general condition without any major complication. Albendazole was used at least 10 days before surgery and continued after surgical resection.
Conclusion: Unresectable hepatic Alveolar Echinococcosis is a rare indication for liver transplant and is associated with some technical difficulties during surgery due to its invasive nature. LT followed by minimal post-operative immunosuppression regimen may provide quite optimistic results.

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ACUTE GRAFT PYELONEPHRITIS AND RECURRENT URINARY TRACT INFECTION IN LIVING KIDNEY TRANSPLANT RECIPIENT: INCIDENCE AND IMPACT ON GRAFT SURVIVAL

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Introduction: Acute graft pyelonephritis (AGPN) and recurrent urinary tract infections (rUTIs) were recognised to be one of the most common infectious complications following living kidney transplantation. Whether if they have or not a detrimental potential in graft survival remain under debate. This study was conducted to evaluate the incidence of AGPN and rUTI and their impact on graft survival.
Methods: We carried out a retrospective study by analyzing data from 89 recipients who underwent living kidney transplantation over a period of 10 years (January 2003-December 2012) in a single center of Vascular Surgery and Organ Transplantation in the Military Hospital of Tunis. We restored the continuity of the urinary tract by using the « Barry » extravesical ureteroneocystostomy technique. The ureteral stenting was non-systematic. Prognosis factors of graft survival were identified through univariate (chi-squared test) and Cox multivariate regression analysis($p < 0.05$).
Results: During the first month of post transplantation, UTI occurred in 40 recipients :45% of the recipients and 71% of all infections reported in this period. 39 recipients had lower urinary tract infection and only one had AGPN. 57.5% of them had rUTIs. Among the 89 recipient, 13 had UTI in late phases (>one month). 5 patients had AGPN and 9 had lower urinary tract infection. 30% of them had shown rUTI. The most common causative organism was Escherichia.Coli (32%) followed by Klebsiella Pneumoniae (30%) and then Staphylococcus Aureus (11.3%), Enterobacter and Pseudomonas Aeroginosa (7.5% respectively). There was no association between either AGPN (p:0.584) or rUTIs (p:0.575) and graft survival.
Conclusion: Few recipients had developed AGPN in our series. Nevertheless, UTIs were specifically recurrent. Prevention, early diagnoses, and adequate treatment of an initial UTI episode were imperative to prevent recurrent infections and reduce the morbidity related to AGPN.

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EARLY AND LATE INFECTIOUS COMPLICATIONS AFTER LIVING KIDNEY TRANSPLANTATION

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Introduction: Living kidney transplantation is unanimously considered as the preferred treatment for end-stage renal disease.The improvement in immunosuppressive therapies guaranteed a decline in the incidence of graft rejections, however it induces an increase in infectious complications especially opportunistic ones. Therefore, we designed this study to evaluate the incidence of early and late infectious complications within living kidney recipients.

Methods: We performed a retrospective study at the unity of vascular surgery and kidney transplantation in the Military Hospital of Tunis. It enrolled 89 patients undergoing a renal transplantation from a living donor between January 2003 and December 2012.All recipients received antifungal prophylaxis with amphotericin B and Pneumocystis prophylaxis with sulfamethoxazole-trimethoprim (SMX-TMP).Early phases were defined as the first month post transplantation. Late stage consists on the follow-up period succeeding the first month.
Results: We witnessed 56 early infections in 45 patients (50.5%).Infective agents were mainly bacteria(87.5% of all infections).The most common infection was urinary tract infections (UTI) which occurred in 45% of the recipients. Sepsis and Pneumonia were respectively shown in 6.7% and 3.4% the recipients.7 patients (8%) had CMV infection. In late stage, 59 infectious complications were reported in 40 patients (45%).There were 23 viral infections in 19 patients (21.3%):CMV infections occurred in 17 patients, 2 patients had Bk Virus infection, 2 had herpes Zoster, one patient had Varicella and one had mononucleosis.26 recipients (29%) have presented 32 bacterial infections among them we identified 14 Pneumonia,13 UTI and 5 sepsis. Parasitic infections occurred in 4 patients:cutaneous Leishmaniasis, Giardiasis, Oxyuriasis and Scabies.
Conclusion: Infections remain to be major complications after renal transplantation. Chemoprophylaxis and a judicious choice of immunosuppressive treatment would reduce their incidence.

P373 IS THE VALACYCLOVIR PROPHYLAXIS EFFECTIVE FOR PREVENTION OF CYTOMEGALOVIRUS INFECTION IN KIDNEY TRANSPLANT RECIPIENTS?

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Background: Cytomegalovirus (CMV) infection is the most common opportunistic infections in kidney transplant recipients (KTRs) despite the development of diagnosis and treatment. There are still many controversies about the prevention of CMV infection. We investigated the efficacy of valacyclovir prophylaxis for prevention of CMV infection in KTRs.
Methods/Materials: We retrospectively analyzed 153 KTRs between 2013 and 2016. We divided into two groups as follows: intravenous ganciclovir for 2 weeks after kidney transplantation (KT) with valacyclovir prophylaxis for 3 months (valacyclovir prophylaxis group) and only intravenous ganciclovir for 2 weeks after KT (control group). We investigated the incidence and risk factors of CMV infection between two groups.
Results: The mean time from KT to diagnosis of CMV infection was 4.8 months. There were no significant differences in the rate of rejection, delayed graft function, donor specific antibody, and graft function between two groups. Among 46 KTRs in valacyclovir prophylaxis group, 21.7% were diagnosed to CMV infection and 15.2% were CMV disease. Among 107 KTRs in control group, 43.9% were diagnosed to CMV infection and 24.3% were CMV disease. The incidence of CMV infection was significantly lower in valacyclovir prophylaxis group compared to control group. In KTRs with antithymocyte globulin induction, the incidence of CMV infection was lower in valacyclovir prophylaxis group (40.0%) compared to control group (67.6%), but there was no statistical significance. In multivariate analysis, the independent risk factors for CMV infection were older age at KT, antithymocyte globulin induction, delayed graft function, and no valacyclovir prophylaxis.
Conclusion: Valacyclovir prophylaxis significantly reduced the incidence of CMV infection in KTRs. In particular, valacyclovir prophylaxis should be used aggressively for 3 months in KTRs with risk factors such as older age at KT, antithymocyte globulin induction, and delayed graft function.

P374 TRANSPLANT TOURISM AND INVASIVE FUNGAL INFECTION IN THE KIDNEY GRAFT

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Kidney transplantation(KTX) is the gold standard treatment for end stage kidney disease. Deceased and live-related KTX are widespread approved methods throughout the world. In addition, commercial KTX has gained an access at certain places driven by financial greed.
Method: This is a retrospective descriptive study evaluating all cases of KTX that have been seen at the Royal Hospital (RH), Oman, from 2013 to 2015. KTX patients with invasive fungal infections(IFI) were evaluated in details for the demographics, medical comorbidity and laboratorial, microbiological, radiological and histopathological investigations.
Results: 198 KTX, of whom 162(81.8 %) had commercial KTX that were done abroad. The mean (SD) age of patients with fungal infection was 38.2(19.0) and 76.9% were males. IFIs were diagnosed in 13(8%) patients with commercial KTX, of which 10(76.9 %) underwent nephrectomy and 3(23.1 %) continued with a functioning graft. The most common fungal isolate was Aspergillus species. Computerized Tomography findings were infarction of graft, renal artery thrombosis, aneurysmal dilatation of external iliac artery, fungal ball or just presence of peri-graft collection. 3 (23.1%) patients died due to septic shock and 7 (53.8 %) were alive on hemodialysis. 3 (23.1%) patients who did not undergo nephrectomy remained with acceptable graft function.
Conclusion: This is the largest single center study in commercial KTX reporting the highest number of patients with IFI acquired over a relatively short period of time. It revealed that a younger, predominantly non diabetic group of patients being at risk of such catastrophic infection. *Aspergillus spps* were the main culprit fungi in these cases with no *Candida spps* being isolated. High index of suspicion and prompt empirical treatment might be the most reasonable mean to reduce the possible grim outcome of these patients. Improving legal transplant programs and strengthening t

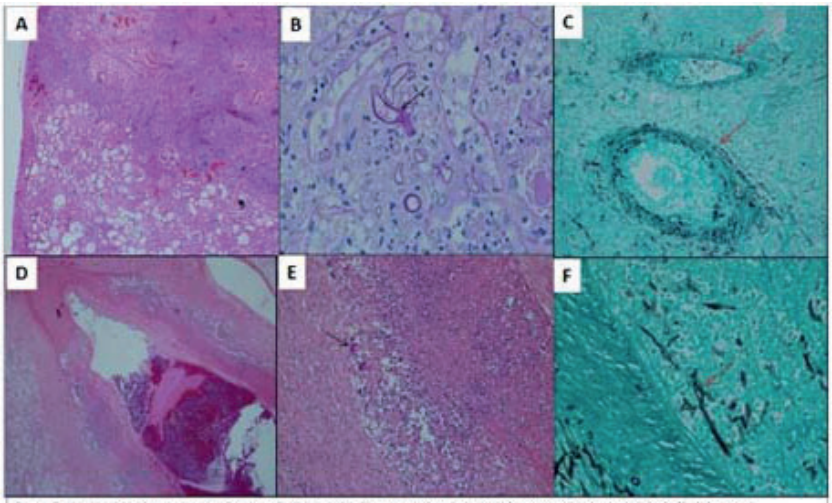

Figure 5: showing histology sections of various findings. A-C is from an explant kidney with mucormycosis. A: the top half of the renal parenchyma appears infarcted and densely inflamed, B: broad aseptate fungal hyphae are seen within the areas of inflammation (black arrow). These branch at 90°angle and are consistent with mucormycosis (PAS stain), C: fungal hyphae extensively infiltrate vessel walls (red arrows, GMS stain). D-F is from an explant kidney with Aspergillosis. D: vascular thrombosis and vasculitis, E: the vascular inflammation includes multinucleated giant cells (black arrow), F: thin septate branching fungal hyphae are seen, consistent with Aspergillosis species (red arrow).

P375 EARLY CLINICAL MANIFESTATIONS AND LABORATORY FINDINGS BEFORE AND AFTER TREATMENT IN RENAL TRANSPLANT PATIENTS WITH CYTOMEGALOVIRUS INFECTION

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Background: The incidence of organ involvements and clinical features are variable among different studies at time of detection of CMV infection. We observed the clinical presentations, hematological and biochemical markers in kidney transplant recipient at various time of CMV and its management course.
Methods: Retrospectively reviewed all live related and unrelated kidney transplant recipients on regular follow up since January-2006-to-June 2015, who were diagnosed to have CMV clinically and confirmed laboratory by DNA-PCR (Quantitative RT-PCR). The data was obtained from the 'Patient Face sheet' using Hospital Information-Management-System.
Results: CMV-PCR was detected in one hundred and two kidney transplant recipients. Of those, 79 were live unrelated kidney transplant and 23 patients with live related kidney transplant. The median time of detection of CMV infection after kidney transplant was 21 months, ranging from 15 days to 84 months. Most of the transplant recipients at the time of detection of CMV-PCR were asymptomatic (67%). Fever, a low grade was the main presentation in 16 % patients. 15 % of patients presented with diarrhoea and 2% of patients with pneumonitis. Most common hematological abnormality was lymphopenia in 46% of patients, then anemia in 40% and thrombocytopenia in 14% of the patients. The biochemical abnormalities found were elevated ALT in 18% of patients and hyperbilirubinemia in 9% of patients. All patients were treated successful but two patients died during the treatment period. There was a significant improvement in the kidney and liver functions after successful treatment of CMV infection.
Conclusion: CMV infection in a kidney transplant recipient is mostly asymptomatic. However it should be considered in a patient presenting with unexplained rise in serum creatinine, low grade fever, diarrhoea or unexplained anaemia. A significant improvement in organs dysfunctions was observed upon successful treatment.

P377 EARLY-ALLOGRAFT-THROMBOSIS IN POST-COMMERCIAL KIDNEY TRANSPLANT

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Introduction: Kidney allograft thromboses is more common in the early part of the post transplant period and many times it is associated with acute antibody mediated rejection.It occurs more commonly in the paediatric kidney transplant and also seems to have some relation to duration of pretransplant peritoneal dialysis. However the occurrence of graft thrombosis in isolation without clinical or histological graft rejection is not rare.
Methods: 58 years old gentleman, with background of long standing type I diabetes mellitus has a full blown complications of diabetes including retinopathy, Nephropathy, Neuropathy and Ischemic heart disease. After years of follow up for his chronic kidney disease that initially started as a diabetic nephropathy with proteinuria, he was initiated on haemodialysis in late 2009. He received commercial Kidney transplantation in October 2010 from Pakistan and was put on triple immunosuppression with Cyclosporin, MMF and prednisolone. After his return, he was found to be in sepsis with very high serum creatinine and infected wound. He developed allograft thrombosis occurred after 6 weeks of commercial kidney transplantation.
Results: blood vessels of the graft showed wide spread thrombi with necrosis of the vessel wall and interstitium showing haemorrhage. The tubules were showing bacterial colonies of gram negative bacilli. However, there was no histological evidence of rejection. The patient recovered fully and hence maintained back again on his regular haemodialysis sessions.
Conclusions: Commercial transplant with poor set up carry high risk of complications. Transplant thrombosis of the kidney graft can be attributed to various reasons and once thrombosed the loss of graft is inevitable. However prompt diagnosis and immediate attempt thrombolysing with streptokinase or surgical intervention with endoluminal extraction of the thrombolysis.

P378 OPPORTUNISTIC AND UNUSUAL INFECTIONS AFTER KIDNEY TRANSPLANTATION DO NOT IMPACT THE PATIENT AND THE ALLOGRAFT SURVIVALS

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Introduction: New immunosuppressive agents in kidney transplant have reduced the incidence of rejection and have improved graft survival. At the same time, an increased incidence and spectrum of opportunistic infections is expected. Moreover, the impact of opportunistic or unusual infections on allograft or recipient survival has not been reported yet.
Methods: We conducted a retrospective, cohort, monocentric study including kidney allograft recipients engrafted from 01/2008 to 12/2013. Recipients with kidney allograft survival below than one week were excluded. Patient were followed at least 1 year unless death or graft loss ocurred earlier. Infection group is made up of allograft recipients with opportunistic or unusual infections. Blood samples for lymphocytes, CD4 and CD8 were collected before transplantation and at one year. We assessed patient and allograft survival after infection compared to a control group including the rest of the cohort.
Results: Among 558 kidney allograft recipients, 538 patients were included in the study. Fifty-five episodes of opportunistic and unusual infections were reported in 51 (9%) patients (infection group). Median delay was 20 (6–35) months and 20 (36%) occurred within the first year after transplant. Among those, respectively 28 (51%) were viral, 15 (27%) were fungal, 7 (13%) were parasitic and 5 (9%) were bacterial infections. At the time of transplant, neither blood lymphocytes, nor CD4 nor CD8 counts were different between infection group and control group. Induction and maintenance treatments were similar in both groups.
At the end of follow-up, six (11%) allograft losses were reported in infection group and 59 (12%) in control group ($p = 1.00$). Patient survival was similar in both groups with eight (16%) deaths in infection group and 50 (10%) in control group ($p = 0.23$).
Conclusion: Opportunistic and unusual infections after kidney transplantation.

P379 DO WE NEED TO EXTEND CMV PROPHYLAXIS COURSE IN HIGH RISK PATIENTS POST TRANSPLANT? A SINGLE CENTRE RETROSPECTIVE STUDY OF CMV INFECTION IN KIDNEY TRANSPLANT PATIENTS

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Introduction: CMV infection is one of the most common viral infection post transplantation. It is associated with multiple morbidities and mortality. Hence most centres give CMV prophylaxis post transplantation. However, the prophylaxis course length varies between 3 and 6 months among different units. The study aim is to assess CMV infection incidence in our centre and evaluate the need to extend our current three month CMV prophylaxis course.
Methods: 95 patients who received kidney transplant between April 2015 and March 2016 were included. Donor and recipient CMV status was checked at the time of transplantation and patients received three month CMV prophylactic course of Valganciclovir if they are CMV -ve and the donor CMV +ve. Patients were followed up for a minimum of 6 months. CMV infection incidence was checked and the length of time to develop the infection was assessed.
Results: 11 patients (11.6%) developed CMV infection. 9 (81.8%) where form the high risk group and received CMV prophylaxis for 3 months whereas 2 (18.1%) where from the low risk group and didn't receive prophylaxis as per unit protocol. 5 out of 9 (55.5%) received subtherapeutic dose of prophylactic valganciclovir at some point during their three months prophylactic course and 4 out of 11 (36.6%) required admission to hospital for IV Ganciclovir. 8 patients (72.7%) developed the infection between four to six months post operatively and 3 patients (27.3%) acquired the infection within three months ($p=0.011$). Mean creatinine level at 6 months for infected group and negative group was 175 μmol/l and 170 μmol/l respectively.
Conclusion: In our unit around three quarters of the infections occurred 4–6 months post operatively despite having CMV prophylaxis for the initial three months. We recommend that the current three month CMV prophylaxis protocol in high risk patients is extended to six months and a repeat study with larger number of patients is conducted in the future.

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RETROSPECTIVE COMPARATIVE STUDY ABOUT INF-BASED VERSUS DAA-BASED PREEMPTIVE TREATMENT OF HCV AFTER LIVING DONOR LIVER TRANSPLANTATION

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Background: Recurrence of hepatitis C virus (HCV) after liver transplantation is universal. Since the introduction of DAA agent, treatment for HCV infection has been changed considerably. However optimal treatment for HCV recurrence after liver transplant has not yet been established. We retrospectively evaluated the efficacy of direct antiviral agent (DAA) as a preemptive treatment for recurrent HCV infection after living donor liver transplantation (LDLT).
Methods/Materials: From January 2010 to September 2016, totally 119 patients received living donor liver transplantation followed by either interferon (INF)-based or DAA-based regimen due to recurrent HCV. All antiviral treatments were started preemptively.
Results: Eighty-nine patients were treated with INF and thirty patients received DAA after LDLT. Genotype 1b was the most common type (65.5%), followed by 2a (21.8%). In DAA group, 16 recipients were treated with ledipasvir/sofosbuvir, 10 patients received daclatasvir combined with asunaprevir, and 4 patients were treated with sofosbuvir. Dosage of ribavirin was titrated depending on body weight and hemoglobin level. Sustained virological response (SVR) was significantly higher in DAA group than INF group (90% vs. 56.2%, p=0.001). Early virological response (EVR) and end-of-treatment response (ETR) rate was also much higher in DAA group when compared to INF group (EVR rate 96.7% vs. 69.7%, p=0.003, ETR rate 93.3% vs. 68.5%, p=0.007). Graft survival rate at 1-, 3-, and 5 years after LDLT in INF group was 82.9%, 73.8% and 70.6% respectively. In DAA group, 1-, 3-, and 5 year survival rate was 100%, 88.6% and 88.6%, statistically showed no significant difference compared to INF group (p=0.05).
Conclusion: DAA-based treatment for HCV recurrence after LDLT showed effectiveness in achieving SVR.

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MORBUS STRANGULARIS POST KIDNEY TRANSPLANTATION: CASE REPORT & REVIEW OF LITERATURE

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A 56-year-old man kidney transplant since 1996 with decompensated hepatitis C liver disease. Running on triple immunosuppression in the form of low dose steroids, Tacrolimus and mycophenolate mofetil. He was admitted with history of dental abscess 3 days ago. Examination shows an acutely ill-appearing man with evident facial edema in the area of the right jaw, no difficulty swallowing nor acute respiratory distress. Vital signs include an oral temperature of 38.7 C (101.7 F), a heart rate of 90 bpm, and a respiratory rate of 18 breaths/min. Examination of the oral cavity reveals numerous carious teeth, dry oral mucosae, and tinge of jaundice due to decompensated liver disease. Intravenous fluids and intravenous ceftriaxone were started immediately. Three days later patient face has become swollen from his neck to the lower part of her ears, bilaterally. The patient sits upright with his mouth open and his tongue protruding slightly. The floor of the mouth and anterior neck showed woody, tender edema with stiffness of the maxilla-mandibular joint and trismus.

Ultrasound of the neck showed evidence of supraglottic edema, a finding that is confirmed by a computed tomography (CT) scan confirms supraglottitis and soft-tissue gas. Leukocyte count was 36. 103/mm3, and anion gap measurement indicates metabolic acidosis. After stabilization by administration of intravenous fluids and antibiotic agents, the patient was transferred to the operating room, where a drainage and cleaning of the anterior neck and floor of the mouth space was done through 3 incisions: two submandibular & one submental. Blood clots and necrotic tissues were optimally removed, tracheostomy was not indicated. The wounds were closed with drains. Four days later, an additional drainage procedure was performed because of an infected fluid collection, and complete dental extraction was done. Patient was discharged in a good condition and at basal graft function.

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ACOUSTIC RADIATION FORCE IMPULSE (ARFI) IMAGING VERSUS TISSUE ELASTOGRAPHY AND SEROLOGICAL MARKERS FOR ASSESSMENT OF LIVER GRAFT FIBROSIS PRE AND POST ANTIVIRAL THERAPY FOR HEPATITIS C VIRUS RECURRENC

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Background & Aim: Liver fibrosis progression in recurrent hepatitis C virus infection is accelerated after liver transplantation with variable methods of assessment of such fibrosis. The main aim of the study is to identify the reliability of non-invasive methods for assessment of liver fibrosis post liver transplantation to start effective antiviral therapy and prevent further progression of hepatic fibrosis.
Methods: Fifty two patients who were eligible for treatment of hepatitis C virus (HCV) recurrence post liver transplantation were enrolled. They were subjected to demographic, clinical, laboratory assessment and abdominal ultrasound. APRI, FIB-4 and liver stiffness measurement with ARFI were assessed for all patients and compared with Fibroscan results.
Results: Out of 52 patients who were enrolled, 82 % were males. The mean age was 51.5±7.3 years. 31 % (16/52) of patients had significant liver fibrosis (≥ F2) as evident by Fibroscan. In the pretreatment setting ARFI, FIB-4 and APRI showed good diagnostic performance in prediction of significant fibrosis with AUROC 0.87, 0.88 and 0.9 for the cutoffs 1.27 m/sec, 2.4 and 0.81 respectively. There was significant regression of the values of ARFI, Fibroscan and APRI 6 months post the end of HCV treatment.
Conclusions: ARFI, FIB-4 and APRI are reliable diagnostic tools for assessment of significant liver fibrosis in the setting of HCV recurrence post liver transplantation and hence wide application of these non-invasive methods should be encouraged.
Keywords: Liver fibrosis, Hepatitis C recurrence, Liver transplantation, ARFI, Fibroscan, FIB-4, APRI

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A 36-YEAR OLD RENAL TRANSPLANT RECIPIENT FEMALE WITH LEG ULCER: A CASEREPORT

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Background: Opportunistic infections are common in organ transplant recipients. After 6 months of transplantation patients have the highest risk of opportunistic infections such as cryptococcosis.
Methods: The report presents the case of a 36-year-old female renal transplant recipient, transplanted 15 years ago with complain of few subcutaneous painful and warm nodules on right leg and ankle since one month ago. Despite changing cyclosporine to rapamune 1 mg/ day and antibiotic therapy, her condition deteriorated and nodular lesions progressed to ulcers. Culture of the tissue of lesion revealed the yeast colonies. Then she was treated with conventional amphotericin B 50 mg/day and oral fluconazole 200mg/BD (adjusted due to renal function) subsequently. Skin biopsies showed the presence of chronic panniculitis associated with round yeast forms. Staining showed positive for periodic acid-Schiff, alcian blue and colloidal iron, but negative in Giemsa and Prussian blue stains. The above findings were consisting with cryptococcal panniculitis with secondary vasculitis. Culture of the fragments revealed C. neoformans var. grubii. The serum cryptococcal antibody titer was 1:16. Chest radiography was normal. The skin lesions regressed gradually and ulcers started healing, however leaving eschars. After insufficient treatment with topical fibrinolysin oint and surgical debridement, the graft was performed for her. The plan was to continue Fluconazole for at least 1 year.
Results: Fungal infection following solid-organ transplantation is a major cause of morbidity and mortality. After candidiasis and aspergillosis, cryptococcosis is the third most common invasive fungal infection in organ transplant recipients. Only 14 cases of cryptococcal panniculitis in solid organ transplant recipient have been reported so far.
Conclusions: Since the cryptococcal cutaneous lesions are often non-specific, there must be a high clinical suspicion and a deep skin biopsy to construct a diagnosis.

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COUPLED PLASMA FILTRATION AND ADSORPTION IN RENAL GRAFT RECIPIENTS WITH SEPSIS

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Introduction and Aims: Septic complications remain an important problem in renal transplant recipients. Systemic inflammatory response in sepsis leads to poor graft function, as well as other organ and systems and can lead to multiple organ failure and death. Extracorporeal therapy can effectively intervene in the pathogenesis of sepsis.
Methods: 26 patients were included in the study, 14 of which were randomized in main group (in this patients we coupled plasma filtration adsorption (CPFA)). 12 patients were in group 2 (without the CPFA). Two procedures were performed in all patients of group 1, the duration of 8–10 hours with an interval of one day. In all patients used a standard protocol of immunosuppression, including tacrolimus, mycophenolate mofetil, and prednisone. Patients were included in the various stages of the postoperative period - from 18 days to 5.6 years after cadaveric renal transplantation. The causes of sepsis were wound infections, bacterial pneumonia, renal graft pyelonephritis, bacterial endocarditis, catheter-related sepsis, common surgical diseases of the abdominal cavity.
Results: In the main group, we observed a significant reduction in the concentrations of cytokines (Il-4, 6, 10, TNFa) during the procedure. It was associated with the improvement of central hemodynamics and lung respiration. In comparing group cytokine concentrations remained stable. There was a slight decrease in cytokine concentrations only in patients with positive dynamics of clinical status. On day 28 in the study group died 3 patients, in the control group - 6 patients.
Conclusions: We believe that the removal of cytokines is an effective procedure for patients with sepsis. In renal transplant recipients with complex immunosuppression, this procedure has great potential.

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MIDDLE HEPATIC VEIN THROMBOSIS CAUSED BY BILOMA AT LIVER RESECTION MARGIN AFTER LIVING DONOR LIVER TRANSPLANTATION USING MODIFIED RIGHT LOBE GRAFT

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Introduction: The modified right lobe graft, which reconstructs MHV of the donor liver, has been generally successful. We report here three cases of MHV interposition graft thrombosis due to biloma.
Case: The first patient was 38-year-old woman with alcoholic cirrhosis. Donor was her husband. MHV was reconstructed with cadevaric iliac vein. Duct-to-duct anastomosis was made. She was discharged without any abnormal findings. However, 50 days after the operation, she re-visited with abdominal pain and dyspnea. On abdominal CT, biloma at liver resection margin and adjacent MHV thrombosis was observed. Chest CT showed pulmonary thromboembolism and DVT was not observed in the lower limb. Therefore, it was judged pulmonary thromboembolism due to thrombus of MHV. Anticoagulation was initiated and the patients recovered and discharged after pigtail drainage for biloma. The second patient was 66-year-old man who has HBV-HCC. His son was the donor. MHV reconstruction and bile duct anastomosis was same with the first case. The patient recovered well after the operation, but he was admitted to the ER with fever. The biloma of the liver resection margin and MHV thrombus were observed on CT. Endoscopic internal drainage was performed for biloma and MHV thrombus was observed without anticoagulation. The third patient had HBV-HCC, 66 years old. Donor was his son. After surgery, there was continuous bile leakage through the drain tube and ERBD was inserted at postoperative 19 days. On the 22nd day after operation, a small amount of biloma was observed in the liver resection margin, and thrombus of MHV was seen.
Conclusion: MHV reconstruction is an important surgical technique in vivo, but with iliac vein, the annual patency is only about 40%. We report 3 cases of biloma of liver resection margin as a cause of MHV graft occlusion, and all patients recovered well after biloma drainage.

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DOUBLE TROUBLE: CMV AND BK VIRUS INFECTION IN A POST RENAL TRANSPLANT PATIENT WITH PERSISTENT LEUKOPENIA

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LT, a 49 y/o, male underwent kidney transplant last February 2016.The operation was unremarkable and a right ureteral stent was placed. He was given a total of 13 vials of rATG at a dose of 1.25 mg/kg/day for 3 days with methylprednisolone as pre medication. He was started on Tacrolimus 4 mg BID, Mycophenolate mofetil 500 mg tablet 1 tablet q6. During admission, there was noted progressive leukopenia and thrombocytopenia which resolved spontaneously. Patient was discharged improved. Patient was apparently well, on weekly follow-up, when there was note of a downward trend in WBC. Assessment at that time was leukopenia, treatment related.MMF was decreased to BID. Upon succeeding follow up, there was noted improvement in WBC; however, creatinine was noted to be increasing. He was admitted for pulse steroid therapy and treated as case of acute allograft rejection. Upon discharge, there was noted improvement of creatinine levels, however, there was again noted downward trend of WBC, hence, patient was advised further work-up. On work up, he was noted to have increasing CMV antigenemia with high levels of CMV DNA. He was treated with Valganciclovir and Ganciclovir.WBC levels increased to normal levels which persisted until a month after discontinuation of therapy after which there was again a downward trend in WBC. Work up revealed a positive urine cytology as well as positive urine and plasma BK PCR tests. Prednisone was tapered then discontinued, Tacrolimus was shifted to Everolimus, MMF was decreased to OD and Ciprofloxacin was started at 250 mg BID. There was an increasing trend in plasma BK virus PCR, hence, cellcept and ciprofloxacin were discontinued and Leflunomide 40 mg OD started. He also underwent biopsy of the renal allograft which showed negative results for both BK virus and rejection.Leflunomide and Everolimus were continued after which there was a noted downward trend of the plasma BK virus PCR levels.

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AN IMMUNOLOGIC PROFILE TO IDENTIFY LIVER RECIPIENTS AT RISK OF PNEUMONIA AFTER TRANSPLANTATION

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Background: Pneumonia is a frequent infectious complication after liver transplantation. There is a need of biomarkers to identify those patients at higher risk for having this complication. Immunologic monitoring could be an interesting option taking into account that some alterations are targets of immunotherapy.
Methods: In a single center study we analyzed a data base of immunological biomarkers prospectively collected in 46 patients. We identified 18 (39.1%) who developed pneumonia during a 6 month follow-up. Levels of IgG, IgM, IgA, complement C3, C4, CD3, CD4, CD8, CD19-B and NK cell levels were measured in the routine laboratory. Study times were before transplantation and at day 7 and day 30 after transplantation. Logistic regressión analysis was performed to assess potential biomarkers.
Results: Patients who developed pneumonia disclosed the following abnormalities: Pre transplant higher levels of IgG (p=0.077), IgA (p=0.033), lower of C4 (p=0.053) and CD8% (p=0.055); at day 7 lower levels of C3 (0.069), CD3 counts (p=0.04), CD8% and counts (p=0.059 and p=0.049 respectively); at day 30 IgG (p=0.13), C3 (p=0.002), factor B (p=0.002), CD3 counts (p=0.018), CD4% (p=0.036), CD8% and counts (p=0.02 and p=0.038, respectively) and NK % and counts (p=0.020 and p=0.023, respectively) were lower compared with patients without this complication. In logistic regression analysis we identified the following profile: Pre transplant higher levels of IgA, day 30 lower concentration of C3 and factor B and lower CD8 percentage. Day 30 IgG hypogammaglobulinemia (IgG<700 mg/dl) was a risk factor for development of pneumonia (RH 4.60. 95% CI 1.12–18.86, p=0.034).
Conclusion: The results suggest that an immunological profile combining innate and acquired immunity biomarkers predispose patients for development of pneumonia in liver transplantation. The inclusion of these biomarkers in immunomonitoring protocols should be taken into account due to their availability and low cost.

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P388 THE VALUE OF THE NATIONAL EARLY WARNING SCORE IN RENAL TRANSPLANT PATIENTS IN PREDICTING SEPSIS

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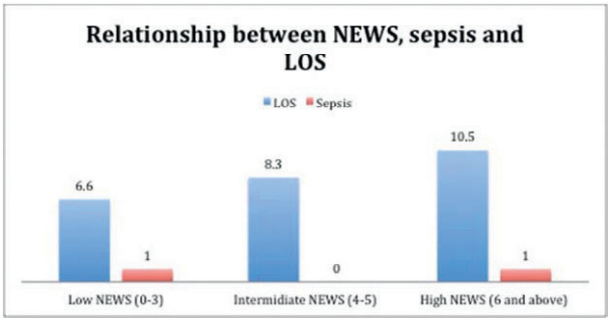
Introduction: The Royal college of Physicians of England (RCoP) acute medical task force recommends NEWS as a surveillance system for all patients in hospital for tracking clinical condition, alerting the doctors to any medical deterioration and triggering a timely response (1). It is an established fact that renal failure is associated with high cardiovascular morbidity and mortality (2). Altered physiology and immunosuppression alters the body's response to stress (3). This prompted us to audit the value of NEWS in predicting sepsis and length of stay in renal transplant recipients.
Materials and Methods: A total of 21 renal transplant surgeries from Oct 21st-Jan 14th were audited in the study. Patients less than age 18 or more than 75 with previous history of transplants were excluded. There were 14 DBD's, 5 live donors and 3 DCD's. NEWS was calculated as per the guidelines of RCoP. Based on NEWS, patients were divided into low (0–3), intermediate (4–5) and high group (>6), with 13, 6 and 2 patients each respectively. The single highest value of NEWS per patient per day was added up for length of hospital stay to get the average NEWS for every patient. Sepsis was defined as patients with fever, tachycardia and clinical focus of infection with raised inflammatory markers. We then compared NEWS with sepsis and length of stay for each group.



Results: Out of 21 patients, sepsis was seen in two patients, one with low NEWS and one in the high NEWS group. Two of our patients with MI did not have significant deterioration in NEWS score, being 0 and 3 on day of attack. Length of stay was longer in high NEWS group, 10.5 days, and was 8.3 and 6.6 days for intermediate and low group, respectively.
Conclusion: Although our study is based on a very few number of patients, it fails to identify the value of NEWS in identifying sepsis and clinical deterioration in renal transplant recipients. Larger studies are needed to assess value of NEWS in renal transplant recipients.

P389 POSITIVE URETERIC STENT CULTURE IN RENAL TRANSPLANTATION: WHO SHOULD BE TREATED?

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Introduction: Routine ureteric stent placement at the time of kidney transplantation reduce urological complications. This is a retrospective review of renal transplant patients who had positive culture of ureteric stent at time of removal and whether those with positive stent culture need antibiotic treatment or not. We also analysed the effect of ureteric stent colonisation on kidney function.
Patients and methods: We performed a retrospective chart review of 86 patients who underwent renal transplantation between April 2016 and February 2017.Our protocol is to remove the ureteric stent at 6th week post-transplant with a single dose of broad spectrum antibiotic Pre-procedure and we send the stent for culture and sensitivity as a routine.
Results: In total, 20 patients (23%) had a positive ureteric stent culture. Eight (40%) patients of the twenty who were symptomatic for urinary tract infection and had positive urine culture versus 12 (60%) patients who were asymptomatic and had negative urine culture. Four (20%) patients of the symptomatic group were admitted and treated for urosepsis and the other four (20%) treated for urinary tract infection on out-patient bases. None of the asymptomatic group with positive stent culture and negative urine culture received any treatment. The average tacrolimus level for positive ureteric stent culture group and negative ureteric stent culture group were 8.8 and 8, respectively. Graft function measured by creatinine among the positive stent culture and negative stent culture were 178 and 159 umol/l respectively.
Conclusion: The incidence of culture positive ureteric stent were 23%. Only 40% of positive ureteric stent culture developed urinary tract infection proven by urine culture. Only patients with positive ureteric stent culture and positive urine culture require antibiotic treatment.

P390 CYTOMEGALOVIRUS INFECTION IN INMUNOSUPPRESSED PATIENTS AFTER KIDNEY TRANSPLANTATION

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Introduction: Cytomegalovirus is one of the most important pathogens in kidney transplant patients
Methods: 235 transplant patients. Prophylaxis was performed in the high-risk patients (D+/R- or treatment with antilymphocyte globulin), the remaining patients were monitored with Ag-pp65/PCR-CMV for 16 weeks or when there was suspicion of affectation. We considered infection (CMVI): Ag-pp65>10 cells/PCR>1000 copies, without associated clinical; and disease (CMVD) when associated symptomology
Results: Of 235 patients, 151(64.30%) male. 69 (29.36%) considered high-risk, the average prophylaxis period: 17.62 weeks (range:6.43–32.86). Of these, 16(23.18%) presented CMVI and 1(1.44%) developed CMVD (post-prophylaxis). The average onset period (AOP) since the transplant: 5.85±3.66 months. The remaining 166 (70.60%) were considered low-risk, 43(25.90%) presented CMVI, 2(1.20%) developed CMVD, AOP: 2.61±3.75 months. We did not find differences in the incidence of CMV when comparing both groups, or between patients that received a different period of prophylaxis, ≤ or >15 weeks. There were 7 relapses (5 in low-risk patients). Comparing patients treated <7, ≥7 and <15, y ≥15 weeks, we found 37.5, 12.5 and 8.3% relapses respectively (p=0.20). On comparing affected patients with healthy in the multivariate analysis, being male acts as a risk factor (p=0.001), glomerular filtration in the first year post-transplant was worse in affected patients, and no increase was observed in the incidence of neoplasms and acute rejection, or decrease patient and graft survival
Conclusions: Early detection and prophylactic treatment in situations of risk have reduced the impact of the disease. The prophylaxis period >15 weeks does not improve the results and increase costs. With a longer treatment period, there are fewer relapses. CMV infection is associated to males and poorer kidney function during the first year post-transplant, without repercussion for survival of either the graft or the patient.

P391 CYTOMEGALOVIRUS INFECTION IN RENAL TRANSPLANT RECIPIENT

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Background: Cytomegalovirus (CMV) is one of the most important infections in renal transplant recipients. The IgG anti-CMV antibodies in the plasma are present in more than two-thirds of donors and recipients prior to transplantation. The impact of CMV infection on kidney graft survival was examined in a prospective, single center study of 42 patients who did receive CMV prophylaxis for six months after renal transplantation.
Methods: A prospective study of cytomegalovirus infection was carried out on 42 renal transplant recipients. Renal transplant recipients were systematically screened for cytomegalovirus infection.
Results: 42 renal transplant recipients were followed during 2004–2011. Mean age of renal recipients was 35.2 ±5.3 years old. Fifteen patients showed evidence of infection with cytomegalovirus uncomplicated by bacterial infections with the following viral titers: 5% in 3 patients, 10% in 5 patients, 15% in 5 patients and 20% in 2 patients. The longer the hemodialysis period previous transplantation correlated with the viral titers. Patients without viral infections were usually asymptomatic. In contrast, the onsets of viral infections were almost always accompanied by a significant clinical illness characterized by fever, leucopenia, and low graft function. Compared to those without CMV,

CMV disease was associated with a relative risk of overall kidney dysfunction of 2.5.
Conclusion: The cytomegalovirus infection is a frequent complication after renal transplantation and is associated with less favorable prognosis for renal graft.

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BACTERIAL AND NOT CMV OR FUNGAL INFECTION THAT IMPACT THE OUTCOME OF LIVING DONOR LIVER TRANSPLANT RECIPIENTS IN UNIVERSITY HOSPITAL IN LIMITED RESOURCES COUNTRY, EGYPTIAN SINGLE CENTER EXPERIENCE

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Background: Liver transplantation (LT) is a standard life-saving procedure for the treatment of end-stage liver diseases. Success of LT may be limited by infectious complications. Aim: to analyze infectious complications and its outcome on Egyptian patients underwent living donor liver transplantation (LDLT) in Cairo University.
Method: 92 adult patients underwent LT for end stage liver disease of various causes was included. We retrospectively analyzed infectious complications and its impact on outcome.
Results: The mean age of recipients was 48.7±7.3 years with male predominance (92.4%). The majority of patients according to Child-Pugh score were class C (83.7%) and MELD score:17.8±3.7. Commonest indication for LT was HCV(64.1%) and HCC(29.4%). Infectious complications; bacterial infection (35.9%), CMV infection(16.3%) and fungal infection(10.9%). Commonest bacterial pathogens were Staphylococcus aureus, Streptococci, Klebsiella and Pseudomonas. Main sites of infection were bile duct(21.8%) followed by blood stream(19.5%).Bacterial infection and sepsis were significantly reduced overall survival(p-*value* =<0.0001 and <0.0001). Fungal infection wasn't significantly associated with mortality (p-*value*=0.5). There was significant association between CMV infection and biliary complications as well as neurotoxicity(p-*value*=0.01 and 0.003) but it wasn't associated with increased risk of rejection, HCV recurrence and mortality(p-*value*= 1, 0.08 and 0.4).There is no significant association between immunosuppressive drugs and bacterial, fungal and CMV infection(p-*value*= 0.7, 0.3 and0.08). Overall mortality was 30.4% and most frequent cause was sepsis(17.3%). The overall 6 months, 1, 3 and 5 year survival were 90.2%, 80.4%, 72.1% and 69.6%. On regression analysis, Bacterial infection and sepsis were independent predictors of poor outcome.
Conclusion: Bacterial and not CMV or fungal infection is correlated with mortality after LDLT. However overall survival is more or less equivalent to inter

Clinical Kidney Infection

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THE FREQUENCY AND RISK FACTORS OF URINARY TRACT INFECTIONS AMONG TRANSPLANTED

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Introduction and Aims: Renal transplantation is the renal replacement modality of choice for patients with renal end stage disease. It offers enhanced quality and duration of life and is more effective than chronic dialysis treatment. Urinary tract infections occur very often after renal transplantation and are associated with significant morbidity and mortality. Only recently the number of transplanted patients followed at our clinic has dramatically increased. Hence, the aim of this study was to evaluate the frequency and risk factors of urinary tract infections among transplanted patients visiting the outpatient service of transplantation.
Methods: We evaluated prospectively 57 patients during one year. The risk factors, variables such as age and sex, etiology of chronic renal failure, the duration of preoperative dialysis, follow up length of the drains or catheters, used immune suppressive, time and number of hospitalization were examined and the relationship between the risk factors and urinary tract infections was evaluated. During each visit, serum creatinine and urine cultures were taken when there was significant white blood cell in urine. All patients received sulfamethoxazole/trimethoprim prophylaxis for six months after renal transplantation. The immunosuppression for most patients consisted of triple regimen including cyclosporine, mycophenolate mofetil and prednisolone. No patient was lost during follow up in this study.
Results: 57 patients, 41 men and 16 women with a mean age of 35±10 years were followed during one year after renal transplantation. The cause of end stage renal disease was tubulo-interstitial nephritis (35%), glomerulonephritis (23%), hypertensive nephropathy (8%), adult polycystic kidney disease (2%) and in 32% the cause was unknown. Double J stent was placed during surgery in all patients and between them 12 patients (21%) suffered from at least one episode of urinary tract infection. Gram negative bacilli.

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GOOD OUTCOME FOLLOWING MANAGEMENT OF MULTIPLE INFECTIONS INCLUDING A DISSEMINATED CRYPTOCOCCOSIS IN A KIDNEY TRANSPLANT RECIPTIENT

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The occurrence of infection can be a serious complication after organ transplantation especially in developing countries. We report an interesting outcome of management of a kidney transplant recipient aged of 38, who received a graft from his wife. The Immunosuppression regimen was based on 7 days Anti-thymocyte globulin, Corticoids, MMF and prograf. One day after transplantation he required a revision surgery for an urinoma. He presented a delayed graft function and underwent haemodialysis. Because of haemostasis disorders, the biopsy was delayed; nevertheless, he received high doses of steroids to treat a hypothetical rejection without improvement of the graft function. Biopsy was finally performed at day38 and showed tubular necrosis and no rejection. We stopped haemodialysis at day41,creatinine decreased gradually to 1.2 mg/dl. Our patient suffered from many infections including bacterial urinary tract infections and a Cytomegalovirus disease 2 months after transplantation. At the 5th month, he presented an acute pain on the right iliac fossae in front of the graft with cellulite-like appearance, he had also signs of knee arthritis and was febrile. Secondarily ,monomorphic papules and nodules appeared in the face, head and neck.

The skin biopsy showed signs of cutaneous Cryptococcosis.The Cryptococcus was also found in spume,blood and in the cerebrospinal fluid. The serum Antigen was positive:1/1000 and the cerebrospinal fluid 1/100.The patient was given Amphotericin B and fluconazole during 01 year until the negativation of the antigenemia . At the end of treatment, the cutaneous lesions disappeared. Our case aims to emphasis the risk of a high immunosuppression. ATG and high doses of steroids are well-established risk factors of developing both CMV and Cryptococcosis. In this case, despite multiple infections and nephrotoxic treatments, the renal function is satisfactory at 22

months, Creatinine is currently about 1.3 mg/dl and no HLA antibody has been detected.

P395 INFECTION DUE TO AN UNCOMMON AGENT IN A KIDNEY TRANSPLANT RECIPIENT

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Introduction: Infections are the second most common cause of death with a functioning transplant among kidney transplant recipients. Infectious agents and clinical presentation of disease usually correlate with time post-transplantation and the geographical origin of donor (D) and recipient (R).
Case report: Twenty-five-year-old Caucasian female patient with end-stage renal disease due to congenital renal dysplasia on hemodialysis. The patient was transplanted with a deceased donor kidney (IgG CMV D+/R-; other relevant serologies negative). Immunosuppressive (IS) therapy consisted of induction with basiliximab and maintenance with tacrolimus, mycophenolate mofetil and prednisolone. Prophylaxis with valganciclovir, cotrimoxazole and nystatin was initiated. There were no complications after surgery and serum creatinine at discharge was 0.96 mg/dl. Twelve weeks after renal transplantation the patient was admitted due to bacterial meningitis due to Escherichia coli. The clinical condition of the patient worsened with global respiratory failure and stupor in context of Klebsiella pneumoniae meningitis. Strongyloides stercoralis hyperinfection syndrome was suspected. This agent was identified in parasitologic examination of duodenal aspirate. Treatment with subcutaneous ivermectin was initiated. Notwithstanding the treatment, the patient died.
Discussion: *Strongyloides stercoralis* is a parasitic nematode, which is endemic in tropical regions of rural areas. Post-transplant infection by this microorganism may occur after transmission from kidney donor or by reactivation of a chronic infection in kidney receptor due to immunosuppressive therapy. Kidney recipients /donors with prolonged stays or originary from endemic areas are particularly prone to infection. Clinical presentation of hyperinfection syndrome may include pulmonary, hepatic or meningeal infections due to enteric microorganisms.

P396 A SINGLE CENTRE EXPERIENCE OF POST RENAL TRANSPLANT BK VIRUS NEPHROPATHY

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Background: BK virus is a polyoma virus that can lead to early graft loss in kidney transplant recipients. We aimed to review our own series of patients who had a diagnosis of BK virus nephropathy(BKVN).
Methods: Electronic data was reviewed for all our patients since 2009 testing positive for BK virus in blood or urine.
Results: There were 17 patients with at least one positive BK virus result in either serum or urine. These patients all had at least >25% rise in serum creatinine. Of these only 8(47%) were biopsied but 7/8 showed the characteristic features of BKV nephropathy with SV40 staining. Various strategies were used for treatment exclusive of the level of viraemia or deterioration in creatinine. These included conservative(no change) in 5 cases (29%), reduction in MMF *n*=8(47%), reduction in Tacrolimus *n*=2(12%), Ciprofloxacin *n*=1(6%) and combined MMF reduction with Cidofovir *n*=1(6%). There was no statistical difference in outcome for graft loss($p = 0.824$), higher creatinine ($p=0.252$), viraemia clearance ($p=0.824$) or rejection ($p=0.949$) between those conservatively managed or treated. There was an increasing trend towards acute rejection in the treated group($p= 0.09$) most likely due to the reduction in immunosuppression. Four(23.5%) patients recommenced dialysis a mean of 30 months from diagnosis of BK virus nephropathy.
Discussion: BK virus leads to a deterioration in graft function and should be considered in any patient with early graft dysfunction in the absence of acute rejection. There is an urgent need to develop more specific anti-viral therapies for BKV nephropathy.

Clinical Intestine Surgical technique

P398 MULTIVISCERAL TRANSPLANTATION WITH KIDNEY AUTOTRANSPLANTATION IN THE PATIENT WITH FAMILIAL ADENOMATOUS POLYPOSIS AND DESMOID TUMOUR

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Introduction: Visceral transplantation has been successfully used for patients with various gastrointestinal disorders. Vascular thrombosis and Crohns disease are the leading causes of gut failure in adults and congenital disorders in children.
Methods: We report here a patient with desmoid tumour, who underwent multvisceral transplantation together with kidney removal and autotransplantation into the illiac fossa.
Results: Between December 2014 and December 2015, some 3 multivisceral transplantations in 3 patients (aged 27 to 60 years) were performed. The case: A 36-year-old female with Gardner syndrome and desmoid tumour suffered with progressive abdomen distention associated with paroxystic pain since 2010. History of previous abdominal surgery consists of right colon resection, right ureter resection. Deceased donor was 18 years old. Multivisceral graft was used. Cold ischemic time was 5 hours. Right kidney removal, cold storage perfusion, ex vivo desmoid mass dissection from the ureter and hilum and autotransplantation into the right pelvic fossa was performed after reperfusion of the transplanted abdominal organs. Lastly, restoration of intestinal continuity was included. Acute renal failure required temporary dialysis for 75 days. Patient was discharged from hospital 3rd month. Patient became nauseous followed with vomiting several times during the first year. Delayed gastric emptying and spastic pylorus was identified using gastric emptying sciascopic and scintigraphic study. Gastric per-oral endoscopic myotomy (G-POEM) was done and patient was discarded on a 5th day. Unfortunately, patient developed gastric ulcer near the G-POEM accompanied with bleeding 14 days after G-POEM. Bleeding was treated conservatively.
Conclusion: Kidney autotransplantation in this case led to better improvement of their function. G-POEM application is controvers in this case. Our opinion is that it was less burdensome than the relaparotomy.

Clinical Intestine Immunology

P399 THE GENE EXPRESSION OF PROTEASE INHIBITORS AND CATHELICIDIN ANTIMICROBIAL PEPTIDE IN INFLAMMATORY BOWEL DISEASE

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Background: The term inflammatory bowel disease (IBD) covers both ulcerative colitis (UC) and Crohn's disease (CD). Genetic susceptibility together with environmental factors disturb intestinal homeostasis, resulting in chronic and repeated inflammation-remission cycles. Despite the differences between UC and CD, there are cases where a definite diagnosis cannot be made, resulting in a diagnosis of non-specific colitis. Antimicrobial peptides (AMPs) have been identified as essential peptides in the maintenance of intestinal barrier function and immune homeostasis and they show increased expression in both inflamed UC and CD mucosa.
Aim of work: To detect the expression of AMPs genes in patients with IBD and study their impact on clinical presentation of Egyptian patients with IBD.
Patients and methods: This is a cross sectional study that was conducted on 20 adult subjects having IBD referred to Gastrointestinal Endoscopy and Liver Unit. Twenty adult subjects were non IBD patients studied as case control. All subjects were submitted to complete medical history, physical examination, laboratory investigations and colonoscopic examination.
Results and conclusions: Patients with IBD have increased mucosal expression of elafin, SLPI (secretory leucocyte peptidase inhibitor) and CAMP (cathelicidin antimicrobial peptide), which may trigger proinflammatory activity. Also, the colonic mucosal gene expression of elafin, SLPI and CAMP in IBD patients is directly related to the disease severity.

Clinical Intestine Rejection

P400

VASCULARIZED COMPOSITE ALLOGRAFTS AS SENTINEL MARKERS FOR INTESTINAL TRANSPLANT REJECTION

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Introduction: Abdominal wall transplantation (AWTx) offered a potential solution to the often-challenging closure of the abdominal wall at the time of intestinal transplantation (ITx). However, besides facilitating closure, the AWTx has been proven a promising asset for early, patient led rejection monitoring. We have therefore used sentinel skin grafts for solely graft monitoring purposes when there was no clinical need for AWTx.
Methods: We performed a retrospective analysis of all patients undergoing intestinal and vascularized composite allograft (VCA) transplantation. Clinical presentation of rejection was correlated with histology, stoma output, citrulline levels and endoscopy findings.
Results: From October 2008 to December 2016, 34 patients underwent ITx. Ten underwent a modified multivisceral transplant and 24 an isolated small bowel transplant. Mean age was 41.9 years (range 23- 73). M/F: 20:14. Median follow up was 774 days (range 16- 3029). All patients had Campath induction (30 mg iv) followed initially by Tacrolimus monotherapy (trough level of 8–12 ng/ml). Twenty patients received a VCA in addition to ITx. There were 5 intestinal biopsy proven rejections in the IT alone group (36%) and a further 5 patients in the same group were falsely treated for rejection, as this was later labelled as infection. There were 7 patients with rejection in the VCA part of the IT+ VCA group (7/20, 35%). These patients presented with a rash limited to the VCA. Of those 7 patients, there were 3 with concurrent intestinal rejection (3/20, 15%) with a lead-time of 5- 7 days between VCA and ITx. There have been no episodes of intestinal rejection without preceding VCA rejection.
Conclusion: We report on a series of combined VCA and ITx. The skin component has been utilized as a dynamic canvas for remote immune monitoring of visceral grafts. It has so far been useful for patient led monitoring of the ITx graft since it is visible and presents the earliest and only sign of rejection.

Translational Intestine Ischemia-reperfusion and preservation

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VILLIN-1 IS A NEW BIOMARKER FOR INTESTINAL ISCHEMIA REPERFUSION INJURY IN RATS AND HUMANS

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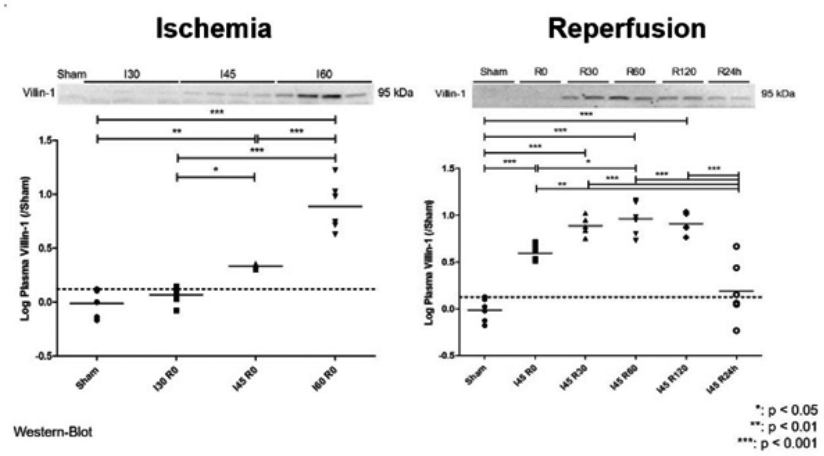
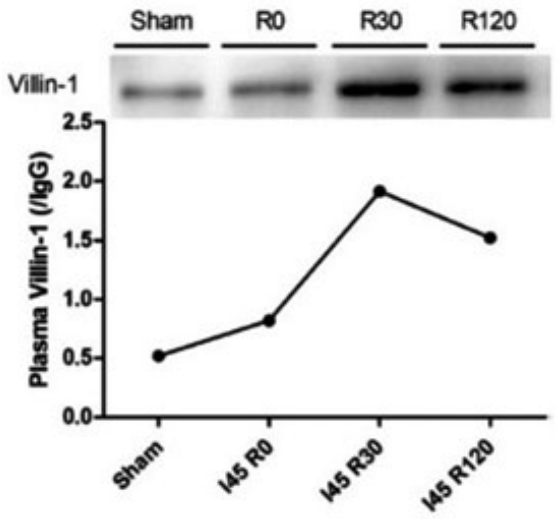
Background: Intestinal ischemia is a frequent and life-threatening pathology, due to delayed diagnosis and lack of therapy. Intestinal reperfusion enhances the catastrophic effect of ischemia, known as ischemia-reperfusion injury (IRI). In contrast to other organs, serological markers for intestinal IRI are missing. Villin-1 -a cytoskeletal protein of the epithelial brush border- is a valuable candidate. The aim was to analyze villin-1 as a serological marker in a rat and human model of intestinal IRI.
Methods: In a rat model of intestinal IRI (temporary mesenteric artery clamping), 4 conditions were tested: (i) laparotomy only (sham); (ii) 30 min ischemia + 5 reperfusion periods (0 min/30 min/60 min/120 min/24 hours); (iii) 45 min ischemia + 5 reperfusion periods; (iv) 60 min ischemia + 5 reperfusion periods; (n=6/group). For survival analysis, 7-day reperfusion was included in each condition (n=10/group). Analyzed end-points: histology (Park-Chiu); intestinal permeability (Using chamber); villin-1 (Western-Blot). In a validated human model of intestinal IRI (6 cm jejunal-clamping during pancreaticoduodenectomy; 45 min ischemia + 0 min/30 min/120 min reperfusion) villin-1 was analyzed by immunoprecipitation (n=6).
Results: In rat, increasing ischemia resulted in decreased survival (30 min: 90%; 45 min: 50%; 60 min: 10%) and loss of intestinal integrity (histology/permeability). From 45 min ischemia, villin-1 appeared in the plasma at 0 min reperfusion and remained detectable until 120 min reperfusion *(Fig 1)*. At 0 min reperfusion, villin-1 could differentiate between 45 min or 60 min ischemia corresponding to the different survival. Overall, villin-1 had a strong correlation with Park-Chiu score (r=0.8068;p<0.0001) and permeability (r=−0.6127; p=0.0019).

Figure 1 - Rat model



In human, villin-1 was released with ischemia and remained detectable until 120 min reperfusion (Fig 2).

Figure 2 - Human model



Conclusion: For the first time, we showed that villin-1 is a serological biomarker of intestinal IRI in rat and human.

Translational Kidney Ischemia-reperfusion and preservation

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MIRNAS PANELS IN HYPOTHERMIC MACHINE PERFUSION PRESERVATION SOLUTION ASSOCIATED TO AKI AND 1 YEAR KT FUNCTION IN AN ECD KIDNEY TRANSPLANT PROGRAM. CLUSTER ANALYSIS

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Introduction: Delayed graft function (DGF) is a common complication after deceased donor kidney transplantation (KT) which affects short and long-term outcome. Currently available biomarkers in HMP perfusate lack sensitivity in predicting graft outcome. Our group has already set up a protocol to determine miRNAs in preservation solution during graft perfusion as well as in sera from KT recipients (Poster 82. 2015 EAU Congress. Madrid). Aim of the study: To identify miRNAs panels associated to AKI and 1 year kidney function from ECD graft under HMP.
Material Y Méthods: We conducted a prospective cohort study of graft dysfunction in KT from ECD. Ethical approval was obtained from Ethics Review Board. A screening experiment from 762 different miRNAs in 4 experimental ECD graft pairs led to a panel of miRNAs in preservation solution. Results were expressed as AKI development and 1 year KT function and studied by Cluster Analysis.
Results: Hierarchical cluster analysis allowed classifying miRNAs in 2 homogeneous groups. First group included AKI and creatinine clearance at 1 year > 30 ml/min and non AKI and KT function < 30 ml/min. The other group included AKI and creatinine clearance at 1 year < 30 ml/min and non-AKI and KT function > 30 ml/min. Tables 1 and 2 show miRNAs identified according to AKI and KT function, miRNAs validated targets and function.

AKI / non-AKI	Targets	Function
hsa-miR-452-5p	DPYSL2, KRAS, MMP2, TM7SF4, THRB, BMI1, LEF1, TCF4, CDKN1B	Cell migration and extracellular matrix reorganization

KT function >< 30 ml/min	Targets	Function
hsa-miR-340-5p	MET	Cell proliferation
hsa-miR-199b-5p	HES1, SET, LAMC2, PODXL, DDR1 HIF1A, ERBB2, SETD2, JAG1, KIT, GRB10, TAF9B, NLK, CCNL1	Cell proliferation, cell plutipotency

Conclusions: Cluster analysis has allowed identify 2 miRNAs panels associated to AKI appearance and 1 year KT function. miRNAs targets were involved in cell response to ischemia, cell proliferation, apoptosis or tissue repair cell signaling.

Clinical Liver Ischemia-reperfusion and preservation

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THE USE OF NORMOTHERMIC MACHINE PERFUSION VS STATIC COLD STORAGE FOR LIVER TRANSPLANTATION: A SYSTEMATIC REVIEW

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Background: The use of machine perfusion (MP) for the preservation of organs has been proposed for decades. In the current era of organ shortages, MP has been revisited as a method of improving preservation of grafts, particularly extended criteria donors (ECD). This review aims to establish the efficacy of NMP over current standards (Static cold storage (SCS)) in preserving livers for transplantation.
Methods: A literature search of Medline and Embase was performed for relevant studies published between 2008 and 2017. Trials in humans and animals assessing the use of NMP against SCS for liver transplants or transplant simulations were reviewed. The primary outcomes were peak liver enzyme levels (AST/ALT) post-transplant, and short term graft survival. Secondary outcomes included long term survival, ALP, INR, bile production, GGT, LDH.
Results: A total of 8 studies were included (5 animal and 3 human). There was a non-significant difference in graft survival in human studies. 2 animal studies reported significant differences in survival in favour of the NMP group. Secondary outcomes were consistently favourable to the NMP group, including significant differences in peak AST, ALP, Bile production, GGT and LDH.
Conclusions: Outcomes are improved for livers preserved by NMP in animal studies compared to SCS. Effects have not been reproduced thus far in human studies. Consistent results from animal data provides support for pursuing more trials investigating NMP in humans.

Basic Heart Ischemia-reperfusion and preservation

P404

A FIRST STEP IN DEVELOPMENT OF A CROSS SPECIES COMPARATIVE STUDY OF IMMUNE MODULATION IN HIBERNATION – ESTABLISHING A RAT IRF7 PROMOTER/GAUSSIA LUCIFERASE REPORTER CONSTRUCT

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Background: Hibernation is a natural molecular adaptation to extreme environmental conditions with implications for organ protection. We have previously shown cardioprotection in hibernating arctic ground squirrels (AGS) compared to rats. Although hibernators undergo significant immunomodulation, their immune activity has not been characterized. We hypothesize that hibernators' cardioprotective phenotype is accompanied by altered expression of immune and inflammatory pathways.
Methods: Monocytes (PBMCs) and plasma were purified from rat, summer AGS, and winter AGS after sham, 3 or 24 h Ischemia/Reperfusion (I/R). Plasma samples were analyzed using multiplex cytokine assay and PBMCs were antibody stained and analyzed using flow cytometry. A lentiviral vector

producing GFP/Renilla luciferase was transduced with various transduction aids. Isolated rat splenocytes were then transduced using a lentiviral vector containing a rat IRF7 promoter/Gaussia Luciferase (GLuc) reporter construct. 72 h after transduction, splenocytes were stimulated with TLR agonists and cell supernatants were collected 24 h later. These were assayed via luminescence.
Results: Our GFP/RLuc results clearly demonstrated a greater transduction efficiency with the DEAE Dextran (6 μg/ml) than with the virus alone or either of the other transduction aids (data not shown). Results using the rat IRF7 promoter/GLuc reporter construct suggest low levels of reporter expression that is stimulated via select TLR agonists. PolyIC (high MW) seems to give the highest reading of GLuc expression. Since IRF7 is part of the TLR3 pathway that is stimulated via PolyIC, this result is not unexpected.
Discussion: Our cytokine and IRF7 promoter/GLuc reporter construct results demonstrate significant differences in the physiological effect of I/R on hibernating compared to non-hibernating animals. We believe these differences warrant further investigation and may lead to improvement in transplant outcomes.

Clinical Kidney Ischemia-reperfusion and preservation

P405 SURGICAL SALVAGE AFTER ACUTE ALLOGRAFT VENOUS THROMBOSIS: A SUCCESSFUL CHALLENGE

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Background: Allograft Renal Vein Thrombosis is a rare, but well-known early complication in kidney transplantation that often leads to allograft loss. Different factors can predispose to such a severe complication.
Case Report: A 4-years-old girl with end-stage renal disease due to bilateral kidney hypodysplasia in a complex uro-genital anomaly underwent predialytic renal transplantation. During the pre-operative work-up, a complete thrombosis of both the femoro-iliac axis and partly of the subhepatic cava vein was diagnosed. Reperfusion was considered, but it was not feasible. She received an AB0-compatible left kidney form her mother, who presented 4/6 HLA matches; in order to allow the anastomosis with the patent cava vein, a prosthetic patch with cadaveric vein was interposed. The post-op was initially uneventful with quick recovery of renal function. Immunosuppression was induced with Methylprednisolone and Basiliximab and maintained with Prednisolone, Mycofenolate and Cyclosporine; continuous i.v. heparin infusion (13 UI/kg/h) was put in place as prophylaxis. After 8 days the patient presented acute abdominal pain with hematic oliguria and tachycardia; a prompt US-scan revealed renal vein thrombosis with diastolic reverse flow. Emergent laparotomy confirmed the suspected diagnosis: kidney was explanted, washed with saline and thrombolytics and reimplanted. The venous patch was removed: it presented wide thrombosis and endothelial damage. In the following post-op, after an initial hemorrhagic shock, renal function progressively improved and the patient was discharged after 30 days.
Conclusion: The described procedure is rarely reported in literature and rarely leads to a successful recovery of renal function. At our knowledge it is the first time that it has been performed in a child. The prompt diagnosis of renal vein thrombosis and the immediate surgical revision has been critical for the good outcome.

Clinical Liver Ischemia-reperfusion and preservation

P406 PREEMPTIVE ALLEVIATION EFFECT OF PDE-III INHIBITOR FOR THE VENO-OCCLUSIVE DISEASE/ SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) AFTER LIVER TRANSPLANTATION

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Background & Aim: The VOD/SOS after liver transplantation is a relatively rare complication, but often is lethal. Based on clinical cases and animal model of VOD/SOS, we clarified the essence of VOD/SOS and developed preemptive therapy for the VOD/SOS.
Clinical Cases: We report two cases with rapidly progressive lethal VOD/SOS after liver transplantation resistant to various therapies. In case 1 who was performed deceased donor liver transplantation, the first episode of acute allograft rejection triggered. Case 2 who was performed living donor liver transplantation from mother. In both cases, transfusion unresponsive thrombocytopenia and hyperbilirubinemia were persisted postoperatively, and extra-sinusoidal platelets aggregation (EPA) and platelet phagocytosis in Kupffer cells and hepatocytes around zone 3 such as clinical xenotransplantation of the liver. The EPA and phagocytosis of platelets were main reasons of the VOD/SOS and transfusion-resistant thrombocytopenia.
Animal Experiment: Furthermore, in a study using the rat VOD/SOS model, it was clarified by electron microscope and immunohistological staining that EPA in zone 3 is the essence of the VOD/SOS. In addition, we verified the VOD/SOS alleviation effect of PDE-III inhibitor having both suppressive effect of platelets aggregation and vascular endothelium protective effect by using the same animal model. It was confirmed that PDE-III inhibitor has preemptive alleviation effect for the VOD/SOS.
Clinical Study: Based on these result, we performed graft reperfusion and perioperative administration of PDE-III inhibitor with 10 recipients of liver transplantation, we do not have occurrence of the VOD/SOS.
Conclusion: The EPA based on sinusoidal endothelial cell injury in zone 3 is the essence of the VOD/SOS after liver transplantation, and graft reperfusion and perioperative administration of PDE-III inhibitor has preemptive alleviation effect for the VOD/SOS.

Translational Kidney Ischemia-reperfusion and preservation

P407 SLAUGHTERHOUSE PORCINE KIDNEYS – A REPLACEMENT FOR LABORATORY ANIMALS TO TEST KIDNEY QUALITY IN AN EX VIVO NORMOTHERMIC MACHINE PERFUSION MODEL

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Presently, machine perfusion techniques are becoming standard care in the clinical donation and transplantation setting. However, more research is needed to understand the mechanisms of why machine perfusion is beneficial. For preservation related experiments porcine kidneys are acceptable alternatives to human kidneys, because of their size and similar physiology. In this experiment the use of slaughterhouse kidneys was evaluated with normothermic machine perfusion (NMP), thereby avoiding the use of laboratory animals. To assess several degrees of damage, different preservation techniques were used, after 30 min of warm ischemic time (WIT). Cold storage (CS), hypothermic oxygenated and non-oxygenated machine perfusion (HMP+/-O2) techniques were used as preservation modalities. As a reference a group with only 7 min of WI and CS was used. In addition, two normothermic autologous blood perfusion strategies were tested: NMP and NMP with addition of amino acids (NMP/NMP+). Kidney function was defined as glomerular filtration rate and fractional sodium excretion (FENa) during the four hours perfusion. The reference group revealed adequate kidney function. However, 30 min of WIT resulted in poor function after CS. Changing the preservation technique to HMP, with or without oxygen, resulted in improved function. Kidney function improved even more when amino acids were added during perfusion (NMP+). Tubular function was also better preserved when using HMP as expressed by lower FENa values. The addition of oxygen during HMP always resulted in better function during NMP. Using HMP during preservation, it is possible to maintain adequate renal function in a slaughterhouse porcine kidney donation after circulatory death model, as evaluated with ex vivo NMP. Discriminant functional parameters were demonstrated when applying different strategies, showing the model's feasibility to test a broad spectrum of interventions regarding preservation and/or reconditioning of kidneys.

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MACROPHAGE STIMULATING PROTEIN PROMOTES TUBULAR REGENERATION AND CD133+ RENAL PROGENITOR DIFFERENTIATION AFTER ISCHEMIA-REPERFUSION INJURY: POTENTIAL PROTECTIVE ROLE IN DELAYED KIDNEY GRAFT FUNCTION

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Introduction: Delayed graft function (dgf) is usually defined as the need for dialysis in the first week after transplant. macrophage stimulating protein (msp) is a plasminogen-related growth factor inducing tubular proliferation after ligation to specific tyrosine-kinase receptor ron. Aim of the study: define the potential role of msp in kidney regeneration after ischemia-reperfusion injury (iri).
Methods: Plasma and urine levels of msp (p/u msp) were evaluated by elisa. Data were correlated with p-ngal. Immunohistochemistry for msp and ron was performed on kidneys of renal iri male wistar rats. *In vitro*, protective effect of msp on hypoxic human tubular cells (tec) (proliferation, apoptosis, cell polarity) and on differentiation of cd133+ renal resident progenitor cells was studied.
Results: At day 2 after transplantation, p/u msp were higher in immediate graft function (igf) patients vs dgf (p-igf 7.42 $\pm$ 0.98 ng/ml; p-dgf 1.98 $\pm$ 0.44 ng/ml; u-igf1.24 $\pm$ 0.31 ng/ml, u-dgf 0.19 $\pm$ 0.05 ng/ml). In igf patients the increase of p/u msp peaked at day 2 in concomitance to p-ngal decrease (recovery of renal function). In experimental renal iri a significant up-regulation of msp and ron was observed in tec in regenerative phase after aki (autocrine release of msp from regenerating tec). Increased msp expression / release from hypoxic tec was observed. In hypoxic tec, msp induced proliferation, preservation of cell polarity and resistance to apoptosis (inhibition of both death receptor or mitochondrial pathways and caspase-3, -8 and -9 activation). In presence of msp, cd133+ cells proliferate / differentiate into mature tec acquiring cell polarity and tubular-like-phenotype (e-cadherin, megalin, alkaline phosphatase and aquaporin-1 expression). MSP promotes tec regeneration and cd133+ renal resident cell differentiation following iri. MSP may be envisaged as potential therapeutic approach for dgf. further studies are needed to define the role of msp as potential biomarker.

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RECONDITIONING OF A MARGINAL DONOR LIVER BY USING A NORMOTHERMIC MACHINE PERFUSION ASSOCIATED TO AIR/OXYGEN MIXER: A CASE REPORT

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Background: The use of marginal livers represents the concrete possibility of expanding the pool of available organs for transplantation. In this setting, machine perfusion is increasingly used, offering better preservation of the liver parenchyma compared with the standard method of organ preservation.
Method/Materials: We present the first reported combined use of normothermic machine perfusion (MP) liver assist (LA) and the Sechrist 3500 Air/Oxygen Mixer, aimed at better controlling and regulating the partial pressure of oxygen (pO 2) and carbon dioxide (pCO 2) in the process of reconditioning a marginal liver from an extended criteria donors (ECD), after static-type cold storage (SCS). This ECD was an 82-year-old woman, declared unsuitable for transplantation by other Italian centers. The recipient was a 56-year-old man affected with hepatocellular carcinoma on hepatitis-C-virus-related cirrhosis, who was on the liver transplant waiting list with the Milan criteria.
Results: The oxygen provided to the system was initially a FiO2 of 100% through a standard fluxmeter at a 2 L/min flow. Later, after evidence of hyperoxia and high pH value, and considering the risk of excessive production of reactive oxygen species and cellular damage, we progressively switched to the Sechrist 3500 Air/Oxygen Mixer with the aim of reducing the pO2 and increasing the pCO2 level to achieve a more physiologic pH values. The MP reconditioning was 210 min and the cold ischemia time was 260 min. Hepatic transaminases measured in the perfusion fluid showed minimal liver damage. The lactate levels dropped significantly during perfusion, from 13.48 to 2.83 mmol/l, bile production was observed from the first hour. A liver transplant was performed and the recipient is alive and well after 3 months.
Conclusions: Based on our experience and a thorough review of the literature it seems that the use of a high accuracy fluxmeter improves the procedure of reconditioning.

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PREDICTORS FOR DELAYED GRAFT FUNCTION IN LIVING DONOR KIDNEY TRANSPLANTATION

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Delayed graft function (DGF) is an uncommon complication after living donor kidney transplantation (LDKT) with a reported incidence of 5%. DGF has a major impact on post-operative care, resulting in numerous diagnostic procedures among early biopsies. Moreover, it influences short and long-term graft survival negatively. As LDKT has experienced a marked increase in the Netherlands, DGF forms a substantial problem. The aim of this study was to evaluate possible predictive perioperative factors for developing DGF after LDKT. All LDKTs performed between 1995 and 2013 were extracted from our transplant database and analyzed. For each identified subject with (functional) DGF (defined as the need for dialysis within the first week after transplantation or the failure of creatinine to drop 10% on three consecutive days in the first postoperative week), three matched controls with similar recipient characteristics (gender, age and year of transplantation) were included to form the control group. Recipient and donor characteristics (i.e. body mass index, preoperative dialysis, blood type and HLA mismatches) were evaluated in addition to various surgical and anesthetic parameters (i.a. transplant side, number of arteries, ischemia times, duration of hypotension and anesthetic and analgesic agents). From a total of 690 LDKTs, 4.1% developed DGF. The majority of patients were men (62.2%) with a mean ($\pm$SD) age of 49.0 ($\pm$12.9) years. Only pre-transplantation dialysis (OR 1.938; 1.028–3.652; $p = 0.041$) and high recipient weight (OR 1.027; 1.006–1.049; $p = 0.013$) were predictors for the development of DGF after LDKT. Anesthetic management and surgical parameters seemed to be of no influence. The finding that pre-transplantation dialysis is a risk factor for DGF after living donor kidney transplantation may be related to recipient volume status. Careful assessment of volume status and correction of hypovolemia prior to transplantation may be helpful in the prevention of DGF after LDKT.

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CONCENTRATION OF IL-6 FEATURES IN THE EARLY POSTOPERATIVE PERIOD AFTER KIDNEY TRANSPLANTATION

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Introduction and Aims: Kidney transplant always has ischemic injury. Ischemic injury causes the release of many mediators. One of the key inflammatory mediators is IL-6. We have studied the dynamics of its concentration in the early postoperative period after kidney transplantation, and the factors that influence on it.
Methods: The study included 28 patients. The selected time points: T0 – before surgery, T1 – 10–15 min after reperfusion, T2 – 4–6 h after reperfusion; T3 – in 12–14 h after reperfusion; T4 day after reperfusion.
Results: At the stage T0 all patients had normal levels of IL-6. In most patients after surgery was an increase of the concentration of IL-6. The peak of this increase of concentration is at different stages, depending on various factors. In patients with good initial graft function peak of cytokine release noted on etah T1 or T2. In most patients with delayed graft function was an increase of the concentration of IL-6 to the 24th (T4) hour after reperfusion. At the same time, recipients with delayed graft function, as well as in patients with a good initial function showed the highest concentration of IL-6 in the blood after 4-6 h. The peak of the release of IL-6 depends on of many factors: the length of heat and cold ischemia, a type of donor, an initial graft function. Longer heat and cold ischemia can delay the release of IL-6. The warm ischemia has a greatest damaging effect on the initial graft function and character of the curve of concentration of IL-6. In a case of transplantation of kidneys from donors with brain death peak release of IL-6 in the first 4–6 h after reperfusion can be expected.

Conclusions: Study of IL-6 profile and the role of cytokines in the postoperative period in recipients of renal graft may identify new targets for specific therapy that might help improve the results of transplantation.

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INVESTIGATION OF MESENCHYMAL STEM CELLS FOR PRECONDITIONING OF KIDNEY GRAFTS IN AN EX-VIVO PORCINE MODEL OF HYPOTHERMIC MACHINE PERFUSION

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Background: In transplantation, Hypothermic Machine Perfusion (HMP) has been shown to be superior to static cold storage (SCS). Mesenchymal Stem Cells (MSCs) are multipotent cells with tissue repair capacities and their application to ameliorate IRI is being investigated in preclinical and clinical studies. The aim of this study was to test the effect of MSCs in a porcine kidney model of HMP and to directly compare outcomes in a model of reperfusion.
Methods: Ten kidneys from 5 donor pigs retrieved at an abattoir were stored on ice for 24 h. The two kidneys then underwent HMP for 4 h using an RM3 pulsatile perfusion machine. For one of the two kidneys, $1–5 \times 10^8$ labelled human MSCs were added to the perfusate. Both kidneys were reperfused with whole blood at 37°C for 2 h. Perfusate samples were analysed for levels of IL-β by ELISA and biopsy samples were analysed for expression of inflammatory cytokines using RT-PCR. Functional parameters including urinary output, oxygen consumption and creatinine clearance were compared upon reperfusion.
Results: MSCs could be traced within the kidneys using fluorescence microscopy. All the physiological parameters were similar between the two groups. IL-1β levels were higher in perfusate and urine samples in the MSC group, with a median of 285.3 ng/ml (IQR 224.3–407.8 ng/ml) vs. 209.2 ng/ml (IQR 174.9–220.1), $p = 0.51$ and 307.7 ng/ml (IQR 190.9–349.6 ng/ml) vs. 105.3 ng/ml (IQR 71.03–164.7 ng/ml) $p = 0.16$, respectively. Interestingly, mRNA expression of the cytokines TNFα, NGAL and EDN-1 was higher in MSC pre-treated kidneys after reperfusion.
Conclusions: The application of MSCs in a HMP setting is feasible with no negative influence on the functional parameters of the kidney grafts. Changes in levels of IL-1β as well as mRNA expression patterns of cytokines suggest that MSCs do have an effect on the grafts. Whether this leads to a positive or a negative outcome on IRI needs to be determined.

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THE EFFECT OF NATURAL ROYAL JELLY AND MESENCHYMAL STEM CELL ON ISCHEMIA REPERFUSION INJURY IN MOUSE KIDNEY

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Background: Renal dysfunction due to is a common problem following kidney transplantation. Administration of bone marrow mesenchymal stem cells (MSCs) and antioxidant improves recovery from IRI. Royal Jelly (RJ) modulates oxidative stress and apoptosis. We investigated the protective role of MSCs and RJ on apoptotic gene expression in mice renal I/R injury.
Material and Methods: In this experimental study, male Balb/c mice (30–35 g) were randomized into six groups while their right kidneys had been removed 2 weeks prior to the study: sham operated without IRI, I/R group,, Ischemic preconditioning (IPC) was performed by three cycles of 3 min ischemia followed by 3 min reperfusion., I/R pretreated with RJ (100 mg/kg/day) for 20 days by Intraperitoneal injection (IP), IR treated with (MSC) GFP+, I/R pretreated with RJ (100 mg/kg/day) for 20 days + MSC GFP+. The I/R injury was induced by clamping the left renal artery for 45 min followed by reperfusion for 48 h.
Results: After IR, there was an increase in blood urea nitrogen (BUN) and creatinine (Cr) levels, and expression of apoptotic genes (FADD, BAD, BAX) genes., showed a significant decrease in all above mentioned parameter was observed in IR mice treated with RJ.
Conclusion: RJ was reduced expression of apoptotic genes and has renal protective effects against IRI. Therefore, the use of royal jelly is recommended for treating damage caused by IR.

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EXTENDED CRITERIA DONOR USE: AN ALTERNATIVE TO EXTEND THE DONOR POOL?

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Background: The effective treatment for end-stage renal disease is renal transplantation. One of the effort to increase the donor pool is the use of extended criteria donor (ECD) in cadaveric transplants. In this study, it was aimed to evaluate the rationale of the use of these donors by comparing the short and long term results of ECD and standard cadaveric donor (SCD).
Methods: Patients with cadaveric renal transplantation between 2010 and 2016 were retrospectively evaluated and two groups were created as ECD ($n = 17$) and SCD ($n = 35$). These two groups were compared in terms of delayed graft function (GGF) and follow-up graft function. The delayed graft function was assessed as the use of hemodialysis within seven days of the transplant. Mann Whitney U test was used statistically.
Results: In terms of delayed graft function there was a statistically significant difference in serum creatinine values at 1, 3, 6 months after transplantation in the ECD group ($p = 0.02$, 0.016, 0.07) compared to SCD group. However statistically difference not detected between the creatinine values after 6 months and at 1 year after transplantation ($p = 0.224$). Advanced age and the long cold ischemia had a significant effect on the delayed graft function. The notification of the national coordination center, the period between the time of the accepted organ and the cross-clamp time was found to be one of the most important factors causing delayed graft function ($p < 0.001$).
Conclusion: Delayed graft function may be more frequent in ECD group, but there is no difference in long term**.** Therefore, an approach may be appropriate to force transplant facilities within the expanded criteria donors. The use of extended criteria donors is the most important factor is advanced age and time to transplantation, so rapid decision can be reduced delayed graft function.

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BRAIN-DEAD DONORS TERMINAL INFLAMMATION IS ASSOCIATED TO DELAYED GRAFT FUNCTION IN KIDNEY TRANSPLANT RECIPIENTS

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Background: In kidney transplantation recipients, increased biomarkers of systemic inflammation before and after transplantation are associated to worse short- and long- term renal outcomes. This may be due to the activating properties of cytokines on renal endothelium, as it occurs in other inflammatory diseases, such as sepsis. However, little is known about the role of systemic inflammation in the donor and if it is associated to worse graft outcomes.
Methods: We retrospectively analyzed clinical and biochemical characteristics of all kidney brain-dead donors generated in the Hospital Clínic of Barcelona in the 2006–2015 period ($n = 194$). Donors who were tested for C-Reactive Protein (CRP) in the 24 h before BD declaration were included ($n = 97$, 50%). Clinical and biochemical features of their respective recipients ($n = 165$) were analyzed, comparing recipients who developed Delayed-Graft Function (DGF) ($n = 30$) with recipients who did not ($n = 135$).
Results: In the univariate analysis, CRP and dialysis vintage were significantly associated to DGF ($p = 0.025$ and $p = 0.002$, respectively), while PRA, donor and recipients age/sex, ischemia time, ICU stay and terminal creatinine were not.

	No DGF (n = 135)	DGF (n = 30)	p-value
Recipient			
Age (years)	57 [46–64]	57.5 [46.75–70]	0.7
Sex (%males)	66.6%	66.6%	1
Dialysis vintage (months)	40 [25–63]	58 [46.5–84.75]	0.002
PRA >10%	11/124 (8.1%)	4/26 (13.3%)	0.58
Previous transplant (yes/no)	28/107 (20.7%)	9/21 (30%)	0.39
Donor			
Age (years)	54.7 ± 13.41	58.47 ± 15. 46	0.18
Sex (%males)	51.8%	60%	0.54
ECD (yes)	78/135 (57.7%)	20/30 (66.6%)	0.48
ACV as cause of death	91/135 (67.4%)	19/30 (63.3%)	0.83
Donor CIT (hours)	14 [11–18]	15.5 [9.5–20.5]	0.8
Donor ICU stay (days)	2 [1–3]	1.5 [1–3.25]	0.71
Terminal creatinine (mg/dl)	0.9 [0.67–1.1]	1 [0.7–1.2]	0.11
Renal biopsy score	3 [2–4]	4 [2.25–4]	0.021
Donor CRP [mg/dl]	4.81 [1.42–12.2]	10.58 [5.1–18.21]	0.025

However, in logistic regression analysis, PCR proved to be significant only in non-ECD donors (p = 0.027), while it lost significance in the ECD group (p = 0.76).
Conclusions: Terminal donor CRP was associated to DGF in kidney transplant recipients and proved to be mostly significant in non-expanded criteria donors.

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P416 CLINICAL EXPERIENCE OF A NOVEL EX-SITU HYPOTHERMIC LIVER PERFUSION DELIVERY SYSTEM

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Introduction: Ex-situ liver perfusion is being used to assess organs for transplant and potentially optimise recipient outcomes. We have established ex-situ oxygenated hypothermic liver perfusion as a low cost, low intensity perfusion strategy in contrast to commercial, high technology delivery systems.
Methods: Hypothermic perfusion utilises proprietary cardiopulmonary bypass equipment, a custom-made heparin-bonded circuit, University of Wisconsin solution and a prostaglandin additive. A single centrifugal pump delivers cooled (8–10°C) oxygenated solution via the hepatic artery (25 mmHg) and portal vein (4 mmHg) and an IVC cannula maintains a negative transhepatic gradient. Livers from donors after circulatory death (DCD) or organs from donors after brain death (DBD) declined by other centres were perfused and transplanted into recipients after appropriate selection and consent.
Results: To date 8 livers (DCD n = 6, DBD n = 2) have been transplanted after hypothermic perfusion. All 8 transplants were considered high-risk due to both donor and recipient factors. Livers were perfused for an average of 118 min (94–176). Median peak post-operative ALT was 642 (150–3020). Longest follow-up is 12 months (3–12) with 100% graft and patient survival, there have been no confirmed cases of ischaemic cholangiopathy. Oxygen consumption in hepatic parenchyma was demonstrated despite cool temperature (mean = 1.71 cm^3/kg/min, 0.62–3.55).
Discussion: Hypothermic perfusion is safe, feasible and has resulted in improved recipient outcomes for DCD liver transplants.

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P417 NORMOTHERMIC EX-SITU PERFUSION IMPROVES ULTRASOUND-MEASURED MICROCIRCULATORY LIVER BLOOD FLOW

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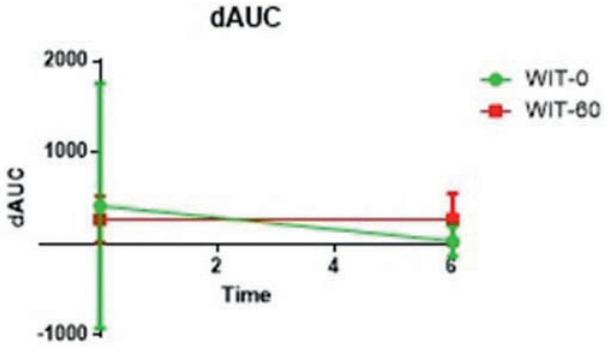
Introduction: Ex situ liver perfusion offers the potential to "recondition" organs prior to transplantation. Putative benefits of perfusion include delivery of oxygen, as well as wash-out of the micro-circulation prior to transplantation. Vasoconstriction during cold storage may also be reduced by perfusion.
Methods: 11 human livers declined for transplantation underwent ex-vivo normothermic perfusion with a red-cell based perfusate at fixed pressures (arterial 75 mmHg, portal 5 mmHg). 6 livers were perfused as soon as feasible (control group) and 5 livers underwent excessive ischaemia (mean 56 h cold ischaemia, followed by 1 h warm ischaemia at 37°C). Microbubble contrast enhanced ultrasound was used to assess the livers at the start, and after 6 h. Microbubble contrast agent was injected via the hepatic artery and portal vein separately to identify circulation specific differences in perfusion within the liver. Area Under the Curve (AUC) calculation from perfusion curve represents global perfusion in region of interest. ultrasound interrogation of vessels and parenchyma was analysed (difference between vessel and parenchyma - dAUC) to quantify changes in tissue perfusion.
Results: During perfusion, portal vein vessel and parenchymal flow (as demonstrated by AUC) remained stable across all livers. However, in control group the arterial dAUC decreased over time (T0 = 416 (SD 1341), T6 = 31 (SD 164)), suggesting improving parenchymal flow relative to luminal flow. However in excessive ischaemia group there was no improvement over time (T0 = 269 (SD 252), T6 = 269 (SD 284).
Discussion: The reduction in dAUC over the course of perfusion implies that as the microcirculation improves, the flow through the liver parenchyma becomes closer to the flow within the hepatic artery. Therefore, normothermic ex situ perfusion improves the hepatic arterial parenchymal microcirculation, however this effect is lost after prolonged ischaemic times.



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P418 ELECTROCARDIOGRAPHY CHANGES DURING REPERFUSION IN LIVING DONOR KIDNEY TRANSPLANTATIONS

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Background: The aim of our study is to determine whether EKG changes during reperfusion of kidney graft in terms of potassium levels, hot and cold ischemia times or amount of University of Wisconsin (UW) solution and to overview precautions which must be taken in future kidney transplantations.
Material and Method: In our study, 10 patients, without cardiac complaints, who undergone living donor kidney transplantation at the Akdeniz University Hospital were evaluated. Demographic features, EKG samples in preoperative, perfusion and postoperative periods and simultaneous blood gas evaluations of the patients were recorded. Operation data, hot and cold ischemia times and the amount of UW solutions which were used for perfusion were also recorded.
Results: Table 1 shows 9 cases in which QT intervals in EKG. Additionally, it was determined that potassium levels were increased comparing to preoperative values in 6 cases. QT interval and correlation of potassium levels which were determined in perfusion were given in figure 1. Whilst the mean (±standard deviation) hot ischemia time of the cases was 7.6 (±4.33) minutes, the mean cold ischemia time was 68.6 (±14.3) minutes. It was found out that potassium levels were also increased in 2 cases which had long cold ischemia times (76 and 99 min) (5.75, 4.89). Correlation of cold ischemia time and prolonged QT interval during perfusion is shown in figure 2. The mean (±SD) UW solution amount which is used for perfusion was 284 (±74.71), bradycardia was observed during perfusion in two of three cases in which UW solution was used over this average.

Conclusion: We consider that high UW solution amounts and long ischemia times may cause above-stated EKG disorders. On the other hand, there is a need for prospective randomized controlled studies.

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SINGLE CENTRE EXPERIENCE OF HYPOTHERMIC ORGAN PERFUSION USING RM3 PERFUSION MACHINE

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Introduction: We report our experience with the pulsatile hypothermic machine perfusion (HMP) (Waters Medical RM3) in our institution. A growing body of the literature reports a reduction in incidence and length of delayed graft function (DGF) with the use of HMP in organ preservation. DGF is a well-known complication of renal transplantation and its incidence varies greatly (30–60%) based on the type of deceased donor considered (brain death – DBD vs cardiac death – DCD donors, extended criteria – ECD vs standard criteria – SCD donors). This multifactorial complication directly causes poor short-term graft function, prolonged hospitalization and increased costs and influences long -term graft and patient survival.
Methods: In our institution we use HMP in every deceased donor kidney transplant unless the transplant can proceed immediately after the bench work preparation of the kidney. The kidneys are pumped on HMP until just before starting the vascular anastomoses. HMP parameters recorded are: temperature, systolic, diastolic and mean pressures, resistive index, flow (ml/min). Target perfusion pressure is 40–45 mmHg systolic. Primary endpoint is incidence of DGF. Secondary endpoints are patient and graft survival.
Results: 18 patients received 10 SCD kidneys (6 from DCD and 4 from DBD donors) and 8 ECD kidneys (4 from DCD and 4 from DBD donors). Mean donor age was 59 (30–75). Mean recipient age was 52 (35–70). 10 recipients were male and 8 female. 4 patients were pre-dialysis and 14 patients were on renal replacement therapy (all of them on hemodialysis). Induction immunosuppression was with Alemtuzumab in 16 patients and Basiliximab in two patients. Mean follow-up was 10 months. Mean static cold storage time prior to HMP was 480 min (200–630 min), mean HMP time was 320 min (120–480 min). Mean cold ischemia time (CIT) was 13.2 h (8.6–27.58 h). Three patients had DGF (16.6%). Patient and graft survival at 1 year are 100% and 97%, respectively.

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THE IMPACT OF TEMPERATURE ON EX-VIVO MACHINE PERFUSION OF SEVERELY STEATOTIC DONOR LIVERS

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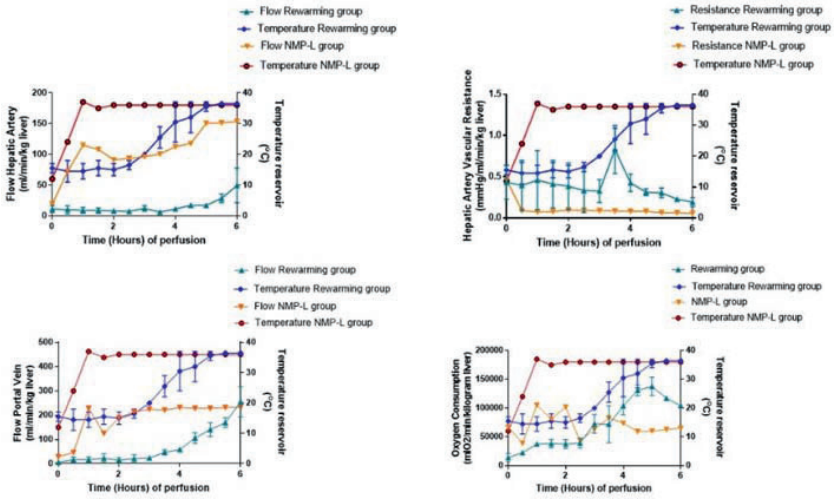
Background: Severely steatotic livers are more susceptible to ischemia-reperfusion injury due to impaired microcirculation and low energy stores. The reconditioning of these organs should aim to directly address these issues thereby providing adequate flows which are fundamental for organ recovery. Here we investigated the influence of temperature on the perfusion parameters of these grafts.
Methods: We perfused 3 severely fatty discarded human donor livers, 1 using normothermic perfusion (NMP-L group) at 37°C for 6 h and 2 within a protocol of 2 h dual vessel hypothermic oxygenated perfusion at 10°C, followed by 1 h controlled oxygenated rewarming going from 10°C to 20°C and then 3 h of normothermic perfusion (Rewarming group) using a bovine haemoglobin based oxygen carrier throughout. Grouped analysis was performed using two-way ANOVA.
Results: The severely steatotic liver perfused at 37°C from the start had lower arterial vascular resistance ($p = 0.01$) and higher flows in the hepatic artery ($p < 0.001$) and portal vein ($p < 0.001$) in comparison with Rewarming group. Perfusion parameters for the Rewarming group improved as expected as temperature was increased although did not achieved flows seen in the liver perfused at 37°C throughout. Oxygen consumption peaked within the first hours for the NMP-L perfusion and later for Rewarming group as temperature was increased.
Conclusion: NMP-L showed advantages for severely steatotic liver in terms of improved microcirculation with higher flows and lower vascular resistance. Oxygen consumption peaked earlier for the liver perfused at 37°C from the start and stabilises thereafter suggesting a beneficial effect in terms of metabolic rate activation and function.



Clinical Kidney Ischemia-reperfusion and preservation

P421

INFLUENCE OF COLD ISCHEMIA TIME ON KIDNEY TRANSPLANTATION OUTCOME

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Background: The present state of evidence regarding the impact of cold ischemia time (CIT) on the outcome of kidney transplantation, are still today unclear. The aim of this study was to investigate the influence of CIT to the short- and long-term function of the kidneys transplanted from deceased donors at the Sahlgrenska University Hospital 2007–2009.

Methods: This study was designed as a retrospective analysis of data recordings from local and national transplantation registers. The studied endpoints were DGF, PNF, AR, s-creatinine, days of hospitalization and graft survival at five years after the transplantation. Unadjusted and adjusted regression analyses were used to determinate relationships between the endpoints and CIT. To further analyze clinical characteristics and outcome tendencies we stratified the population according to CIT.
Results: We found significant differences in outcome comparing, CIT <14 h and ≥14 h, for DGF, level of s-creatinine and graft survival five years after the transplantation. Further we found significant relationship between CIT, as a continuous variable, and the incidence of DGF and the level of s-creatinine. The graft survival at five years after the transplantation was very close to significant.

Conclusion: This study gives firm evidence that CIT influence both the short- and the long-term kidney function. Efforts to lower the CIT are required, at least at the institution where this study is performed.

Clinical Kidney Ischemia-reperfusion and preservation

P422 THE USE OF INTRA-OPERATIVE DIURETICS FOR RENAL TRANSPLANTATION

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Background: Traditionally, intra-operative diuretics in combination with adequate hydration have been used for renal transplantation to prevent acute tubular necrosis. However, the evidence for their role in preventing delayed graft function is controversial. There is also no consensus in the type of diuretic that should be used. In this study we aimed to assess the rate of slow and delayed graft function in patients receiving either intra-operative Mannitol or Furosemide.
Methods: We retrospectively reviewed 90 patients who had renal transplantation at our tertiary centre. The primary outcomes for this study were delayed graft function and slow graft function. Secondary outcomes were rates of polyuria and changes in electrolytes.
Results: Rates of delayed and slow graft function were similar for both furosemide and mannitol. However, we found that the use of furosemide led to a significant increase in rates of polyuria. There were no electrolytes imbalances caused by the use of diuretics.
Conclusion: In conclusion, we found that there was no benefit in using one type of diuretic over another in terms of graft function. However in view of the fact that furosemide led to polyuria and its management difficulty, we feel that mannitol should be preferred. There is also a need for future randomized controlled trial assessing the use of diuretic versus placebo.

Clinical Kidney Ischemia-reperfusion and preservation

P423 DELAYED GRAFT FUNCTION AS A RISK FACTOR FOR IMPAIRED GRAFT SURVIVAL STRATIFIED BY DONOR KIDNEY QUALITY ASSESSED BY THE KDPI

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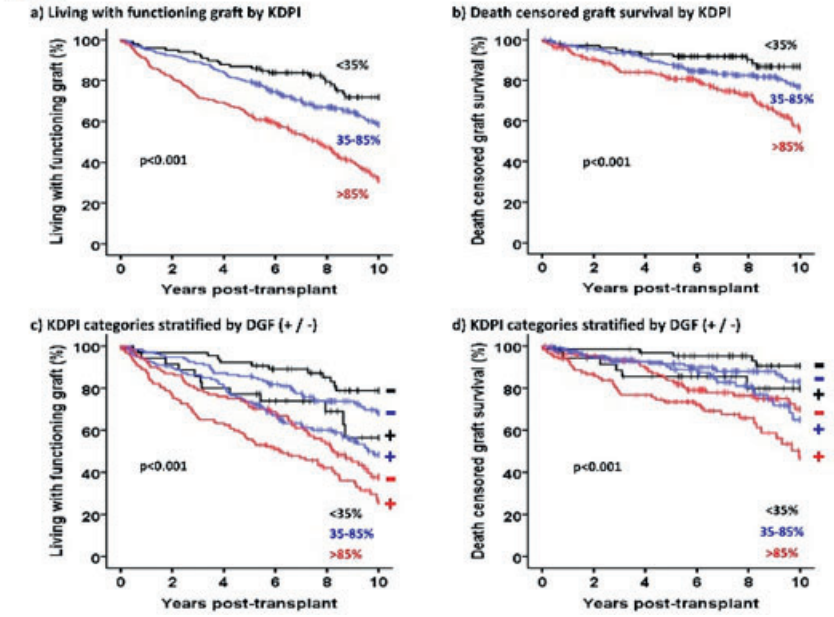
Introduction: Delayed graft function (DGF) is associated with impaired graft survival in kidney transplant recipients. The kidney donor profile index (KDPI) is increasingly evaluated as a prognostic tool to predict graft quality. However, there is few data that examined the contribution of DGF and donor kidney quality to impaired graft outcomes.
Methods: This retrospective single center study included 580 adult patients who received a deceased donor kidney from 2000–2010. KDPI was calculated using OPTN data as reference and long-term outcomes (mean 8.0 years) were assessed.
Results: Overall mean KDPI was 66%. Further categorization according to KDPI (<35% (n = 99), 35–85% (n = 264) and >85% (n = 217) resulted in a very high mean KDPI of 95% in the group with the highest KDPI. Due to the European Senior Program (ESP) this group showed a significantly higher recipient age (64 years compared to 47 and 48 years in the <35% and 35–85% groups, respectively). As expected, at 10 years patients living with functioning graft (71.9%, 58.5%, 31.3%) and death censored graft survival (86.7%, 76.9%, 55.6%) decreased with increasing KDPI (Fig. 1 a, b). Intriguingly, rates of DGF <35%: 35.4%, 35–85%: 50.0%, >85% 53.9%) did not increase proportionally with higher KDPI. This might represent the ESP driven effect by local allocation of kidneys >65 years in order to lower cold ischemia time. However, DGF had a negative effect on long term graft survival in all KDPI categories (Fig. 1 c, d). A multivariate Cox regression analysis adjusted for KDPI and cold ischemia time revealed DGF as an independent risk factor for premature graft loss (HR 1.97, $p < 0.001$).
Discussion: DGF contributes to further risk for graft loss independently from donor kidney quality assessed by the KDPI and cold ischemia time. Very high KDPI kidneys (>85%) – mostly allocated within the Eurotransplant senior program, facilitating shorter cold ischemia time –achieved comparable rates of DGF to 35–85% KDPI kidneys.

Figure 1.



Translational Kidney Ischemia-reperfusion and preservation

P424 A NEW EX VIVO MODEL OF REPERFUSION INJURY IN HUMAN ORGANS

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Purpose: Research teams worldwide are employing *ex vivo* machine perfusion models in ischaemia-reperfusion studies. However, current 'reperfusion' models largely constitute the use of anti-coagulated packed red cells or whole blood through a centrifugal pump. The use of anti-coagulated blood does not allow for the study of coagulation and Complement, both important aspects of clinical reperfusion injury.
Methods: We designed an *ex vivo* reperfusion circuit based on commercially available cardiopulmonary bypass technology (HL20 – Maquet, Getinge Group). The heart-lung base allows creation of 'pulsatile' flow through the centrifugal pump, thereby closer mimicking clinical reperfusion. The system allows the operator to set a defined flow rate, therefore making it possible to reverse the anti-coagulant effects of citrate with a titrated calcium infusion pre-organ inflow and re-citrification of the organ outflow to prevent clotting of the circuit. Research grade, whole blood from National Health Service Blood & Transplant (NHSBT), was used in *ex vivo* simulation of reperfusion in human kidneys ($n = 5$) declined for transplantation, (consented and allocated for research by NHSBT, U.K). Blood gas measurements from the arterial inflow and venous outflow were analysed using a point of care device (i-STAT Handheld Blood Analyzer, Abbott Point of Care).
Results: Human kidneys were successfully perfused in this ex-vivo reperfusion circuit for up to two hours. Ionised calcium measurements were maintained at 0.9–1.0 mmol/l immediately pre-arterial inflow and <0.35 mmol/l post-venous outflow by titration of calcium chloride and citrate infusions respectively. No circuits clotted using these parameters and continuous flow to the organ was maintained.
Discussion: This *ex vivo* organ reperfusion model represents a useful tool for the examination of reperfusion injury in all organs, particularly in respect to coagulation and complement activation following reperfusion.

Clinical Kidney Ischemia-reperfusion and preservation

P425 SUCCESSFUL IMPLEMENTATION OF KIDNEY TRANSPLANT PROGRAM FROM CONTROLLED CARDIAC DEATH DONORS: SIMILAR OUTCOMES COMPARED WITH KIDNEY TRANSPLANT FROM BRAIN DEAD DONORS AFTER FIRST YEAR OF FOLLOW UP

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Material and Methods: First year of programme, 21 cDCD kidney transplants (KT) from 13 donors and 34 KT from 24 DBD donors were performed. Data regarding donors, recipients, graft and surgical details and one year outcomes were collected from cDCD and DBD, comparing both groups.
Results: cDCD: Donors: 59 ± 12 years, 53.8% women, mean ICU stay 26 ± 22 days, 69% stroke as cause of death, creat 0.5 ± 0.2 mg/dl, proteinuria 514 ± 429 mg/day, 61.5% ECD. Recipients: 58 ± 13 years, 61.9% male, time of RRT 3.5 ± 2.5 years (90% Hemodialysis), 4.8% hypersensitized, PRA Peak 6 ± 12%, Missmatch 4 ± 1. 100% First transplant. Total WIT 18 ± 4 min, CIT 6.7 ± 2.5 h. No PGF, delayed graft function (DGF) 33.3%. 1 episode of acute rejection (4.7%). At 1 year: Creat 1.7 ± 0.4 mg/dl, eGFR 42 ± 14 ml/min, proteinuria 467 ± 326 mg/days. Older and male donor / recipient markers of worse renal function at 1 year follow-up. Donor Hypertension and increased ICU stay markers of higher proteinuria at 6 months. cDCD vs. DBD: cDCD donors had lower creatinine (0.5 ± 0.2 vs. 0.9 ± 0.2 mg/dl) and higher proteinuria (464 ± 421 vs. 61 ± 95 mg/days). cDCD recipients had lower cPRA I + II peak (2.5 ± 7.5 vs. 17 ± 35%). DBD greater CIT (19.6 ± 3.9 vs. 6.7 ± 2.5 h). Thymoglobulin induction 44% DBD vs. 100% cDCD. cDCD higher DGF (33.3% vs. 8.8%), no differences in creatinine, eGFR, proteinuria at 1 year. DBD higher acute rejection (11.3 vs. 4.7%), similar mortality both groups.
Conclusions: Successful implementation of cDCD program in numerical terms and outcomes at 1 year, similar to DBD, despite higher rate of DGF.

Clinical Kidney Cardiovascular complications

P427

INCIDENCE AND RISK FACTOR FOR LATE ONSET DEEP VENOUS THROMBOSIS AFTER KIDNEY TRANSPLANTATION

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It is well known that deep vein thrombosis (DVT) in kidney transplantation (KTx) is due to an imbalance of hemostatic mechanisms. It contributes to increased incidence of DVT not only early but also late in course. The aim of the present study was to evaluate the incidence and risk factors for development of DVT at a single institution.

Methods: Retrospective comparison of kidney transplantation recipients who developed postoperative late onset DVT. Patients undergoing KTx at Gifu university hospital between 2000 and 2014 were evaluated.

Results: Of the 246 patients undergoing KTx during the study period, DVT developed in 4. The mean age was 62.5 y.o (21–69). The mean duration after transplantation was 70.5 month (25.9–143.5). All of patients were male. Two patients suffered acute antibody-mediated rejection, which responded to steroids. All patients received tacrolimus, mycophenolate mofetil, methylprednisolone as immunosuppressant. Three of all took anticoagulant therapy (aspirin) for another reasons. All thrombolic events were symptomatic for pain or edema. Three DVTs are at same side of kidney transplantation, One patient had bilateral iliac vein thrombosis. All patients were treated with intravenous sodium heparin and then with oral warfarin. Subsequent to kidney transplantation no patients developed thrombotic complications and symptoms of legs disappeared.

	Pt1	Pt2	Pt3	Pt4
age	69	62	21	63
sex	M	M	M	M
Type of dialysis	PD→HD	HD	-	HD
job	driver	office worker	college sutudent	cook
Duration of dialysis (month)	5	1	preemptive	10
Diagnosis yers after KTx	14y6m	5y5m	8y11m	5y9m
ABO compatible/incompatible	in	in	in	compatible
living/deceased	living	living	living	living
immunosuppresive therapy	FK,MMF, MP	FK,MMF, MP	FK,MMF,MP	FK,MMF,MP
Anticoagulant therapy	aspirin	aspirin	aspirin	-
Complications after KTx	AMR	-	AMR due to non adherense	nephrectomy because of renal cell carcinoma lung cryptococcosis
Steroid pulse therapy	+	-	+	-
central venous catheter	right femoral vein for dialysis before KTx	-	-	-
Hematocrit(%)	39.3	40.7	44	40
Body mass index(kg/m^2)	26.6	27.1	19.3	24
Hypercoagulability factors in relation to DVT	-	-	-	-
symptoms	gonalgia swelling	leg pain	meralgia	foot edema
serum creatinine(mg/dl)/eGFR	0.98/58.8	1.29/45.1	2.23/33.7	0.65/90
blood pressure(mmHg)	132/86	139/108	129/81	150/84
side of graft	left	right	left	right
side of DVT	left	both	left	right
extent of DVT	FV~Pop	CIV~PV	CIV~FV	living~FV
plumonary embolism	+	+	+	-
treatment	intravenous sodium heparin and then with oral warfarin			
IVC filter	C	-	+	+

PD:penitoneal dialysis HD: Hemo dialysis FK: tacrolimus, MMF: mycophenolate mofetil, MP:methylprednisolone PV: peroneal vein, Pop: popliteal vein, FV: femoral vein, CIV: comon iliac vein LIV: lateral iliav vein

Conclusions: IgA recurrence after transplant is an important cause of allograft loss. Prevention may consist of accurate pretransplantation screening for thrombophilia or identification of patients at higher DVT risk. AND close monitoring and treatment of recurrence are crucial.

Clinical Kidney Cardiovascular complications

P428

CARDIOVASCULAR DISEASE AFTER KIDNEY TRANSPLANT FROM UNCONTROLLED DONATION AFTER CIRCULATORY DEATH (UDCD)

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Introduction: Cardiovascular diseases (CVD) are the most frequent cause of mortality in kidney transplant (KT) recipients, and 50% of these deaths are due to ischemic heart disease (IHD). The incidence of CVD after this kind of KT is unknown.
Aim: To analyse the prevalence and the incidence of CVD events and their risk factors in a program of KT from uDCD after 100 months of follow up.
Material and Methods: We included 237 RT from uDCD between 2005 and 2013. We reviewed donors, recipients, procurement and evolution characteristics. We reported CVD events: IHD, cerebrovascular accidents and peripheral vascular disease (PVD) or death attributable to CVD.
Results: Recipient's age was 48 $\pm$ 11 years and 141 (59.5%) were male. Pretransplantation CDV risk factors were: 77.2% (183) hypertension, 22.8% (54) diabetes mellitus and 39.2% (93) dyslipidemia. CVD pretransplantation were: 5.5% (13) IHD, 4.6% (11) stroke and 3.8% (9) PVD. Mean follow up was 44 $\pm$ 27 (25–63) months. The prevalence of CVD was 8.8% and the incidence was 27 cases/1000 patient-years. of the 21 CVD events in 20 patients, 55% (11) were IHD, 35% (7) stroke and 10% (3) PVD. Multivariable analysis shown the following risk factors to develop for any CVD event: pretransplantation IHD (HR: 9.2 (3.2–26.8) $p < 0.001$), pretransplantation PVD (HR: 4.2 (1.1–15.4) 0 = 0.02), previous cerebrovascular accidents (HR: 4.2 (1.4–12) p = 0.008), recipient's age at transplantation (HR: 1.05 (1.006–1.1) p = 0.04), body mass index of recipient at transplantation (HR: 1.12 (1.004–1.2) p = 0.04), diabetes mellitus (HR: 2.8 (1.03–7.9) p = 0.04), dyslipidaemia (HR: 2.5 (1–6.1) p = 0.05) and serum creatinine at 6 month (HR: 2 (1.1–3.5) p = 0.02).
Conclusions: The incidence of CVC events following KT of uDCD donors is low and is related to the previous CVC risk factors and events and renal function at 6 months. Then, KT recipients with pre-KT CVC events require a wide pre-transplant vascular study and a close post KT follow-up.

Clinical Kidney Metabolic complications

P429

EFFECT OF SMOKING ON DEVELOPMENT OF NODAT AFTER KIDNEY TRANSPLANTATION

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Purpose: Cigarette smoking has adverse effects on kidney transplant recipients, causing cardiovascular disease, kidney function impairment, and cancer. New onset diabetes mellitus after transplantation (NODAT) represents serious complication of transplantation of solid organs.
Methods: In the group of 252 patients after kidney transplantation, we identified smokers and current non-smokers (the patient who has not been smoking or who is ex smoker) for the period of minimum 24 months. In the monitored period of 12 months after transplantation, we detected presence of NODAT in both groups. The group contained only those patients who did not have diabetes mellitus (of type 1 and 2) at the time of kidney transplantation.
Results: The group of smokers was composed of 88 patients (34.9%) and non-smokers 164 patients (65.1%). The average age of smokers was 52 years $\pm$ 12.4, and of current non-smokers it was 44.8 years $\pm$ 12.8 ($p < 0.0001$). The smokers had significantly lower body mass index (BMI) at the time of kidney transplantation (p = 0.0059) and also 12 months after transplantation (p = 0.0069), lower weight gain 12 months after transplantation (p = 0.0220) and larger waist circumference 12 months after transplantation ($p < 0.0001$).
Conclusion: In our group, smoking had no effect on development of NODAT, the smokers had lower values of BMI and waist circumference, however, the guideline development group feels that, as for the general population, success of smoking cessation can be enhanced by offering structured smoking cessation programs.

Translational Liver Cardiovascular complications

P430

PREOPERATIVE ECHOCARDIOGRAPHIC ASSESSMENT AS A PREDICTOR OF OUTCOME AFTER LIVER TRANSPLANTATION

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Background: Echocardiography has been used as a screening modality for cardiac function in LT recipients. This study aims to determine whether preoperative echocardiographic indices were correlated with post operative outcomes
Methods: This study was designed to analyze data prospectively from 30 recipients of LDLT. pre and post operative echocardiography (3 months) were compared and correlated with outcomes. Nitric Oxide was measured pre and post transplantation (day7) and correlated with echocardiographic data. Clinical and laboratory data were recorded preoperative and at days7, 14 postoperative
Results: Three months mortality was 30%, morbidity was (53.3%).↑TR (tricuspid regurge) correlated with mortality (p = 0.049) and TAPSE (tricuspid annular plane systolic excursion) showed a negative correlation with it (p = 0.05). LAD (left atrial diameter)(p = 0.045) and LVEDD (left ventricular end diastolic diameter)(p = 0.05) correlated with morbidity. There was marked improvement of diastolic dysfunction (↓RVES (p = 0.009), RVED (p = 0.006) [right ventricular end systolic and end diastolic areas], E/E' (p = 0.008)),↓contractile function (↓ LVS (tissue Doppler lateral mitral annulus S wave velocity)(p = 0.036) and TAPSE (p = 0.004). patients with lower EF (ejection fraction) (p = 0.028) and FS (fraction shortening)(p = 0.025) had a longer ICU stay. There was significant ↓in post transplant NO levels (p = 0.006), NO7 was negatively correlated with arterial BP during ICU stay (p = 0.039), and positively correlated with respiratory rate (p = 0.05) and post operative EF (p = 0.048). Tachycardia (p = 0.49), fever (p = 0.007, p = 0.016), acidosis (p = 0.031), duration of ICU stay (p = 0.026, p = 0.004) and ventilator time (p = 0.002, p = 0.003) are related to mortality and morbidity. Serum urea and creatinine levels were strongly correlated with mortality and morbidity
Conclusion: ↓TRand↓TAPSE are correlated with mortality after LTx. There is an evidence of reversibility of diastolic dysfunction. Tachycardia, fever, acidosis, duration of ventilation and kidney functions related to adverse outcomes

Clinical Liver Cardiovascular complications

P431

PORTOPULMONARY HYPERTENSION AFTER LIVER TRANSPLANTATION: CASE REPORT

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Background: Portopulmonary hypertension are common pulmonary vascular complications in patients with cirrhosis. Generally, portopulmonary hypertension may present prior to liver transplantation. There was few case reports describing patients developing portopulmonary hypertension after liver transplantation. This case report demonstrates one patient from our hospital.
Case: The patient was a 55-year-old male who underwent deceased donor liver transplantation for cirrhosis due to chronic hepatitis B, which was complicated by ascites and hepatic encephalopathy. Preoperative transthoracic echocardiogram demonstrated 4 chamber dilatation and normal LV systolic function. Mean pulmonary arterial pressure (mPAP) via a Swan-Ganz catheter at the time of liver transplantation was 40 mmHg. After liver transplantation, mPAP remained between 30 and 45 mmHg for 3 days. Sildenafil was administered to the patient, and then mPAP was maintained at about 25 mmHg. The postoperative course was uneventful after sildenafil medication, the patient was discharged home after postoperative 30 days.
Conclusion: Portopulmonary hypertension after liver transplantation is rare condition. Sildenafil may be helpful to control this condition.

Clinical Kidney Metabolic complications

P432 POST RENAL TRANSPLANT DIABETIC NEPHROPATHY

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Diabetic nephropathy occurs in type 1 and type 2 diabetes mellitus, and in other secondary forms of diabetes mellitus, for example after pancreatitis or pancreatectomy, in which duration of diabetes is long-enough and level of glycaemia high enough to result in complications. Hence post-transplant diabetes mellitus firstly reported in 1960s, meanwhile case reports of recurrent and de novo diabetic nephropathy post kidney transplantation were reported in the early 2000s mostly due to same risk and precipitating factors of the diabetic nephropathy in non-transplant population and may appears early in view of the hyperfiltration risk of being, single, grafted kidney. In this review we tried to discuss the risk factors specially genetics risks, early detection, strategies to avoid and delay the progression of this de novo and recurrence diabetic nephropathy. We concluded that de novo and recurrent diabetic nephropathy post kidney transplant is not a rare complication and must be minded to tailor immunosuppression especially the benefit from pharmacogenetics of tacrolimus to suspect which recipient is vulnerable to post transplant diabetes. Lifestyle modification and tight control of blood glucose can delay its occurrence as early introduction of ACEI /ARBS.

Clinical Kidney Cardiovascular complications

P433 DOES THE FIRST POST-TRANSPLANT YEAR EXPOSURE TO CYCLOSPORINE A INFLUENCE BLOOD PRESSURE CONTROL AND KIDNEY GRAFT FUNCTION?

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Introduction: Long-term exposure to high blood levels of cyclosporine A (CyA) is associated with chronic vascular toxicity and may shorten kidney graft survival. The aim of this study was to assess the effect of diverse exposure to CyA within a first post-transplant year on kidney graft function and blood pressure control in the distant follow-up observation.
Methods: This retrospective analysis included 33 low immunological risk kidney transplant recipients, constantly treated with CyA. First year CyA exposure was calculated on the basis of all consecutive drug measurements during first 12 months after transplantation. The effect of higher or lower exposure was analyzed in above and below median value subgroups, including glomerular filtration rate (GFR) and its 5-year decline, as well as ambulatory blood pressure monitoring (ABPM) after a mean follow-up period of 9 years.
Results: The median exposure to CyA was 59 mg year/ml, with mean value of 53 (51–56) mg*year/ml in below median subgroup and 72 (67–76) mg*year/ml in above median subgroup. A 5-year and current GFR values were 46 (35–56) and 48 (36–60) ml/min/1.73 m^2 in low exposure subgroup *versus* 48 (38–59) and 48 (37–59) ml/min/1.73 m^2 in high exposure subgroup ($p = 0.68$ and $p = 0.99$, respectively). ABPM data showed higher systolic blood pressure values in higher exposure subgroup, both during day [152 (143–160) vs. 141 (133–149), $p < 0.05$] and night [144 (132–156) vs. 130 (121–140), $p < 0.05$]. Systolic BP night drop was 5 (0–10) and 8 (3–12) mmHg, respectively (NS). Similar diastolic BP values were observed. There was no difference in the number of anti-hypertensive drugs (2.5 vs. 2.3) in both analysed subgroups.
Conclusion: Our preliminary data suggest that a lower first post-transplant year exposure to cyclosporine is associated with better blood pressure control in a distant observation that cannot be explained by differences in kidney graft function.

P434 ROL OF ICN AND IMTOR IN RECURRENCE OF DIABETIC NEPHROPATHY IN RENAL TRANSPLANT

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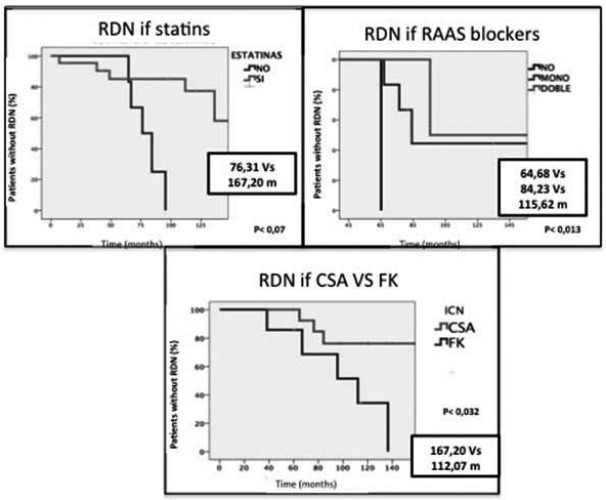
Background:
Renal transplantation has been established as a treatment for end-stage renal disease (ESRD) due to diabetic nephropathy. This study aimed to investigate the risk factors of recurrence of diabetic nephropathy (RDN) in renal allograft of diabetic patients.



Methods: We studied 1011 renal transplant between 1986 and 2003, of which 95 had ESRD due to diabetic nephropathy. We retrospectively analyzed the clinical characteristics and outcomes of recurrence of diabetic nephropathy (RDN) after renal transplantation.
Results: Of the 95 recipients with ESRD due to diabetic nephropathy, 41 patients developed recurrence of diabetic kidney disease and 11 of them underwent graft biopsy. The mean duration from transplant to developing RDN was 81.58 months (range, 54–120 months), and 109.66 months (range, 27–188.4 months) to need renal replacement treatment. In the univariant analysis, treatment with statins associated less risk of RDN (76.31 months vs 167.2 months, log rank 0.07) as well as the administration of RAAS blockers (64.68 months vs 115.62, log rank 0.013). Treatment with tacrolimus was more diabetogenic when compared with cyclosporine (OR 4.27 IC 95% 1.75–5.13 p 0.047). High doses of prednisone (>0.06 mg/kg) were also associated with a higher risk of RDN (OR 3.03 IC 1.19–8.30, p 0.029). The ICN and imTOT combination demonstrated the highest risk of RDN (OR 14.08 IC 95% 3.72–53.29 $p < 0.01$).
Conclusions: The treatment with tacrolimus and imTor is the more diabetogenic immunosuppressive regime. Tacrolimus entail a greater risk of RDN than Cyclosporine. The administration of estatines or RAAS blockers could delay the progression of RDN.

P435

INCIDENCE OF POSTOPERATIVE LOWER EXTREMITY DEEP VEIN THROMBOSIS IN KOREAN KIDNEY TRANSPLANTATION PATIENTS: A SINGLE INSTITUTION 1-YEAR PROSPECTIVE STUDY

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Background: The incidence of lower extremity (LE) deep vein thrombosis (DVT) after kidney transplantation (KT) is significantly different between Western and Asian countries. Most studies have been retrospective and were conducted in Western countries. The current analysis evaluates the incidence of DVT within 1 year after KT in Korean patients receiving mechanical thromboprophylaxis.
Methods: We performed a prospective analysis of 621 consecutive patients who underwent KT between November 2009 and September 2014. To evaluate for DVT, we used serial color duplex ultrasound at postoperative 1, 2, and 4 weeks and 3, 6, and 12 months.
Results: DVT occurred in 32 patients (5.3%); no patient was diagnosed with symptomatic pulmonary thromboembolism. Seventeen were diagnosed with DVT within two weeks postoperatively (53.1%). The incidence of DVT at 1, 2, and 4 weeks and 3, 6, and 12 months was 1.19%, 1.74%, 1.27%, 1.57%, 0.99%, and 0.58%, respectively. The highest incidence rate was observed at 3 months postoperative. There was no statistically significant correlation between locations of DVT and KT. Recipient age and number of KT were significantly different between patients with versus without DVT.
Conclusions: The incidence of DVT after KT was significantly lower than that reported from Western countries but higher than that following other major operations in Korean hospitals. The incidence of symptomatic DVT incidence was very low (0.33%); we suggest that mechanical thromboprophylaxis is a sufficient treatment. The timing of DVT events in KT recipients showed a different pattern compared with other major surgical patients.

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AN OBSERVATIONAL STUDY ON THE EFFECT OF DPP-4 INHIBITOR THERAPY IN PATIENTS WITH POST TRANSPLANT DIABETES MELLITUS

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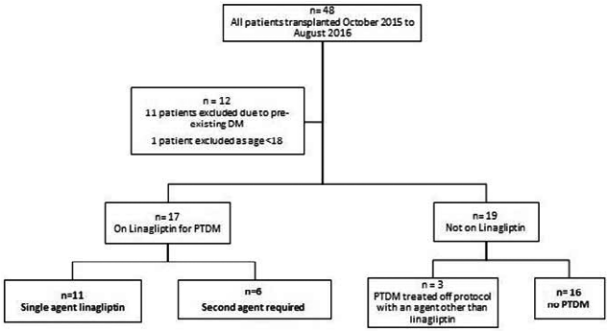
Background: Post-transplant diabetes mellitus (PTDM) affects up to 50% of patients in the first year after renal transplantation and is associated with poor patient outcomes including increased mortality and acute rejection 1. The use of corticosteroids and calcineurin inhibitors contributes to the development of PTDM 1. Early management of hyperglycaemia in the post-transplant period may reduce the risk of persistent diabetes 2. DPP-4 inhibitors have shown efficacy in protecting beta cells from tacrolimus-induced toxicity, 3 have minimal risk of causing hypoglycaemia and are effective in the setting of kidney transplantation 4. We report the 1 year outcomes following introduction of a new clinical treatment pathway for the management of PTDM using the DPP4 inhibitor linagliptin.
Methods: A retrospective analysis of all patients who received a renal transplant between October 2015 and August 2016 following introduction of a new post-transplant diabetes protocol was performed. Data collected included demographic and clinical details, home and laboratory glucose measurements and oral glucose tolerance test (OGTT) results.
Results: Of 48 transplants performed, 20 patients (41.6%) developed PTDM and 17 of these patients were treated with linagliptin 5 mg as the first line agent. Six patients required a second oral agent and two received insulin therapy. The average duration of treatment was 96 days. of fasting and non-fasting laboratory blood sugar readings in the treated group, 99.5% were <11.1, and 80.7% were <7. Thirteen patients (76.5%) had ceased linagliptin by 6 months post-transplant. HOMA-IR scores were calculated for 19 patients and did not differ significantly between the patients with PTDM ($n = 9$) and without PTDM ($n = 10$) ($p = 0.40$).
Conclusions: This study suggests that linagliptin monotherapy is effective in maintaining blood sugar control in the majority of kidney transplant recipients who develop PTDM and may help maintain insulin



Clinical Kidney Metabolic complications

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CONVERSION OF TWICE-DAILY PROGRAF TO ONCE-DAILY ADVAGRAF LOWERED WITHIN-PATIENT VARIABILITY OF BLOOD TACROLIMUS CONCENTRATION

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Background: Variability of blood trough concentration of tacrolimus is related to rejection and allograft loss after kidney transplantation (KT). Conversion from twice-daily tacrolimus to once-daily Advagraf leads to a significantly lower within-patient variability of tacrolimus. Hyperglycemia is one of the side effect of tacrolimus. However, it is not clear the effect on blood glucose of twice-daily tacrolimus or once-daily advagraf.
Methods: Twenty-three KT patients (15 men and 8 women, aged 57.2 ± 10.5 years) switched from twice-daily tacrolimus to once-daily advagraf. Blood glucose level for 6 months was obtained before and after conversion. Variability of blood glucose and blood tacrolimus concentration was tested.
Results: Blood glucose and tacrolimus concentration were not different after conversion. Blood glucose concentration was from 104.9 ± 15.4 to 106.0 ± 17.7 mg/dl. Blood tacrolimus level was from 5.13 ± 1.88 to 4.57 ± 1.44 ng/ml. However, percent coefficient of variance of blood glucose concentration showed significantly decreased distribution from 10.7 ± 8.2 to 5.8 ± 4.3% ($p = 0.009$) even though that of tacrolimus was not significantly different. At that time of conversion, laboratory findings were as follows: BUN/Cr 20.8 ± 9.84, Cr 1.29 ± 0.44 mg/dl, hemoglobin 13.06 ± 1.88 g/dl, WBC 6022.6 ± 2335.3/ul. After conversion, renal function and other laboratory findings were not significantly changed: BUN/Cr 20.2 ± 6.41 mg/dl, Cr 1.25 ± 0.34 mg/dl, hemoglobin 13.1 ± 1.93 g/dl, WBC 7033.9 ± 1718.2/ul. HbA1c from 10 patients showed 6.23 ± 0.53 to 6.36 ± 0.73%.
Conclusion: Conversion from twice-daily tacrolimus to once-daily advagraf leads to a significantly lower within-patient variability of blood glucose concentration.

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CINACALCET IS ALTERNATIVE OPTION TO CONTROL HYPERPARATHYROIDISM IN KIDNEY TRANSPLANT PATIENTS

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Background: Hyperparathyroidism (HPT) is inevitable complication of renal replacement therapy. It can resolve after kidney transplantation (KT). However, 30% of patients showed persistent HPT 1 year after KT. Persistent hyperparathyroidism should be controlled because it has been associated with mortality and allograft loss. Parathyroidectomy is the preferred option for HPT with severe hypercalcemia. Cinacalcet can be alternative therapy to parathyroidectomy. However, the effect of cinacalcet is not clear in KT patients.
Methods: Eight KT patients (6 men and 2 woman, aged 52.3 ± 5.7 year) were treated with cinacalcet. All patients had mycophenolic acid and corticosteroid. Six patients had tacrolimus and three patients had cyclosporine.
Results: At that time of cinacalcet start, serum total calcium concentration was 11.0 ± 0.54 mg/dl, and iPTH level was 197.1 (range 84–452) pg/ml. BUN/Cr 22.4 ± 7.44, 1.11 ± 0.31 mg/dl, p 2.79 ± 0.52 mg/dl, hemoglobin 14.2 ± 2.61 g/dl, WBC 6692.5 ± 2358.3/ul, an blood tacrolimus concentration 5.80 ± 2.05 CsA 74.8 ± 52.6 ng/ml. Six patients responded to cinacalcet.

Serum calcium concentration was significantly decreased to 10.06 ± 0.73 ($p < 0.01$). The iPTH level was tended to decrease (142.0 ± 83.9, $p = 0.154$), but the level of one patient was increased. Other laboratory findings were not significantly changed as follows: BUN/Cr 21.5 ± 8.99, 1.065 ± 0.34 mg/dl, p 3.07 ± 0.76 mg/dl, hemoglobin 14.4 ± 1.43 g/dl, WBC 7511.4 ± 1066.4/ul, FK 5.95 ± 2.23 ng/ml. Two patients have been stable even after cinacalcet withdrawal. Two patients, non-responder, were treated with parathyroidectomy. Nodular hyperplasia was shown in both patients. After parathyroidectomy, serum calcium and iPTH were decreased. One patient of two non-responders showed ureteral stone.
Conclusion: Cinacalcet is relatively effective drug in suppressing HPT in KT patients. However, it has also limitation such as partial response and ureteral stone.

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P439 RESOLUTION OF DIABETES MELLITUS WITH SOFOSBUVIR AND RIBAVIRIN TREATMENT AFTER LIVER TRANSPLANTATION FOR CHRONIC HEPATITIS C

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A causal relationship between chronic hepatitis C (CHC) and insulin resistance and type 2 diabetes mellitus (DM) have been reported in many studies. DM was reported in 28% of CHC patients in one study, and was a significantly higher prevalence compared to the study's general population. So it would be plausible that DM in CHC patients could be resolved by treatment with direct-acting antiviral agents (DAA). The authors experienced a case of resolution of DM with DAA treatment after liver transplantation (LT) for CHC and report here.
Case: A 64 years old male patient underwent ABO incompatible living donor LT (LDLT) for HCV-cirrhosis and hepatocellular carcinoma (HCC) within Milan criteria on April 6, 2016. HCV genotype was 2a/c and serum concentration was 2.8E4. He was on insulin treatment for T2DM since 2005. Peak AST/ALT level after LT was 430/373 IU/l on the first day after the operation. Triple immunosuppressant of Tacrolimus, Mycophenolic acid and steroid was given. The AST/ALT level was never normalized after LT and was 197/276 IU/l at 6 weeks after LT when Sofosbuvir and Ribavirin treatment was began. AST/ALT level was dramatically normalized 2 weeks after treatment. Quantitative HCV RT-PCR level was 6.6E6 at the time of treatment initiation. After 2 weeks of treatment the level was dropped to 3.7E1 and not detected since 8 weeks of treatment. In addition he did not require any insulin or oral hypoglycemic treatment since 8 weeks after treatment with Sofosbuvir and Ribavirin. His recent AST/ALT level was 25/15 IU/l and fasting glucose level was 100 mg/dl at 8 months of treatment.
Conclusion: Preexisting DM may be resolved with DAA accompanied by normalization of AST/ALT level and eradication of HCV RNA in the blood in the setting of LT. We need more studies on this issue.

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P440 ARTERIAL STIFFNESS IN KIDNEY TRANSPLANT RECIPIENTS: AORTIC CALCIFICATION EVALUATED BY TC-SCAN AS PREDICTOR OF HIGH STIFFNESS AFTER TRANSPLANTATION

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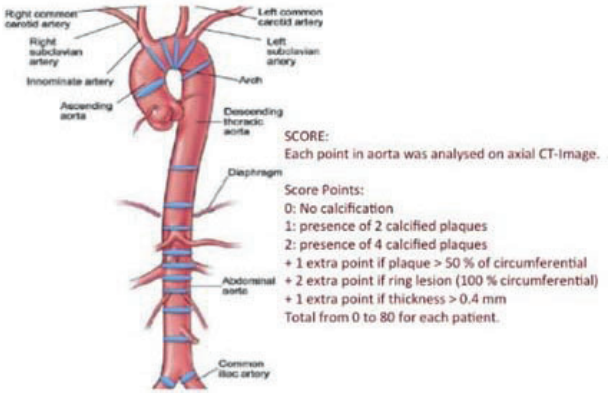
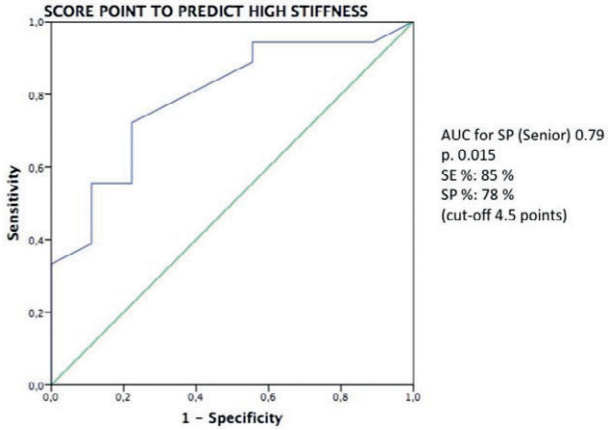
Introduction: Cardiovascular mortality in kidney transplant recipients is still high and traditional cardiovascular risk factors fail to predict cardiovascular events (CV). Arterial calcifications (AC) increase arterial stiffness and mortality and they are very common in patients in waiting list. Arterial stiffness could be easily and not invasively measured using a validated device (Sphigmocor®) calculating the carotid-femoral pulse wave velocity (PWV). Likewise, PWV is a powerful predictor of CV in renal transplant recipients, although the relationship between PWV measured by Sphigmocor® and Calcifications seen in CT-SCAN in renal transplant setting is not proven yet.
Methods: We analysed a cohort of patients retrospectively. All were submitted to PWV test one month after renal transplantation and to a CT-SCAN performed in the 6 months before transplant. Arterial Calcifications were evaluated independently by two Radiologists (senior and fellow) according to a score point (SP) depicted in Figure 1.



Both radiologists were unaware of the PWV results. A single experienced investigator (E.M.) performed the PWV tests.
Results: Basal characteristics of our study cohort are showed in table 1.

	Patients all cohort (27)
Age At Transplant (Mean ± DS)	58 ± 9
Number of TR (1/>1) %	82/18
Diabetes before Tr (Y/N) %	81/19
Smoker (Never/Ex/Active) %	40/48/11
Time on Dialysis (Months) Mean [Range]	26 [0–96]
BMI (Mean ± DS)	25 ± 4
PWV (Mean ± DS)	9.6 ± 3
PWV >10 m/s (Y/N) %	25/75
Score calcification (Senior) Mean [Range]	13 [1–44]
Score calcification (Fellow) Mean [Range]	14 [0–44]

Intraclass correlation coefficient for scoring between the two Radiologists was excellent: 0.96 (C.I. 0.92–0.98 $p < 0.0001$).
Since arterial stiffness is an aging process, both SP and PWV well correlated with age at the time of the tests ($r = 0.53$ p. 0.004 and $r = 0.43$ p. 0.02 respectively), moreover CA and Pulse Wave Velocity showed direct relationship ($r = 0.53$ p. 0.004). A ROC Curve using SP to predict high stiffness measured by PWV showed an AUC of 0.79 (fig. 2).



Conclusion: High PWV after transplantation reflects arterial stiffness due to calcifications detected before transplant by CT-SCAN. Further studies should evaluate the usefulness of the PWV monitoring in renal transplant recipients over the time.

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P441 LATE DETECTION OF NEUROLOGICAL PROBLEM IN ORTHOTOPIC LIVER TRANSPLANTATION RECIPIENT

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Liver transplantation is a current definitive treatment for those with end-stage liver disease. But liver transplantation is also indicated for those with acute liver failure. Acute diffuse encephalopathy is the most frequent neurological symptom. Epileptic seizure is also common. Neurological complications increase mortality and morbidity. Before liver transplantation, a definite neurological evaluation is needed for liver transplantation recipient. A 37 year acute fulminant hepatitis patient was scheduled for orthotopic liver transplantation. With high level of ammonia, a seizure-like activity was happened one hour before the operation. Mild brain atrophy was checked on brain CT. Orthotopic liver transplantation was proceeded as scheduled. Continuous renal replacement therapy (CRRT) was applied during operation. Orthotopic liver transplantation was ended successfully and the level of ammonia has decreased in severity. However a seizure-like activity was shown in ICU. Brain edema and bilateral cerebral infarction was checked on brain CT. With irreversible neurological complication, the recipient donated his organs to other patients. This is a case presentation about this neurological complication.

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P442 THE EFFECT OF KIDNEY TRANSPLANTATION ON CARDIOVASCULAR RISK FACTORS IN PATIENTS IN THE TERMINAL STAGE OF CHRONIC KIDNEY DISEASE

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Introduction: Cardiovascular disease is a frequent cause of morbidity and mortality in patients with chronic kidney disease (CKD), before and after a kidney transplantation (KT).
Objectives: The objective of the study was to evaluate the effect of kidney transplantation on some cardiovascular risk factors: the lipid profile, antioxidant enzyme paraoxonase (PON) associated with HDL, neopterin (Neo), thromboxanes (TBX) and also the impact upon the new independent cardiovascular risk factor – asymmetric dimethylarginine (ADMA).
Patients and Methods: The study encompasses 63 patients witch CKD and 49 patients after KT. The patients after KT had a good function of the grafts (MDRD = 1.08 ml/s/1.73 m^2, s-creatinine 99.2 μmol/l).
Results: In both groups, total cholesterol, HDL and also LDL-cholesterols were elevated, nevertheless within the physiological ranges. Arylesterase and lactonase PON A activities in patients after KT were elevated by 23% and 37.3%, respectively, in comparison with the patients suffering from chronic renal disorders. The levels of Neo, TBX and ADMA were significantly reduced after KT (by 90.3%, 57.1% and 16.1%, respectively).
Conclusion: Based on our results we can conclude, that kidney transplantation leads to reduction of cardiovascular risk factors.

P443 PREDICTIVE FACTORS IN KIDNEY RE-TRANSPLANTATION OUTCOME

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Tor Vergata, Italy

Background: Kidney Re-Transplantation (KReT) is associated with improved patient (pt) survival and money saving if compared to dialysis.
Material/Methods: Aim of our study was to evaluate the factors influencing graft and pt survival after KReT. Forty-six pts who underwent KReT were included in the analysis (median age 48 years, range 24–69; M/F: 28/18). We considered, as predictive factors, the following pre KReT pathological cardiovascular conditions (CV): vascular calcification (VC), left ventricular hypertrophy (LVH), ejection-fraction <50%, moderate-severe valvulopathy (VV), pathological cardiac kinesis, coronaropathy and arterial hypertension. We also considered first KT loss graft cause, months of dialysis, pre-KRT sensitization, immunosuppressive therapy (IT) and rejection episodes.
Results: Graft survival at 1, 3 and 5 years was respectively 80%, 74% and 68%, patient survival was 88%, 82% and 82%. Graft survival resulted to be affected by LVH (p-value: 0.001) and VV (p-value: 0.049), whereas patient survival was correlated to VC (p-value: 0.048) and VV (p-value: 0.05). Moreover, graft survival was negatively influenced by antibody-mediated rejection (AMR) (p-value: 0.05). The others factors did not affected neither graft nor pt survival.
Conclusions: In our study both pt and graft outcome were negatively influenced by pre KReT CV risk factors. KReT population present double risk because of double periods of dialysis and IT, complicated by associated-side effects. In order to identify treatable conditions careful pre-KReT screening is recommended. AMR resulted the immunological condition associated with the worst prognosis. Best immunological strategies to improve KReT outcome are optimal HLA-matching donor-recipient and the avoidance of prohibited antigens.

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P444 ROLE OF EDUCATION PROGRAM IN CONTROLLING NEW ONSET DIABETES AFTER TRANSPLANTATION IN RECENT RENAL TRANSPLANT BODY BUILDER

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Introduction and Aim: New-onset diabetes mellitus is a common complication of solid organ transplantation and is likely to become even more common with the current epidemic of obesity in some countries. Many risk factors were identified as hepatitis c, immunosuppression and genetics. We aimed to present the role of diabetes education in improvement of NODAT in kidney transplant body builder.
Case Report: Thirty six-year-old bodybuilder who was suffering idiopathic end stage kidney disease that was triggered with excessive exercise i.

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P445 WEIGHT LOSS IN PRE-TRANSPLANT OBESITY: A POSSIBLE STRATEGY FOR POST-KIDNEY TRANSPLANT BLOOD PRESSURE CONTROL

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Background: Hypertension is a common disease during pre- and post-kidney transplantation. Several factors can contribute to uncontrolled blood pressure. Obesity, another common co-morbid condition in patients with hypertension, is associated with hypertension. The effect of obesity on post-transplant hypertension is unclear.
Methods/Materials: Kidney transplant recipients' blood pressure up to 96 weeks after kidney transplantation was followed and correlated with 2 groups of patients with pre-transplant body mass index (BMI) <30 kg/m^2 (non-obese group) or ≥30 kg/m^2 (non-obese group).
Results: A total of 70 kidney transplant recipients were included in the study. The majority of patients were male (59%) and total mean age was 52.66 ± 1.43 (SEM) years. Around two-third of the study population (48 patients) was non-obese and one-third was obese. Mean BMI was 24.69 ± 0.5 and 34.08 ± 0.81 kg/m^2 in non-obese and obese, respectively (p = 0.0001). Among non-obese patients, 68.7% had post-transplant hypertension defined by systolic blood pressure (SBP) ≥140 mmHg; whereas, hypertension developed up to 90.9% of obese patients (Relative risk = 0.76, p-value = 0.070). The estimated median time when hypertension was detected was 10.57 ± 10.39 weeks post-transplantation (95% CI 0 – 30.94) in non-obese group and was slightly longer in obese group (11.14 ± 5.78 weeks post-transplantation with 95% CI 0 – 22.47). There was no difference in the distributions of incidence of post-transplant hypertension between non-obese and obese groups (χ^2 = 1.072, p-value = 0.300 (log rank test, Figure).
Conclusion: Although the incidence of post-transplant hypertension occurs in a relatively same period after kidney transplantation, it is much more common among kidney transplant recipients with pre-transplant obesity. Weight loss for obese patients during pre-transplant period should remain encouraged.

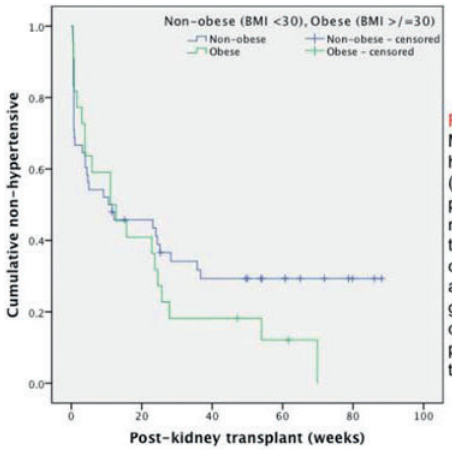

Figure: Kaplan-Meier curve showing hypertension (systolic blood pressure >/= 140 mmHg) in pre-transplant non-obese (blue curve) and obese (green) groups between during 96 weeks post-kidney transplantation

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P446 FGF-23, NGAL AND ENDOSTATIN: THE PREDICTORS OF ALLOGRAFT FUNCTION AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: The aim of this study is to evaluate the relationship between FGF-23, NGAL, endostatin and graft dysfunction and to identify their relation with arterial stiffness.
Materials and Methods: We performed a prospective study of 146 maintenance kidney recipients with stable allograft function who had received their transplant at least 36 months previously. We calculated the estimated GFR (eGFR) using the MDRD4 equation. Pulse wave velocity (PWv) was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system. Serum FGF-23, NGAL, endostatin levels were measured by ELISA.
Results: Demographic characteristics (age, gender, duration of dialysis before transplantation, post-transplant time, systolic and diastolic blood pressure) and biochemical parameters as serum calcium, phosphorus, parathyroid hormone, CRP, lipid profile and eGFR levels) and PWv values were similar in two groups. The mean FGF-23 (45.6 $\pm$ 5.3 vs 42.9 $\pm$ 3.4 pg/ml, p: 0.036), NGAL (643.0 $\pm$ 42.3 vs 515.0 $\pm$ 28.3, p: 0.018) and endostatin (6149.1 $\pm$ 1178.9 vs 5538.7 $\pm$ 291.0 U/l) levels were significantly higher in group 1. In correlation analysis, FGF-23 was significantly negatively correlated with eGFR (*r*: $-$0.267, p: 0.023) and positively correlated with NGAL (r: 0.258, p: 0.036) and endostatin (r: 0.321, p: 0.006) levels. In addition, serum endostatin levels were positively correlated with PWv (r: 0.276, p: 0.019). In linear regression analysis, eGFR was detected as the unique predictor of NGAL (p: 0.001). In addition for each 1 ml/min decrease at one year of GFR were correlated with 0.281 pg/ml of increased level of FGF-23 (p: 0.023) and 0.04 ng/ml of increased level of NGAL (p: 0.007). Each 1 cm/s of increased level of PWv was resulted 3648.7 U/l of increased level of endostatin (p: 0.019).
Conclusion: We concluded that elevated FGF23, NGAL and endostatin were associated with loss of graft function in kidney transplant recipients. Moreover, endostatin can be u

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P447 THE ASSOCIATION BETWEEN BETA2-MICROGLOBULIN LEVELS, INFLAMMATION AND NUTRITIONAL STATUS IN CHRONIC HEMODIALYSIS AND KIDNEY TRANSPLANT PATIENTS

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Introduction: The aim of this study was to evaluate the correlation between beta2-microglobulin, nutritional and inflammation parameters as well as kidney function both in patients on chronic hemodialysis (HD) and kidney transplantation (KT).
Materials and Methods: This cross-sectional study evaluated patients ongoing HD (*n*: 72), patients on KT (*n*: 54) and control group (*n*: 34). All patients were evaluated for their standard clinical and biochemical parameters as C-reactive protein (CRP) and Beta2-microglobulin (Beta2-M). Body compositions were analyzed with the BIA technique that estimates body mass index (BMI). Hand grip strength was analyzed by using a dynamometer. We calculated the estimated glomerular filtration rate (eGFR) using the MDRD4 equation.
Results: The mean beta2-M concentration was 2.1 $\pm$ 0.8, 16.3 $\pm$ 12.4 and 3.6 $\pm$ 2.4 μg/ml in control group, patients ongoing HD and patients on KT; respectively. In patients ongoing HD, the mean BMI was 24.8 $\pm$ 5.4 kg/m^2, the mean albumin level was 3.9 $\pm$ 0.4 g/dl. In correlation analysis serum beta2-M was negatively correlated with BMI (*r*: $-$0.385, p: 0.02), handgrip strength (*r*: $-$0.545, p: 0.001) and serum albumin levels (*r*: $-$0.355, p: 0.05). Serum beta2-M was positively correlated with serum CRP levels (r: 0.342, p: 0.045). In linear regression analysis, BMI and handgrip strength were detected as the predictors of beta2-M levels in patients ongoing hemodialysis. In patients on KT, the mean eGFR was 70.9 $\pm$ 19.7 ml/min, mean serum creatinine was 1.2 $\pm$ 0.4 mg/dl. Serum beta2-M levels were positively correlated with serum creatinine (r: 0.509, p: 0.07) and negatively correlated with eGFR (r: $-$0.482, p: 0.01).). In regression analysis, patients on KT; body mass index (p: 0.01) and eGFR (p: 0.039) were detected the independent predictors of beta2-M.
Conclusion: Our study suggested that serum beta2-M levels are negatively correlated with eGFR thus it may be a convenient marker to detect earlier the risk of loss of graft function.

P448 HAND GRIP STRENGTH IS ASSOCIATED WITH SERUM TESTOSTERONE AND ALBUMIN LEVELS IN MALE KIDNEY TRANSPLANT RECIPIENTS

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Introduction: In this trial we aimed to determine the relation between serum testosterone, hand grip strength, nutritional and inflammatory parameters as well as graft function.
Materials and Methods: One hundred and forty four stable male renal transplant recipients from our renal transplant outpatient clinic were enrolled into the study. All patients were evaluated for their standard clinical (age, gender, duration of hemodialysis, post-transplant time) and biochemical parameters (calcium, phosphorus, parathyroid hormone, C-reactive protein (CRP), albumin, creatinine) and serum testosterone (T) levels. Body compositions were analyzed with the BIA technique (BCM, Fresenius) that estimates body mass index (BMI) and percent fat. Hand grip strength was analyzed by using a dynamometer (ProHealthcareProducts.com, Park City, UT). We calculated the estimated GFR (eGFR) using the MDRD4 equation.
Results: Demographic characteristics (age, gender, duration of dialysis before transplantation) and biochemical parameters as serum calcium, phosphorus, lipid profile and eGFR levels were similar in study population. Mean serum T was 588.0 $\pm$ 55.5, mean BMI was 26.8 $\pm$ 0.6 kg/m^2, mean hand grip strength was 42.2 $\pm$ 1.7 mm^2. Serum T levels were positively correlated with hand grip strength (r: 0.445) (p: 0.033), serum CRP (r: 0.399) (p: 0.05) and negatively correlated with serum albumin levels (*r*: $-$0.454) (p: 0.05). In linear regression analysis serum albumin (p: 0.033) and testosterone levels (p: 0.038) were detected as the predictors of hand grip strength. However we couldn't find a significant correlation between graft function and hand grip strength.
Conclusion: Serum testosterone level is correlated with hand grip strength as well as CRP and albumin which may indicate that testosterone can affect nutritional status and inflammation in male renal transplant recipients.

Clinical Kidney Metabolic complications

P449 EFFECTS ON THE PARATIROID FUNCTIONS OF KIDNEY TRANSPLANTATION

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Background: Many complications related to chronic renal failure is treated by renal transplantation, however net effect on mineral metabolism due to secondary hyperparathyroidism is unclear. The effect of renaltransplantation on parathyroid function was investigated in this study.
Methods: We performed observational cohort study of 129 kidney transplant recipients in our hospital between 2011 and 2015 to investigate the evolution of mineral metabolism from pretransplant through the first year after transplantation. Patients were enrolled into two groups as preoperative PTH level >800 pg/dl and / or clinical symptom (group 1 = 21) and asymptomatic group (group 2 = 108). All groups were compared with PTH, calcium, phosphorus levels according to their pretransplant baseline plasma PTH level and at months 3, 6, and 12 after transplantation.

Parathormone	Group1 (*n* = 21)	Group2 (*n* = 108)	p
Preop PTH	1210.64 + 80.38	334.80 + 19.86	0.001
Postop PTH (1st month)	587.58 + 110.92	238.84 + 39.38	0.023
Postop PTH (3rd month)	578.73 + 90.80	178.21 + 24.28	0.083
Postop PTH (6th month)	484.80 + 80.34	178.65 + 21.27	0.080
Postop PTH (12th month)	319.87 + 90.61	170.69 + 28.90	0.156

Results: Patients participating in the study (male = 83, female = 46; the mean was 39.5 ± 12). The pretransplant plasma PTH level of the patients was 477 ± 35 in all groups (1211 ± 36 in group 1, 334 ± 19 in group 2). In a study that compared all patients with preoperative and postoperative PTH levels up to 12 months, is statistically significant with reduction serum PTH level. In the first three months PTH levels were assigned to decrease significantly in both groups (Group 1, preop PTH: 1211, 3rd month: 578 pg/dl p = 0.004), (Group 2 preop PTH 334, 3rd month: 178 pg/dl p < 0.001). On the other hand, there was no significant difference between postoperative 3rd and 12th PTH levels (p = 0.625 p = 0.193). In group 1, none of the patients developed hungry bone syndrome, muscle and bone pain were regressed after the operation. In both groups, serum Ca levels were elevated and P levels were significantly decreased within the first three months in postoperative period.
Conclusion: If there is eligible donor candidate, kidney transplantation before parathyroidectomy will give favorable results in parathyroidectomy candidates.

Clinical Kidney Cardiovascular complications

P450 BLOOD PRESSURE VARIABILITY DOES NOT PREDICT OUTCOMES AFTER KIDNEY TRANSPLANTATION

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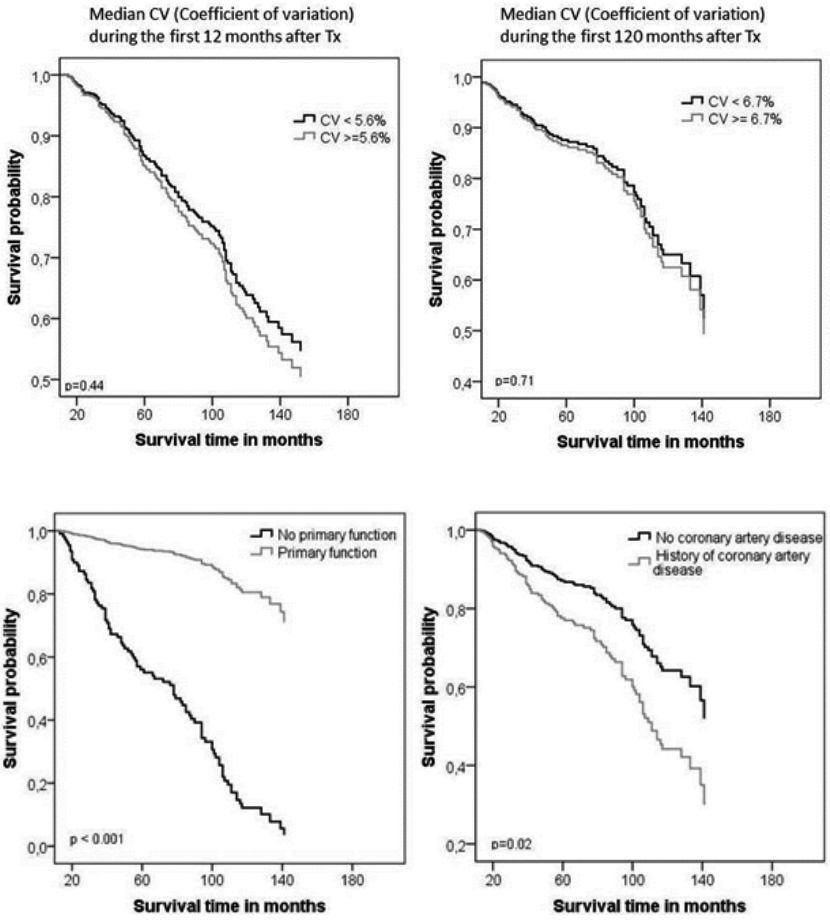
Background: Elevated long-term blood pressure variability has been shown to be predictive of adverse outcomes in patients with chronic kidney disease. In kidney transplant recipients a negative correlation between endothelial function and short-term variability has been found. No data exist, however, for associations of visit-to-visit variability (long-term variability) and outcomes after kidney transplantation.
Design and Method: 877 patients who underwent kidney transplantation at the Charité-Universitätsmedizin Berlin and at the Universitätsklinikum Knappschaftskrankenhaus Bochum, Germany were included in this retrospective study. Patients were followed up for at least 12 months (up to 266 months) after transplantation. Visit-to-visit blood pressure variability over the first 12 months after transplantation (3 visits) and during the first 120 months after transplantation (7 visits) was calculated as the coefficient of variation (CV) = standard deviation (SD)/ mean blood pressure.
Results: Patients were categorized to those with low vs. high level of systolic CV at 12 months, defined by the median value (CV <5.6 and CV ≥5.6%). After



adjustment for gender, age and mean creatinine over the first 12 months the combined endpoint of death or graft loss did not differ between the two groups (HR (95% CI) = 1.1 (0.82 – 1.56), p = 0.44). No association was also found between patients with low and high systolic CV over 120 months (p = 0.15). Only primary graft function was associated with better outcomes after transplantation (p < 0.001).

Conclusions:
Visit-to-visit blood pressure variability is not associated with mortality or graft loss after kidney transplantation in this retrospective analysis. The presence of primary graft function was predictive of better long-term outcomes after transplantation.

Clinical Kidney Cardiovascular complications

P451 ATRIAL FUNC.TION, ATRIAL VOLUME AND CARDIOVASCULAR CLINICAL OUTCOMES IN PATIENTS WITH END-STAGE RENAL DISEASE – A STUDY OF CARDIAC COMPUTED TOMOGRAPHY

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Background: Patients with chronic kidney disease (CKD) have an increased cardiovascular risk. Previous studies using 2-dimensional echocardiography have shown that left atrial end-diastolic volume (LaEDV) predicts cardiovascular outcomes and mortality in patients with CKD. Cardiac computed tomography angiography (CTA) offers a more precise measure of atrial dimension and function and may better predict patient outcome.
Aim: The aim of the present study was to examine cardiac CTA assessed LaEDV and left atrial ejection fraction's (LaEF) association to: left ventricle end-diastolic volume (LvEDV), left ventricular mass, left ventricular ejection fraction, and N-terminal plasma-pro-brain natriuretic peptide (NT-pro-BNP). Furthermore, we examined LaEDV and LaEF as predictors of major adverse cardiac events (MACE) and mortality.
Methods: 146 kidney transplant candidates underwent cardiac CTA as part of the work-up prior to kidney transplantation before being accepted for the waiting list. Left atrial (La) and left ventricular (Lv) volume and function was determined by cardiac CTA. MACE and mortality data were extracted from Western Denmark Heart Registry, review of patient records and patient interviews.
Results: No differences between LaEDV tertiles were observed regarding patient baseline characteristics. LaEDV was positively associated with measures of Lv function – both LvEDV (b = 0.36, p < 0.05) and Lv mass (b = 0.30, p < 0.05). LaEF was not associated with measures of Lv function. LaEDV was positively and LaEF negatively associated with NT-pro-BNP (LaEDV: b = 10.28, p < 0.05. LaEF: b = −0.06, p < 0.05). During a median follow-up of 3.7 years, MACE and survival analysis showed no relation to LaEDV or LaEF.
Conclusions: With cardiac CTA, we demonstrated a correlation between atrial and ventricular functional parameters. We did not find any association with neither LaEF nor LaEDV or MACE and mortality in this cohort of kidney transplant candidates.

Clinical Kidney Metabolic complications

P452 SEVERE DAPSONE-INDUCED METHAEMOGLOBINEMIA IN A KIDNEY TRANSPLANT RECIPIENT

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Introduction: Dapsone is increasingly used as second line prophylaxis against pneumocystis pneumonia in subjects intolerant to trimethoprim–sulfamethoxazole. Methaemoglobinaemia (MetHb) is a rare condition, resulting from cellular oxidative stress and leading to acute respiratory distress.
Case Presentation: A 33 year old female underwent a renal transplant with a background of Henoch Schonlein Purpura and allergy to trimethoprim. The initial transplant operation was complicated by a retroperitoneal haematoma which required return to theatre for surgical evacuation on Day 1. She received a dose of dapsone on day 1 and 2 post-transplant. Early on day 2 the patient was anuric and reported acute breathlessness with oxygen saturations of 89% despite high flow oxygen. Potential common causes were excluded. An arterial blood gas analysis revealed characteristic chocolate coloured blood with normal PaO_2 and O_2 saturations of 77% corresponding with an acute severe MetHb of 21.8% rising from a level of <0.6% 24 h previously. On this basis methylene blue (1 mg/kg) was administered intravenously and a clinical improvement was seen soon after. Repeat blood gas analysis at 6 h showed a MetHb level of 4%. Dapsone was discontinued and azithromycin substituted. MetHb levels continued to fall without further treatment.
Discussion: MetHb levels of over 15% are often symptomatic with levels over 45% leading to critical or fatal illness. In this patient we postulate the combination of dapsone, renal failure, surgical stress and tacrolimus led to significant symptomatic MetHb. Clinicians should be particularly aware of MetHB problems in kidney transplant patients receiving dapsone.

Clinical Kidney Metabolic complications

P453 HEPATORENAL SYNDROME IN KIDNEY TRANSPLANT RECIPIENT

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Introduction: Hepatorenal syndrome (HRS) is a well-recognized complication of end-stage liver disease. Once thought to be a reversible condition with liver transplantation alone, HRS may directly contribute to the requirement for long-term dialysis posttransplant. Type 1 HRS or liver failure accompanied by rapidly progressive renal failure carries a median patient survival of 2 to 4 weeks; patients with type 2 HRS or liver failure associated with a slower deterioration of renal function fare better with a median survival of approximately 6 months.
Methods: Case report study.
Results: Male patient, 51 years old, was treated with kidney transplantation from deceased donor, nine years ago, due to terminal renal failure caused by membranous glomerulonephritis. Renal transplantation underwent without complications, afterwards treated with tacrolimus, mycophenolate mofetil and steroids. Graft function was stable. He started with alcohol abuse after transplantation and developed alcoholic liver cirrhosis two years ago. On the admission he was diagnosed acute graft dysfunction, severe thrombocytopenia, followed by coagulation disorder. He rapidly developed HRS with followed AKI – acute renal failure and manifestation of hemorrhagic syndrome. He was treated with pulse corticosteroid therapy, beside polysymptomatic therapy, in order to reduce the impairment of renal allograft, without success in improvement in renal graft function. In the period of two weeks he developed anuria end stage renal failure and started treatment with RRT with hemodialysis. All drugs administered in the therapy were dosed according to the degree of hepatic and renal insufficiency. He was treated with hemodialysis in the next period of few weeks, without complication. He was put on waiting list for combined liver and kidney transplantation, but died to severe gastrointestinal hemorrhage.
Conclusion: Combined liver and kidney transplantation (CLKT) for patients with HRS should be considered.

Clinical Kidney Metabolic complications

P454 THE CLINICAL CONSEQUENCES OF DIABETES MELLITUS IN PATIENTS AFTER KIDNEY TRANSPLANTATION – A PAIRED KIDNEY ANALYSIS, GDANSK TRANSPLANTATION CENTRE, POLAND

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Background: Diabetes mellitus (DM) has been acknowledged as the most common disorder leading to end-stage renal failure in adults. Diabetic patients show higher survival rates after transplantation in comparison to the dialysis therapy.

Methods: We retrospectively (partially on the base of registry database) analysed clinical consequences of DM in patients after kidney transplantation performed in Gdansk Transplantation Centre between 2000 and 2016. To minimize the donor variability and bias, a paired kidney analysis was applied. Diabetes group consisted of patients with diabetic nephropathy as a reason of renal failure or diabetes lasting at least 5 years before transplantation.
Results: The incidence of DM (type 1 + 2) was 13% (181/1393), but only 145 patients with DM had their pairs of non-diabetic patients, who received kidneys from the same donor and were included to the analysis. There were significant difference in the age of patients, DM group was older (mean age 47 vs 52 years, $p < 0.05$). More immunosuppressive protocols consisting induction was used in non-diabetic group (16%vs32%, $p < 0.05$). The incidence of acute rejection (AR) – not biopsy proven, was similar in both groups (24% vs 17%, $p > 0.05$). Also the incidence of DGF did not differ (34vs38%, $p > 0.05$). There were no significant difference in kidney graft function one month after transplantation. On univariate analysis DM was a factor significantly associated with loss of graft, but not the independent predictor upon multivariate analysis. DM was not a predictor of death. The Kaplan-Meier curves of patients and graft survival did not differ significantly in diabetic and non-diabetic group.
Conclusion: We did not found the difference in the incidence of AR, DGF, and between allograft and patients survival rates in diabetic and non-diabetic patients.

Clinical Kidney Metabolic complications

P455 CORTICOSTEROIDS WITHDRAWAL IN STABLE MAINTENANCE RENAL TRANSPLANT PATIENTS

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Hospital General Universitario Gregorio Marañón, Spain

Corticosteroids are powerful antiinflammatory 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 withdrawal. The present paper reports the results of cessation of steroids in stable maintenance renal transplant patients. Patients and methods: One hundred seventy deceased kidney grafted patients (51% men), aged 57.5 ± 11.4 years, with follow-up of 96 months (1–247) and steroids withdrawal period of 60 months (1–198) 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 Mofetil 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 receive monotherapy only. Results: Basal serum creatinine was 1.56 ± 0.6 mg/dl and after five years followup 1.4 ± 0.5 mg/dl. Basal blood glucose concentration was 135 ± 12 mg/dl and after five years 109 ± 0.8 mg/dl. Weight was maintained. At 8 years, graft and patient survival were 100%. There was no acute rejection after steroids withdrawal. After withdrawal 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.

Clinical Kidney Cardiovascular complications

P456 HEMODIALYSIS OR TRANSPLANTED, CARDIOVASCULAR RISK IS ALWAYS PRESENT

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Cardiovascular complications are the leading cause of death in hemodialysis, successful renal transplantation improves the survival of the patients but cardiovascular disease remain threatening. In our cross-sectional study we collected data from 59 haemodialysis patients and 80 renal transplant recipients. We compared the cardiovascular risk factors in the two groups. The mean age of hemodialysis patients was 42.7 and 35.51 in the 2nd group. Anthropometric status: 31%of haemodialysis patients were overweight, 5% obese, 57% normal weight, but 75% of normal weight women had waist circumference higher than the normal value and 15% of men with a normal weight had a waist circumference higher than the normal value .24% of transplant recipients were overweight, 6% obese and 60% were normal weight, but 38% of normal weight women had a waist circumference higher than the normal range and 59% of normal weight men had a waist circumference higher than the normal value. Blood pressure: We did not find any significant difference between the levels of blood pressure between the two populations. We noticed that 77% of patients undergoing hemodialysis were treated for hypertension and 43% of kidney transplanted patients were on hypertension drugs. Metabolic status: We found that there was no significant difference in blood glucose levels between hemodialysis and transplant patients mean ([0.95 ± 0.04 g/l] vs [0.98 ± 0.08], $p = 0.58$). We found that there was no significant difference in uric acid levels mean: [56.20 ± 0.37 mg/l] vs [53.41 ± 0.25], $p = 0.58$).29% of haemodialysis patients had hyperuricemia compared with33%in the transplanted population. No significant difference for the Triglycerides rate [0.95 ± 0.04 g/l] vs [0.98 ± 0.08]; $p = 0.76$). The Cholesterol rate shows a very significant difference [1.60 ± 0.06vs [1.86 ± 0.06] $p = 0.01$). There was no significant difference in HDL, In the male group, mean HDL-c was [0.36 ± 0.06] vs [0.46 ± 0.02]. $p = 0.25$ In the group of women mean HDL-c wa [0.8 ± 0.36] vs [0.49 ± 0.04] $p = 0.39$

Clinical Pancreas/Islet Rejection

P457 PANCREAS REJECTION WITH GRAFT NECROSIS PRESENTING WITH EPISODIC MASSIVE INTESTINAL BLEEDING

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Purpose: This study is to present our unusual experience of episodic massive intestinal bleeding due to pancreas rejection with graft necrosis.
Materials and Methods: A case of NIDDM with uremia underwent simultaneous pancreas and kidney transplant in 2005. With 3 times of acute rejection on the kidney and pancreas grafts, he eventually went back to hemodialysis 7 years later.
Results: The pancreas graft failed due to acute rejection on the pancreas graft 9 years after SPK transplant. Therefore, all immunosuppressants were discontinued. Unfortunately, the pancreas graft became necrotic, and thereafter, intermittent gastrointestinal (GI) bleeding occurred. The angiography detected bleeding from arterial Y-graft, and the extravasated blood flew through the graft duodenojejunostomy anastomosis into the bowels and presented with GI bleeding. The bleeder was controlled by coil embolization. Hemorrhagic shock due to massive re-bleeding happened 1.5 months after coil embolization. The emergent angiography showed coil migration into the necrotic pancreas graft and active re-bleeding again from the same arterial Y-graft. The bleeder was temporarily controlled by a covered-stent in recipient common iliac artery, and emergency explant of the failed and necrotic pancreas graft was performed and the arterial Y-graft was ligated securely to prevent re-bleeding.
Conclusion: Bleeding from arterial Y-graft could occur after rejection and necrosis of pancreas graft due to sudden withdrawal of immunosuppressants, which might present with intermittent massive GJ bleeding. The coil embolization might fail due to coil migration into the necrotic pancreas graft.

Clinical Pancreas/Islet Immunosuppressive agents

P458 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. 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.
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.

Clinical Pancreas/Islet Immunosuppressive agents

P459 LONG-TERM OUTCOME IN COMBINED KIDNEY-PANCREAS RECIPIENTS WITH MINIMIZED IMMUNOSUPPRESSION: A SINGLE CENTER REPORT

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Background: We retrospectively analyzed long-term pancreatic and renal graft function, patient and graft survival and major complications after combined pancreatic-kidney transplantation (SPK) and Tacrolimus (Tac) or Cyclosporine A (CyA) monotherapy.
Methods/Materials: Between 1979 – 2015 performed at our center, 7 out of 489 SPKs patients were converted to Tac ($n = 6$) or CyA ($n = 1$) monotherapy in response to hematologic side effects ($n = 6$) or biopsy-proven BK-nephropathy ($n = 1$). Prior to monotherapy, patients were treated with Tac plus MMF ($n = 5$) or Tac plus Rapamycin ($n = 1$, study) or Tac-monotherapy (study, converted to CyA due to idiopathic thrombopenia), respectively, for a period of 62.1 (30–144) months (mean).
Results: At 133 (48–205) months all patients are alive with a stable pancreatic and renal function (mean creatinine 1.7 mg/dl ± 0.7 SD, blood glucose 97.1 mg/dl ± 12.2 SD, HbA1c 5.3% ± 0.3 SD, C-peptide 4.2 ng/l ± 2.1 SD, Tac-/CyA -level 5.6 ± 1.8 SD / 107 ng/ml). All major complications (urosepsis, incisional hernia, portal vein thrombosis, bleeding telangiectasia of graft duodenum, idiopathic portal hypertension, mild acute rejection, idiopathic thrombopenia, $n = 1$ each) were controllable. In one patient a biopsy proven acute vascular rejection (at month 33 within Tac-monotherapy, 155 month posttransplant, C4d negative) was treated by adding MMF (discontinued after 6 weeks due to leucopenia and diarrhea) plus prednisolone (discontinued after 5 weeks for severe skin dystrophy). No antibody mediated rejection was observed. The most recent DSA screening was negative in 2 patients and is missing for logistic reasons in 5.
Conclusion: Late after SPK, Tac-/CyA monotherapy seems to be feasible in patients suffering from side effects of non-CNI immunosuppressants. Cautious dose adjustments, careful trough level monitoring and particular attention to strict adherence to the drug treatment may be particularly relevant in this context.

Clinical Kidney Other

P460 THE FIRST EXPERIENCE OF SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION FROM A LIVING DONOR IN KAZAKHSTAN

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Background: First simultaneous transplantation of pancreas and kidney (SPK) from a living related donor was performed in 1996 in the United States for the treatment of patients with type 1 diabetes with subsequent renal failure. In several European countries the treatment of choice for patients with type 1 diabetes and ESRD is preferently only kidney transplantation with the following optimization of insulin therapy, as it is believed that the combined transplantation of pancreas and kidney associated with a higher risk of complications. Consistent with the comparative study of different variants of transplant outcome, there was revealed the survival benefit of recipients with SPK than the recipients with kidney transplantation alone.
Objective: To study and implement the methods of simultaneous transplantation of pancreas and kidney from a living related donor .
Patients and Methods: The first operation for the simultaneous pancreas and kidney transplantation in Kazakhstan was performed in 2012, on the base of the # 7 city clinical hospital, Almaty city. The recipient was a woman, 28 years old with ESRD as a complication of type 1 diabetes. Donor was her brother, 25 years old. Simultaneous pancreas and kidney transplantation was performed using manually assisted laparoscopy method.
Results: The first performed operation for simultaneous pancreas and kidney transplantation from a living related donor was successful. Recipient was discharged after 38 days of surgery. Within the period from 2012 to 2017 dynamic follow up of recipient's condition indicated an improvement in clinical and laboratory data, and quality of life. Learning and further improvement of this method allow to use it extensively.

Basic Pancreas/Islet Ischemia-reperfusion and preservation

P461 PANCREAS PERFUSION WITH HYPOTHERMIC MACHINE: PANCREAS AND DUODENAL HISTOLOGY UP TO 24 HOURS

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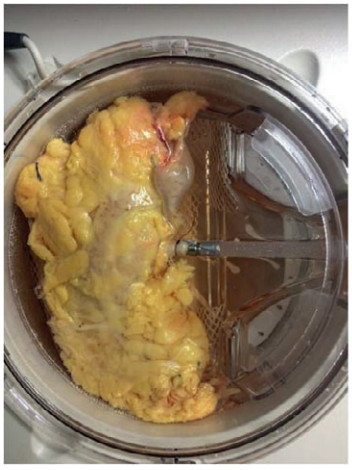
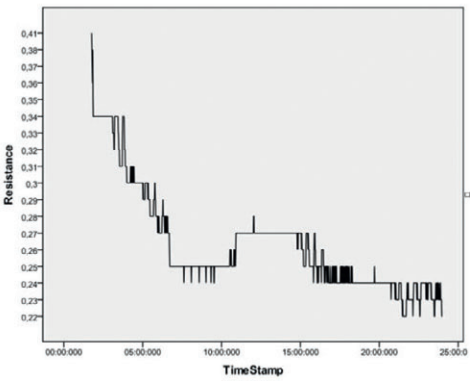
Background: Pancreas transplantation is one of the best treatments options for insulin-dependent diabetes. Pancreas is high vulnerable to ischemic damage and ischemic-reperfusion injuries. Cold storage (CS) is the mainstay preservation method. Hypothermic machine perfusion (HMP) has proved its value on the preservation of kidney transplants. Does HMP could preventing ischemic reperfusion damages in pancreas transplants ? The first pancreas pulsatile perfusion were done on canine pancreas autograft in the eighties, but this perfusions was high pressure perfusion and induced edema. No clinical studies have investigated this impact of this HMP on human pancreas grafts.
Methods/Materials: In this pre clinical study, 7 human pancreas from dead beating donors were perfused with a Wave HPM (Waters Medical Systems) and 2 pancreas were not perfused (control group) and were preserved in a cold storage solution (control group). Pancreas were prepared as transplant for a transplantation of vascularized pancreas. The splenic artery and superior mesenteric artery were anastomosed to an iliac artery division. We perfused the pancreas with a pressure of 25 mmHg. Tissue biopsies were collected at baseline and after 6 / 12 / and 24 h of HMP.
Results: The macroscopic aspect of the pancreas was unchanged after 24 h of perfusion (image 1). The index of resistance decreased during the first hours of perfusion (image 2). Histology did demonstrate no edema after 6 / 12 / and 24 h of HMP. Immuno-histology did demonstrate that endocrine function was still maintained after perfusion for insulin, glucagon and somatostatin.
Conclusion: We conclude that pancreas preservation by pulsatile machine perfusion is feasible and does not induced edema after up to 24 h of HMP with a low pressure.





Clinical Pancreas/Islet Cardiovascular complications

P462

SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION IN A PATIENT WITH HEPARIN INDUCED THROMBOCYTOPENIA ON DABIGATRAN THERAPY

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Background: New oral anticoagulants like direct thrombin inhibitors are an attractive alternative to vitamin K antagonists as anticoagulation therapy and can be used in heparin induced thrombocytopenia. They are convenient in low risk surgery, as there is no need for bridging with heparins. Patients who need urgent major surgery are at similar risk as on warfarin therapy, which however is multifold higher than in elective procedures. Due to their elimination profile, these drugs are generally contraindicated in patients with severe renal insufficiency. Pancreas transplantation is associated with high risk of bleeding and substantial risk of graft thrombosis on the other hand. There are no recommendations on anticoagulation therapy in high risk patients on kidney-pancreas waiting list who cannot be given heparins.
Method: We describe a case of simultaneous pancreas-kidney transplantation in a patient with heparin-induced thrombocytopenia on dabigatran treatment.
Conclusion: We conclude, that despite high risk, pancreas transplantation in a patient with HIT can be safely done on NOAC therapy, but an access to idarucizumab should be assured.

Clinical Pancreas/Islet Immunosuppressive agents

P463

EMA – SPK: EVEROLIMUS VERSUS MYCOPHENOLIC ACID IN SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANTATION TO EVALUATE THE DIFFERENCES IN DIABETIC RETINOPATHY PROGRESSION

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Background: Patients with type 1 diabetes (T1D), treated with simultaneous pancreas and kidney transplantation (SPK), commonly have advanced stages of diabetic retinopathy (DR). New therapeutic agents targeting the production of proangiogenic factors in retina (i.e. VEGF, HIF-1) have been tested in experiments, including local application of mTOR inhibitors. We initiated a randomized clinical trial to evaluate the role of systemic mTOR inhibition after SPK in the course of DR.

	MPA	Everolimus	
Patients	n=15 (5 f, 10 m)	n=19 (3f, 16 m)	
Age at transplantation	43,6 ± 12,6	46,4 ± 9,2	
Duration of diabetes	26,5 ± 8,6	27,9 ± 9,1	
Excluded	2	6	
Patient survival	100%	94,74%	NS
Graft survival	88%	89%	NS
Biopsy proven acute pancreas rejection	0%	11%	NS
Biopsy proven acute kidney rejection:	23,08%	38,89%	NS
Borderline changes (treated with steroids)	6,7% (1/15)	26,3% (5/19)	NS
Acute cell-mediated rejection	13 % (2/15)	5,2% (1/19)	NS
Acute humoral rejection	6,7% (1/15)	10,5% (2/19)	NS
Chronic rejection	6,7% (1/15)	0	NS
GFR-MDRD (mL/s/1.73 m^2)			
3 months after transplantation	0,80 ± 0,28	0,84 ± 0,26	NS
6 months after transplantation	0,94 ± 0,32	0,89 ± 0,23	NS
12 months after transplantation	0,98 ± 0,29	0,85 ± 0,21	NS
HbA1c (mmol/mol)			
Before transplantation	69,1 ± 13,2	71 ± 15,3	NS
3 months after transplantation	34,9 ± 4,6	40,7 ± 5,6	P < 0,05
6 months after transplantation	37,5 ± 3,9	42,2 ± 3,7	P < 0,05
12 months after transplantation	35,6 ± 2,8	41,6 ± 4,8	P < 0,05
Fasting C-peptide (nmol/L)			
3 months after transplantation	1,13 ± 0,31	1,12 ± 0,38	NS
6 months after transplantation	0,96 ± 0,34	1,17 ± 0,51	NS
12 months after transplantation	0,84 ± 0,25	1,08 ± 0,32	NS
Most common complications			
Anemia	58,30%	57,10%	NS
Leucopenia	50%	12%	P < 0,05
Severe neutropenia requiring G-CSF therapy	28,60%	0%	P < 0,05
Wound dehiscence	0	30,70%	P < 0,05
Urinary tract infections recidives	28,60%	0%	P < 0,05
Diarrhoea	21,4% (3)	31,2% (5)	NS
Diabetic foot syndrome	2 patients	1 patient	NS
Charcot osteoartropathy	1 patient	1 patient	NS
Tremor	2 patients	0	NS
Progression of ischaemic heart dissease	1	1	NS

Methods: Main objective is a complex ophthalmological endpoint (grade and progression of the DR, new indication to laser therapy, clinically significant macular edema, visual acuity, cataract grade, central macular thickness, intravitreal bleeding and neovascularisation). Secondary endpoints are patient and graft survival, graft function, wound healing and complications. We include patients with T1D on the waiting list for SPK and randomize them to treatment with natrium mycophenolate (1440 mg/day) or everolimus (through concentration 4–8 ng/l). All receive tacrolimus, induction with antithymocyte globulin and short-term steroid treatment. Complete eye examination including optical coherence tomography is done at baseline, 6, 12 and 24 months post-transplant.
Results: After two years SPK has been performed in 34 out of 41 patients enrolled. Our data have shown comparable patient and graft survival and long term kidney graft function with higher incidence of biopsy proven acute graft rejections (kidney and pancreas) in the everolimus group but not statistically significant. However we observed significantly higher glycated haemoglobin level in the everolimus-treated group and a higher rate of surgical complications.
Conclusion: Assessment of the preliminary data for secondary endpoints shows results in accordance with previous findings. Ophthalmological endpoints will be evaluated when sufficient amount of data allows a valid statistical analysis. Study is open for new participants.

Clinical Pancreas/Islet Cardiovascular complications

P464

SEVERE HYPERTENTION POSTOPERATIEVLY IN SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANT

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Introduction: Hypertension (HTN) is a major cause of morbidity and mortality postoperation. Diabetes Mellitus has many complication such as retinopathy, nephropathy and neuropathy. Diabetic patients have HTN for many reasons. We found that after Simultaneous Pancreas and Kidney (SPK) transplantation a group of our patients become severe hypertensive. We decided to study the prevalence of HTN in early postoperation period and the risk factors.
Method and Material: This is a prospective study which studied 18 patients of diabetic nephropathy who were transplanted (SPK) from June 2016 to March 2017. All the patients were transferred intubated to Intensive Transplant Unit (ITU) postoperatively. They were all sedated for the first few hours. The highest blood pressure detected in the first day was the index for analysis. Severe HTN was defined as systolic blood pressure above 180 mmHg.
Result: There were 18 patients who were transplanted, 11 (68.8%) were male and 5 (31.3%) were female. The median age of them was about 36 years old. We had 1 (5.6%) case of in hospital mortality and 17 (94.4) were alive. The prevalence of mild and moderate HTN was 50% and none of them had severe HTN preoperatively. Also, 8 (50%) patient had severe HTN and overall 15 (93%) of patients had HTN. On the sixth day post operation, 9 (56.3%) patients had moderate HTN and one (6.3%) patient had severe HTN.
Conclusion: There was a significant difference between preoperative severe HTN and early postoperative severe HTN. The presence of HTN had no effect on early graft function and clinical outcome.

Basic Pancreas/Islet Other

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A NEW 2-STEP PROTOCOL FOR HUMAN ADIPOSE DERIVED MESENCHYMAL STEM CELL DIFFERENTIATION TO INSULIN-PRODUCING CELLS USING XENO-ANTIGEN FREE REAGENTS

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Background: Recent protocols for adipose derived mesenchymal stem cells (ADSCs) differentiation into insulin-producing cells (IPCs) are always time consuming of over 30 days. Also, some regents containing xeno-antigen are used during differentiation. The aim of this study is to clarify effectiveness of new two-step protocol using completely xeno-antigen free reagents on differentiation of human ADSCs to IPCs.

Figure 1

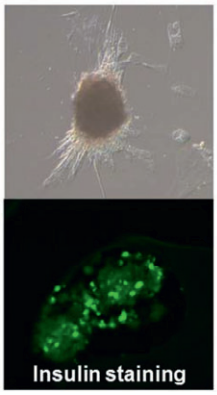
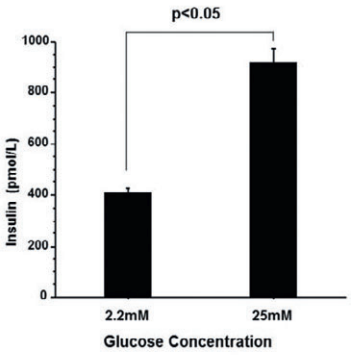


Figure 2



Methods: Commercial human ADSCs (Thermo Fisher Scientific Inc, USA) were used. 1x104 ADSCs were seed in 96-well dish and cultured in DMEM/F12 containing 1% human albumin instead of FBS, 1% B27-serum-free supplement, 1% N2 supplement, 50 ng/ml human activin A, 10 nM exendin-4 for step-one differentiation (7 days). Then, 10 mM nicotinamide, 50 ng/ml human hepatocyte growth factor, and 1 mM valproic acid were used for step-two differentiation (14 days). After the two-step differentiation finished, the cell morphology, dithizone (DTZ) and insulin staining, glucose stimulation test, pdx1 and neuroD expression were investigated.
Results: After the step-one, the ADSCs began to form the cluster and ultimately shaped the islet-like cell clusters after continued 14 days step-two differentiation (Figure 1). The average diameter of differentiated cell clusters is 101 μm. The differentiated cell clusters showed the positive DTZ and insulin staining. Also, after differentiation, the obvious expression change of pdx1 (4.5-folds), neuroD (4.3-folds) and ins-1 (2.2-folds) were observed. The insulin secretion of 10 differentiated cell clusters was 410 pmol/l per 60 min when exposed to 2.2 mM glucose, and it increased to 920 pmol/l when stimulated by 25 mM glucose. The stimulation index of differentiated group was 2.2 and significant higher than undifferentiated groups (Figure 2).
Conclusion: Our new accelerated two-step differentiation protocol to IPCs using xeno-antigen free reagents is effective and promising for clinical transplantation targeted to Type-I DM patients.

Basic Pancreas/Islet Surgical technique

P466

EXPERIMENTAL PORCINE MODEL IN PANCREAS TRANSPLANTATION

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Background: The objective of this study was to provide a plausible experimental model with an aim to provide valid data for future studies. A porcine subject was employed due to its anatomical and physiological similarities with the human species.
Methods: Sixty-four Landrace pigs of 30 kg were employed in this study, half of them in the role of pancreas donors, and the remainder as recipients. The latter were made diabetic by two methods, 10 with Streptozotocin (STZ) and 22 with a total pancreatectomy. For each donor, a whole, fully vascularized duodenum-pancreas graft was extracted. Following this, the graft was placed intra-peritoneally in the recipient's right side. A venous anastomosis was done between the donor portal vein and vena cava, and an arterial anastomosis was then performed between the donor aorta-patch and recipient infra-renal aorta. Enteric drainage was performed by an anastomosis between the duodenum of the graft and the jejunum of the recipient.
Results: The median cold ischemia time was 329 min (217–420), and the preservation solution used was Celsior (n = 55.2%) and IGL1 (44.8%). Six of the ten pigs treated with STZ died due to toxicity issues (n = 3), duodenum graft ischemia (n = 1), venous graft thrombosis (n = 1) and intestinal volvulus (n = 1); whilst only nine out of the twenty-two with a total pancreatectomy died because of anaesthetic management (n = 5), bronchoaspiration (n = 2), intestinal volvulus (n = 1), and graft necrosis without thrombosis (n = 1). Following transplant, the rest of the subjects lived with a normalization of glucose levels until euthanasia.

Conclusions: A large animal model in pancreas transplantation research is a viable method; with few transplant technique related complications. Special care in anaesthetic management is needed. Due to SZT's high toxicity and mortality, total pancreatectomy seems an effective and safe procedure to induce diabetes.

Clinical Pancreas/Islet Surgical technique

P467 LONG-TERM OUTCOME AFTER SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION IN DIABETIC PATIENTS WITH END-STAGE RENAL DISEASE: A 25 YEARS' EXPERIENCE IN A LOW VOLUME CENTER

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Background: Simultaneous pancreas and kidney transplantation (SPK) has become an effective treatment for patients with complicated diabetes mellitus type 1 and end-stage renal disease. SPK improves quality of life, increases longevity and stabilizes diabetic complications. We reviewed the outcome after SPK in our center performing 5–10 SPK per year.
Methods: A retrospective analysis was performed on patients undergoing SPK since the program's initiation. Between Jan 1992 and Dec 2016, 113 SPK were performed. Medical records of 109 SPK recipients with >1 year follow-up were reviewed retrospectively. Patient survival and pancreas/kidney survival/function at 1, 5 and 10 years and reasons for complete pancreas loss were analyzed.
Results: Overall patient survival at 1, 5 and 10 years was 97, 89 and 78%, respectively. Death-censored pancreas graft survival was 89, 88 and 80%, respectively. Insulin-free survival at 1, 5 and 10 years was 89, 88 and 81%, respectively. Mean HbA1c level pre-transplant was 8 $\pm$ 1.43% and normalized to a mean of 5.2 $\pm$ 0.63% at 6 months post-SPK. Pancreas graft loss resulted from transplantectomy in 13/21, immunological reasons in 5/21, and other reasons in 3/21 patients. Reasons for tranplantectomy included vascular thrombosis in 9/13, PTLD in 1/13 and other reasons in 3/13. Death-censored kidney graft survival at 1, 5 and 10 years was 95, 88 and 73%, respectively. Mean serum creatinine was 1.4 $\pm$ 0.53 and 1.8 $\pm$ 1.75 mg/dl at 1 and 5 year, respectively.
Conclusions: Despite a low number of SPK per year and a decreasing number of suitable SPK donors, excellent short-, middle- and long-term survival with good metabolic control can be obtained after SPK.

P468 SIX RENAL ARTERIES AND 2 RENAL VEINS IN A SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION – A CASE REPORT

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Background: Since 2004 there has been 178 pancreas transplantations performed at the Clinical Department of Gastroenterological Surgery and Transplantation at the Central Clinical Hospital of the Ministry of the Interior in Warsaw. Simultaneous pancreas kidney (SPK) requires from the surgeon a vast experience in vascular surgery and microsurgery. In pancreas transplantation it is necessary to create a common vascular trunk from: common iliac artery, spleen artery and celiac trunk, as well as to reconstruct portal vein with common iliac vein. In our center the most often vessel anastomosis is created between reconstructed graft vessels and right external iliac artery and left common iliac vein of the recipient. During one transplantation we usually perform 4 arterial anastomoses and 3 venous.
Materials: We demonstrate a case of SPK transplantation in which the kidney graft had 2 renal veins and 6 renal arteries. The recipient was male, aged 32, with diabetes diagnosed 25 years ago and renal replacement therapy from 2013. The donor organs required more anastomoses than in routine.
Results: On 14.03.2016 we performed a SPK transplantation. In the first step we reconstructed renal vessels. The donor's aorta patch had 10 cm and had 6 renal arteries ostia. We divided arteries' patches and performed 5 side-to-side anastomoses, reconstructing the arterial patch. The renal veins reconstruction was done by creating a common trunk (side-to-side anastomosis). The reconstructed vessels were engrafted with a typical method. In control ultrasonography the grafted kidney had regular and rich blood supply. The patient had proper renal and pancreas function. After one year of observation the organs remain efficient.
Conclusions: Anatomy anomalies should not be contradiction for transplantation. The surgeon should consider that each additional vessel can be equivalent. Transplantation with multi vessels is challenging for the surgeons and is a test for knowledge and microsurgical abilities

P469 KIDNEY RETRANSPLANTATION IN A PATIENT AFTER SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION – A CASE REPORT

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Background: Since 2004 there has been 179 pancreas transplantations performed at the Clinical Department of Gastroenterological Surgery and Transplantation at the Central Clinical Hospital of the Ministry of the Interior in Warsaw. Vast majority of performed transplantations (84%) were simultaneous pancreas- kidney (SPK). Average 5-year survival of the patients was 85%, while the survival of the kidney grafts-85%, and pancreas grafts-60%. The function of organs can deteriorate in different time, regardless simultaneous grafting. Most often it is the pancreas graft that first loses its quality.
Materials: We demonstrate a case of a kidney retransplantation in a 75-year old female patient after SPK in 2007. The indication for SPK was insulin-dependent diabetes, diagnosed at age 32 (probably drug related) and diabetic nephropathy. After 5 years of progressive loss of the kidney graft function, she required renal replacement therapy (from 2013), whereas the function of the pancreas graft was sufficient, with no need to implement insulin. In 2013 she was diagnosed with left major labia cancer (ca planoepitheliale invasivum VIN3) and underwent radical resection. Because of residual diuresis (700 ml) we did not perform graftectomy of previous kidney graft in this patient.
Results: On 15.05.2016 we performed a retransplantation of the kidney graft from a deceased donor. We chose intraperitoneal approach. The vessels anastomosis was done left common iliac vessels. In the perioperative period the grafts' function and diuresis were sufficient. There were no symptoms of abdominal compartment syndrome. After 10 months of observation, the patient has proper diuresis, does not require renal replacement therapy or insulin. She lives with 2 pancreases and 4 kidneys.
Conclusions: Organ retransplantation after SPK is feasible but requires an experienced transplantation center.

P470 NEAR 200 PANCREAS TRANSPLANTATION – AN EXPERIENCE OF ONE CENTER, THE HISTORY OF TECHNICAL DEVELOPMENT

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Since 2004 there has been 178 pancreas transplantations performed at the Clinical Department of Gastroenterological Surgery and Transplantation at the Central Clinical Hospital of the Ministry of the Interior in Warsaw. 84% of transplantations were simultaneous pancreas- kidney (SPK). The first pancreas transplantation was in 2004 in our Center, when transplanted pancreas after kidney (PAK). In 2014 also we performed first in Poland pancreas transplantation in patient with type 2 diabetes. The average 5-year survival of the patients is 85%, while the survival of the kidney grafts-85%, and pancreas grafts-60%. We have in our observation one patient living with efficient pancreas graft for 12 years since transplantation. At the beginning we performed ileo- duodenal anastomosis. From few years we prefer duodeno-duodenal junction, because it simplifies endoscopic approach. We use endoscopy to investigate the anastomosis, collect histopathological samples and perform hemostasis, if necessary. Our first vessel anastomoses were between graft vessels and vena cava and aorta. When we got experienced, we started grafting to common iliac arteries. Nowadays, we choose the junction location depending from anatomical conditions of the recipient. During SPK transplantation we start from the pancreas. We transplant the kidney from the same incision, with additional "pocket "created from retroperitoneal space behind left iliac vessels. The average time of the surgery shortened, and now takes 180 min. We use three drugs in induction with polyclonal antibodies. In chosen cases we use monoclonal antibodies. During 14 years of transplanting we developed surgical techniques, minimalized time of cold and warm ischemia of donor organs. We also gained the biggest experience in pancreas transplantation in Poland. The transplantation results are much better than in previous years. From last two years we perform pancreas retransplantation and our first results are promising.

Clinical Pancreas/Islet Biomarkers and molecular changes

P471 EARLY RECIPIENT SERUM AMYLASE AND LIPASE LEVELS AND OUTCOMES IN PANCREAS TRANSPLANTATION

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Background: Serum lipase and amylase levels are used to monitor pancreas graft health post-transplantation. Early post-operative serum amylase and lipase levels vary considerably between patients. The aim of this study is to establish how this correlates with outcomes in pancreas transplantation.
Methods: Retrospective single-centre study of 131 pancreas transplants between March 2010 and March 2016 with a 1 year minimum follow-up. Donor and recipient demographics and peak serum amylase and lipase levels on post-operative day 0–3 were collected. Primary endpoints were patient death, allograft failure, delayed graft function, primary non-function, length of stay and re-operation.
Results: Recipient characteristics were 61% males with mean age 42.8 (range, 24–58). Donors (84 DBD and 47 DCD) were 52% males with mean age 34.3 (range, 7–59) with intracranial haemorrhage as a cause of death in 49%. Mean cold ischaemic time for pancreas allograft was 619 min (range, 286–868). Allograft failure occurred in 17 recipients (13%) with 5 (4%) recipient deaths in the follow up period, 2 of which had functioning pancreas allografts. The mean donor serum amylase was 100 U/l (range, 8–1075) and the mean recipient peak amylase and lipase on post-operative days 0–3 were 193 U/l (range, 7–1094) and 413 U/l (range, 14–6599) respectively. The type of allograft (DCD or DBD) did not predict post-operative amylase and lipase serum levels ($p = 0.57$ and $p = 0.47$ respectively). A receiver operating characteristic analysis was performed and the serum amylase and lipase levels were found not to have a statistically significant impact on graft survival (Amylase: area under curve 0.49, 95% CI 0.25–0.73; Lipase: area under curve 0.49, 95% CI 0.25–0.73).
Conclusions: Although levels vary widely between individuals, early post-operative serum amylase and lipase levels do not correlate with allograft outcomes.

Translational Pancreas/Islet Ischemia-reperfusion and preservation

P472 HYPOXIA INDUCES ENDOPLASMIC RETICULUM STRESS AND UNFOLDED PROTEIN RESPONSES IN ISOLATED HUMAN ISLETS

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Background: Activation of the Unfolded Protein Response (UPR) in mammalian cells acts as an adaptive response to endoplasmic reticulum (ER) stress. UPR activation has been implicated in beta cell dysfunction and apoptosis. We investigated the effect of hypoxia on ER stress pathways in isolated human islets.
Methods: Human islet preparations from normoglycaemic donors were exposed to hypoxic conditions (8% oxygen), RNA was extracted at baseline and immediately post hypoxia exposure. Islets were pre-treated with Rapamycin prior to hypoxic exposure and analysis of UPR mediators performed by qPolymerase Chain Reaction.
Results: Hypoxia resulted in significant upregulation of 2 mediators of the UPR; Binding Immunoglobulin Protein (BIP) and C/EBP Homologous Protein (CHOP) mRNA expression ($p = 0.03$, 0.0007 respectively). Pre-treatment with Rapamycin significantly abrogated this effect in a dose-dependent fashion. There was no significant upregulation in ER Degradation Enhancing α-Mannidose-like protein (EDEM), Activating Transcription Factor 4 (ATF4) or spliced X-box Binding Protein 1 (sXBP1) confirming selectivity in the UPR response to hypoxia.
Conclusion: Activation of ER stress pathways secondary to islet hypoxia post-transplantation may be implicated in beta cell apoptosis and loss post-transplantation. Modification of the UPR may be initiated using direct therapy of islet preparations prior to implantation to improve beta cell functionality.

Clinical Pediatric transplantation Other

P473 HEPARIN WASHOUT IN THE CELL SAVER BOWL: IS IT STILL NECESSARY?

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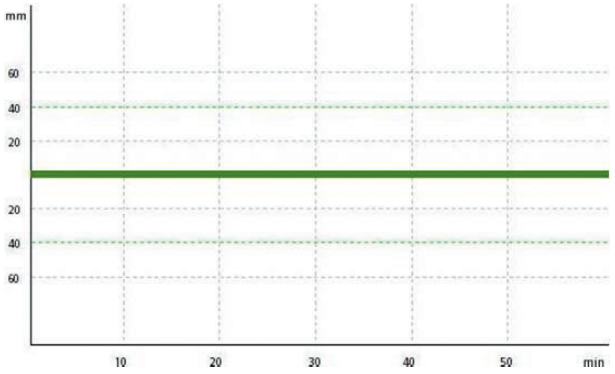
Heparin as anticoagulant is recommended in the use of Haemonetics Cell Saver. An Heparin solution is continuously infused with the blood collected (25000UI/1L NaCl) in the bowl. Even if heparin is eliminated by washing in the Cell saver, it is possible to find some small remains in the blood transfused, what could be responsible for coagulation disturbance in pediatric patients. Is heparin necessary in the Cell Saver?
Material and Method: We studied 10 pediatric patients undergoing spinal surgery. They all have a normal coagulation status before the surgery. We collected 20 blood samples in these 10 patients, after one hour of surgery, directly in the Cell saver bowl, before washing and without any infusion of heparin solution in this bowl. The blood samples were treated with Thromboelastometry (ROTEM: Extem, Fibtem).
Results: In the 10 patients we had 8 girls and 2 boys, mean age was: 13.3 years old [9–16], mean weight was: 45Kg [25–88]. All the 20 blood samples were analyzed with ROTEM analysis: Extem test and Fibtem test, at least 40 min. We did not observed any coagulation of the blood during the ROTEM analysis. Extem- CT >2500s and Fibtem-CT >2500s for the 20 blood samples

The blood collected in the Cell Saver bowl seems to be free of coagulation factors.

The coagulation factors are probably already involved in the coagulation process from the beginning of the surgical procedure in the wound. They are not available anymore for blood coagulation.
Conclusion: The blood collected with surgical suction doesn't coagulate in the Cell Saver bowl. We consider useless to had heparin in the cell Saver bowl. Furthermore the infused Heparin solution might have a deleterious impact on the patient.



Clinical Pediatric transplantation Donation and donor types

P474 ORGAN DONATION OF A NEWBORN

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Case Description: A male newborn was delivered by emergency c-section in the 42th week of pregnancy. Immediately after delivery the boy had to be resuscitated for 20 min. Approximately 12 h later, the newborn was reported as a potential donor to the German OPO. At this time brainstem areflexia was already clinically observed and the first EEG had shown a flat line. Apnoea testing on the next day showed no respiratory activity. 48 h after birth the newborn showed all signs of complete cessation of all brain function. According to the German rules brain death can be declared, if the irreversibility of the loss of brain function as been proven. Therefore the examinations has to be repeated after 72 h in children ≤2 years. After brain death was confirmed, the

parents were approached again and agreed to organ donation. All organs were reported to ET. Heart, liver and both kidneys were accepted for transplantation.
Results: Unfortunately the 1 year old recipient who received the heart died due to surgical problems (untreatable bleeding) shortly after transplantation, the other recipients are in good health condition.
Discussion: Organ donation in newborn is a rare event. Several aspects have to be considered: Firstly, due to the different stages of development of the brain, rules of brain death testing in newborns differ from adults. Secondly, it has to be kept in mind that there are also small children on the waiting list in the need of an organ. Finally, in our experience grieving parents often find some comfort by donating their children organs to other children desperately waiting for a transplant. This was also the case in the above described situation. Pediatricians, who are often reluctant to approach families with the question of organ donation, have to keep this aspect in mind. Asking the parents for consent to organ donation is often not an additional burden for the family but actually be of help in this otherwise often almost unbearable situation.

Clinical Pediatric transplantation Donation and donor types

P475 VACCINATION WITH LIVE VACCINES IN A PEDIATRIC DONOR 13 DAYS PRIOR TO DONATION

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Case Description: A 15-month old boy was reported to the German OPO (DSO) with a hypoxic brain damage after bolus aspiration and unknown duration of CPR. Permission for retrieval of all suitable organs and tissues was given by the parents. The prosecuting attorney excepted the lungs. 13 days prior to organ retrieval a live vaccination with measles, mumps, varicella and rubella was undertaken. Other vaccinations with inactivated vaccines were carried out within the last 4 to 10 weeks. Only the heart was accepted for transplantation for a high urgent listed 16-month old boy.
Results/Conclusion: The heart recipient was not vaccinated for measles, mumps, varicella and rubella prior to transplantation. Within 2 weeks after transplantation a qualitative detection of mumps virus in urine was found. The recipient showed no clinical signs of infection. This successful transplantation shows, that each donor situation has to be evaluated thoroughly, especially in high risk donors. A register will help to gain experience in all rare cases.

P476 CLINICAL CASE: A CASE OF NON STANDARD RISK CHILD DONOR

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Background: Extended criteria donors, who might have previously been presumed ineligible, can in certain circumstances be an option of alleviating ubiquitous scarcity of organs for transplantation. This report presents a pediatric non standard risk donor.
Case Report: We present a case of a 5 year old previously healthy girl who presented with severe frontal headache 7 days prior to admission to our hospital. Lumbar tap showed pleocytosis with predominating neutrophils, treatment with ceftriaxone was started empirically. All cultures as well as PCR to Herpesviridae, Flaviviridae, Enteroviridae, Borrelia spp, Rabies were negative. Cerebrospinal fluid, blood, muscle and skin samples were taken for further diagnostic. Her clinical status deteriorated, she became comatose and therapy for raised intracranial pressure was started. MRI scan showed acute hydrocephalus, edematous and enlarged cerebellum and cerebral herniation into foramen magnum. ICP continued to increase despite external ventricular drainage and aggressive antiedematous therapy. Brain death was confirmed with perfusion scintigraphy and parents consented to organ donation. Kidneys and liver were procured and successfully transplanted. Autopsy report revealed septic cerebellar meningitis with unknown causative agent.
Conclusion: This was a rare clinical scenario of a child with encephalitis of unknown origin, who became a multiorgan donor, even though at time of brain death the exact cause of death was unknown. Although meningitis of unknown origin is otherwise an absolute contraindication for organ donation, in this case it was a relative one. There is a shortage of organs worldwide so the receiving hospitals took the calculated risk and both kidneys and liver were transplanted. Four months after transplantation all recipients are clinically stable, managed on the outpatient basis, with no signs of allograft dysfunction or infectious disease transmission.

Clinical Pediatric transplantation Immunology

P477 HYPOGAMMAGLOBULINEMIA IN PEDIATRIC HEART TRANSPLANTATION

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Background: IgG hypogammaglobulinemia (commonly defined as serum IgG levels <600 mg/dl) has been demonstrated as a risk factor of infection in single center, multicenter, metanalysis and interventional studies performed in adult heart recipients. There is a lack of information regarding this immunological alteration in pediatric heart recipients.
Methods: We report on clinical and immunological data of 2 pediatric heart recipients (male, 4 and 13 years, with terminal cardiomyopathy, NYHA IV, ischemic time 209 and 220 min, respectively) included in a multicenter study performed to identify immunological biomarkers as potential risk factors of severe infection after transplantation. Both patients had bacterial infections before transplantation. Anti-microbial prophylaxis included valganciclovir and cephalosporins in both cases.
Results: Both patients were found to have low immunoglobulin G (IgG) levels according to age early after heart transplantation (at day 7: 531 and 555 mg/dl, respectively). The older of these patients developed recurrent bacterial infections over a 6 month period (pneumonia and bacteriemia with recovery of pseudomona aeruginosa, klebsiella pneumonia and staphylococcus aureus in cultures). IgA, C3, C4, anti-CMV levels were lower in this patient (52 vs 90 mg/dl, 115 vs 172 mg/dl, 35 vs 46 mg/dl, 241 vs 3527 units, respectively). IgM levels were within normal for age in both (106 and 86 mg/dl). IgG, IgA and IgM anti-pneumococcal polysaccharide antibodies were 4.8, 0.5, 0.95 and 6.4, 0.36, 1.65 mg/dl, respectively. At one-month IgG levels remained low in both patients (487 and 498 mg/dl).
Conclusion: Post transplant IgG hypogammaglobulinemia was observed in 2 patients after heart transplantation. Prospective follow-up studies are needed to determine the incidence of hypogammaglobulinemia, its impact on survival, and the appropriate therapy in the pediatric heart transplant population.

Clinical Kidney Immunology

P478 ROLE OF B- AND T-LYMPHOCYTE ATTENUATOR IN RENAL TRANSPLANT RECIPIENTS WITH BIOPSY-PROVEN ACUTE REJECTION

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Background: Acute rejection remains one of common causes for allograft dysfunction in kidney transplantation. Recently, BTLA/HVEM pathway appears to play a critical role in regulation of T activation and immune responses.
Methods: We analyzed the expressions of BTLA and HVEM on circulating CD4+ and CD8+ T cells by flow cytometry in recipients with biopsy-proven acute rejection (BPAR) and stable allograft function, as well as in healthy volunteers. Moreover, we performed the HE staining and immunohistochemical staining to access the expressions of BTLA and HVEM in kidney samples from recipients with BPAR and healthy volunteers. T cells extracted from rat model of acute rejection were used to prove the role of BTLA.
Results: The expression of BTLA on CD4+ T cells was significantly lower in recipients from BPAR group than that in recipients from stable group (BPAR group: 91.41 ± 1.40, Stable group: 98.19 ± 0.72, $p < 0.001$). The expression of BTLA on CD8+ T cells in recipients both from BPAR and stable group was significantly higher than healthy volunteers (BPAR: 94.60 ± 1.63, Stable: 98.10 ± 0.46, Control: 85.00 ± 2.39, $p < 0.01$ when Control group were compared with BPAR group or Stable group). There was no significant difference in the expression of HVEM on T cells among three groups or in the expression of BTLA on CD4+ T cells between recipients from BPAR and control group (HVEM: BPAR: 69.50 ± 4.14, Stable: 62.90 ± 6.69, Control: 55.96 ± 6.09, $p > 0.05$; BTLA: BPAR group: 91.41 ± 1.40, Control group: 90.06 ± 1.48, $p > 0.05$). In vitro, we also found that BTLA protein expressions were significantly associated with the occurrence of acute rejection.
Conclusions: In conclusion, our study observed significantly lower expression of BTLA on CD4+ T cells from renal transplant recipients with BPAR when compared to recipients with stable allograft function.

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ASSOCIATION OF COMPLEMENT COMPONENT 4 AND 5 SINGLE NUCLEOTIDE POLYMORPHISMS WITH ANTIBODY-MEDIATED REJECTION IN RENAL TRANSPLANT RECIPIENTS

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Background: Antibody-mediated rejection (ABMR) is an important cause of allograft dysfunction in short-term and long-term period. The complement component 4 (C4) and component 5 (C5) is considered to be pivotal in the complement system of the innate immune response, and be associated with the alloreactive antibodies and donor-specific antibodies (DSAs). However, the effect of C4 and C5 genetic polymorphisms on the development of ABMR is still unclear.
Methods: Blood samples of renal transplant recipients with ABMR or stable graft function were collected, and studied by next-generation sequencing with an established gene panel. High quality readout was obtained in 9 single nuclear polymorphisms (SNPs) in C4 gene and 22 SNPs in C5 gene.
Results: 200 subjects containing 137 stable patients and 63 recipients with ABMR were included in our study. After adjusting with age, sex and immunosuppressive protocols, all SNPs in C4 and C5 genes have no statistical association with the pathogenesis of ABMR.
Conclusions: Our study observed for the first time that all SNPs of C4 gene or C5 gene are not significantly correlated with ABMR in renal transplant recipients. This finding may have implication for the diagnosis and prevention of ABMR, contributing to the promotion of the renal transplant outcomes.

Clinical Kidney Immunology

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RESEARCH ON QUADRUPLE IMMUNOSUPPRESSION MAINTENANCE THERAPY USING SIROLIMUS, LOW-DOSE CALCINEURIN INHIBITORS, MYCOPHENOLATE MOFETIL WITHIN THE THREE MONTHS AFTER RENAL TRANSPLANTATION

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Background: Although calcineurin inhibitors (CNIs) have significantly lowered acute rejection rates, they are direct nephrotoxins and exhibit several other side effects. When recipients appear acute rejection or lack of immunosuppression, we could not increase the dose of triple maintenance regimens, because of the drug side effects of tacrolimus (Tac) and mycophenolate mofetil (MMF). Therefore, we could choose quadruple immunosuppression maintenance therapy including sirolimus (SRL), low-dose CNIs, MMF in this setting. But quadruple immunosuppression maintenance therapy need future study to clarify its superiority of improving renal function and ensuring medication safety in this setting.
Methods: The retrospective research contains 38 recipients (33 males,5 females) who used quadruple immunosuppressive therapy within three months after transplantation selected in our center from 2013–2016. We observed and comprised the change of serum creatinine (SCr), blood urea nitrogen (BUN), glomerular filtration rate (GFR), hemoglobin (HGB), CD19+ B cell subset counts, white blood cell (WBC), CD4+ and CD8+ T cell subset counts, platelet count (PLT), liver function, fasting blood-glucose (FBG), serum lipid and urine protein.
Results: There was no significant difference between before and after switching in CD19+ B cell subset counts, alanine transaminase (ALT), PLT, urine protein, TG and fasting blood-glucose. Seven days after switching, differences reached significance for serum creatinine (SCr), blood urea nitrogen (BUN) and GFR ($p < 0.05$). CD4+ and CD8+ T cell subset counts were significantly reduced after switching ($p < 0.05$). One month after switching, differences reached significance for aspartate transaminase (AST), HGB and TC ($p < 0.05$).
Conclusions: Quadruple immunosuppression maintenance therapy including SRL, low-dose CNIs, MMF used within the three months after renal transplantation may be a useful strategy to improve renal function and ensu.

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DE NOVO HLA ANTIBODY DEVELOPMENT AFTER MISCARRIAGE IN KIDNEY RECIPIENT WHOSE KIDNEY WAS FROM HER SPOUSE

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Background: De novo donor-specific antibodies (dn DSA) against the human leukocyte antigen (HLA) have been reported to be associated with poor renal allograft outcomes. In husband-to-wife transplants, the pregnancy from the spousal donor could be the significant triggering event for dn DSA.
Case Report: 28-years old woman with end-stage renal disease (ESRD) caused by IgA nephropathy underwent kidney transplant (KT) from a living unrelated spousal donor. The HLA antigens typing showed 3/6 loci mismatch and HLA-DQ locus was all mismatched. Her panel reactive antibody (PRA) to HLA class I and II were 0 percent. One year after KT, mycophenolate mofetil (MMF) was switched to azathioprine (AZA) for planned the pregnancy. She was pregnant several months later, but unfortunately she underwent emergency surgery for a ruptured ectopic pregnancy. After surgery, her serum creatinine was slightly up and PRA to HLA class II went up to 70 percent, while PRA to HLA class I remained 0 percent. Dn DSAs against HLA-DR, DQ were identified and the ranges of mean florescence intensity (MFI) were 3481 to 13510. She treated with four times of plasmapheresis, low-dose intravenous immunoglobulin (IVIG), and rituximab. Six months after desensitization, PRA to HLA class II declined to 20% and MFI also significantly reduced. In addition, serum creatinine level also has returned to normal.
Conclusion: KT increases the chances for pregnancy for women with ESRD. However, in husband-to-wife transplants, pregnancy could cause dn DSA which leads to poor graft outcome. Therefore, in these particular cases, the detailed immunologic work-ups and apposite treatment during pre and postpartum period, such as IVIG therapy should be considered.

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SYSTEMIC LUPUS ERYTHEMATOSUS AMONG RENAL TRANSPLANT RECIPIENTS: SINGLE CENTER EXPERIENCE

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Introduction: Long term outcome of renal transplantation among systemic lupus erythematosus (SLE) patients remains a debated topic.
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 was 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 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 transplant recipients is associ

Clinical Kidney Rejection

P483 NEUTROPENIA AND ACUTE REJECTION IN ABO-INCOMPATIBLE KIDNEY TRANSPLANT RECIPIENTS TREATED WITH RITUXIMAB

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Introduction: Rituximab induces long-lasting B cell depletion in the peripheral blood, and it has been suggested that proinflammatory cytokine release associated with regulatory B cell depletion might prime antigen-presenting cells. Previous reports have shown that B cell-related cytokine storm after administration of rituximab may induce neutropenia and acute rejection. This study was conducted to investigate the correlation between neutropenia and rejection in ABO-incompatible kidney transplant recipients who underwent administration of rituximab for 1 year after their transplants.
Patients and Methods: Between June 2006 and July 2015, 47 patients received successful ABO-incompatible kidney transplants with rituximab induction at Osaka City University Hospital. All recipients underwent plasmapheresis due to removal of anti-A/B antibodies and rituximab administration.
Results: Fourteen recipients experienced acute rejection (AR (+) group), and 33 did not (AR(−) group). The frequency of neutropenia was greater in the AR (+) group compared to the AR(−) group. Multivariate logistic regression analysis revealed that the rate of acute rejection significantly correlated with the prevalence of neutropenia.
Conclusions: Our results indicated that acute rejection in ABO-incompatible kidney transplant recipients receiving rituximab was associated with neutropenia.

P484 SNPS OF SOLUTE CARRIER FAMILY GENES ASSOCIATED WITH ACUTE RENAL ALLOGRAFT REJECTION IN KOREAN POPULATION

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Background: Solute carrier family has been reported to be associated with various kinds of renal diseases. Thus, we hypothesized that single nucleotide polymorphisms (SNPs) of the solute carrier family genes might have association with acute rejection of kidney transplantation (KT) in Korean population.
Methods: To investigate whether polymorphisms of solute carrier family genes are involved in the development of acute renal allograft rejection, we firstly selected 349 solute carrier family genes in NCBI gene database and searched the nonsynonymous SNPs on coding region in each genes. Finally we selected 4200 exonic SNPs. The genotypes of these SNPs were performed using Axiom™ genome-wide human assay. SNPStats and SPSS 18.0 were used for the analysis of genetic data. Logistic regression models were performed to determine odds ratio (OR), 95% confidence interval (CI), and p value.
Results: A total of 90 renal allograft recipients transplanted in Pusan Paik hospital. Acute rejection developed in 49 patients among them. Among 4200 SNPs of 349 solute carrier family genes, three SNPs (rs5036 in SLC4A1, rs11643718 in SLC12A3, and rs1047099 in SLCO4A1) only showed significant association with acute rejection ($p < 0.05$).
Conclusions: These results suggest that these significant SNPs (rs5036 in SLC4A1, rs11643718 in SLC12A3, and rs1047099 in SLCO4A1) may be associated with the susceptibility to the acute rejection in the KT patients of Korean population.

Translational Kidney Rejection

P485 TARGETING HISTONE DEACETYLASE IN RENAL TUBULAR EPITHELIAL CELLS INHIBITS AMPLIFICATION OF TH1 CELL-MEDIATED INFLAMMATION

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Background: More studies are focusing on renal tubular epithelial cells (RTECs) as a new target to restore inflammatory environment as clarifying their immune regulatory function. Here, we investigated whether histone deacetylases (HDACs) are activated in RTECs during T cell-mediated inflammation and their blockade is able to reduce the inflammatory responses.
Methods: Human renal proximal tubular epithelial cell line HK-2 was cultured in the presence or absence of recombinant interferon gamma (IFN-g) 200 U/ml plus tumor necrosis factor alpha (TNF-a) 5 ng/ml. The HDAC activity was determined on the expression levels of acetylated H3 and a-tubulin by immune blot assay. To determine the functional activity of HDAC inhibitor SB939, we analyzed the immune stimulatory phenotype of HK-2 cells such as class II MHC molecule, CD80, CD86, and CD40 by flow cytometry. In addition, the culture supernatants were used for measuring cytokines and chemokines by ELISA assay.
Results: We found that HDAC activity was markedly increased in HK-2 cells by treatment of IFN-g/TNF-a within 12 h. Treatment of pan-HDAC inhibitor SB939 in HK-2 cells completely prevented HDAC activity increased by IFN-g treatment. SB939 treatment predominantly inhibited up-regulating CD40 expression but not MHC class II, CD80, and CD86. In addition, MCP-1 was significantly inhibited more than IL-6 and TNF-a by SB939 treatment. We found that HDAC activity was markedly increased in HK-2 cells by treatment of IFN-g/TNF-a within 12 h. Treatment of pan-HDAC inhibitor SB939 in HK-2 cells completely prevented HDAC activity increased by IFN-g treatment. SB939 treatment predominantly inhibited up-regulating CD40 expression but not MHC class II, CD80, and CD86. In addition, MCP-1 was significantly inhibited more than IL-6 and TNF-a by SB939 treatment.
Conclusion: Our results demonstrate that 1) HDAC activity is increased in RTECs in response to IFN-g, 2) which further facilitates T cell-mediated inflammation.

Clinical Kidney Rejection

P486 EFFICACY OF RABBIT ANTI-THYMOCYTE GLOBULIN THERAPY FOR SEVERE ACUTE REJECTION IN KIDNEY TRANSPLANTATION IN THE AGE OF MODERN IMMUNOSUPPRESSIVE THERAPY

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Background: T-cell depleting antibody therapy is the treatment of choice for glucocorticoid-resistant kidney allograft rejection and is used as first-line therapy in severe T-cell mediated rejection (TCMR). Most studies investigating the effectiveness of this treatment were conducted when cyclosporine and azathioprine combination were therapy. However, there is little evidence for its effectiveness in combination with current standard maintenance immunosuppressive therapy consisting of tacrolimus (TAC), mycophenolate mofetil (MMF), and corticosteroids (CS) with or without induction therapy.
Methods: Between 2002 to 2012, we identified 108 patients, treated with rabbit anti-thymocyte globulin (rATG) for biopsy-proven severe (Banff TCMR grade IIA or more) or glucocorticoid-resistant acute rejection; 78 patients had TAC/MMF and/or CS therapy at time of rejection. Patients were treated with high dose methylprednisolone, followed by rATG when kidney function showed further deterioration or a biopsy showed TCMR grade II.
Results: Median time to rejection was 24 days (IQR 6–339). At 1 year, 26% of patients receiving TAC/MMF lost their graft and serum creatinine was not significantly different (median 164, IQR 129–203 μmol/l) than the best creatinine in the 3 months before rejection (median 159, IQR 128–210 μmol/l) ($p = 0.38$). After 1 year 13% of patients showed no improvement of kidney function compared to kidney function at time of rATG. Sixty percent of patients showed mild (0–50%) improvement. In the follow up of 1715 days (IQR 720–2509) 43% of the patients lost their graft. After rATG (mean follow-up 1948 days) 212 infections requiring hospitalization, 12 solid tumors and 2 lymphoma's occurred.
Conclusion: Anti-rejection treatment with rATG in patients treated with TAC/MMF showed 26% graft loss after 1 year and 43% graft loss in the follow up of 4.7 years. In contrast, in patients treated with cyclosporine and azathioprine graft loss of 11% a

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THE LONG TERM EFFECT OF BORTEZOMIB ON MANAGEMENT OF IMMEDIATE POSTOPERATIVE ANTIBODY MEDIATED REJECTION AFTER KIDNEY TRANSPLANTATION

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Background: Bortezomib is used in antibody-mediated rejection (AMR) after kidney transplantation (KT) resistant to conventional treatment. We are going to talk about our experience using Bortezomib in immediate postoperative refractory AMR after KT.
Method: Between September 2012 and April 2015, we reviewed medical record retrospectively.
Result: We experienced 10 AMR cases which were managed with Bortezomib. PRA positivity over 50% was on six patients and crossmatching positivity on six. Donor-specific HLA antibody (DSA) was positive on six and four had moderate to strong intensity. Nine patients were diagnosed biopsy proven AMR and treatment started at POD 3.7 $\pm$ 2.1 days (0–8 days). Initial treatment performed by steroid pulse, ATG and plasmapheresis. Bortezomib started at POD 0–22 days. During the treatment, hemodialysis was needed in eight patients and was kept during 7–46 days but three patients were needed maintenance hemodialysis due to graft failure. Seven patients recovered from rejection; a patient at POD 21 and the others at 43–3 months. Only one patient had another rejection episode at POD 103. Thrombocytopenia and anemia accompanied commonly and needed repeated transfusions. It was continued till first month, and recovered gradually, and reached over 100K/mm3 in platelet and 10 mg/dl in hemoglobin at third month. DSA was negative in five patients on preoperative evaluation or at that time of rejection, so we considered non-HLA antibody mediated rejection. Three patients who were experienced graft failure had strong intensity against DSA about 8000–13000.
Conclusion: Bortezomib is effective treatment of immediate postoperative AMR after KT and represent good long term outcome. However, recipient with strong intensity of DSA maybe have limitation to treat. Recovery after Bortezomib treatment tend to slow, so we need to wait with sufficient and appropriate support and management.

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HAEMODIALYSIS MODULATES RISK PARAMETERS PREDICTING POST TRANSPLANT COMPLICATIONS

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Background: Chronic or intercurrent alterations of the immune system in patients with end-stage renal disease (CKD) and intermittent haemodialysis (CKD5D, HD) have been supposed for an acute rejection of renal allograft.
Methods: Leukocyte subsets in flow cytometry, complement activation and concentrations of TGFβ, sCD30 and interleukins in ELISA of fifteen patients eligible for renal transplantation were analysed before, during and after a regular HD.
Results: Before HD, median proportion of CD8+ effector cells (31.2%, reference range (ref.) 7.4–24.6%), CD8+ CCR5+ effector cells (9.3%, ref. <5.9%), HLA-DR+ regulatory T cells (25.1%, ref. 5.9–18.8%) as well as median concentration of soluble CD30 (80.1 ng/ml, ref. 7.7–60.5 ng/ml) were increased and naïve CD8+ T cells (16.5%, ref. 28.4–66.7%) were decreased. During HD, there was a significant decrease of CD4- CD8- T cells (4.2 to 3.4%, ref. 3–10.2%, $p < 0.001$), CD25+ T cells (25.1 to 26.6%, ref. 22.9–44.9%, $p = 0.026$), sCD30 (median after one hour 84.45 ng/ml to 85.96 ng/ml at the end, $p < 0.001$) and HLA-DR+ regulatory T cells (25.1 to 26.6%, $p = 0.005$). Regulatory T cells (6.2 to 7.2%, ref. 2.8–7.1%, $p = 0.003$) were increased.
Conclusion: HD might affect the allograft outcome by influencing T cell subsets (regulatory T cells, double negative T cells, natural killer T cells, CD8+ HLA-DR+ T cells, CD4+ T cells, CD4+ HLA-DR+ T cells) and the activation of the complement system.

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MONOCLONAL GAMMOPATHY OF RENAL SIGNIFICANCE IN KIDNEY TRANSPLANTATION: DE NOVO C3 GLOMERULONEPHRITIS

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Background: Monoclonal gammopathy of renal significance (MGRS) includes renal disorders caused by monoclonal immunoglobulin produced by a non malignant B-Cell. MGRS spectrum is wide, involving a recent pathology such as C3 glomerulonephritis (C3 GMN). Just a few cases of C3 GMN in the context of MGRS after kidney transplantation (KT) have been published.
Methods/Materials: We present 3 patients that developed C3 GMN after KT in the context of MGRS.
Results: 74 years old (y/o) man with chronic kidney disease (CKD) of unknown origin. KT in 2006. Stable renal function (RF) and no proteinuria (prot). January 2016: RF decreased and prot reached nephrotic level. KB: C3 GMN. Proteinogram: IgM K monoclonal, 2.8 g/l. Negative BJP. Normal medullar biopsy (NMB). We treated with Rituximab without response and started dialysis January 2017. 61 y/o woman with CKD of genetic origin. KT in 2010. Baseline RF: Cr 180 μmol/l and prot 0.5 g/24. July 2016 prot increased to 9gr/d and RF decreased. KB: C3 GMN and severe IFTA. Proteinogram: IgG K monoclonal, 1.9 g/l. Negative BJP. NMB. BJP: light k chain (0.26 g/l). We performed no specific treatment due to IFTA and poor RF. Started dialysis November 2016. 66 y/o woman with CKD due to Polycystic kidney disease. First KT in 2004. Correct RF without prot. April 2014: increased prot reaching nephrotic level and RF decreased. KB: C3 GMN and CHR. RF decreased and started dialysis August 2014. May 2016: second KT. Correct RF without prot until 6 months after KT, prot = 1 g/days. Proteinogram: IgA L monoclonal, 2.7 g/l. Negative BJP. NMB. We are waiting KB result.
Conclusions: MGRS in the shape of C3 GMN after KT shows up with nephrotic prot and fast decreasing RF. May appears in the context of any kind of monoclonal Ig and with low concentration of monoclonal Ig. Use of Rituximab or other treatments such Bortezomib may be useful if administered at the beginning of the disease. Is necessary to perform studies to define which one is the best treatment for each clinical situation.

Clinical Kidney Rejection

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PROTEASOME INHIBITION TO PREVENT CHRONIC ANTIBODY-MEDIATED REJECTION (AMR) AFTER ECULIZUMAB RESCUE FROM ACUTE AMR?

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Background: Eculizumab has the potential to effectively prevent and treat acute AMR. The Cornell data (Am J Transplant 2015), however, indicate that eculizumab does not prevent chronic AMR in recipients with persistently high donor-specific antibodies (DSA).
Case Reports: We here present two cases of successful eculizumab rescue from treatment resistant (steroids, immunoadsorption (IA), IVIG, rituximab, bortezomib) acute AMR in sensitized renal transplant recipients on Tacr/MPA/steroids (ATG induction) who both showed a slow but steady decline of the IgG DSA MFI values after two cycles of bortezomib and continuous eculizumab treatment resulting in long-term stable graft function (patient 1: S-Cr 1.7 mg/dl, 52 months posttransplant; patient 2: S-Cr 1.1 mg/dl, 24 months). Patient 1 (deceased-donor 2nd transplant, PRAmax 2%, pretransplant anti-HLA DQ7 IgG DSA) experienced an acute also ATG-resistant AMR on day 44 (C4d negative). The DSA nearly disappeared after bortezomib treatment, but completely recurred one year later. Because of moderate transplant glomerulopathy, bortezomib and rituximab were given at 47 months without a DSA response so far. Patient 2 (6 pregnancies, first renal transplant from her husband, PRAmax 0%; pretransplant multiple IgG DSA; desensitization: IA/IVIG, rituximab) showed a C4d-positive acute AMR on day 14 (IgG anti-HLA DQ7 and anti-HLA DQA1*05:05 DSA) with successful eculizumab rescue. Although neither DSA against HLA nor against non-HLA antigens were detected after bortezomib treatment, an acute AMR (again responsive to eculizumab; with low-grade transplant glomerulopathy) occurred after increasing the interval of eculizumab administration.
Conclusion: Our case reports show that continuous eculizumab treatment in combination with bortezomib-induced DSA suppression may enable long-term stable graft function, but even this combined treatment does not completely prevent chronic AMR, especially when a strong IgG anti-HLA class II antibody recurs.

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P491 PASSENGER LYMPHOCYTE SYNDROME AFTER ANTIREJECTION THERAPY

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Passenger lymphocyte syndrome (PLS) following ABO compatible but not identical transplantation is known to have several risk factors, which are donor blood group O to recipient blood group A or B, Previous RBC sensitization, Cyclosporine A (CsA) treatment.. And so it has been suggested that the relative recipient T-lymphocyte inhibition allow to maximize antibody production. We report a case of PLS after accelerated acute rejection treatment with T-cell depleting therapy.

32 female received living donor kidney from her brother on April 2015. The recipient's blood type was A Rh positive (A+), and the donor-her brother was O Rh positive (O+). 3 units of A+RBC transfusion was done perioperatively. Induction immunosuppression with methylprednisolone, Tacrolimus, mycophenolic acid was started. On the postoperative day (OPD) 2, the urine output was about 10000 cc and the serum creatinine (Cr) was dropped to normal range (1.28 mg/dl). On OPD 3, she became pyrexic, urine output decreased and serum Cr rose to 2.22 mg/dl. So acute accelerated rejection was suspected and thymoglobulin was started in 1 mg/kg dose. Tacrolimus was stopped. On POD 6, urine output resumed and serum creatinine fell to 1.18 mg/dl. On POD 9 she received 2 units of A+ RBC transfusion. On the postoperative day 12. The patient became pyrexic. Serum creatinine rose to 3.12 mg/dl, the Hemoglobin fall to 6.1 mg/dl and the total and direct bilirubin increased. Isoagglutinin test was 1:8 positive for Anti-A IgG. PLS was diagnosed. Plasmapheresis was done for 2 times and O+ RBC transfusion was done. On the 25th postoperative day, she discharged with well functioning kidney without anemia. Perioperative recipient type RBC transfusion in ABO minor mismatch renal transplantation and T-cell depleting therapy may be a precipitating factor for late PLS. And the final POD 9th day recipient type RBC transfusion evoked the brisk PLS.

P492 EXTRACORPOREAL PHOTOCHEMOTHERAPY FOR THE TREATMENT OF TRANSPLANT GLOMERULONEPHRITIS

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Background: Extracorporeal photochemotherapy (EPCT) is used for the treatment of rejection in transplantation of heart, lung, liver and kidney. We have used it for the first time in the treatment of graft glomerulonephritis.
Methods/ Materials: 1 man at the age of 38 years has received EPCT procedures. After 1 year from transplantation he has noted increased blood pressure, weight gain, swelling of legs. Laboratory revealed proteinuria to 12 g/day, serum creatinine level increasing to 0.23 mmol/l and urea to 17.9 mmol/l, decreased estimated glomerular filtration rate (EGFR) to 33.8 ml/min. By the biopsy – transplant glomerulonephritis (focal and segmental glomerulosclerosis). After pulse – methylprednisolone therapy for a total dose of 2 g and 1 session of plasmapheresis, which intensified the proteinuria (up to 15 g/day), there was hypoproteinemia (albumin 22 g/l). If there was no positive effect we have taken the decision to hold 7–8 sessions of EPCT 2–3 times a week.
Results: We noted positive dynamics: proteinuria after 3 sessions amounted to 12 g/day, decreased creatinine level to 0.15 mmol/l, urea – 13.4 mmol/l, improving blood flow to the kidney cortex according to ultrasound, resistance indices tended to the normal range. At the end of the treatment the daily proteinuria was reduced to 5 g/day, serum azotemia was normalized (creatinine 0.12 mmol/l, urea 10.4 mmol/l), EGFR 61.8 ml/min, in parallel with stabilization of blood pressure and legs swelling disappearing. At 6 months post-treatment biopsy was not shown any evidence of progression of glomerulonephritis. After 4 years patient is in good condition. Blood pressure is not higher than 140/90 mmHg, edema is not observed, serum creatinine – 0.09 mmol/l, urea – 10 mmol/l, EGFR – 80.5 ml/min, the daily proteinuria – 0.69 g/day.
Conclusion: This clinical example shows that ECPT can be applied to normalize graft function and can stop the process of focal and segmental glomerulosclerosis progress.

Clinical Kidney Rejection

P493 PREDICTORS OF EARLY ACUTE OR CHRONIC REJECTION AFTER DELAYED GRAFT FUNCTION: A MONOCENTRIC EXPERIENCE OF RENAL TRANSPLANT FROM DECEASED DONORS

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Background: Delayed graft function (DGF) is a known risk factor for rejection of kidney transplant (KT). However, little is known about its interaction with traditional immunological risk factors and if type of immunosuppressive protocol can modulate the impact of DGF on rejection.
Methods/Materials: We retrospectively analyzed all kidney transplants from deceased donor at our Center from 01/11/1998 to 31/12/2015 and developed DGF, in order to identify predictors of early acute or chronic rejection after DGF. We compared clinical-laboratory features and immunosuppressive protocols of patients who developed biopsy-proven rejection within 1 year of KT with those of patients who did not. We assessed serum creatinine (sCr) and proteinuria (PTO) at 1, 3 and 5 years after rejection.
Results: Overall 1032 patients received KT and 243 (23.54%) developed DGF within the observation period. Among those who had developed DGF, 113 (46.5%) underwent renal biopsy on clinical grounds, after a median time of 26 days. Within this group, 38 patients (33.6%) were diagnosed with acute or chronic (20 Antibody-mediated, 10 Cell-mediated; 8 mixed) (Group R) and 75 patients (66.4%) were diagnosed with other pictures, mainly calcineurin inhibitors (CNI) nephrotoxicity (53.3%) and acute tubular necrosis (34.7%) (Group NR). Comparative analysis showed that triple maintenance therapy with CNI+ Mycophenolate mofetil (MMF) + Steroid (S) was more represented in Group NR (p 0.02). There was no difference in sCr and PTO between two groups after 5-year follow-up.
Conclusions: Triple maintenance therapy CNI+MMF+S was associated with a lower risk of early acute or chronic rejection after DGF as compared with other immunosuppressive protocols, whereas no traditional immunological risk factor turned out to predict the risk of rejection after DGF in our population.

Clinical Kidney Rejection

P494 SOLUBLE CD16 (SCD16) IS AFFECTED BY IMMUNOSUPPRESSIVE DRUGS AND ASSOCIATES SIGNIFICANTLY WITH ACUTE RENAL REJECTION

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Serum levels of sCD16 depend mainly on the number of CD16 positive cells and on the density of CD16 expression at the cell membrane. CD16 expression is expressed mainly by neutrophils and monocyte lineage cells, natural killer cells and can mark a dendritic cell subtype with higher antigen presenting capacity. Other cell types seem to be able to express it, including capillary cells during transplant heart rejection. sCD16 was reported to be unaffected by calcineurin inhibitor (CNI), rapamycin (Rapa) and mycophenolate mofetil. Previously we reported that CD16 expression is significantly higher in aspiration biopsy of acutely rejecting kidney transplants. We studied sCD16 in cadaver kidney allograft recipients (KTx). KTx receiving different treatments, CNI ($n = 13$), RAPA ($n = 8$), thymoglobulin induction ($n = 10$), anti-IL-2 receptor antibody ($n = 15$), all stable patients and patients with acute ($n = 18$) and chronic ($n = 7$) rejection confirmed by biopsy. Aspiration biopsy was done on day 7 post-transplant in stable cases and on rejection day. Samples were cultured and supernatants were collected at day two of incubation and analysed for sCD16 by ELISA. No significant differences for patients' demographics were observed among groups. Results are expressed in ng/ml, quartiles. CNI stable 21–25 ng/ml, anti-IL-2 receptor antibody 24–27, Rapa 27–40, thymoglobulin induction 21–23, acute rejection 25–38 and chronic rejection 26–28. The value of sCD16 was significantly lower among thymoglobulin as compared to CNI ($p = 0.008$), as compared to anti-IL-2R ($p = 0.035$) and anti-IL-2R was lower as compared to Rapa ($p = 0.028$). sCD16 was significantly higher in acute rejection than in stable cases ($p = 0.014$). Our results display for the first time a significant association between sCD16 and acute rejection in human kidney transplant and contrary to others we saw different effects of immunosuppressive drugs, the higher down-modulation observed with thymoglobulin.

P495

EXTRACORPOREAL PHOTOPHERESIS IN REFRACTORY CELLULAR REJECTION OF RENAL ALLOGRAFT

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Background: Extracorporeal photopheresis (ECP) is an immunomodulatory procedure widely used in T- cells mediated disorders such as cutaneous T-Cell lymphoma, graft versus host disease and in prophylaxis and treatment of acute rejection in heart and lung transplant; nevertheless, experience in the treatment of acute rejection in renal transplantation is limited.
Methods/Materials: We present two recipients of deceased-donor renal allograft with different kinds of acute rejection showed in percutaneous biopsy (one with a Banff IIA acute cellular rejection developed after the treatment of a IB cellular rejection and the other one with borderline changes after finishing conventional therapy of a cellular and humoral mixed rejection) treated with ECP (equipment Therakos UVAR XTS System) in addition to conventional therapy. Laboratory results for anti-HLA, anti-MICA and anti-endothelial antibodies were negative. One patient received fourteen ECP sessions with a weekly periodicity in a first cycle and 6 sessions with a monthly periodicity nine months after beginning the treatment. The other one received thirteen ECP sessions with a weekly and be weekly schedule.
Results: Progressive improvement of renal function was observed in both patients after the procedure, without any kind of treatment-related infectious complications. Six months after finishing the rescue treatment, renal function remains stable in both patients (serum creatinine (Crs) 1.9 mg per decilitre (mg/dl) in one case and Crs 1.5 mg/dl in the other one) and the 24-hour proteinuria is under 500 mg in both cases.
Conclusion: Photopheresis as a rescue treatment in refractory cellular rejection of renal allograft seems to be safe and useful. The mechanism behind the beneficial effects is probably related to the progressive increase of regulatory FoxP3+ T-cells (Tregs) and a change in the pattern of synthesis of interleukins. Studies with larger patient populations are needed to confirm these results.

P496

RAPID GRAFT LOSS DUE TO RECURRENCE OF UNDIAGNOSED PRIMARY HYPEROXALURIA

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Introduction: Primary hyperoxaluria (PH) is a rare autosomal recessive disorder leading to systemic deposition of calcium oxalate crystal causing nephrocalcinosis, nephrolithiasis, and chronic kidney disease. A case record of a young woman with end-stage renal disease is being presented who underwent paid organ transplantation and developed allograft loss at two weeks due to recurrence of undiagnosed PH.
Case Records: The patient is a 28 year old female patient, was known to have hypertension and hyperlipidaemia for few years. She presented with end-stage renal disease and commenced on haemodialysis in December 2014. She was found to have bilaterally small kidneys; hence kidney biopsy was not performed. In February 2016, she received kidney transplantation from donor a 38 years old paid male donor (no further information was provided). Post-operative period was complicated with severe bacterial sepsis and development of a lymphocele. Two weeks later there was a consistent decline in graft function, and eventually, she required maintenance haemodialysis. Renal allograft biopsy showed extensive calcium oxalate crystals deposition, suggestive of recurrence of primary hyperoxaluria. Moreover, patient contracted hepatitis C and developed severe erythropoietin-resistant anaemia.
Discussion: In 26% of patients with PH, the disease manifests early in life as infantile oxalosis. However, in 10% of cases of PH, the diagnosis is made as recurrence, following kidney transplantation. Since the primary cause of the disease is the deficiency of a liver enzyme, combined liver and kidney transplantation is the treatment of choice for these patients.
Summary: Recurrence of PH is recognised, leading to graft loss. Despite this in 10% of patient diagnosis is done retrospectively. This case demonstrated the need for careful screening of PH in young patients prior to transplantation. There is a dire need for pre-transplant counselling to increase awareness of life-t.

Clinical Kidney Rejection

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A SINGLE CENTER THREE YEARS PROSPECTIVE OBSERVATIONAL STUDY OF OUTCOME OF ABO INCOMPATIBLE RENAL TRANSPLANT

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Background: Nine consecutive patients from ABO incompatible donor renal transplant were observed in this study regarding their outcome over a period of three years in Prince Sultan military medical city.
Method: All patients received pre-transplant Rituximab (375 mg/m^2) and immunoglobulin 2 g/kg (IVIG) as basic desensitization protocol regardless of their anti AB titer. Immunoadsorption (IA) or plasmapheresis (PP) was offered to those who had Ant-AB titer above 1:4 after Rituximab and IVIG.
Results: There were five male and 4 female recipients. Age ranged from 14 to 56 years with mean age being 33.78. The mean donor age was 24.5 years. One out of the nine donors was a deceased donor. 6 patients required pre and post-transplant IA. One patient did not require post-transplant IA. 2 patients did require neither pre nor post IA. Only one patient had acute rejection who received kidney from blood group A1 donor. This patient also failed to respond to Immunoadsorption post-transplant however responded to splenectomy to revert rejection. Currently the serum creatinine of this transplant group ranges from 50 to 136 μmol/l with a mean average of 93 μmol/l.
Conclusion: Patients with low Anti-AB titer has less chances of rejection, Blood group A1 is most immunogenic.

P498

THERAPEUTIC EFFECTS OF THYMOGLOBULIN ON ACUTE ANTIBODY-MEDIATED REJECTION IN KIDNEY TRANSPLANTS

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Background: Rabbit anti-thymocyte globulin (rATG) is originally used in prevention and treatment of T cell-mediated rejection (ATMR). We report here the usefulness of rATG for acute antibody-mediated rejection (AAMR) in kidney transplants.
Methods: We administered rATG in 5 cases with steroid-resistant AAMR. We described the characteristics and courses of those cases, and evaluated the effect of rATG on AAMR.
Results: A mean age of 5 patients was 57.3 ± 11.3 years. All cases were blood type compatible transplants, and 2 of them had donor-specific antibodies. AAMR occurred within a week after transplantation (Tx) in 3 patients and three months after Tx in 2 patients. Steroid pulse therapy was initially performed, however, that was not effective in all cases. Thereafter, rATG (1.5 mg/kg) was administered for 5 to 7 days. The mean serum creatinine level before AAMR and at AAMR onset was 2.12 ± 1.41 mg/dl and 3.65 ± 2.24 mg/dl. After rATG treatment the graft function recovered and the mean serum creatinine level decreased to 1.47 ± 0.55 mg/dl. Though all patients had cytomegalovirus (CMV) antibody (D+/R+), CMV infection occurred in 4 patients. The interval between rATG treatment and CMV infection was 20.8 ± 5.9 (13–30) days. CMV viremia developed in 2 patients, CMV syndrome in one patient, and CMV disease (enteritis) in one patient. All CMV infections were successfully treated with valganciclovir. All cases have been doing well after rATG treatment.
Conclusion: The rATG was effective for treatment of steroid-resistant AAMR. rATG is an additional option for treatment of AAMR.

P499 ACUTE AND CHRONIC ACTIVE ANTIBODY MEDIATED REJECTION IN KIDNEY TRANSPLANT RECIPIENTS: PROGNOSIS AND TREATMENT

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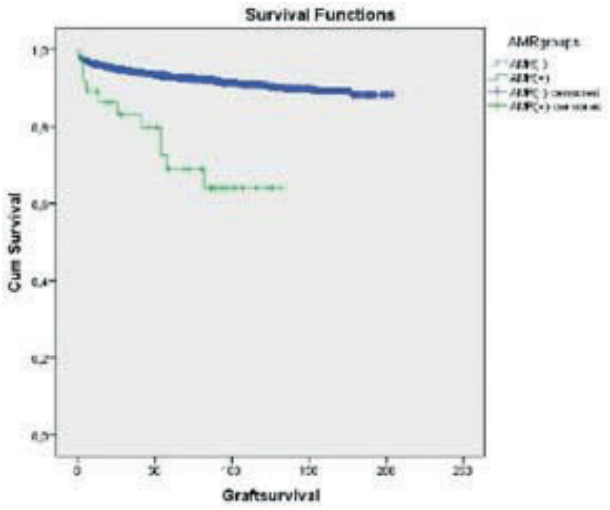
Background: This study was to evaluated prognosis and effectiveness of treatment protocols in acute and chronic active antibody mediated rejections (AAMR, CAAMR) in kidney transplant recipients.
Materials and Methods: This study included 2573 patients and divided to two groups: Group 1: 38 (AAMR: 15/ CAAMR: 23, male/female: 22/16, mean age ± sd: 37 ± 12.3), Group 2: 2537 patients (1717/820, 38.1 ± 12.4). There were no significant differences in terms of genders, age, donor types, lymphocyte cross match, mismatch numbers, induction and immunosupressive therapy modalities. Tacrolimus based therapy was higher in groups. Diagnosis of rejection was confirmed by biopsy. Different combinations of rituximab (375 mg/m^2), immunoglobuline (2 gr/kg), plasmapheresis (30 ml/kg/day), prednisolone and anti-thymocyte globulin were used for AMR. The rate of diffuse C4d positivity in peritubulary capillaris was shown 97%, neutrophilic infiltration in glomerulary and peritubulary capillaris was shown 73.7%, interstitial inflammation was shown all recipients as 73.7% mild, 23.7% moderate, 2.6% severe levels. SPSS 20.0 software programme were used for statistical analysis.
Results: Demographic features were similar between groups. Graft survival rates was lower in group 1 (1./3./5./10./15. years % 89/96- 83/94- 69/93- 64/90- 64/88, p: <0.001, respectively). Patient survival rates was similar between groups (p: 0.996). The rates of delayed graft function (26.3%/ 18.9%, p: <0.001), chronic allograft dysfunction (42.1%/ 7.3%, p: <0.001), plasmapheresis needs after transplantation (89.5%/ 3.5%, p: <0.001), cytomegalovirus viremia (5.3%/ 1.1%, p: 0.015), BK virüs viremia and nephropathy (10.5%/ 1%, p: <0.001), serum creatinine levels in last control (2.1 ± 0.9/1.2 ± 0.5, p: <0.001) were higher in AMR group.

Conclusion: Graft survival rate and graft function were worse in AMR group. We are thinking, early diagnosis and treatment are very important for AMR.



P500 COMBINATION THERAPY OF RITUXIMAB AND INTRAVENOUS IMMUNOGLOBULIN AS AN EFFECTIVE TREATMENT FOR CHRONIC ANTIBODY-MEDIATED REJECTION IN KIDNEY TRANSPLANT RECIPIENTS

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Background: Chronic antibody-mediated rejection (CAMR) is a representative cause of chronic allograft loss. Several studies have cited combination of rituximab and intravenous immunoglobulin (IVIG) as a treatment for CAMR, but the effects are still controversial.
Objectives: We investigated the efficacy of rituximab and IVIG on the progression of CAMR in kidney transplant recipients (KTRs).
Methods: We retrospectively analyzed 27 KTRs with CAMR diagnosed by allograft biopsy using the Banff 2005 classification. We divided into two groups as follows: combination group treated with rituximab (375 mg/m^2) and IVIG (2 g/kg) and control group not treated or used different protocols such as rituximab or IVIG only, steroid pulse therapy (non-rituximab and IVIG group). The change of graft function, and factors associated with graft survival were analyzed between two groups.
Results: There were no significant differences in baseline characteristics and immunologic findings between two groups. Proteinuria at diagnosis of CAMR was significantly higher in rituximab and IVIG group compared with non-rituximab and IVIG group (p = 0.047). Among 9 patients in rituximab and IVIG group, 4 (44.4%) patients were progressed to graft failure. Among 18 patients in non-rituximab and IVIG group, 11 (61.1%) patients were progressed to graft failure. The changes in graft function were less decreased in rituximab and IVIG group compared with non-rituximab and IVIG group. High proteinuria at diagnosis (>1.3 g per day) was independent risk factor for graft failure in KTRs diagnosed to CAMR.
Conclusions: The rate of graft failure was lower and the decline of graft function was lesser in rituximab and IVIG group. In KTRs diagnosed to CAMR with high proteinuria, combination therapy of rituximab and IVIG showed less progression to graft failure compared with other therapy. Combination therapy with rituximab and IVIG could be an effective treatment of CAMR in KTRs.

P501 A CASE OF PREEMPTIVE DESENSITIZATION, TRANSPLANTATION, AND EARLY ANTIBODY MEDIATED REJECTION AND RESCUE IN A NEGATIVE FLOW CROSS-MATCH AND PRETRANSPLANT DONOR-SPECIFIC ANTIBODY

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Pre-transplant (Tx) presence of donor specific HLA antibodies (DSAs) has been correlated with post-transplant rejection. But the clinical relevance of pre-

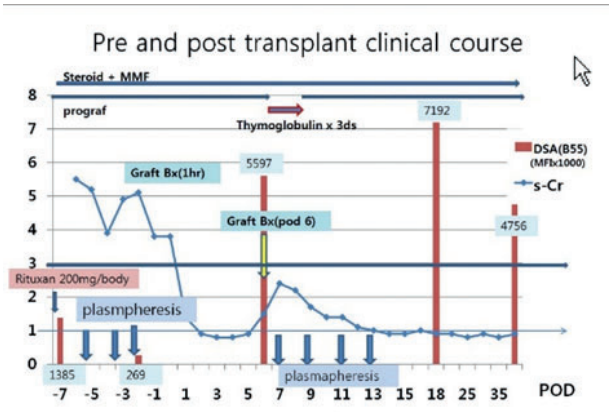

Fig 1. Pre and post transplant clinical course. DSA, donor specific antibody; POD, post-operation day; Bx, biopsy. S-Cr, serum creatinine; Rituxan,rituximab

Tx DSAs in flow crossmatch negative kidney transplant recipients remains unclear. Here we report the successful treatment of early acute antibody mediated rejection (AMR) that is occurred despite of preemptive desensitization in a negative flow cross-match and pre-Tx DSAs. A 34-year-old female underwent kidney transplantation from her husband in February 2017. She was treated pre-operatively with rituximab (200 mg/body) and three times of plasmapheresis because DSAs detected by Luminex Single Antigen Bead (SAB) assay in the absence of positive complement-dependent cytotoxicity (CDC) crossmatch and flow crossmach. She was treated with Tacrolimus and Mycophenolate mofetil and prednisolone and Simulect (an IL-2 blocking agent). After transplantation, the renal allograft functioned immediately. On POD1, the serum creatinine was 0.9 mg/dl and 1 h protocol biopsy revealed nonspecific finding (fig 1). On POD6 her serum creatinine had increased from 0.9 to 1.5 mg/dl and episode graft biopsy showed peritubular capillaritis (ptc 2) and C4d deposition in PTC (fig 2). In that time, rechecked result of T-cell flow cross match was changed to positive from negative and DSAs still showed positive result (fig 1). On POD12, The serum creatinine fell to 1.1 mg/dl after 3 days of intravenous thymoglobulin and 4 times of plasmapheresis (fig 1). During last follow-up visit (POD 45) renal function had been maintained with a serum creatine level of 0.9 mg/dl despite presence of DSA (fig 1).

Clinical Kidney Immunology

P502 PASSENGER LYMPHOCYTE SYNDROME AFTER RENAL TRANSPLANTATION

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Immune hemolysis in one of the adverse effects that can occur following ABO blood group mismatched solid organ and/or bone marrow transplantation between donor and recipient. Understanding the clinical settings and the various causes is necessary for prompt diagnosis and appropriate management. One such condition is passenger lymphocyte syndrome (PLS). We report a cases of PLS occurring after renal transplants; a 46-year-old female renal allograft recipient of the B-positive blood group who received a kidney from an O-positive donor. Postoperatively, the patient showed decreasing hemoglobin (Hb) level and high heart rate which suspicious bleeding. The patient was transfused with B-group packed RBCs (PRBCs). In spite of transfusion, the patient Hb level showed more and more decreasing, re-operation was done, confirm the minor bleeding at surface of transplantation kidney and performed bleeding control. After bleeding control, the patient still showed declining hemoglobin level and was also transfused with B-group PRBCs, following which there was steep fall in Hemoglobin level. A request for pRBCs was sent to the blood bank and this time cross-match with B-group PRBCs showed incompatibility. Direct anti-globulin test (DAT) positive and anti-A antibodies were detected in recipient serum, confirming a diagnosis of PLS. The patient was managed with methylprednisolone and O-group PRBCs. Fortunately her condition improved and was discharged in stable condition.

Clinical Kidney Rejection

P503 COLONIC INTUSSUSCEPTION 14 YEARS POST KIDNEY TRANSPLANTATION

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A 48-year-old male kidney transplanted in 2002, induction therapy was Alemtuzumab followed by tacrolimus, sirolimus and prednisone. Nadir serum creatinine (cr) level was 1 mg/dl. At August, 2016, the patient was admitted with mild tenderness related to graft at right iliac region, cr 2 mg/dl, good urine output. Laboratory data showed white blood cell count (wbcs); 12,400/ml, platelet count; 175,000/ml, serum Albumin; 3.4 g/dl, Cholesterol; 260 mg/dl, tacrolimus trough level; 4.8 ng/dl, urine analysis; 5.2 g protein/day. Graft doppler ultrasound showed no abnormalities. Graft biopsy, revealed transplant glomerulopathy moderate degree with border line changes (g-1, t-1, i-2, v-0, c4d-4) according to Banff classification. In view of the daily rise of cr & borderline changes in the biopsy, methyl prednisolone 500 mg I.V. was given for 5 days. Sirolimus was shifted to mycophenolate mofetil with partial improvement in serum creatinine to 1.6 mg/dl on discharge. A week later, he was admitted with absolute constipation, rebound tenderness at right iliac region with stable vital signs. Laboratory results showed unremarkable findings except for a wbcs; 23,000/ml, platelet count; 175,000/ml. Multiple air fluid levels in erect & supine plain X-ray. Non-contrast CT abdomen revealed picture coops with intestinal intussusception. On urgent exploration, intestinal loops were distended with inflamed distended appendix & appendicectomy was carried out. Microscopically, the picture coops with catarrhal appendicitis. Patient discharged in stable condition with cr 1.4 mg/dl. Post transplantation lymphoproliferative disorder is not uncommon cause of intussusception. In our case, immunosuppression hindered acute appendicitis classic picture that overlapped with picture of graft tenderness and complicated with intussusception due to an imbalance in the longitudinal forces along the intestinal wall. However, the transplanted kidney was in the retroperitoneal space referred pain fro.

Clinical Kidney Histology

P504 POLYCYSTIC KIDNEY DISEASE AND INCIDENTAL RENAL NEOPLASM: A SINGLE CENTRE EXPERIENCE

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Background: Data for the risk of solid cancer in patients with autosomal dominant polycystic kidney disease (ADPKD) are scarce and it is unknown whether renal transplant recipients are at increase risk. The aim of this study is to elicit possible association between incidental renal neoplasm in end stage renal failure (ESRF) population.
Methods: Retrospective analysis from a prospective maintained database of the consecutive native nephrectomies in ADPKD patients. Surgery was performed at our institution via midline laparotomy, prior or after kidney transplant in the period between 2012 and 2017.
Results: Twenty-three patients underwent bilateral nephrectomy; 11/23 were male (48%) and 9/23 had previously received a kidney transplant (39%). Mean age was 53.6 years (36–68). Mean hospital stay was 10 days (6–20). Imaging before the operation was not suspicious for neoplasm in any case. All the patients had campath induction and tacrolimus-based maintenance immunosuppression. Indication for surgery were space (61%), recurrent cyst infection (39%), pain/discomfort (26%), haematuria (17%) and weight loss (4%). Complication rate: intraoperative bleeding (4%), collection (4%), prolonged ileus (8%). There was no mortality with a median follow-up of 15.6 months (4.5–60.1). Quality of life improved for all the patients. Histology showed 4 incidental lesions (17%): 3 papillary adenomas (13%) and 1 pT1a papillary renal cell carcinoma (4%). The last patient presented 13 years post-transplant with persistent haematuria. A total body CT after the operation did not show any secondary disease and no further oncological therapy was required.
Conclusions: In our experience, bilateral nephrectomy for patients with ESRF is safe and effective. It is also associated with an overall rate of 17% of incidental neoplasms, which assumes high importance in the context of immunosuppressed and transplanted patients.

Clinical Kidney Immunology

P505 COMPARISON OF KIDNEY TRANSPLANTATION OUTCOMES BETWEEN RECIPIENTS WITH ESRD DUE TO NEPHRITIC SYNDROME, NEPHROTIC SYNDROME OR PRIMARY DISEASES OF NON-AUTOIMMUNE ORIGIN

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Background: Kidney transplantation (KTx) is the treatment of choice for patients with end stage renal disease (ESRD) due to glomerular diseases, primary or secondary. The aim of this study was to compare outcomes of KTx among patients with nephritic vs. nephrotic syndrome as cases of ESRD.
Methods: We retrospectively compared the outcomes of KTx recipients with biopsy proven glomerular primary disease (PD), i.e nephritic and nephrotic syndrome, with those of KTx recipients with a PD of non-autoimmune origin. All

patients were transplanted during the period 1/1985–1/2015 and had 1 year of follow up post KTx or more.
Results: 180 KTx recipients with biopsy proven glomerular PD were identified, and a control group of 110 patients with PKD, hypoplastic kidneys or obstructive uropathy, as PD was selected. The two groups were similar with respect to baseline characteristics at KTx, but patients with glomerular PD, had received more grafts from living donors than the controls ($p = 0.02$), most of them (75.35%) had been treated with immunosuppressants prior to KTx ($p < 0.0001$) and had donor specific antibodies (DSA) less frequently.

Parameter (mean ± sd), %	KTx with glomerular PD = 180	Control group = 110	p-value
DSA pre-KTx	9	27.6	0.001
De novo DSA	15.6	18.4	0.68
Patients with acute rejection	9.6	8.1	0.68
Survival with functioning graft	77.6	95.3	0.0001
Graft survival	75.7	95.3	<0.0001
Graft survival (living donors)	80	100	0.02
Graft survival KTx after 2000	88.2	96.8	0.02
Ser creatinine at end fup (mg/dl)	1.7 ± 0.9	1.39 ± 0.6	0.007
Follow up time (months)	66 ± 52.3	58 ± .4	0.14

Conclusions: KTx recipients with a glomerular PD had inferior renal function and worst graft survival, compared to those with a PD of non-autoimmune origin. The difference in graft function and survival remained significant when the analysis was contacted per decade of follow up or was limited to living donor KTx. No differences in KTx outcomes were found between patients with nephritic and nephrotic syndrome as PD.

P506 EFFECTS OF DIFFERENT VOLATILE ANAESTHETICS ON CXCL9 AND CXCL10 IN KIDNEY TRANSPLANT SURGERIES

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Background: Kidney transplant is the gold standard in terminal kidney failure. Ischemia reperfusion damage is known to be affected by various factors in the perioperative period. Ischemic hypoxic damage increases local inflammation, which induces the secretion of proinflammatory cytokines from proximal tubules. Chemokines (CXCL9, CXCL10) are small proinflammatory mediators that have a significant role in leucocyte migration into the graft. Decreasing the inflammation, the protective effects of sevofluorane in ischemia reperfusion damage has been shown in heart surgeries. In our study, we aimed to compare the effects of sevofluorane and desfluorane on chemokines in transplant patients.
Methods/Materials: Seventy patients who underwent kidney transplant were included in the study. The patients were randomized into two groups. Anesthesia maintenance was provided using desfluorane in group D, and sevofluorane in group S, following the induction of similar anethesia for all patients. Demographic and immunologic data were recorded. CXCL9 and CXCL10 levels were studied using ELISA taken from serum and urine samples in the preoperative period, and postoperative day 1, 7, and month 1. serum creatinine was recorded simultaneously and eGFR were calculated.
Results: No significant difference was detected between the groups regarding the demographic data, preoperative and postoperative immunologic tests, and immunosuppressive treatments ($p > 0.05$). Urine and serum CXCL 9 and CXCL 10 levels in the preoperative period, on day 1, 7, and month 1 were similar between the groups ($p > 0.05$) No significant difference was detected regarding kidney functions and rejection risk in the preoperative period, day 1, 7, and month 1 ($p > 0.05$).
Conclusion: In our study, we found that two different inhalation agents desfluorane and sevofluorane had similar effects on serum and urine chemokine levels in the early postoperative period in kidney transplant patients

P507 CHARACTERISTICS OF SHORT-TERM RENAL TRANSPLANTATION IN ALGERIA: A TWO YEARS FOLLOW-UP STUDY

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Introduction: Renal transplantation (RT) is the best treatment of end-stage renal disease by improving life expectancy and quality of life and reducing medical expenses compared with maintenance dialysis. The number of RTs is growing up in Algeria during the last decade. In our study, we investigated the characteristics of short-term RT in Algeria.
Material and Methods: Our prospective study included 52 renal transplant patients (RTR) between 2015 and 2016 (32 men and 20 women, mean age 32.9 ± 11.1 years). These patients were followed in both of the Immunology and the Nephrology Departments of the Beni Messous Hospital of Algiers, Algeria. RT was performed from living related donors (LRD):27 men and 25 women, mean age 41 ± 10 years. ABO blood group system compatibility was respected in all the cases. HLA typing was performed using the polymerase chain reaction/sequence specific priming (PCR-SSP) method. Anti-HLA antibodies were detected by the immunoenzymatic assay ELISA. Cross matches (CxM) were performed by the anti-human globulin enhanced complement-dependent cytotoxicity (AHG-CDC) method.
Results: The most frequent donors were siblings (52%), followed by parents (33%) and spouses (15%). Concerning the HLA compatibility between donors and recipients, haplo-identity took the leading position (77%).8 donor-recipient pairs had up to 3 HLA mismatches (15.4%), and 4 were HLA identical (7.6%). Before RT, only 11 recipients were sensitized to HLA antigens (21.1%):10 to the class I and 1 to the class II. All AHG-CDC CxM were negative. After RT, 17 RTR were lost to follow-up (32.7%). Only 2 non sensitized recipients developed anti-HLA antibodies after 7 and 12 months respectively, with a clinical suspicion of acute antibody-mediated rejection (ABMR).
Conclusion: RT from RLD and in non-sensitized recipients appears to have a good short-term outcome in Algeria. However, we should increase the monitoring frequency to reduce lost to follow-up of recipients and prevent the ABMR in short and long term.

P508 TREATMENT OF EARLY ACCELERATED ACUTE AMR WITH ECULIZUMAB IN HLA-ANTIBODY INCOMPATIBLE RENAL TRANSPLANTATION

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Background: Early accelerated antibody-mediated rejection (AMR) within 2 weeks after HLA-antibody incompatible (HLAi) renal transplantation is often refractory to standard treatment and often results in graft loss. The most common mechanism of AMR is binding of antibodies to antigens on endothelial cells in the kidney followed by complement activation. Eculizumab is a monoclonal antibody that specifically targets and blocks action of complement.
Methods: Over a period of 6 years 6 patients who underwent HLAi living donor renal transplantation were treated with eculizumab. The initial protocol was 5 doses on weekly bases. One of the patients had a 9 weeks course and one a 4 weekly course. All patient were receiving standard AMR treatment including antibody removal.
Results: Mean age of patients treated was 51 ± 14 years (ranged 26 – 66) and all were female. Mean baseline donor specific antibody (DSA) level for HLAi patients was 49280 ± 21230 MFI (ranged 26526 – 84022). 2 patients died with no evidence of graft recovery before finishing a scheduled treatment with eculizumab. Follow-up of patients ranged between 2 months and 2 years. Mean creatinine on the last visit was 112 ± 39 μmol/l. Efficacy of eculizumab in our cohort was 67%. There was no statistically significant difference in either baseline DSA pre transplant or highest level of DSA post transplant between patients whose graft function did and did not recover. Mean DSA value on the last follow up was 14710 ± 11342 MFI (ranged 3251 – 26218).
Conclusions: Eculizumab can be successful in treatment of accelerated antibody mediated rejection in HLA-antibody incompatible renal transplantation. Multicentre analysis of treatment outcomes may allow better identification of patients who would likely benefit from short course of eculizumab as a salvage therapy. 4 weeks of treatment may be sufficient to achieve graft recovery and decrease financial burden of anti-rejection treatment.

P509

COMPLEMENT C1Q BINDING DONOR SPECIFIC ANTIBODIES AND KIDNEY ALLOGRAFT OUTCOMES: A RETROSPECTIVE STUDY

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Introduction: The C1q in vitro assay is used to assess antibody pathogenicity in renal transplantation due to the known role of complement in antibody mediated injury. C1q-binding capability of Donor Specific Antibodies (DSA) have been associated with the occurrence of antibody mediated rejection (AMR) episodes. However, its impact on allograft survival was inconsistently shown in literature.
Methods: C1q determination was performed in 42 patients with positive DSA. Three patients were excluded by absence of biopsy. According to the histologic evidence of rejection, groups were divided in: group 0 – without AMR; group 1 – AMR with C1q positive and group 2 – AMR with C1q negative. Outcomes were analyzed after a median of 28 months of follow up.
Results: From a total of 39 patients, 22 (56%) presented C1q positive and 17 (44%) C1q negative results. In patients with C1q positive there were more histologic findings of acute and chronic AMR (36% vs 12%; $p = 0.07$). Allograft lost occurred only in one patient, with chronic humoral rejection and a C1q positive assay, determining similar allograft survival between groups. Serum creatinine levels variability was also similar in all 3 groups. Analyzing the data on anti-rejection therapy, rituximab ($p < 0.01$), intravenous immunoglobulin ($p < 0.05$) and plasmapheresis ($p < 0.01$) were prescribed more often in Group 1. Utilization of corticoids was similar among groups. Group 0 was the one with more episodes of urinary tract infection per month ($p < 0.05$), and more infections by CMV and BKV ($p > 0.05$).
Conclusions: Allograft survival was not worse in patients with DSAs binding C1q, despite a clear trend towards worse histological findings. The superior use of anti-rejection immunosuppressants in those patients is an important hallmark, suggesting that C1q assay can be valuable for an early diagnosis of patients at greater risk of rejection.

Clinical Kidney Rejection

P510

FAILURE OF ECULIZUMAB TREATMENT FOR THROMBOTIC MICROANGIOPATHY (TMA) ASSOCIATED WITH ACUTE HUMORAL REJECTION IN A RENAL TRANSPLANT RECIPIENT

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Introduction: The atypical hemolytic uremic syndrome (aHUS) is a rare cause of end-stage renal disease but is described to recur in 6% up to 71% of renal transplant recipients within the first posttransplant year. Neither the frequency nor the optimal treatment modality of secondary TMA associated with acute rejection is well characterized.
Case Report: We report on a 59 year old patient with ADPKD who received a preemptive live-donor renal transplant from his sister. After an uneventful posttransplant course with good graft function, the patient experienced a biopsy-proven acute antibody-mediated and interstitial rejection on day 40. As treatment (steroid pulses, rabbit ATG and immunoabsorption / IVIG) showed no response, eculizumab therapy was initiated when TMA was detected together with ongoing transplant glomerulitis (without any interstitial rejection) in the repeat biopsy. Despite complete inhibition of both the classical and alternative complement pathways, graft function showed no improvement and a final biopsy detected interstitial fibrosis and tubular atrophy of the cortex (65% concerned; no TMA or rejection). We found no donor-specific antibodies (DSA), neither against HLA (IgG, IgM) nor against non-HLA antigens (MICA, antiphospholipid antibodies, angiotensin II- and endothelin-receptor antibodies, anti-Fga antibodies). Furthermore, T- and B-cell crossmatches were negative, as were the ELISA crossmatch and anti-endothelial cell crossmatch. Genetic testing found no mutation of the investigated genes for aHUS.
Conclusion: Our report describes an uncommon case of secondary TMA associated with acute humoral rejection, without detection of any DSA. Even eculizumab rescue for TMA associated with ongoing humoral rejection as detected in the repeat biopsy was unsuccessful despite effective complement inhibition. Whether an earlier eculizumab initiation would have prevent TMA and graft failure, is a point of discussion.

Clinical Kidney Immunology

P511

POSITIVE VIRTUAL CROSSMATCH WITH NEGATIVE FLOW CROSSMATCH RESULTS IN THREE CASES

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Pre-transplant (Tx) presence of HLA antibodies (HLA-Ab) especially donor specific antibodies (DSA) has been correlated with post-Tx rejection. While crossmatch (XM) is the specific method to identify DSA, logistical reasons prevent performing a prospective XM in all transplants. In such cases DSA as identified by solid-phase assay (SPA) are being used to perform a virtual crossmatch (VXM). We present three cases of kidney transplants (two in pre-Tx and one in post-Tx), for which testing detected a presumptive DSA with discordant results: a negative flow cytometric crossmatch (FXM) and anti-human globulin enhanced complement-dependent cytotoxicity crossmatch (AHG-CDC-XM) and a positive VXM using SPA (Lifecodes Single Antigen LSA, Immucor). The first case is HA, a 43 years old man in which two anti-HLA class I DSA were identified by SPA with C*05:01 and C*06:02 specificities and mean fluorescence intensities (MFIs) of 1250 and 1500 respectively (the potential donor is his wife, 30 years old). The second case is CS, a 20 years old woman in which one anti-HLA class II DSA was identified by SPA with a specificity DQB1*03:02 or DQ8 and a MFI of 3500 (the potential donor is her mother, 55 years old). The last case is HA, a 13 years old boy in which one anti-HLA class I DSA was developed 11 months after Tx and identified by SPA with a specificity A*01:01 and a MFI of 2500 (the donor was her mother, 40 years old). The first two recipients are receiving a desensitization treatment before considering Tx. For the third one, a kidney biopsy concluded to a chronic active antibody-mediated rejection. Interestingly, these cases demonstrated the higher sensitivity of SPA for DSA identification than FXM, and the importance of the VXM before and after renal Tx, especially for antibodies with a MFI less than 4000.

Clinical Kidney Rejection

P512

DE NOVO DONOR SPECIFIC AND NON- DONOR SPECIFIC HLA ANTIBODIES AND SUBCLINICAL ANTIBODY MEDIATED REJECTION IN KIDNEY TRANSPLANT RECIPIENTS-12 MONTHS PROTOCOL BIOPSY STUDY

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The association of Donor-Specific HLA Antibodies (DSA) with antibody-mediated rejection (AMR) is already well known and confirmed by many studies. The role of circulating Non-DSA HLA (non DSA) antibodies (Atb) is still controversial. The aim of our study was to investigate the clinical importance of DSA and non DSA in clinical overt and silent AMR in a 12 months protocol biopsy study.
Methods: 54 with low immunological risk, living donor kidney transplant recipients were involved in a prospective study. ATG or Simulect induction and regular triple drug immunosuppression was used under the standard condition. De Novo DSA and non-DSA were followed before, 3, 6 and 12 months after the surgery with Luminex SAB, (MFI >800 were considered as positive). After 12 months a routine protocol biopsy was performed in all recipients. The presence of AMR was confirmed according to the BANFF 2013. A semiquantitative analysis of complement 3 with immunofluorescence was performed. All recipients were followed for kidney function (GFR) and proteinuria.
Results: In 28 (52%) HLA atb were detected. 5 (9%) in DSA and 23 (42%) in non-DSA group (gr). DSA and non DSA belonged to anti- Class2 and anti-Class 1 atb with mean MFI of 4081,71 (range 983–8790) and 2284.43 (range 876–3347), respectively. 4 pts from DSA group revealed overt deterioration of kidney function and appropriate AMR treatment. One pt in DSA and 12 pts in non-DSA gr approached to criteria for AMR with normal graft function. The usual phenotypes were: microcirculation inflammation in 5, glomerular lesions 8, interstitial inflammation in 8 and C3-IF positivity in 15 pts. 11 pts with non DSA and 26 without anti HLA atb didn't present significant histological lesions. GFR and proteinuria remained normal.
Conclusion: Our study confirm the importance of DSA and non DSA in the follow up of kidney transplant recipients. The difference between the active and indolent DSA and non DSA is determined only by graft.

Clinical Kidney Immunology

P513 COMPARISON OF DE NOVO DONOR SPECIFIC ANTIBODY FORMATION FOR KIDNEY TRANSPLANT RECIPIENTS INDUCED WITH THYMOGLOBULIN OR BASILIXIMAB

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Background: Thymoglobulin (ATG) and basiliximab (Bas) induction are commonly used therapies to prevent allograft rejection in kidney transplant recipients (KTx). Formation of donor specific antibodies (DSA) has been shown to be a reliable predictor of antibody mediated rejection (AMR). The aim of this study was to evaluate the rate of DSA formation in patients who were induced with ATG or Bas.
Methods: We analyzed 28 cases of kidney transplant performed between August 2013 and August 2015 at our institution. All pts had at least a greater than 3 mismatch and cPRA <20. Luminex testing was used to detect DSA. DSA were tested at monthly intervals x 3 then q 3 month x 2 and if clinically indicated. We compared the rate of DSA formation between patients who received ATG ($n = 18$) versus Bas ($n = 10$). Dosing: two 20 mg doses of Bas and 3–6 mg/kg ATG were used. Triple I/S was used for maintenance [Tacrolimus (target levels 6–8), Prednisone and MMF]. For each DSA specimen, we collected information on the total number of DSAs formed (class I versus class II), the DSA mean fluorescence intensity strength if the value >1000, and the total number of non-DSAs formed (class I versus class II). We evaluated these parameters at two time points: <180 or >180 days from transplant.
Results: For DSAs performed <180 days, the mean number of days elapsed since transplant was 58 and 29 in patients rece.

Clinical Kidney Surgical technique

P514 DIAGNOSIS AND MANAGEMENT OF TRANSPLANT RENAL ARTERY STENOSIS

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Background: Transplant renal artery stenosis is an uncommon vascular complication following renal transplantation, usually presenting with high blood pressure and deteriorating renal function.
Methods: The diagnosis in confirmed radiological by either Doppler ultrasound scan, angiogram and treatment in usually by means of angioplasty and stenting. To evaluate the role of radiological imaging in the diagnosis and managements of transplant renal artery stenosis.
Results: In 352 patients was performed 360 kidney transplants between 2010 – 2015 years. All patients after transplantation was performed Doppler ultrasound scan. We analyzed four patients (1, 1%) was suspected stenosis of the artery renal transplant. Four patients in whom the diagnosis of Transplant renal artery stenosis was suspected on Doppler. All patients then underwent transplant artery angiogram with a view to proceed angioplasty after measuring the pressure gradient the suspected stenosis area. In four patients (1.1%) from 360 angiography confirmed a stenosis. Radiological success was achieved in 100%. Two patients underwent angioplasty and two stent was required. There wasn't complication at this operations. There wasn't cases of recurrent stenosis in our patients.
Conclusion: Our study confirmed that Doppler ultrasound scan is a first line investigation in the diagnosis of Transplant renal artery stenosis. Percutaneous transplant renal artery angioplasty or stenting in high successful in treating the condition with a low rate of complications.

P515 SURGICAL COMPLICATIONS OF LIVING KIDNEY TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

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Purpose: Surgical complications are still high potential causes of graft loss. The incidence has a huge amount of variations depending on many factors. Our aim was to study the postoperative technical complications following kidney transplantations (KTx).
Material and Methods: From April 2009 to January 2017, a total of 141 living donor KTx were performed at our institute. Mean age was 45.3 ± 12.3 yr (range 19–76). of these patients, there were 101 males and 40 females. Mean body weight and BMI was 61.2 kg and 22.1 at transplantation, respectively. All 141 patients were treated with tacrolimus based immunosuppression, including methylprednisolone and mizoribine or mycophenolate mofetil. Induction therapy was treated with basiliximab and rituximab. The internal iliac artery and external iliac vein were used for vascular anastomosis. The ureter was anastomosed to the bladder via an extravesical technique.
Results: During observation 9 surgical complications (6.4%) were noted, including ureteral stricture, renal artery stenosis, lymphocele, subcapsular hematoma and wound infection. Urinary leakage was seen in 1 case (0.7%). Hemorrhage of vascular anastomosis was none. There were no gastrointestinal complications. None the patients required surgical repair. None the patients lost the graft due to a surgical complication.
Conclusion: The incidence of surgical complications in living KTx was low (6.4%) and seems to be acceptable.

P516 LAPAROSCOPIC NEPHRECTOMY FOR LIVING KIDNEY DONOR: OUR EARLY EXPERIENCE

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Background: Laparoscopic nephrectomy for renal transplantation has become a standard operation worldwide since it provides faster recovery and return to the donor's everyday activities.
Method: We retrospectively analyzed 12 patients who underwent Laparoscopic nephrectomy for renal transplantation, from February 2015 to December 2016. We present a case of a 68-year-old male, living kidney donor, who had undergone exploratory laparotomy following a car accident one year before laparoscopic nephrectomy. The patient was placed in the typical left decubitus position for nephrectomy. Two 5 mm trocars, and a 10 mm one were placed to the left midclavicular line, between the costal cartilage and the anterior superior iliac spine, in order to achieve triangulation. A 10 mm trocar was placed suprapubically and was replaced by a gel-port for the graft's removal. Laparoscopic nephrectomy was performed, following symphysiolysis. Operative time was three hours. Time of warm ischemia was three minutes.
Results: The recipient presented immediate diuresis. The donor had an uneventful recovery and was discharged four days later.
Conclusions: Laparoscopic approach seems to be safe for live kidney donors, even in cases of prior laparotomy. It is related to less pain, fewer complications and shorter hospitalization. The time of warm ischemia does not seem to affect the graft's function. The donor returned to his everyday activity six days post-operatively.

P517 SURGICAL CONSIDERATION IN EN BLOC KIDNEY TRANSPLANTATION FROM VERY SMALL DONOR

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Since en bloc kidney transplantation (EBKT) is very rare, only a few transplant surgeons have experience. Recently we performed successful EBKT from

5 month old girl who was brain dead due to hypoxic brain injury. We report our first experience of EBKT with special consideration of surgical technique. The donor was 5 month old girl with body weight of 3,000 g. She was born as premature due to fetal distress and weighed 1500gm at that time. She was found apneic at her home by her family while sleeping in prone position. 10 min cardiac massage returned normal pulse but her brain stem response was absent. After repeated neurologic examination for 48 h interval and getting flat EEG, she was declared as brain death. Recipient with short history of end stage renal disease was selected. Since the length of the ureters were too short, contracted bladder would cause difficulty in ureteral reimplantation and ureteral complication in later period. Kidneys weighed 51gm with aorta, vena cava and both ureter attached. Procured aorta was almost similar with internal iliac artery of the recipient in caliber. Proximal aorta proximal to the renal artery was ligated and distal aorta just proximal to its' bifurcation was anastomosed to the internal iliac artery in end to end fashion, interruptedly. Proximal IVC was ligated and Distal IVC was spatulated and anastomosed to the external iliac vein. Both ureters were separately implanted to the mobilized bladder over the 3Fr. double J catheter and the bladder was tacked to the psoas muscle to relieve tension on anastomosis. Both kidneys were sutured to the peritoneum to prevent twisting. The allograft showed urine within 5 min after reperfusion. Serum creatinine was normalized 3 weeks after EBKT. High rate of early failure of the EBKT can be overcome with fine surgical technique and careful patient selection.

P518 PROPHYLAXIS OF LYMPHOCELE FORMATION AFTER KIDNEY TRANSPLANTATION VIA PERITONEAL FENESTRATION: A SYSTEMATIC REVIEW

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Background: Lymphocele formation after kidney transplantation is a frequent complication which causes pain, secondary graft loss, rehospitalisations and reoperations. Therefore prophylaxis of lymphocele formation is of utmost importance. We aimed to assess the effectiveness of peritoneal fenestration in renal transplantation to prevent lymphocele development.
Methods: A systematic literature search was conducted combined with hand-searches on lymphocele prevention following renal transplantation using peritoneal fenestration. A qualitative and quantitative analysis of included trials was conducted.
Results: We identified three trials including 414 patients and 437 transplantations which studied peritoneal fenestration. Only one randomized-controlled trial was identified. Critical appraisal uncovered a number of methodological flaws, predominantly in the non-randomized studies. Most importantly endpoint definitions varied among trials, selection bias was high and interventions and follow-up were not standardized. Meta-analysis of the included trials resulted showed a significant reduction of clinically symptomatic lymphoceles (OR: 0.23, 95%CI: 0.09 to 0.64, $p = 0.005$) and overall postoperative fluid collections (OR: 0.49, 95%CI: 0.28 to 0.88, $p = 0.02$) without a significant increase in other surgical complications.
Conclusion: Although peritoneal fenestration is a promising technique to reduce lymphocele formation, only few studies have investigated this technique so fare. Given the low methodological quality of included trials more studies are necessary to evaluate the effectiveness and the risks and benefits of this technique.

Basic Kidney Surgical technique

P519 RENAL TRANSPLANTATION AFTER BLADDER AUGMENTATION WITH HYDROSTATIC DILATATION IN A 9 YEARS OLD CHILD WITH SMALL BLADDER

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Aim: In this study, we presented a patient who underwent renal transplantation (Tx) due to chronic renal insufficiency and reached normal bladder volume by approximately 20 fold after Tx.
Case: A 9 years old male patient who was on peritoneal dialysis for 6 years with bilateral vesicoureteral reflux (VUR), which was the cause of chronic kidney disease, presented to our clinic for living donor renal Tx. The patient had also hypertension. He weighed 20 kg and was 108 cm tall (under 3 percentile). Biochemical tests were preoperatively as follows; Urea 206 mg/dl, Creatinine 12.61 mg/dl Potassium 6.78 mmol/l, Phosphorus 7.6 mg/dl, Magnesium 3.41 mg/dl, Amylase 152 U/l, GGT 154 U/l. A cystic mass with a diameter of 6 cm was found in the right kidney, and cholelithiasis was also diagnosed. Bilateral VUR was detected in the Voiding cystoureterography (VCUG) examination and bladder volume was 15 cc. At the same session, laparoscopic bilateral nephrectomy and cholecystectomy were performed. Up to the time of Tx, hydrostatic bladder volume enhancement was performed with saline solution (0.9%) given in a volume of 10–20 cc two times per week from urinary catheter placed to the bladder through the penile urethra. Initially, bladder augmentation was considered, but the patient's pre-Tx bladder capacity reached 100 cc with the hydrostatic dilatation sessions. Two months after the first operation, living donor renal Tx operation was performed successfully. Biochemical tests of the patient at the first year follow-up were normalized (Urea 18 mg/dl, creatinine 0.7 mg/dl). In VCUG, there was no reflux and bladder capacity was measured as 290 cc. The growth curve of the patient also showed a positive progress [weight 24 kg, height 114 cm (under 3 percentile)].
Conclusions: We think that it should be kept in mind that the bladder in children with long-term chronic renal failure may shrink, and they may return to normal capacity once they start to urinate after Tx.

Clinical Kidney Surgical technique

P520 KIDNEY MALROTATION IN TRANSPLANTION FROM CADAVERIC DONOR: REPORT OF A CASE

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Background: It is an urgent issue to find new sources of organs to face the "organ shortage" so we here report the case of a malrotated kidney successfully used for a cadaveric donor transplant.
Materials: The recipient was a 68 years old woman with a history of end stage renal failure secondary to chemotherapy for colonic cancer, creatinine at admission 9.3 mg/dl. The donor was a 77 y.o. woman died for intracranial hemorrhage, and the graft was a left kidney with pelvis originating from anterior surface, an aortic patch with two renal arteries, a single renal vein and a single ureter. Transplantation was carried out using a standard procedure and the graft was placed in the recipient's right iliac fossa. During early postoperative period a delayed graft depurative function was observed and treated with several hemodialysis sessions before stabilization of creatinine around 2.02 mg/dl. Eco color Doppler study of the graft showed good cortical perfusion and resistance indexes. Three months after discharge the patient is in excellent clinical status, good urine output with a serum creatinine of 1.25 mg/dl .
Discussion: Anatomical anomalies involving either the vascular or the excretory district represent frequent causes for discarding a kidney. Anatomical anomalies allowing transplantation ranges from simple ones to those which require an extensive back table reconstruction in order to be useful; In our experience, we can say that it is common to find anatomical variations during the harvesting procedure and, possibly, this is leading to a great amount of iatrogenic organ lesions and a consequent not negligible number of discarded kidneys.
Conclusion: Kidneys with extensive anatomic anomalies can be used to further expand the actual pool of organs eligible for transplantation and this must be a boost in researching new surgical expedients for back table reconstruction and for more accurate organ retrieval procedures.

P521

SIMULTANEOUS MANAGEMENT OF RENAL CELL CARCINOMA IN THE NATIVE KIDNEY AND TRANSPLANT URETERIC STRICTURE

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Background:
The incidence of ureteric stricture following renal transplantation is 2–12%. Management options include endourological (dilatation/stricturoplasty), open reconstruction or long term ureteric stenting. Renal cell carcinoma (RCC) is more common in End Stage Renal Disease (ESRD) and renal cystic disease. Here we report simultaneous management of native kidney RCC and reconstruction for transplant ureteric stenosis.
Case: A 67 year old male with end stage renal disease (ESRD) secondary to IgA nephropathy received dual ipsilateral kidney transplant from 65 year old, female DCD in 2012. Separate ureteric anastomoses were constructed and stents were removed after 6 weeks. Subsequent baseline creatinine increased 5 months post transplantation from 140 mmol/l baseline to 200 mmol/l and USS showed hydronephrosis of the upper transplant kidney. Percutaneous nephrostomy and nephrostogram showed an upper ureteric stricture 3 cm below the pelvi-ureteric junction (PUJ). USS and CT scanning also revealed 2 Bosniak IV cysts (2 cm and 6 cm) in the native right kidney, with no metastases. He underwent an open native right radical nephrectomy with the native ureter used to reconstruct the strictured transplant ureter. The native right ureter was anastomosed over a ureteric stent just below the PUJ of the upper transplant kidney (uretero-pyelostomy). Histology revealed one papillary and one clear cell RCC. Stent removal was at 6 weeks. At over 4 years post transplantation there has been no recurrent RCC or ureteric stenosis with maintained graft function.
Conclusion: Native kidneys should be carefully assessed for cystic disease or tumours regularly before transplantation. In patients undergoing nephrectomy the use of the native ureter for reconstruction can be a useful strategy. In this case simultaneous radical native nephrectomy for RCC with use of the native ureter for surgical reconstruction of transplant ureteric stricture led to a successful long term outcome.

P522

A RARE CASE OF MEDIUM ARCUATE LIGAMENT SYNDROME (MALS) IN A LIVER TRANSPLANT RECIPIENT WITH NEGATIVE COMPUTED TOMOGRAPHY CONFIRMATION

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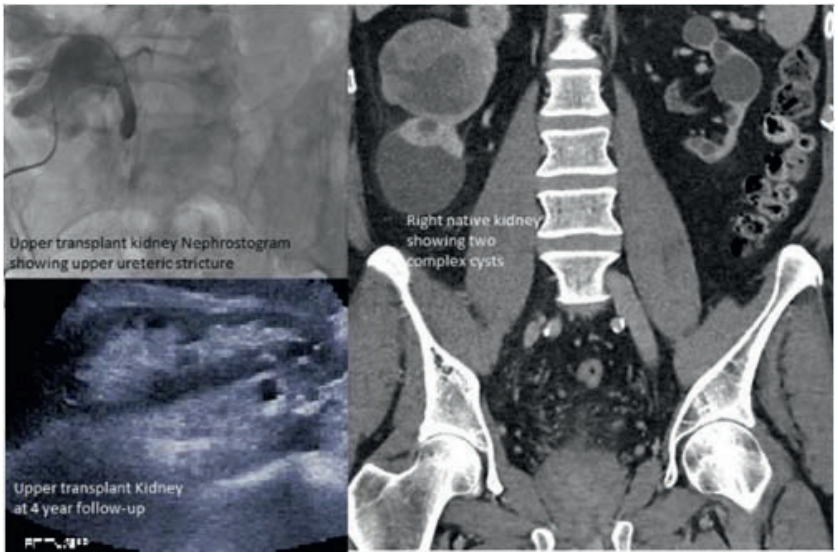
Background: MALS, also known as celiac axis compression syndrome or Dunbar syndrome, is a rare and nonspecific disorder, first described by Harijola in 1963 and Dunbar in 1965. In MALS, the median arcuate ligament, a fibrous arch that connects the diaphragmatic crura on either side of the aortic hiatus, compresses the celiac trunk due to the abnormal position of either the celiac trunk or the median arcuate ligament. MALS typically presents in women (4:1), aged 40 to 60. Usually patients are asymptomatic, however common clinical features include: postprandial abdominal pain, unintentional weight loss, nausea, vomiting, and abdominal bruit. Diagnosis of MALS is confirmed with positive findings on computer tomography (CT) or magnetic resonance angiography combined with duplex ultrasonography (USG). MALS is treated with the surgical release of the median arcuate ligament and celiac ganglionectomy.
Case: 41 year old female presented with numerous inflammatory changes and unresectable epithelioid hemangioendothelioma in the liver underwent a liver transplant. Physical pre-transplant examination was normal. Following the transplantation, abdominal USG and CT showed no flow within the left and right hepatic arteries. No evident stricture in 3D CT reconstruction was found. Complete thrombosis of the common hepatic artery was assumed. Due to progressing ischemia of the liver, aminotransferase elevation the patient was retransplanted six days later. During retransplantation, blood flow through the initially thrombosed hepatic artery, was only achieved following the resection of the median arcuate ligament. Dissection of this tissue allowed for an excellent arterial flush and strong arterial output.
Conclusion: Patient did not present any typical symptoms and no positive findings on CT were described for MALS. However duplex USG showed complete arterial thrombosis. MALS in liver transplant recipients may not be obvious in radiology examination. Dissection of the hepatic artery.



Clinical Liver Surgical technique

P523 MEDIAN ARCUATE LIGAMENT SYNDROME CAUSING INSUFFICIENT HEPATIC ARTERIAL FLOW TREATED WITH AORTOHEPATIC BYPASS IN CADAVERIC DONOR LIVER TRANSPLANTATION

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Background: In this report we aimed to present our experience about a patients with decreased hepatic arterial blood supply due to of median arcuate ligament (MAL) compression treated with aortohepatic bypass after cadaveric donor liver transplantation.
Material and Method: A 46 year old male undergone cadaveric donor liver transplantation due to Hepatitis B virüs related cirrhosis. After hepatectomy of the recipient, hepatic and portal vein anatomoses were performed by the surgeons. Decreased hepatic arterial flow was observed during the operation due to luminal narrowing of celiac artery caused by compression of the median arcuate ligament. The ligament was resected and the compression of celiac artery was terminated. Subsequently, the adequate arterial blood supply was provided and the native hepatic artery anastomozed to the graft hepatic artery. The sufficient arterial flow was confirmed by the Doppler intraoperatively and the operation was terminated after bile duct anastomosis and bleeding control. At the postoperative day 2, the reoperation was performed due to increased liver enzymes (AST: 1151/ALT:1979 IU) and decreased hepatic arterial flow (10–20 cm/seconds) screened by Doppler. In the operation, the inadequate hepatic arterial blood supply was observed despite adequate dissection of MAL and an alternative pathway for sufficient arterial blood supply was planned. By using cadaveric iliac graft the hepaticoaortic bypass was performed with interrupted 7/0 propropylene sutures and end to side technique by using loop magnifier and sufficient flow was confirmed by Doppler. The patient was discharged and has been followed up for 8 months without any problem.
Conclusion: Providing sufficient arterial flow is one of the main steps of the liver transplantation. The aortohepatic bypass should be kept in mind in case of insufficient blood supply due to MAL compression which is the main factor of the decreased celiac arterial flow in liver transplantation.

Clinical Liver Other

P524 COMPARISON OF BISPECTRAL INDEX AND ENTROPY MONITORING IN PATIENTS UNDERGOING LIVING DONOR LIVER TRANSPLANTATION

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Background: Liver transplantation (LT) recipients with high MELD score are known to require decreased minimal alveolar concentration (MAC) compared to recipients with lower MELD score. Anesthetic depth monitoring to adjust MAC is invaluable during LT. Intraoperatively recommended depth of Bispectral index (BIS) and entropy monitoring are 40–60. We conducted an observational study comparing BIS and entropy monitoring under maintenance of isoflurane anesthesia during LT.
Methods and Materials: Twenty patients undergoing living donor LT were recruited to have BIS and entropy monitoring (state entropy, SE). Values were recorded throughout preanhepatic, anhepatic and postreperfusion stages. Isoflurane was maintained to achieve BIS 40–60, and corresponding entropy were observed. Data were analyzed to see if disagreement >|15| between BIS and entropy occurred more than 1 time in an hour, and were analyzed according to LT stages and MELD score. Analysis was performed using Poisson exact test for disagreement rate.
Results: BIS, entropy and isoflurane MAC values in median [interquartile range] were 50 [45–56], 48 [39–56] and 0.6 [0.5–0.7]. In overall analysis, BIS and entropy showed strong correlation ($r = 0.804$, $p < 0.001$), and BIS and entropy showed weak correlation with MAC ($r = 0.095$, $p < 0.0007$; $\sigma = 0.246$, $p < 0.001$). In analysis of all stages of LT, disagreement between BIS and entropy occurred significantly (disagreement rate/hr 1.26, $p = 0.0028$). When analyzed according to LT stages, the disagreement occurred significantly only during postreperfusion stage ($n = 20$, disagreement rate/hr 1.51, $p < 0.001$). Patients ($n = 4$) with MELD score >20 showed significantly increased disagreement rate.(4.71, $p < 0.001$).
Conclusion: BIS and entropy monitoring showed significant disagreement at postreperfusion stage and in MELD >20, in which cases BIS were higher than corresponding entropy. Further studies are needed to determine which is better between BIS and entropy in postreperfusion stage and high MELD score.

P525 THE EFFECT OF PREREPERFUSION ACIDOSIS ON POSTREPERFUSION VASOPRESSOR REQUIREMENT AND OUTCOME IN LIVING DONOR LIVER TRANSPLANTATION

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Background: Acidosis is progressed due to tissue hypoxia and other causes during liver transplantation. Recent studies showed that low pH protects organs from lethal ischemia-reperfusion injury, so called pH paradox. We studied the effect of prereperfusion acidosis on postreperfusion vasopressor requirement and postoperative outcomes in living donor liver transplantation (LDLT).
Methods: We reviewed the medical records of 100 adult patients who underwent LDLT. Patients were divided into two groups by the degree of base excess (BE) measured 10 min before reperfusion: high BE group ($BE > -6$) and low BE group ($BE \leq -6$). The amount of vasopressor to keep the mean arterial pressure ≥70 mmHg and postoperative outcome were compared between two groups.
Results: Of 100 recipients, 57 patients were high BE group and 43 patients were low BE group. Donor factors such as gender, age, cold and warm ischemic time, graft steatosis, and graft-recipient weight ratio were not different between two groups. Recipient factors such as gender, age, body weight, cause of liver disease, MELD score, and intraoperative transfusion were not different between two groups. However, initial BE measured after induction were lower in low BE group than high BE group ($p = 0.003$) Vasopressor requirement expressed as norepinephrine equivalent in high BE group at 5 min ($p = 0.033$) and 1 h ($p = 0.045$) after reperfusion were significantly lower than low BE group. However there were no difference between two groups after 2 and 3 h. Postoperative outcomes such as postoperative liver enzymes, intensive care unit stay, hospital stay and the one-year survival rate were not different between two groups.
Conclusion: Low BE group had a better hemodynamic recovery than high BE group after reperfusion. Further studies will be needed for the effect of acidosis on hemodynamic recovery during LDLT.

Clinical Kidney Surgical technique

P526 MULTIPLE ARTERY ANASTOMOSIS IN KIDNEY TRANSPLANTATION: INTERNAL ILIAC ARTERY INTERPOSITION GRAFT

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Background: Anastomosis of multiple renal arteries in kidney transplantation is technically demanding. Previously this condition was considered a relative contraindication to use of the donor, due to an increased risk of vascular and urologic complications.
Methods/Materials: Between August 1990 and February 2017, we have performed 679 renal transplants, among which 101 patients (14.9%) of the multiple donor arteries were encountered and total 109 cases of procedure was done. We reviewed these cases for the type of vascular reconstruction and outcome of 16 interposition graft cases using branched internal iliac artery.
Results: The type of reconstruction were illustrated as follows; ligation of an upper polar artery in 34 cases, double barrel anastomosis in 38 cases, end to side anastomosis between a polar artery and main renal artery in 10 cases, separate anastomosis of two renal arteries to the branch of the internal iliac artery in 1 case, use of the inferior epigastric artery of the recipient for end to end anastomosis to lower polar artery in 10 cases, interposition graft using branched internal iliac artery in 16 cases. We reviewed the 16 cases of the internal iliac artery interposition. By use of this technique, warm ischemic time was not prolonged and postoperative course was good without vascular and urologic complications.
Conclusion: Our method enables to select an appropriate recipient's interposed arterial branch to be anastomosed that is compatible with donor's multiple renal artery and is easy to perform. Anastomotic arterial pseudoaneurysm formation or rupture is thought to be possibly low compared with that of the double barrel anastomosis. And multiple arterial anastomosis are conducted in cold extracorporeal environment and a simple end to end arterial anastomosis is done in recipient's body. This technique wound reduce warm ischemic time, therefore renal damage could be diminished.

Clinical Liver Surgical technique

P527

PURE RIGHT LOBE DONOR HEPATECTOMY USING 3-D LAPAROSCOPY FOR ADULT-TO-ADULT LIVING DONOR LIVER TRANSPLANTATION

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Background: The recent major concern in laparoscopic hepatectomy is to expand into totally laparoscopic living donor right hepatectomy. However, donor safety is the most important problem in living donor hepatectomy. Hence, laparoscopic right lobe donor hepatectomy has rarely been used for donors with favorable anatomy, and enough graft or remnant liver volume. We had experienced pure right lobe donor hepatectomy using 2-D laparoscopy and donor's satisfaction and happiness. But, in order to prevent postoperative complications, the good visual field should be secured preferentially. Three-dimensional (3-D) imaging, a recent technical innovation in laparoscopic surgery, has been postulated to enhance depth perception and facilitate operations. We performed pure right lobe donor hepatectomy using 3-D laparoscopy.
Case Report: A 47-year old woman volunteered for her sister who suffered from fulminant hepatic failure. Donor's right hepatic artery and portal vein was with normal variation and the length of right hepatic duct was about 3 mm. V5, V8 and right inferior hepatic vein should be prepared for the reconstruction of graft outflow. The enhanced depth perception was very useful for meticulous dissection of portal triad and exact transection of right hepatic duct and hepatic hilum. Furthermore, we could prevent the injury of the hepatic veins which should be essentially preserved through the definite dissection at the back side of vessels.
Conclusion: Conclusively, we think that 3-D laparoscopy will be able to improve laparoscopic surgical performance in living donor hepatectomy and to avoid the injury of vessels or hepatic duct in both donor and recipient.

Clinical Kidney Other

P528

ANALYSIS OF DOPPLEROGRAPHIC INDICATORS OF BLOOD FLOW IN VESSELS OF TRANSPLANTED KIDNEY IN PATIENTS WITH PRESERVED FUNCTION AND WITH DYSFUNCTION OF KIDNEY TRANSPLANT IN THE LATE POSTOPERATIVE PERIOD

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Background: Dysfunction of kidney transplant (KT) in the late postoperative period is a result in progressive sclerosis of glomeruli, interstitial fibrosis and tubular atrophy. The purpose of the research was to investigate the ultrasound (US) appearances and dopplerographic indicators of blood flow in the vessels of the KT in patients with preserved depurative function and with dysfunction of KT long after a kidney has been transplanted.
Methods/Materials: 26 patients with KT dysfunction and 26 patients with preserved function of KT were examined by US in the late postoperative period. The US determines the condition of the transplant and analyze the data of color and spectral dopplerography. The blood flow in renal arteries was examined at the level of main trunk of renal artery (MTRA), segmentary (SRA) and interlobar renal arteries (IRA) in spectral Doppler mode evaluating speed and spectral features.
Results: The lower values of time-average maximum speed of blood flow (TAMX) were registered in the context of MTRA, SRA and IR in patients with disturbed depurative function in the late postoperative period comparing with patients who had no KT dysfunction. The difference between the patients with preserved and disturbed renal function referring to TAMX was 21.63% in the context of MTRA; 41.30% – for the upper segment of TAMX SRA; 29.09% – for the middle segment of TAMX SRA; 44.08% – for the lower segment of TAMX SRA; 51.67% – for upper segment of TAMX IRA; 44.67% – for the middle segment of TAMX IRA and 73.26% – for the lower segment of TAMX IRA.
Conclusion: The TAMX indicator, especially for IRA, is both the appropriate criteria that demonstrates the development of renal disease of the transplanted kidney in recipients and a potential prognostic criteria of dysfunction KT in the late postoperative period.

Clinical Pediatric transplantation Other

P529

THE LIFE OF A BABY AFTER A LIVER TRANSPLANTATION: THE IMPORTANCE OF FAMILY EDUCATION AND PROPER COMMUNICATION TO REDUCE ANXIETY AT HOME

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A pediatric Liver Transplant may seem something easy to manage, but for parents is an incredible change of life. Parents fears and insecurities give results in incorrect use of the Transplant Coordination (C.T.), that should be a service families can turn to in case of emergency. Instead, most of the calls to C.T. are due to problems that parents could easily fix by themselves, when properly educated in the immediate post-transplant.
Methods/Materials: Our study was conducted in the months between June and November 2016, in the departments of Hepatology and Nephrology of our Children's Hospital. During this period it was considered a sample of 32 children: 15 liver transplants and 17 kidney transplant. Upon returning to the ward, in the immediate post-operative, it was given to such patients the brochure "In life it takes guts", prepared in 5 languages. The brochure was composed considering the common questions (10 as a total), that parents ask to the medical staff during the post-transplant covering daily-life aspects that young patients will face when they go back home. A week after the discharge, patients were re-evaluated in a Day Hospital and a 4-query- questionnaire was given to their families, aiming to investigate the autonomy and security degree acquired at home. The main indicator considered to accomplish this analysis was the calls frequency to the C.T., after the child discharge.
Results and Conclusion: 63% of the sample said that they turned "rarely" to the C.T. in early post-operative. In fact, the overall phone calls to C.T. over the six months taken into account had been reduced by 20% (with a gradual reduction from the beginning of the project to date). This shows an increase in autonomy and safety child assistance at home. The 87% of respondents considered "very useful" the information provided by the medical staff at discharge. In particular, 91% said that the brochure represented an important starting point, and it was very useful in the daily home assistance.

Clinical Kidney Surgical technique

P530

HAND-ASSISTED LAPAROSCOPIC DONOR NEPHRECTOMY: A SINGLE CENTER EXPERIENCE

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Background: The advantages of a minimally invasive nephrectomy are a faster recovery and better quality of life for the donors. Until recently, the majority of donor nephrectomies in our hospital were done by open surgery.
Methods: Between September 2009 and December 2016, 55 live donor nephrectomies were performed by hand-assisted laparoscopic donor nephrectomy (HALDN) at our institution. Preoperatively, kidneys were assessed by scintigraphy and by angio-computed tomography. We harvested 55 left kidneys. There were double renal arteries in 8 cases. The warm ischemic time (WIT) was 60–480 s (average 183.27 s), operative time was 145–280 min (average 209 min), estimated blood loss (EBL) was 50–400 ml (average 153 ml).
Results: All procedures were uncomplicated, and all donors were discharged after 6–12 days with normal creatinine levels. The average follow-up period lasted 40 months (1–87 months). Out of all of the cases, 2 cases had minor complication, while all others were uneventful. None of the donors were lost to follow-up. All of the kidneys were transplanted. There were 2 cases of delayed graft function (DGF). None of those kidneys was lost.
Conclusions: Our limited experience shows that HALDN is a safe method and should be used routinely instead of open surgery.

Clinical Kidney Immunosuppressive agents

P531 OUTCOMES OF KIDNEY ALLOGRAFTS EXPOSED TO CYCLOSPORINE FOR 20 YEARS

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Background: The advent of cyclosporine (CsA) undoubtedly improved the results of kidney transplantation (KTx). However, the burden of CsA-related nephrotoxicity remains a major concern for long-term kidney allograft survival and function. Studies addressing this issue show conflicting results.
Methods: This single-centre retrospective study reports the long-term outcomes of 644 recipients who underwent primary KTx (553 from a deceased donor and 91 from a living donor) between 1983 and 1993 and had their renal allograft functioning at 1 year. All of them were treated with CsA (9% CsA monotherapy, 41% CsA plus steroid, and 50% CsA plus azathioprine plus steroid). The follow up considered was 20 years.
Results: Twenty-year patient survival and death-censored graft survivals were 73% and 50%, respectively. Main causes of death were cardiovascular disease (31%), malignancy (27%), and infection (17%). Main causes of graft failure were chronic rejection (52%), death of recipient with a functioning graft (15%), recurrent glomerulonephritis (14%), and interstitial fibrosis/tubular atrophy (13%). Multivariate analysis identified the following predictors of premature transplant loss: immunologically-mediated primary renal disease (RR 1.2, CI 1.02–1.34), chronic HCV infection (RR 1.3, CI 1.04–1.55), new-onset proteinuria (RR 3.5, CI 2.9–4.31), major cardiovascular events (RR 1.5, CI 1.03–2.2), and difference between serum creatinine concentration (SCr) at 1 year and its post transplant nadir (RR 1.9, CI 1.51–2.3). In survivors with graft functioning at 20 years, SCr and calculated GFR (MDRD) were 1.4 mg/dl (1.1–1.8) and 51 ml/min (39.5–65), respectively.
Conclusion: Our data show that CsA-related nephrotoxicity does not necessarily lead to irreversible graft function deterioration if transplant recipients are regularly monitored and CsA exposure adjusted according to changes in transplant function.

PLB001 A 2ND GENERATION CMV-SPECIFIC T CELL PRODUCT AS A PREEMPTIVE CELLULAR THERAPEUTIC FOR SUSTAINED IMMUNOLOGICAL REGENERATION POST RENAL TRANSPLANTATION

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Reactivation of CMV is one major complication in immunosuppressed kidney transplant recipients (KTR). The potent anti-viral drugs available have side effects and resistance can be acquired. Thus, novel treatment strategies such as adoptive virus-specific T cell (VST) therapy may be implemented preemptively preventing CMV disease and circumventing adverse effects of virostatic drugs. We developed an autologous approach of VST therapy, which efficiently reduced CMV viremia and symptoms. However, half of the patients experienced relapses, presumably due to the biased composition of this 1st generation VST product almost exclusively consisting of short-lived effector memory T cells. Therefore, a 2nd generation protocol entailing constrained mTORC1 signaling was developed which enriches for more long-lived central memory T cells, which were reported to persist longer in animal models. In this study, we compared the phenotype and function of 1st and 2nd generation VST from peripheral blood of 19 immunosuppressed KTR and healthy controls (HC). VST products from 7 of these KTR were generated also before transplantation to figure out the best time for product generation and to identify challenges occurring with the onset of immunosuppression.

Applying our novel protocol, it was feasible to generate VST products for all 19 KTR. CMV-specific functionality defined by specific killing of targets was comparable between VST generated from KTR and HC. However, CMV-peptide stimulation induced IFNγ production was reduced in KTR compared to HC. We show that the production of 2nd generation VST products is feasible before transplantation and despite immunosuppression qualitatively even better after transplantation. The generation is feasible preventively before recorded CMV viremia, at the time of acute viremia and also after a history of CMV viremia. Currently, we are initiating a Phase I/II clinical trial to ultimately confirm the superiority of the 2nd generation VST product in KTR.

PLB002 OUTCOME OF CLINICAL PANCREATIC ISLET TRANSPLANTATION IN JAPAN – JAPAN ISLET TRANSPLANTATION REGISTRY REPORT

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Background: In our country, clinical ITx (islet transplantation) started using the pancreas from DCD donor on April, 2004. In this study, we report the outcome of ITx in Japan.
Method: Group Era1 (2003–2008): 65 islet isolations were performed using the pancreas of DCD donors. Out of 65 isolations, 34 ITxs were performed for 18 patients. Eight patients underwent single, 4 patients two times and 6 patients three times. Modified Edmonton protocol with tacrolimus, sirolimus and basiliximab was used for immunosuppression.

Group Era2 (2011– present): 17 islet isolations were performed using the pancreas of DBD (11) or DCD (6) donors. 12 ITxs were performed for 10 patients. Newly designed immunosuppressive protocol (modified Minnesota Protocol) using ATG, Etanercept as the induction and CNI (cyclosporine or tacrolimus), MMF as the maintenance therapy, was introduced (CIT-J multicenter study).
Results: Islet Isolation: Islet yield was 391,178 $\pm$ 12,115 IEq in group Era2, which was significantly higher than 270,291 $\pm$ 205,116 IEq in group Era1. While, Purity was 42 $\pm$ 13% in group Era 2, which was almost equal to 44 $\pm$ 19% IEq in group Era1. Pancreatic Islet Transplantation: Transplantation/Isolation rate was 0.71 in group Era 2, which was significantly higher as compared to 0.52 in group Era 1. Although three patients achieved insulin independency (2 patients: three times, one patient: two times) in group Era 1, a long-term insulin independency could not be achieved. In group Era 2, all patients were freed from hypoglycemic unawareness. In group Era 2, all patients were freed from hypoglycemic unawareness immediately after ITx. Insulin independency was, so far, achieved in one patient, who underwent two times.
Conclusion: According to a technical improvement and a use of DBD donors, the results of islet isolation have been highly improved recently. Also, newly designed immunosuppression protocol is expected to result in the improvement of long term islet grafts' survival.

PLB003 HUMAN AMNIOTIC EPITHELIAL CELLS PROTECT ISLETS FROM PRO-INFLAMMATORY CYTOKINES

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Background: Inflammatory phenomena are primary contributors to early graft loss and poor islet engraftment. Inhibiting pro-inflammatory cytokine activity reverses inflammation-mediated dysfunction of islet grafts. Human amniotic epithelial cells (hAECs) possess anti-inflammatory and immunomodulatory properties. We hypothesized that hAECs could protect islets from cellular damage induced by pro-inflammatory cytokines.
Methods: Rat islets were co-cultured with human hAECs for 24 h, followed by 48-hour exposure to interferon-γ, tumor necrosis factor-α and interleukin-1β. Controls included islets cultured alone (with or without cytokines) and islets co-cultured with hAECs without inflammatory cytokines. For all conditions, glucose stimulated insulin secretion (GSIS), total islet cellular insulin content, beta cell apoptosis by detection of histone-associated DNA fragments, and Th1/Th2 cytokines secreted in the culture media were assessed by qualitative multianalyte ELISA array.
Results: Exposure of islets to the cytokine cocktail significantly impaired insulin response to glucose stimulation as compared to control islets (Stimulation Index (SI): 1.1 vs 2.1). In contrast, cytokine exposure of islets co-cultured with hAECs showed GSIS similar to that of intact islets (SI 1.9). Exposure of islets to cytokines induced islet cell apoptosis, with a 15-fold increase in DNA fragments detection, as compared to control islets. In contrast, in islets co-cultured with hAECs, amounts of DNA fragments detected were similar to islets cultured without cytokines. After exposure to the cytokine cocktail, IL-6 and cytoprotective IL-10 and G-CSF were detected in islets co-cultured with hAECs, but not in islets cultured alone.
Conclusion: Taken together, this data suggests that co-culture of islets and hAECs may promote islet cell survival by controlling inflammatory phenomena, and that islet engraftment may be enhanced by co-transplantation with hAECs.

PLB004 COLONIZATION AND INFECTION WITH VANCOMYCIN-RESISTANT ENTEROCOCCUS DURING EARLY POST LIVER TRANSPLANT PERIOD, 2014–2015, SHIRAZ, IRAN

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Background: Vancomycin-resistant enterococci (VRE) are becoming a major concern in health care associated infections. VRE infection causes significant morbidity and mortality among the patients undergoing liver transplantation. We assess VRE colonization and infection in the early period of hospitalization after transplant among the recipients in the main referral center of liver transplant in Iran.
Methods/Materials: In this prospective study, all 482 consecutive patients who underwent liver transplant in Nemazee Teaching Hospital in Shiraz from October 2014 to October 2015 were enrolled. Demographic, clinical and laboratory data such as VRE stool colonization status were collected at admission. In case the recipients developed any evidence of infection during early post liver transplant period, sepsis workup would be done based on attending physician's advice.
Results: VRE fecal colonization was documented in 10.6% (51 of 482) of the patients screened. Of these 51 patients, 13 (25.5%) developed a VRE infection after transplant. The infection was detected in 22 (5.1%) of the remaining 431 patients who were not colonized ($p = 0.00$). Mortality during the early period of hospitalization after liver transplantation was significantly greater among those who had VRE colonization (9 of 51, 17.6%), compared with those without VRE colonization before transplantation (33 of 43, 7.7%) ($p = 0.031$)
Conclusion: Liver transplantation candidates with VRE colonization before transplantation experience greater morbidity but not greater mortality, compared with no colonized candidates. Transplant recipients who acquire VRE after transplantation have a higher mortality rate than no colonized recipients. It is suggested that some effective strategies be adopted to reduce the rate of nosocomial post transplant VRE infection among the susceptible group.

PLB005 UP-REGULATION OF HYPOXIA INDUCIBLE FACTOR (HIF) TARGET GENES DURING NORMOTHERMIC REGIONAL PERFUSION (NRP) RECOVERY OF LIVERS FROM DCD DONORS

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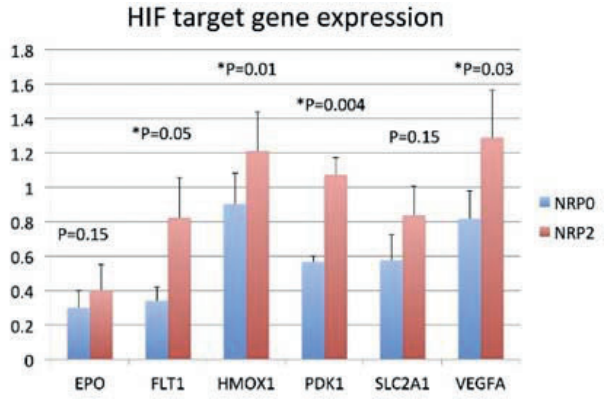
Background: A program of in situ normothermic regional perfusion (NRP) in donors after circulatory death (DCD) has been developed with encouraging early results. However, we are still to fully understand the mechanism by which NRP works. Hypoxia Inducible Factor (HIF) and its target genes have been shown to protect organs from ischaemia reperfusion injury. We hypothesised that DCD livers are preconditioned during NRP, and this preconditioning is mediated by HIF and its target genes.
Methods: Liver biopsies were taken at 0 and 120 min during NRP from four DCD donors undergoing organ retrieval. Expression of 6 HIF target genes (EPO, HMOX-1, FLT-1, PDK1, SLC2A1, and VEGFA) was assessed using real-time rt-PCR. Gene expression ratios were calculated compared to house keeping genes (HPRT and TBP) at 0 and 120 min. Paired two-sample t-tests were run to compare gene expression levels between the two time points.
Results: All 6 HIF target genes were up-regulated following 2 h of NRP. The mean up-regulation ranged from 1.3 fold (EPO) to 2.4 fold (FLT-1). The up-regulation of 4 genes (HMOX-1, FLT-1, PDK-1, and VEGFA) reached significance ($p < 0.05$).
Conclusion: Normothermic Regional Perfusion up-regulates HIF target genes. This may be a mechanism by which NRP protects organs from subsequent ischaemia reperfusion injury.



PLB006 TUMORAL RESPONSE AND TUMORAL PHENOTYPIC CHANGE IN A DIETHYLNITROSAMINE-INDUCED HEPATOCELLULAR CARCINOMA AFTER SALIRASIB AND SORAFENIB ADMINISTRATION IN RAT

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Background: MAPK and mTOR pathways seem to play a key role in liver tumor progression in experimental models as well as in humans. Vascular endothelial growth factor also contributes to angiogenesis in hepatocellular carcinoma (HCC). The aim of our study was to test the putative synergic antitumor effect of Salirasib and Sorafenib in a diethylnitrosamine (DEN)-induced HCC in rat. Changes in tumor phenotype during treatment were also studied.
Methods: DEN was administered IN Wistar rats over 9 weeks, in order to induce cirrhosis and liver cancer. A laparotomy was performed to confirm cirrhosis and tumor development. Surviving rats were randomized and treated with Salirasib (10 mg/kg) and/or Sorafenib (7.5 or 15 mg/kg) during 4 weeks. Rats were finally sacrificed and liver tumors were processed for histological and immunohistological analyses, including Ki67 as a marker of tumor proliferation.
Results: All rats developed cirrhosis and cancer, as confirmed on conventional histology. Mortality rate was significantly higher in the treated rats than in the control group ($p = 0.002$). There were no significant differences in the number of tumor lesions when comparing treated and control groups. However, the tumor burden was significantly smaller in the treated group ($p = 0.029$). Interestingly, 62.5% of the rats treated with Salirasib and/or Sorafenib developed cytokeratin-7 and -19 positive hepato-cholangiocellular carcinoma (HCC/CHC), while this phenomenon was not found in the control group ($p = 0.018$). Ki67 immunohistochemistry showed significantly reduced tumor cell proliferation in the treated group ($p = 0.001$).
Conclusions: A synergistic effect of combining Sorafenib/Salirasib administration could not be confirmed in this experimental model. Both chemotherapeutic agents were associated with tumoral phenotypic change in 62.5% of rats, irrespectively of types of therapy; the mechanism of such de-differentiation did not seem to be explained by increased tumoral cell proliferation.

PLB007 NON-INVASIVE SURVEILLANCE OF ORGAN HEALTH AFTER LIVER TRANSPLANTATION USING DONOR-SPECIFIC CELL-FREE DNA

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Background: There is an emerging interest in the use of donor-specific cell-free DNA (dscfDNA) as a non-invasive biomarker of organ health and organ rejection. We have developed a PCR-based approach that readily measures dscfDNA. Using this approach, we evaluated the utility of dscfDNA in two separate cohorts of recipients.
Methods: Deletion/insertion polymorphisms (DIP) were used to distinguish donor- and recipient-specific DNA. Post-transplant dscfDNA was measured using a novel probe-free droplet digital PCR (ddPCR) methodology. In the longitudinal cohort, dscfDNA was serially measured at days 3, 7, 14, 28 and 42 in 25 recipients. In the cross-sectional cohort, dscfDNA was quantified in 20 recipients (>3 months post-transplant) undergoing liver biopsies.
Results: DscfDNA levels were reflective of organ health after liver transplantation. In the recipients who underwent uncomplicated transplantation, dscfDNA markedly reduced at D7 and remained at a low level from D14 onwards. Furthermore, dscfDNA was consistently lower in recipients who were clinically stable compared to those who developed biopsy-proven organ rejection.
Conclusion: In this study, we demonstrated a readily performed methodology to measure dscfDNA. We also highlighted the potential of dscfDNA as a non-invasive biomarker for the surveillance of organ health and potentially, the diagnosis of organ rejection after liver transplantation.

PLB008 STUDY OF IMMUNOREGULATORY T LYMPHOCYTES IN TRANSPLANTED PATIENTS WITH LONG-TERM MINIMIZED IMMUNOSUPPRESSION

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Background: The long-term immunosuppressive therapy required to maintain host tolerance of a transplanted organ contributes to an increased risk for malignancy in organ transplant recipients. A variety of factors, including the intensity and duration of immunosuppression, can influence the likelihood for the development of cancer in these patients. Here, we focused on two regulatory T cell populations, namely regulatory T cells CD4(+)CD25(+)FoxP3 (+) (Treg) and CD4(+)CD8αα(+) double positive (DP8α) T cells as possible targets for the immunosuppressive treatments.
Methods: Monocentric study (CHU, Poitiers), including 13 patients (mean age: 68), renal transplant recipients for more than 10 years (mean duration: 26 years), without signs of rejection, treated with minimized immunosuppression: azathioprine+steroids ($n = 3$) or anticalcineurin monotherapy ($n = 10$).
Results: As compared to controls ($n = 8$), mean frequencies of Treg and DP8α T cells were increased in the transplanted cohort reaching 8.1% (vs 5.8%; $p < 0.05$) of CD4(+) T cells and 6.0% (vs 0.8%; $p < 0.05$) of CD3(+) T cells, respectively. In patients with malignancy, a further increase of both total and CD45RA(-)Helios(+) Treg mean frequencies among CD4(+) T cells was found when compared to other patients ($p< 0.05$) and controls ($p < 0.05$). Immunosuppressive therapy appeared to influence preferentially the DP8α T cell population whose frequency among CD3(+) T cells was increased in patients treated with azathioprine (12.1%), as compared to other patients ($p < 0.05$) and controls ($p < 0.05$).
Conclusion: The proportions of Treg and DP8α T cells appear to vary according to the type of treatment and background of cancers in renal transplant patients with long-term minimized immunosuppression.

PLB009 LIVE DONOR KIDNEY TRANSPLANTATION PEARLS: A PRACTICAL REVIEW

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Living donation is “a gift of extraordinary value”. The use of living donors for renal transplantation was critical for the early development of the field and preceded the use of cadaveric donors. Most donors are related genetically to the recipient, but there are an increasing percentage of cases, where donors are genetically unrelated like spouses, friends, or other emotionally related individuals. As it is known, ethical guidelines mandate that the living donors should not be coerced without any evidence of financial profit for the donor. Living donation has been associated with a higher success rate than that seen with cadaveric donation. Due to a higher demand for transplantation and the lack of a parallel increase in the number of available cadaveric organs, living donation is the only solution for patients to avoid long times on waiting list, and occasionally, even the need of dialysis and much efforts are needed to encourage living donation rates. This review summarizes the process of living kidney transplantation in a simple & practical manner with some suggestions to increase the living donation rate.

PLB010 ORGAN PRESERVATION FLUID AS A SOURCE FOR BIOMARKERS TO PREDICT KIDNEY FUNCTION AFTER TRANSPLANTATION ALLOWING SAFE AND REAL-TIME MONITORING OF DONOR ORGAN QUALITY

Bas Van Balkom[1], Hendrik Gremmels[1], Raechel Toorop[1], Liselotte Ooms[2], Frank Dor[3], Olivier De Jong[1], Laura Michielsen[1], Wilco De Jager[1], Gert Jan De Borst[1], Arjan Van Zuilen[1], Marianne Verhaar[1]
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Background: Kidney transplantation is the preferred treatment for end-stage kidney disease, and donor kidney shortage urges proper donor-recipient matching. Zero-hour biopsies provide predictive value for short- and long-term transplantation outcome, but are invasive and may not reflect the entire organ. Alternative, more representative methods to predict transplantation outcome are required. We hypothesized that proteins and extracellular vesicles (EV) accumulate in preservation fluid during storage, and can serve as biomarkers to predict post-transplantation graft function.
Methods/Materials: Preservation fluid from donor kidneys was collected and analyzed for the presence of secreted proteins and EV. Using a discovery cohort of 8 kidneys with immediate function (IF) and 8 kidneys with delayed graft function (DGF), we identified proteins and extracellular-contained RNA associated with post-transplantation kidney function. Biomarker potential of secreted proteins was verified in an additional cohort of 40 kidneys and a prediction algorithm was established by stepwise multivariable logistic regression.
Results: We could demonstrate that preservation fluid contains a plethora of biomaterials, including cytokines and hormones, and EVs, which contain proteins and RNA. Five secreted proteins distinguished between IF and DGF in the discovery set, and verification in 40 additional samples yielded a prediction model based on leptin and GM-CSF. ROC curve analysis showed an AUC of 0.87. Additionally, 4 small RNAs in EV showed a similar association, and the predictive power of these RNAs is currently investigated.
Conclusions: We demonstrate that donor kidney preservation fluid harbors biomarkers that predict short-term post-transplantation kidney function. Our approach is safe, easy, and performs better than current prediction algorithms, which are based on clinical parameters. Importantly, such biomarkers could provide real-time assessment of organ quality of machine-perfused organs.

PLB011 QUANTIFERON MONITOR: A NOVEL IMMUNE MONITORING ASSAY TO STRATIFY RISK OF INFECTION AFTER HEART TRANSPLANTATION

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The optimal balance between adequate protection from rejection and the adverse consequences of over-immunosuppression is an important unmet need in clinical practice after heart transplant (HT). We tested the clinical applicability of Quantiferon monitoring (QFM), a novel immune monitoring test developed to detect conditions of over- or under-immunosuppression after solid organ transplantation, focusing our analysis on infectious risk

QFM was performed at study entry and then three to six months later in 132 consecutive HT recipients. The test consists in plasma interferon-gamma (IFN-g) assay by the Quantiferon ELISA platform, after overnight incubation of 1 ml of whole blood with lyophilized antigens that stimulate NK-cells, with a TLR-7 agonist, and CD3 T lymphocytes with a TCR agonist. QFM results are reported as median [25th-75th percentile] and 3 to 6 month infection occurrence was the study endpoint. We performed 249 QFM tests in 131 patients. During study period 69 infectious episodes occurred in 51 patients. QFM was significantly lower when tested during the first 6 months after transplant than later (18 [11–148] vs. 181 [62–523] IU/ml; $p < 0.01$), reflecting the higher immunosuppressive burden in the initial post-transplant phase, and in patients who would have developed infectious episodes, when compared to non-infected patients. (66 [14–177] vs.186 [57–650] IU/ml; $p < 0.01$). By ROC analysis we identified two cut-off points (140 IU/ml in samples assayed <6 months and 500 IU/ml in those assayed >6 months after HT). These two cutoffs allowed to identify patients at high risk for developing infection, independently from potential confounders (OR [95%C.I.]=7.5 [3.1–20.8]; $p < 0.01$). This study provides first suggestive evidence that a novel immune-monitoring method of IFN-g assay after stimulation of innate and adaptive immunity may identify HT recipients with low responsiveness of immune system and high risk of infection.

PLB012 IN OUR COUNTRY, APPROVAL OF FAMILIES IS NEEDED FOR DONATION OF ORGANS THAT BELONGS TO PEOPLE WHO HAD CEREBRAL DEATH

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In our country, approval of families is needed for donation of organs that belongs to people who had cerebral death. One of the biggest obligations for meeting organ transplantation need is necessity of family approval and low family approval rates. Therefore, the study has been made in order to observe approval and rejection circumstances of families of people who had cerebral death in a donor source hospital that has no transplantation center. In the study, approval and rejection circumstances of the families of 49 people that had cerebral death between the dates 1st January 2014 and 1st January 2017 in Ordu province of Turkey was retrospectively observed. The written permission was ethically gotten from the hospital in which the research was being made. Data have been reviewed by using illustrative statics in SPSS 20.0 package and chi-square test. In this research, it was established that most of the families of people who had cerebral death rejected organ donation. In this context, in order to increase the awareness of the individuals in the society, it is recommended organizing trainings, events, public spots and projects for the factors that affect the family in cooperation with the related institutions and organizations.

PLB013 SPOKESPERSON'S INFLUENCES IN CAMPAIGNS FOR ORGANS DONATION

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Background: Donation of organs is a theme that needs to be discussed at the academic and social spheres, once it is necessary that society comprehend the procedures adopted, demystifying situations that may hinder family adherence to donate organs. With the aim of raising awareness of the population related to this need, campaigns are carried out showing the organs donation as a way to heal health problems of patients in situations of vulnerability. In this context, we adopted a Transformative Consumer Research (TCR) in order to analyze the importance of the role played by the emitter in campaigns favorable to organs donation based on the proposed model of Emitter Influence in Campaigns for Organs Donation. The model measures the relations between variables (moral and human conviction, fear of medical negligence, fear of body mutilation and religiosity) that influence individuals in the decision to talk with family about organs donation.
Methods: the research will be performed with 2.000 people that will be exposed to the same information about the donation of organs issued by three distinct spokespeople: priest, doctor, transplanted and non-identified spokespeople. The research is structured in the following steps: step 1 (qualitative); step 2 (translation and validation of the research instrument); step 3 (pretest) and step 4 (Structural Equation Modeling).
Results: Therefore, the research intends to perform social contributions (clarification of the organ donation process), theoretical (stimulating the development of investigations starting from the TCR theory in to the health area and analyzing the role played by the emitter in the communication process), besides contributing for the development of public policy for organ recruitment, and well-being of patients.
Conclusion: This research will allow the influence of the spokesperson to be considered more effectively in the elaboration of campaigns aimed at encouraging organ donation in Brazil.

PLB014 THE CONCEPTION OF A MULTI-TISSUE RETRIEVING TEAM OF HUMAN ORIGIN IN A CENTRAL HOSPITAL: CONTRIBUTION TO NATIONAL SELF-SUFFICIENCY

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One of the goals defined by the national authority (IPST, IP), is that Portugal can be a self-sufficient country in human tissues for transplantation. The cooperation between the Tissue Bank of IPST, IP (responsible for the analysis, processing, preservation, storage and distribution of human tissues) and the Regional Coordination Office allowed confirming that this goal was far from being satisfied since the Tissue Bank stills import skin, corneas and musculoskeletal tissue to reply the national requests. In 2015, the National Transplantation Coordination promoted a theoretical-practical course regarding the training of multi-tissue retrievery teams, with the partnership of the of Barcelona and the support of the Department of Anatomy of Nova Medical School / FCM, Lisbon. This course was attended by health care professionals of three hospitals from Lisbon. The conception of the multi-tissue retrievery teams with the characteristics defined in the mentioned course allowed to begin the recovery of the defined goal. This team consists in 3 elements, which start the activity after the end of the organs retrievery in brain death donor. Our team currently has 5 health care professionals but we are planning specific training for more health care professionals during 2017.*Banc de Sang i Teixits*. The results achieved in 2016 and in the first quarter of 2017 show that the establishment of these teams is a great asset for the Institutions and their contribution for the increasing of musculoskeletal tissues is quite significant as well as a higher use of cardiovascular tissues (valves).

PLB016 SURGICAL CHALLENGES TOWARD BETTER OUTCOMES OF PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION: EXPERIENCE OF THE FIRST EGYPTIAN PEDIATRIC LIVER TRANSPLANT CENTER

Ahmed Elshawadfy Sherif[1], Mohammed Taha Badawy[1], Amr Mostafa Aziz[1], Maher Osman[1], Hesham Abdeldaym[1], Mureo Kasahara[2], Koichi Tanaka[3], Khaled Abou El-Ella[1]
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Background: Since there is no cadaveric organ donation scheme is legislated in Egypt yet, living donor liver transplantation (LDLT) is the only curative option for children with liver failure. The complexity of pediatric LDLT arises from the anatomical and technical challenges in both donor and recipient operation. These challenges are reflected on recipient early postoperative morbidity and long-term survival.
Methods: Retrospective observational cohort study was conducted to evaluate surgical challenges and difficulties toward better outcomes in 52 pediatric LDLT recipients in National Liver Institute, Menoufia University from Apr 2003 to Dec 2016. As the first pediatric LDLT program in Egypt, the difficulties associated with the initiation (Phase A) and maintenance of the program (Phase B) in collaboration with Kyoto University were also analyzed.
Results: The mean age of recipients was 4.9 years (0.66–17). The indication for LDLT was biliary atresia (38.5%), PFIC (15.4%), cryptogenic cirrhosis (13.4), Crigler-Najjar type I (7.7%), Budd-Chiari Syndrome (5.8%), HCV cirrhosis (5.8%) and hepatoblastoma (1.9%). Type of graft used was segment II &III (76.9%), formal right and left liver lobes (15.3%), segment II, III & partial IV (5.8%), monosegment-III/hyper-reduced (3.8%). Early surgical 90-days morbidity were observed in 27% of cases; consisting of vascular complications (9%), biliary complications (8%) and graft size issues (10%). Acute rejection, infections, and other medical 90-days morbidity were observed 31% of cases. Kaplan-Meier survival analysis shows that patients who did not experience 90-days morbidity had a 1-year survival of 95%, 5-years survival of 89% and 10-years survival of 74%, while patients who had 90-days morbidity showed a 1-year survival of 40%, 5-years survival of 19% and 10-years survival of 19%. Log Rank 4.87 and $p = <0.005$.
Conclusions: Early postoperative 90-days morbidity significantly reduces patients' long-term survival.

PLB017 ESTABLISHMENT OF A ROBUST PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION PROGRAM IN THE ABSENCE OF CADAVERIC DONATION LEGISLATIONS AND RETRANSPLANTATION BACKUP: EGYPTIAN SINGLE CENTER EXPERIENCE

Ahmed Elshawadfy Sherif[1], Mohamed Taha Badawy[1], Amr Mostafa Aziz[1], Maher Osman[1], Hesham Abdeldayem[1], Mureo Kasahara[2], Koichi Tanaka[3], Khaled Abou El-Ella[1]
[1]National Liver Institute, Menoufia University, Egypt; [2]National Children's Hospital, Japan; [3]Department Of Transplantation And Immunology, Kyoto University, Japan

Background: Liver transplantation is the only therapeutic option in a big range of congenital and acquired end-stage liver diseases in children. Since there is no cadaveric organ donation scheme is legislated in Egypt yet, the establishment of pediatric living donor liver transplantation (LDLT) program was the only option available to treat those children. The absence of the retransplantation option as a backup to salvage children with serious early postoperative complications is an additional burden.
Methods: From Apr 2003 to Dec 2016, 52 pediatric LDLT were done in National Liver Institute, Menoufia University. A retrospective analysis was conducted to evaluate the challenges the encountered establishing the first pediatric LDLT program in Egypt in collaboration with Kyoto University (Phase A), and maintaining a robust and stable program as regards controlling early postoperative morbidity toward improving patients' survival (Phase B).
Results: Phase A (37 recipients) mean age 5.1 (0.66–17), donor BMI 25.6 (18–24.5) and GRWR 2.1 (0.88–4.3). Phase B (15 recipients) mean age 4.6 (1–13), donor BMI 25.5 (21.6–29.3) and GRWR 2.3 (1.2–3.7). Type of graft was 79.4% left lateral lobe in Phase A and 73.3% in Phase B. Other grafts used were left lobe (11.5%), left lateral with partial segment IV (5.8%), right lobe (3.8%), and monosegment-III/hyperreduced (3.8%). Kaplan-Meier survival analysis for both phases in correlation with early 90-days morbidity is shown in the figure below. Phase A Log Rank 14.1 and $p = <0.005$, and Phase B Log Rank 4.1 and $p = <0.005$. Phase A causes of mortality; surgical complications (46%), rejection (25%) and medical complications (29%). Phase B causes of death were only related to medical complications.
Conclusions: Establishment of a solid pediatric LDLT program in the absence of cadaveric retransplantation support requires robust measures to minimize postoperative surgical complications, which would effectively improve patients' survival.

PLB018 OUTCOMES IN PAEDIATRIC KIDNEY TRANSPLANTATION: A STUDY OF 233 PATIENTS

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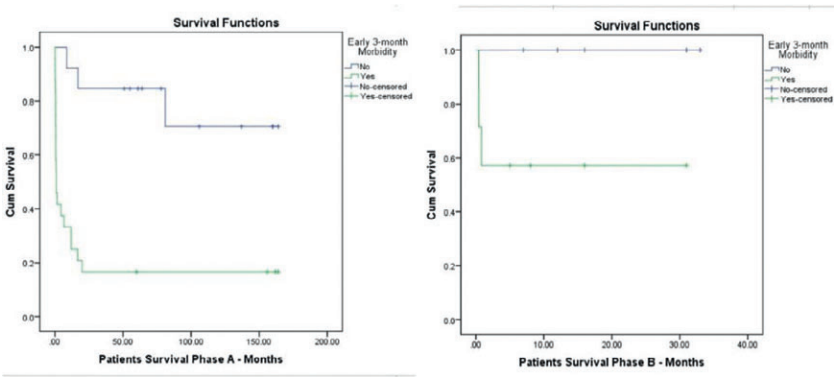
Background: This aim of this study was to investigate outcomes following paediatric kidney transplantation in addition to auditing the adherence of a newly introduced paediatric-specific transplant checklist.



Methods/Materials: All recipients who underwent kidney transplantation at two large UK paediatric transplant centres between 2011–2015 were included. 40 parameters were collected and analysed. Adherence of paediatric-specific transplant WHO checklists from one centre (June 2015-December 2016) was also reviewed.
Results: 233 children (140M, 93F) were transplanted in the 5-year period (66 DBD, 10 DCD, 157 living). Mean follow-up length was 1.6 years (±0.06). 8.9% of patients developed new-onset diabetes after transplantation (NODAT), 6.2% had transplant renal artery stenosis (TRAS), 4% had disease recurrence and 3% developed post-transplant lymphoproliferative disease (PTLD). Polyoma, CMV and EBV viraemia rates were 16%, 29% and 68% respectively. Higher-grade post-operative complications were found to significantly increase the risk of graft failure ($p < 0.05$). The rate of acute rejection did not differ between Azathioprine-based and mycophenolate mofetil-based immunosuppression groups ($p > 0.05$). Of the 22 transplant procedures that were eligible for use of the checklist, the adherence was 40.9%.
Conclusion: Multi-centre prospective studies are required to investigate these findings further. Renal transplantation remains the gold standard renal replacement therapy in children albeit the burdens of issues like NODAT, TRAS, recurrent disease, PTLD and infections.

PLB019 IMPROVED LONG TERM OUTCOMES OF PANCREAS TRANSPLANTATION IN THE MODERN ERA

Anna Adamusiak
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PLB020 BENEFITS OF SIMULTANEOUS PANCREAS KIDNEY TRANSPLANTATION: A SINGLE CENTER 10 YEARS RETROSPECTIVE STUDY

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Background: Simultaneous pancreas kidney transplantation (SPK) is eligibility to diabetes mellitus (DM) combined with end stage kidney failure. At present there is insufficient evidence to support the use of SPK over other kidney transplant options in patients with type 2 DM (T2DM). However in our center approximately 70% SPK recipients were T2DM.
Objective: This study aims to compare of the result of SPK and Kidney transplantation alone (KTA) for ESRD recipients with T2DM regarding complications of transplant, patients' survival, allografts' survival, kidney graft function, and metabolic control.
Methods: From January 2007 to June 30 2017 91 ESRD recipients with T2DM were performed KTA and had 44 recipients undergone SPK. Divided patients into two groups: KTA-T2DM ($n = 91$), SPK-T2DM ($n = 44$). Descriptive and death censored survival analysis was computed using Kaplan Meier curves and log-rank test. Complications (DGF, rejection, infection, protein urine, cardiovascular and cerebrovascular complications, hyperlipidemia) were compared between two groups.
Results: By univariate analysis Patients survival was similar between KTA-T2DM and SPK-T2DM at 1, 5, 10 years (1 year: 98.95% vs. 95.5%, =0.30; 5 years: 98.9% vs. 95.5%, =0.30; 10 years: 98.9% vs. 93.2%, =0.15). Kidney allograft survival was similar between KTA-T2DM and SPK-T2DM at 1, 5, 10 years (1 year: 100% vs. 95.4%, =0.15; 5 years: 98.9% vs. 95.5%, =0.30; 10 years: 97.8% vs. 95.5%, =0.49). Incidence rate of protein urine (25.3% vs. 15.4%, =0.04), lower eGFR (eGFR<40 ml/min.1.73 m^2) rate (38.5% vs. 18.2%, =0.00) and hyperlipidemia (70.3% vs. 52.3%, =0.05) were significantly decreased in SPK-T2DM group. Cerebrovascular complications (12.1% vs. 4.5%, =0.11) was likely decreased in SPK-T2DM group without significance.
Conclusions: For ESRD with T2DM recipients SPK can achieve better kidney allograft outcome and metabolic control than KTA.

Table 1: Comparation of two Groups Complication

	KTA-T2MD(n=91)	SPK-T2DM(n=44)	p
DGF	5/91(5.5%)	3/44(6.8%)	0.77
Rejection	4/91(4.4%)	4/44(2.3)	0.51
Infection	8/91(8.8%)	9/44(20.5%)	0.08
Protein urine(>200mg/L)	23/91(25.3%)	5/44(11.4%)	0.04
eGFR<40	35/91(38.5%)	8/44(18.2%	0.00
cerebrovascular complications	11/91(12.1%)	2/44(4.5%)	0.11
hyperlipidemia	64/91(70.3%)	23/44(52.3%)	0.05

PLB021 PREVENTION OF DESTRUCTION OF B-CELLS OF ISOLATED PANCREATIC ISLETS CAUSED BY 5-NITRO-8-OXYQUINOLINE

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5-nitro-8-oxyquinoline (5,8NOX) is a derivative of 8-oxyquinoline (D8OX). 16 D8OX formed in B-cells toxic chelat complexes with Zn+2-ions in B-cells that result destruction of cells within 15–30 min.

Aim of Work: To study direct effect of 5,8NOX on B-cells of isolated pancreatic islets (PI).

Methods: Isolated islets by Collagenase of 26 white mice 7 days old and of 6 Rabbits 5 days old were used. Pre-cultivation for 6 h in nutria media 199 + 5.5 mM Glucose+2% of bovine serum. Groups of islets. Group 1: islets+5,8NOX, 70.6 mg/dl for 20 min; Group 2: Rabbit's islets+5,8NOX, 72.3 mg/dl; Group 3: islets+Na salt of Diethyldithiocarbamic acid (DDCNa), a not diabetogenic chelat active chemical, 452 mg/dl for 10 min + 5,8NOX, 70.9 mg/dl for 20 min; Group 4: intact islets. Post-cultivation of islets 12 h in medium 199. Fixation in Bouin 1 h and in Ethanol 70 + H2S. Staining of paraffin sections by aldehyde-fuchsine, by immunehisto- chemical method (IG) staining of insulin in B-cells, fluorescent staining of Zn+2-ions (Zn) in B-cells by 8-para(toluenesulphonylamino)quinoline [8PTSQ] with measuring of absorbance and of intensity of fluorescence.

Results: Group 1: destruction of 62.8 ± 5.9% of B-cells in islets; marked decreasing of Insulin content (IG) and of Zn+2-ions in cytoplasm of B-cells: IG: 1.32 ± 0.09 (intacts-1.87 ± 0.04); Zn: 1.44 ± 0.06 (intacts-1.85 ± 0.06); Zn: 1.42 ± 0.04 (int- acts-2.02 ± 0.09). Group 2: destruction of 78.2 ± 6.7% of B-cells; marked decreasing of IG and of Zn+2-ions in B-cells: IG: 1.18 ± 0.04 (intacts-1.89 ± 0.07); Zn: 1.12 ± 0.03 (intacts-2.04 ± 0.06). Group 3: destruction of 21.7 ± 4.8% of B-cells in islets; not marked decreasing of IG and of Zn+2-ions in B-cells: IG: 1.76 ± 0.07 (intacts-1.91 ± 0.05); Zn: 1.72 ± 0.04 (intacts-2.08 ± 0.09). Group 4: alteration of 14.2 ± 1.3% of B-cells; Insulin and Zn+2-ions content in B-cells without changes: IG: 1.83 ± 0.07; Zn: 2.03 ± 0.06.

In conclusions: 1) 5,8NOX result binding of Zn+2-ions in B-cells.

PLB022 BETTER PATIENT OUTCOMES AND EARLIER DIAGNOSIS OF BRAIN DEATH WITH TRANSCRANIAL AND CAROTID ARTERY DOPPLER ULTRASOUND

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Doppler ultrasound is useful to demonstrate cerebral circulatory arrest. Intracranial pressure is the major limitation of its use. While increased intracranial pressure may cause false positive diagnosis of brain death in a patient with a treatable cause of cerebral oedema, a normal intracranial pressure due to an open skull may cause a flow-without-functional-brain. There are studies reporting that transcranial doppler ultrasound may delay the diagnosis of brain death in open skull cases. We are aware of this limitation. However, we use the transcranial doppler ultrasound to follow-up the cerebral circulation in patients with potentially fatal cerebral injury on a daily basis. This results in a treatment better tailored to the patient, and also earlier detection of brain death. We would like to present our findings in a patient cohort of 27 patients (19 male, 8 female, mean age 58.4 ± 21.7 years). Of these patients, 9 (33%) received daily examination with a doppler ultrasound (Group Doppler). Although the mean time from a glasgow coma scale of 3 to first clinical examination for brain death was longer (3.3 vs 1.4 days, p = 0.561), the mean time from the first clinical examination to diagnosis of brain death was shorter (24 vs 37 h, p = 0.014) compared to the rest (Control Group). To note, 24 h is the obligatory duration of follow-up between the first and second clinical examinations for brain death. Hence, 24 h is the legal minimum duration. Only one of these patients' relatives volunteered for organ donation. Among the rest, the time to cardiac arrest and time to first organ failure were longer in the Doppler Group (p = 0.011). This suggests that signs of brain death were noticed later in the Control Group. We would like to discuss the possibility of a bias of better vs inferior treatment, and a possible role of routine evaluation with doppler ultrasound in the management of potential brain death patients.

PLB023 UNEXPECTED LOSS OF ORGANS AFTER CONSENT TO ORGAN DONATION IN A BRAIN-DEAD PATIENT WITH SPONTANEOUS SUBARACHNOID HEMORRHAGE: ASYMPTOMATIC POLYCYSTIC KIDNEY DISEASE AND POLYCYSTIC LIVER DISEASE

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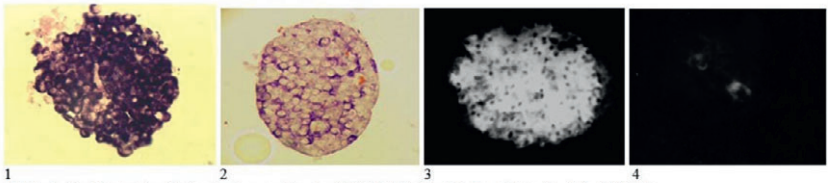
Subarachnoid hemorrhage (SAH) is a pathologic condition in which the blood spreads to the subarachnoid space and often occurs after trauma. Approximately half of spontaneous SAH cases occur due to intracranial aneurysms. Aneurysms leading to spontaneous SAH may be associated with various diseases. Autosomal dominant polycystic kidney disease (ADPKD) is the most common inherited cause of kidney disease characterized by progressive cystic growth in the kidneys and extra-renal findings such as cysts in other organs, intracranial aneurysms, and mitral valve prolapse. The prevalence of intracerebral aneurysms in patients with ADPKD is 8–10%, and therefore it is more common than in general population. Screening for intracranial aneurysms is recommended in high-risk individuals with ADPKD. A 57-year-old male patient was admitted to the intensive care unit due to widespread spontaneous SAH. He was admitted to the intensive care unit with a Glasgow Coma Scale (GCS) of 5. On the 13th day of hospitalization, brain death was diagnosed with a GCS of 3 and this situation was declared to family members. After meeting with the Organ and Tissue Donation and Transplantation of our hospital, the family donated his kidney and liver. In abdominal ultrasonography (USG) performed for organ evaluation after organ donation, polycystic kidney (PCK) and polycystic liver diseases (PLD) were detected. These organ pathologies were evaluated by the relevant committees, and it was decided that the organs were not suitable for donation. The patient's clinical features and new findings were shared with the family. It should be kept in mind that patients with SAH may be a potential candidate for organ donation due to brain death. It should be taken into account that symptomatic PCKD and PCLD may be detected rarely in these patients. We think that the organ donation process can be managed more accurately by performing research on the etiology if needed.



Aldehyde-fucshin staining (1,2); zinc ions staining by 8PTSQ (3,4). Fig.1,3 –intat islets; fig. 2,4 - 5,8NOX

PLB024 IMPLEMENTATION OF CRITICAL THRESHOLD CONCEPT IN CLINICAL TRANSPLANTATION: NEW HORIZON IN DISTANCE LEARNING

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Background: Each clinical case offers a great opportunity to reinforce these 'threshold concepts', however, not everyone of us is 'blessed' with these crucial not-so-difficult-to-acquire skills. The faculty of totally on-line MSc in Transplantation aims for unceasing engagement with students in order to facilitate them to negotiate through 'stuck places' and 'tricky bends' in their own work place. The mainstay of this course are: (a) Emphasis on achieving critical decision-making skills (b) Regular feedback to allow reflective practice and, thereby, constantly learning from errors and reinforcing good practices. The aim of this article is to assess the performance of educators and how well the 'ethos of critical threshold' has been accepted from the perspective of students.
Methods: We employed level 1, 2, 4 and 5 of Kirkpatrick pyramid (a) for the evaluation of performance of educators of program, and (b) to evaluate the acceptance of this non-traditional format in clinical medicine education by postgraduate 80 students in 22 countries.
Results: Students' survey (Kirkpatrick level 1) was done only for module 1 of cohort 1 reported students' satisfaction rate of 93%. Excluding a total of 12 drop-outs in 2 modules (n = 10 in first cohort's module 1, and n = 2 in module 2), as many as 93% of students of first cohort passed module. Nine out of 60 registrants of module 1 in 2nd cohort took recess for one year requesting to join back as a part of 3rd cohort commencing one year later, all 51 who continued passed though 3 of them had to resit. All those who passed module 1 (both cohorts) and 2 (1st cohort) registered for their respective next module (return on investment Kirkpatrick level 5).
Conclusion: For a successful model in distance learning in clinical transplantation it is imperative for the students to accomplish well defined 'critical-decision making' skills. This course equips clinicians to negotiate 'sticky mire', as obvious from high return of investment.

PLB025 EXAMINATION OF THE PROCESSES OF DONORS BETWEEN ADMISSION TO INTENSIVE CARE UNITS AND FAMILY APPROVAL IN YEAR 2016 IN BURSA/ TURKEY

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In 2016, 117 of the 241 brain death cases identified in the Bursa organ and tissue transplantation regional, coordination center in Turkey were used as donors. It is aimed to investigate the effects of the donors on the process of being on intensive care recipient and donor.
Objectives: Between January 1, 2016 and December 31, 2016 the donor source hospitals in Bursa, Balıkesir, Çanakkale, Yalova, Düzce and Bilecik provinces which are affiliated to the Bursa Regional Coordination Center, were visited, the interviews were conducted with the hospital coordinators, and the archives were reviewed.
Methods: Of the 117 cases, the period between the admission to intensive care units and monitoring by the hospital coordinators was 0–1 day in 43 cases (36.7%), 1–2 days in 34 cases (29%), 2–3 days in 17 cases (14.5%), 3–4 days in 12 cases (10.3%), 4 days and more in 11 cases (9.5%).
Results: It was determined the passing time between the starting the monitoring of donor candidates and being a donor as 0–1 day in 69 cases (59%), 1–2 days in 42 cases (35.9%), 2–3 days in 2 cases (1.7%), 3–4 days in 3 cases (2.5%), 4 days and more in 1 case (0.9%). The passing time between the diagnoses of brain death and family refusal was 0–1 day in 17 cases (13.7%), 1–2 days in 13 cases (10.5%), 2–3 days in 16 cases (12.9%), 3–4 days in 20 cases (16.1%), 4 days and more in 58 cases (46.8%). The rate of donor approval from donor relatives was found to be 47.5%. It was observed that 65% of the potential organ donation cases were detected by the hospital coordinators in first 48 h after the acceptance in intensive care units and 95% of the cases were identified as donor in first 48 h after the monitoring of donor candidate.
Conclusions: Our data also showed that the increasing the awareness of intensive care workers and organ transplant coordinators through the training should be required for increasing the detection of potential organ donors.

PLB026 INCREASING INFLUENZA VACCINATION RATES IN SOLID ORGAN TRANSPLANT RECIPIENTS IN AN OUTPATIENT TRANSPLANT CENTRE

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Background: 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. However, the reported rate of influenza vaccination among SOTR has been low at 52%. The primary objective of the study was to evaluate the rate of influenza vaccination (FV) among solid organ transplant recipients (SOTR) before and after the implementation of FV service in an outpatient transplant centre. Secondary objectives were to identify potential barriers to receiving annual FV, evaluate the incidence of influenza infection before and after the implementation of FV service and identify factors influencing the incidence of influenza and the rate of FV.
Methods: A prospective study on FV among SOTR was performed. SOTR were surveyed on FV and those who were not vaccinated in the previous year were educated on the need for annual FV. SOTR were vaccinated for influenza if they are eligible and agreeable. Incidence of influenza was collected 1 year before and after the visit.
Results: Only 77 (25.0%) SOTR (n = 308) received FV in the previous year. The main barriers to FV reported (n = 231) were "not informed to receive vaccination"(66.7%) and "vaccination is not necessary"(32.9%). After implementation of service, 75.8% of SOTR who had not received FV last year were vaccinated. The number of SOTR who received oseltamivir or had a positive influenza swab were 15 (4.9%) and 8 (2.6%) before and after the implementation of service ($p = 0.668$). SOTR who had FV in the previous year had a lower incidence of influenza ($p = 0.046$). The number of years post-transplant was a factor influencing rate of FV ($p = 0.01$).
Conclusion: The rate of FV among SOTR who were not vaccinated previously increased to 75.8% post implementation of FV service. The main barrier identified from the survey was the lack of knowledge for the

PLB027 BATS AND ORGAN DONATION – A CASE STUDY, LEARNING FROM CAUTIONARY TALES

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Background: Learning from incidents & sharing that learning is vital for clinical governance to be effective. NHS Blood & Transplant (NHSBT) is reliant on those who report & those involved in investigations to ensure that the processes are reviewed, improved as necessary & good practice is highlighted. Whilst contact with bats is not a common finding for organ donors, cases do occur where there has been actual or suspected contact. A small number of bats in the United Kingdom (UK) have been found to carry the Lyssavirus, which is the causative agent of rabies. The risk of exposure to the Lyssavirus from a bat bite or other contact however is low & therefore the risk to recipients is even lower. In one case a donor was reported to have been in contact with a bat, although it was not certain whether the donor had been bitten.
Methods: Following discussions with a Consultant Microbiologists in NHSBT, advice was sought from Public Health & wildlife experts. Whilst it was accepted that the risk of infection & so transmitted infection was very low, risk could not be completely excluded due to some uncertainties in the donor history. The decision was made to explore the possibility of obtaining brain tissue samples from the donor which was successfully arranged through excellent communication pathways & good consultation with the senior management team.
Results: Thanks to the efforts of the Specialist Nurses – Organ Donation, clinicians & scientists, these samples were taken & later confirmed as negative, eliminating any risk of transmission via the donated organs. Abdominal organs were retrieved & successfully transplanted.
Discussion: Rabies is almost always fatal unless treated very early. Rabies is a zoonotic infection, which means it is passed to humans by animals. Almost all cases of rabies occur outside the UK.

Learning points: If a donor has had contact with a bat – explore the date & nature of contact, whether the bat was alive & whether medical treatment was given.

Seek advice early!

PLB028 PREDISPOSING FACTORS OF FAILED APNEA TEST DURING BRAIN DEATH DETERMINATION IN POTENTIAL ORGAN DONOR

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Background: Apnea test is an essential component in the clinical determination of brain death, but it may incur a significant risk of complications such as hypotension, hypoxia and even cardiac arrest. We analyzed the risk factors associated with failed apnea test during brain death assessment in order to predict and avoid these adverse events.
Methods: Medical records of apnea tests performed for brain-dead donor between January 2009 and January 2016 in our institution, were reviewed retrospectively. Age, gender, etiology of brain death, use of catecholamine and results of arterial bleed gas analysis (ABGA), systolic/diastolic blood pressure (SBP/DBP), mean arterial pressure (MAP) and central venous pressure (CVP)

prior to apnea test initiation were collected as variables. A-a gradient and PaO2/FiO2 were calculated for more precise assessment of the respiratory system. In total, 267 cases were divided into a group which was completed apnea test and the other which was failed the test.
Results: 13 cases failed the apnea test and the majority of reasons were severe hypotension (SBP < 60 mmHg). In terms of hemodynamic state, SBP was significantly higher in the completed test group than the failed group (126.5 ± 23.9 vs. 103 ± 15.2, respectively; p = 0.001). In ABGA, the completed test group showed significantly higher PaO2/FiO2 (313.6 ± 229.8 vs. 141.5 ± 131.0, respectively; p = 0.008) and lower A-a gradient (278.2 ± 209.5 vs. 506.1 ± 173.1, respectively; p = 0.000). In multivariable analysis, low SBP (p = 0.040) and high A-a gradient (p = 0.002) were independent risk factors associated with failed apnea test.
Conclusions: Although the unexpected adverse events during apnea test for brain death determination do not occur frequently, they could be fatal. If a brain-dead patient shows low SBP and high A-a gradient, clinicians should pay more attentions and preparations prior to apnea test.

PLB029 IT HAS BEEN DETECTED IN THE EARLY STAGES OF BRAIN DEATH, DONOR CARE AND THE ROLE OF NURSING IN THE NUMBER OF ORGAN EXTRACTION

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Log-Purpose: The small number of donor Adana Numune Training and Research Hospital and not look sufficiently small that donors assess the desired level of organ extraction due to the inability to detect early brain death and the results identify the deficiencies in the donor's organ maintenance.
Material- Methods: The research method depends on the Adana Numune Training and Research Hospital (2nd and 3rd places) decided to carry out a survey of the 10 nurses working in intensive care units are given. A total of 152 nurses (142 females, 10 males) survey was conducted. 32 Average age (between 23–42). Studies leading to brain death determination of the correct patient, shorten the time identified brain death, the potential donor and the donor includes questions aimed at increasing care. Adana Teaching and Research Hospital of samples depends on what brain death / number of donor brain death in 2015 and the post-training survey held in 2016 / frost effect on the number were investigated.
Findings: The training post in the number of brain death in 2015 10, while 290% increase on the figure 29 in 2016, the number of donors in 2015 this figure 3 300% increase in 2016, while the first, brain death criteria, know the rate is known as the ratio of 77.6%, donor It was to remain in the care of 57%.
Results: "Early has been identified brain death and donor care and the role of nursing in the number of inference bodies" in the number of deaths brain detected by creating awareness and sensitivity after on education and increase the number of donors have shown a significant impact. Therefore, it was concluded that the training should be repeated.
Keywords: Brain Death, Donor Care, Intensive Care Workers.

PLB030 IMPORTANCE OF LIVER AND CADAVERIC RENAL TRANSMISSION TO LABORATORY FINDINGS AND IMPORTANCE OF COLD ISKEMI

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Objective: To evaluatelaboratorydifferencesbetweenlive-cadaverickidney-transplantsperformed in our 2015 year hospital and to evaluate the laboratory results in cold ischemia cha
Methods: Between January 01, 2012 and December 31, 2015, live and cadaver kidney transplants performed at Bozyaka Training and Research Hospital Organ Transplant Application and Research Center of Health Sciences University were retrospectively investigated. The effect of live and cadaveric kidney transplants on laboratory findings and the prospect of cold ischemia were investigated.
Results: A total of 54 live and cadaverized kidney transplants were made in the study conducted at the Health Sciences University Bozyaka Training and Research Hospital Organ Transplant Application and Research Center. Of these, 65% (35 people) cadavers were live and 35% (19 people) live transplants. 33.4% (18 persons) were female. The mean age was 40.6 in the cases of cadaveric transplants and 46.6 in the cases of cadaveric transplants. When we examined the periods of 1, 3, 6, 12 months after the transfer of 54 cases, Urea values decreased by 56% in cadaver transplants and decreased by 66% in live transplants. Creatinine levelsdecreased by 76% in cadaver transplants and 83% in live transplants. When cold ischemia periods were examined, kidney transplants wereperformed between 0–5 and 5–10 h, 10 cases with 10–15 h, 22 cases between 15–20 h, and finally 3 cases with over 20 h.
Conclusion: When laboratory and cadaveric renal transplant laboratory findings are examined, it is determined that the results are close to each other and that the duration of cold ischemia in cadaveric kidney transplants is within the standard ranges. Increased awareness of organ donation has been considered with the aim of increasing donation of organs from cadavers and it has been determined that the duration of cold ischemia in cadaveric kidney transplants is less effective on the problems of organ damage that are encountered and that the problems are mainly caused by re-

PLB031 COORENOR/FOEDUS PORTAL: ANALYSIS OF ORGANS' OFFERS RECEIVED BY ITALY FROM EU COUNTRIES BEFORE AND AFTER ITS INTRODUCTION

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Introduction: Approaches to growth transplants are increasing the number of donors and optimising the use of available organs. To make available to others those resources which cannot be used within the country of origin, first the COORENOR EU funded a project, followed in 2012 by FOEDUS Joint Action, led to the creation and development of an IT portal that could facilitate the exchange of organs
Methodology: We analysed number, type and origin of the offers received by Italy and the imported organs in 2 periods of 48 months before (01.07.08–30.06.12, period A) and after the introduction of portal (01.07.12–30.06.16, period B). In period B, we also examined how the offers were received
Results: Offers received were 404 and 753 respectively in A and B periods, 315 (41.8%) received through the Portal. Organs transplanted were 53 and 64 respectively in A and B periods, 20 (31.2%) sent through Portal. In both periods, most offered organs were lungs, most transplanted livers. The countries more active in exchanges in period A were Greece, Israel and Slovakia, in period B France, Greece, Malta, Czech Republic, Spain and Switzerland. In period A 18.6% of donors proposed were pediatric whereas in period B 21.3%. Use of portal has gradually increased, from 16.4% of 2012 to 84.7% in 2016
Conclusions: The increase in offers was related to the increase of donations in the EU countries and probably to a spreading common attitude to share resources. In Italy, this incremented by 21% the transplants performed with organs from foreign donors, especially pediatric. The portal, ensuring speed and simultaneity of offer, real time sharing of clinical information and updates of the donor and transparency of allocation, is also used in the International Partnership Agreements. In facts offers and transplants reflect the view of the agreements in force (with GR, MT and SAT countries). The improved user-friendly interface of FOEDUS incremented offers and transplants and helped operators carrying out their technical tasks

PLB032 EARLY ACUTE ANTIBODY-MEDIATED REJECTION (AMR) AFTER LUNG TRANSPLANTATION SUCCESSFULLY TREATED WITH C5 BLOCKADE

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Background: Mounting evidence exist on the risk of AMR after lung transplantation. The diagnosis is based on allograft dysfunction, donor-specific antibodies and specific histopathological findings, but the management remains poorly defined.
Case Presentation: We report a 48-year-old female who received bilateral lung transplantation because of lymphangioleiomyomatosis. Prior to transplantation, she had only one detectable (>500 MFI) low-titer preformed class II donor-specific antibody (DSA) (HLA DR17: MFI 1783), but with negative flow-cytometry crossmatches. After an uneventful early post-transplant course, she developed at day 7 rapidly progressive dyspnea with hypoxemia. The chest X-ray showed new bilateral interstitial pulmonary infiltrates. Repeat Luminex-assay at day 9 revealed the presence of several class-I (HLA A24: MFI 3978, HLA B8: 1886) and class II (DR17: 19088, DQ2: 3440) donor-specific antibodies with positive flow-cytometry T et B crossmatches. Transbronchial lung biopsy showed C4d deposits in the pulmonary capillaries without cellular rejection (A0-BO). She was treated with a single 600 mg dose of eculizumab followed by 3 weekly high-dose intravenous immunoglobulins (2 g/kg) and at 1 month post-transplant, she received one dose of rituximab (375 mg/m^2). Oxygen requirements rapidly decreased after eculizumab administration and she was off oxygen-therapy by day 14 post transplantation. Circulating DSA progressively decreased below 2000 MFI by day 41 post-transplantation and remained negative. The patient is doing well with a three-years follow-up.
de novo
Conclusion: Early acute AMR developed after lung transplantation in a recipient with low-titer preformed DSA prior to transplantation. No hyperacute AMR occurred. Eculizumab therapy followed by intravenous immunoglobulins was associated with rapid clinical and immunological improvement and should be considered in the presence of acute AMR with a de novo positive crossmatch and capillary C4d deposits.

PLB033 CRITICAL APPRAISAL OF EX-VIVO LUNG PERFUSION OF HUMAN DONOR ORGANS USING CT

Sofie Ordies[1], An Martens[1], Adriana Dubbeldam[1], Anna E Frick[1], Maarten Vander Kuylen[1], Sigi Nauwelaers[1], Philippe Rinieri[1], Bruno Desschans[1], Robin Vos[1], Bart Vanaudenaerde[2], Geert Verleden[1], Johny Verschakelen[1], Dirk Van RaeMDonck[1], Stijn Verleden[2], Arne Neyrinck[1]
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Background: Lung transplantation is hampered by persistent organ shortage with significant waiting list mortality. Many transplant groups use ex-vivo lung perfusion (EVLP) to evaluate, preserve and possibly recondition marginal donor lungs. The effect of pretransplant EVLP itself on lung quality and the value of the physiological parameters is still under debate. Therefore, the aim of this study was to assess isolated CT scanning of rejected human donor lungs before and after EVLP assessment. We evaluated the impact on lung parenchyma and the relation with EVLP physiology.
Methods: Ten declined human donor lungs were procured after standard cold flush (PerfadexTM) and stored on ice (inflated at 30 cm H2O; 4°C) by our local transplant team. Normothermic EVLP assessment was performed with acellular perfusate and closed atrium for a minimum of 2 h. CT-scans of explanted lungs were taken before and after EVLP and scored and summed for ground glass opacification (GGO), consolidation and septal thickening by a blinded radiologist.
Results: Lungs were declined for structural lesions ($n = 2$), acquired donor injury ($n = 5$) and non-graft related causes ($n = 3$). There was no correlation between the demographics, CT findings and physiological parameters. After EVLP, the CT score was improved in two lungs, decreased in two lungs and stable in the other six lungs. In contrast physiological evaluation (P/F ratio, compliance and PVR) was not in accordance with the CT findings and had a different evolution in time (Figure 1).
Conclusion: In these rejected donor lungs, we demonstrated that isolated CT-scanning is feasible. 20% of the lungs showed less injury after EVLP on CT-scan, 60% remained stable and 20% clearly deteriorated. This was not closely related to EVLP physiology. We believe that isolated CT-scan is a promising and valuable tool for additional organ assessment in combination with EVLP physiology. Our findings need further validation.

PLB034 COMPOSITION OF THE WAITING LIST FOR LUNGS TRANSPLANTATION IN ITALY IN THE PERIOD 2014–2016

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Introduction: Lung transplantation is the most penalized program by the donor's shortage and by their mean age increase. Waiting list for lung transplantation is constantly growing and mortality is still high. Aim of this work is to analyze the situation of waiting list for lung transplantation in Italy in the period 2014–2016 to find if any corrective factor could be studied to modify the allocation policies.
Methodology: We analyzed the waiting list (WL) composition in terms of demographic data, mortality, drop out for transplantation and waiting mean time (WMT) to transplant in the period 2014–2016 divided in to age, sex, blood group and primitive pathology.
Results: During over all this period, patients in WL were 964, 53.1% of them were male, mean age was 45.1 ± 15.6 years, most common blood group was 0 (49.5%) e indication to transplantation was pulmonary idiopathic fibrosis (30.8%). Were transplanted 385 patients (39.9%), 53.8% male, mean age was 44.8 ± 15.6 years, most common blood group A (46%) and indication to transplant was pulmonary idiopathic fibrosis (30.9%). WMT was 449.6 ± 547 days, greater among female patients (525.7 ± 595.6 days), among blood group 0 (546 ± 594.3 days) and cystic fibrosis (598 ± 599.1 days). Mortality in WL during over all the period was 17.7%, most frequently among male patients (20.8%), in blood group B (21.3%), in the age range >46 years (21.8%), in pulmonary idiopathic fibrosis (24.2%) and pulmonary hypertension (24.2%).
Conclusions: National criteria for lungs allocation are the age (pediatric or adult), the urgent status and geographical localization. Transplant centers chose the recipients according to codified criteria established at local level that includes with different weight the ABO compatibility/identity, clinical conditions and dimensions. In the light of this study some corrective actions in lung allocation could be studied to support the category of patient that are penalized by the actual allocation policy.

PLB035 LIVING DONOR LIVER TRANSPLANTATION USING ALPPS PROCEDURE: CASE REPORT

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Associating liver partition and portal vein ligation (ALPPS), inducing rapid hyperplasia of the liver remnant, may be potentially beneficial in small for size liver transplant setting. Here, we present a case of combination of ALPPS procedure with Living Donor Liver Transplantation (LDLT) for cryptogenic cirrhosis where graft recipient weight ratio (GRWR) was 0.44.
Case: 35 year old male weighting 72 kg was referred with the diagnosis of cryptogenic cirrhosis. He had 3 consecutive hepatic encephalopathy episode in last 3 months. MELD score was 26 with no ascites. His sister was the only available donor candidate. She had grade II hepatosteatosis. Computer assisted volumetry resulted a left lobe volume / total liver volume ratio of 24% and left lobe volume was 323 ml (Figure 1). GRWR was 0.45. Since his sister was the only donor and with lack of expectation of timely cadaveric graft availability the combination of ALPPS surgery and LDLT was discussed in detail at the transplant board. Informed consents were obtained. In stage I: we

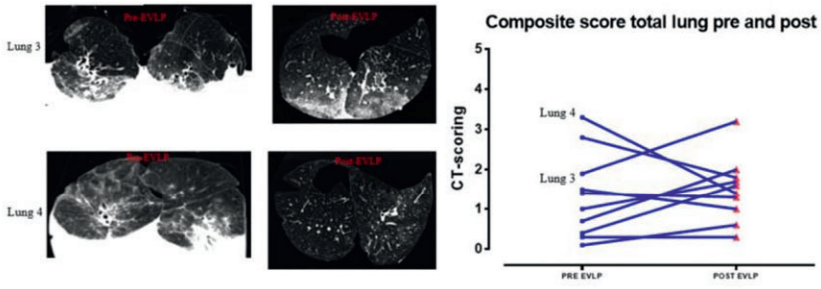

Figure 1: Isolated CT-scans of lung 3 (above) and lung 4 (down) pre- and post-EVLP. Lung 3 deteriorated after EVLP, while lung 4 improved after EVLP. CT scoring is visualized in the right graphic: CT-scoring of lung 3 increased (more GGO, consolidation and septal thickening), while the CT-scoring of lung 4 decreased.

harvested a 303 g left lobe graft from the donor. Left hepatectomy performed for the recipient, and left lobe liver graft was transplanted conventionally with hepaticojejunostomy. The recipient right lobe was left in place, right portal vein was ligated and cut. Before stage II surgery. Computer assisted volumetry reported a left lobe of 758 ml 18 days after stage I. In stage II: Recipient right lobe was resected as planned without complication. After stage II, graft biopsy showed intrahepatic cholestasis, bilirubin gradually decreased. Patient developed infected bile leak. Patient is stable at ward on postoperative 45 day with a recent scan showing 1414 ml graft volume (Figure 2). In this case of proof of concept, we tried to shift the risks from donor to recipient where there was only one donor candidate offering recipient a complex 2 stage procedure. This may be beneficial for increasing donor pool and help offering patients a life saving treatment.

PLB036 DOES DUCT-TO-DUCT ANASTOMOSIS TECHNIQUE INFLUENCE ON THE INCIDENCE RATE OF BILIARY COMPLICATIONS AFTER LIVER TRANSPLANTATION?

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Background: Biliary complications are the most important surgical complication after liver transplantation. Avoiding extended periductal dissection, not using cautery around the donor and recipient bile duct, sufficient hemostasis of the bleeding edges are among several technical recommendations to reduce these complications. Regarding complication incidence depending on the type of lumen anastomoses, interrupted or running, the results may differ among centers and surgeons. Hence, this retrospective study conducted aiming at evaluation of the risk factors affecting biliary complications following liver transplantation in Imam Khomeini Hospital Complex (IKHC), Tehran, Iran.
Methods/Materials: Four hundred fifty-two consecutive patients (61% male, 39% female) underwent liver transplantation from donors after their brain death between 2013 till 2016 evaluated for biliary complications and their risk factors. Choledochojejunostomy and end to end anastomosis were used in 41 (9%) and 411 (91%) of patients, respectively. Complications assessed based on imaging (ultrasonography, MRCP), interventional procedure (PTC, ERCP) and laboratory values results. All patients were followed up at least for six months.
Results: Fifty four patients (11.9%) had biliary complications from which 2.4%, 8.6% were due to anastomosis leakage and anastomosis stricture, respectively. CMV infection following transplantation, hepatic artery thrombosis, and cold ischemia time were significant risk factors for biliary complications. Despite significant increase in biliary complications due to hepatic artery thrombosis, hepatic artery stenosis did not resulted in such complications. Interestingly site or technique of the anastomoses had no effect on biliary complication rates.
Conclusion: We postulate technical modifications that preserve periductal circulation like ischemia time or impairment of hepatic artery blood flow but not anastomosis technique may have a role in biliary complication development rate.

PLB037 A SYSTEMATIC REVIEW OF CURRENT MANAGEMENT OF BILE LEAKS FOLLOWING LIVER TRANSPLANTATION

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Background: Bile leakage is a common postoperative complication of liver transplantation, and is a major factor contributing to morbidity, mortality and graft loss rates. There are three main management options for the treatment of bile leaks; endoscopic retrograde cholangiopancreatography (ERCP), percutaneous transhepatic cholangiography (PTC) and anastomosis reconstruction surgery. These methods have been systematically-reviewed and their efficacies evaluated.
Methods: A search of the PubMed and Web of Science online databases from January 1985 to June 2017 resulted in 18 studies fulfilling the following inclusion criteria. These included randomised and non-randomised controlled trials, cohort studies and retrospective studies on the subject of endoscopic, radiological or surgical approaches to the management of bile leaks after liver transplantation. All papers reviewed were written in English or had full translations available.
Results: ERCP was found to have a mean success rate of 85% across eight studies comprising 4982 procedures. PTC was also found to have a mean success rate of 85% across three studies comprising 902 procedures. The surgical option had a variable success rate of between 41% and 63% across three studies comprising 2190 procedures, depending on the cause of the bile leak. If due to bile duct necrosis, none of 13 operations were successful, but if the leak resulted from a biopsy, both cases of a pair were cured by this method.
Conclusions: Both ERCP and PTC are effective treatments for bile leaks following liver transplantations, with high success rates. Surgery has a much lower success rate, but this is often used as a last resort only when ERCP and PTC have failed. To develop reliable treatment guidelines large prospective studies comparing all three techniques are desired; a difficult task due to the low number of operations performed annually.

PLB039 RISK FACTORS OF EARLY HEPATIC ARTERY THROMBOSIS IN THE ANTIPLATELETS AND ANTICOAGULATION ERA FOLLOWING LIVER TRANSPLANT

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Background: Several risk factors of early hepatic artery thrombosis (eHAT) post liver transplant (OLT) have been identified, but there is no consensus regarding the use of antiplatelets or anticoagulation agents as prophylaxis.
Aim: To evaluate the predictors of eHAT after OLT and assess the incidence of eHAT and bleeding in patients on anticoagulation therapy.
Methods: Data of 504 patients transplanted in our centre between May 2009 and December 2015 were obtained from a prospectively collected database. Data of a control group of 914 OLT recipients were extracted from a previous study at our centre before the introduction of the anticoagulation protocol.
Results: 481 patients were included in the statistical analysis. 357 (74.2%) received antiplatelets and/or anticoagulation therapy depending on the anticoagulation risk sub-group. 18 patients had eHAT (3.7%). Bleeding happened in 117 patients (24.5%). In the control group, patients were divided in the same 4 anticoagulation risk subgroups but nobody was on therapeutic antiplatelets/anticoagulation treatment. On the multivariate analysis only PSC (OR 3.493, 95%CI 1.169–10.438, $p = 0.025$) and abnormal donor arterial anatomy (OR 3.797, 95%CI 1.390–10.372, $p = 0.009$) were predictors of eHAT. The antiplatelets/anticoagulation treatment did not reduce the incidence of eHAT in our patients when compared to the control group. The anticoagulation treatment was associated with an increased risk of post operative bleeding ($p < 0.0001$). A significant reduction of eHATs ($p = 0.036$) and an increase of post-operative bleedings ($p = 0.045$) were observed only in high and very high risk subgroups together.
Conclusion: this study provides evidence that PSC and abnormal donor arterial anatomy are predictors of eHAT. Therapeutic anticoagulation regimen helps to reduce the incidence of eHAT in high and very-high risk sub-groups but increases the risk of post-operative bleeding. The use of antiplatelets regimen alone has no effect in preventing eHAT.

PLB040 LIVER RE-TRANSPLANTATION: SINGLE CENTRE EXPERIENCE WITH 100 CONSECUTIVE CASES

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Background: Re-transplantation of liver (reOLT) is performed for early or late failure of the liver graft. It has been associated with a significant survival reduction compared to primary liver transplant (OLT). Disparity exists between organ donors supply and transplant demands. Moreover, patients waitlisted for reOLT compete with patients awaiting primary OLT. The aim was to evaluate last 100 consecutive cases of reOLT in our center.
Methods/Materials: We performed 104 reOLT in 94 patients between 5/1996 – 5/2017. This accounts for 7.0% of all liver transplants ($n = 1480$). Pediatric cases (<18 years) amounted to 9.6% of all reOLT. Out of these, there were 11 cases of second re-transplant (re-reOLT), 2 of them were pediatric patients. One primary OLT and 1 reOLT were referred for reOLT and re-reOLT from abroad. Early reOLT (≤6 months) occurred in 58.5%, and late reOLT (>6 months) in 48.5%. Indications for reOLT were: vascular thrombosis (hepatic artery and/or portal vein): 34.9%, recurrence of primary disease: 20.5%, rejection: 10.8%, biliary complications: 4.8%, other: 28.9%. The cumulative graft and patient survival rates in OLT and reOLT were compared using Log-Rank test.
Results: Mean follow-up was 4.0 ± 4.9 years (1 day-17.6 years). Results are summarized in Table 1. In the reOLT group 1 and 5-year graft survival was 77.1% and 66.0%, and the patient survival was 81.0% and 72.6%, respectively.

For comparison – in the primary OLT group 1 and 5-year graft survival was 87.5% and 80.1%, and the patient survival was 91.1 and 84.2%, respectively. Thus, the 5-year graft survival in reOLT was 21.5% lower (p = 0.016), and the 5-year mortality was 11.6% higher (p = 0.062) than after primary OLT.

Graft	1 year	5 year	Patient	1 year	5 year
OLT	87.5%	80.1%	OLT	91.1%	84.2%
reOLT	77.1%	66.0%	reOLT	81.0%	72.6%
p		0.016			0.062

Conclusion: Liver re-transplantation offers significantly worse long-term graft survival and numerically higher mortality in comparison with first transplantation. The reOLT remains the only treatment option for patients with graft-related life-threatening complications.

PLB041 DIABETES MELLITUS; EFFECTS ON OUTCOMES AND COMPLICATIONS IN LIVER TRANSPLANT RECIPIENTS

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Liver transplantation is a therapeutic option for end stage liver disease. Post-transplant diabetes mellitus (PTDM) is a complication frequently seen in liver transplant recipients. Few studies have examined the effect of PTDM on survival after liver transplant with controversial results. Some have shown only minor increases in infection rates among diabetics and no increase in mortality while some others have found higher mortality and infection rates in patients with PTDM.
Methods: This study is a retrospective designed study done to compare the survival and complication rates between adult liver transplant recipients with and without diabetes mellitus (DM) including those with PTDM in Shiraz organ transplant center who received liver transplantation between 2006 and 2011.
Results: A total number of 562 subjects with were included. The recipients had mean age of 55.13 ± 15.18 years old at the time of transplantation and mean of post-transplant follow up time of 8.5 years. Hepatitis B cirrhosis was the most common cause for liver transplantation (19.2%) followed by cryptogenic cirrhosis (18.5%). Out of 562 patients, 88 (15.7%) had past history of DM before transplant, 77 (13.7%) were PTDM and 138 (24.6%) had impaired fasting blood sugar (FBS) after transplant. We considered patients with impaired FBS as diabetics. The most common post-transplant complication was infection; 15 cases in diabetics and 11 cases in subjects with normal blood sugar (p = 0.7). The rejection rate was 17.8% in diabetic and 18.1% in non-diabetic recipients with no significant difference (p = 0.92). Mortality rate was 33% in diabetics (43.2% in patients with pretransplant DM, 41.6% in PTDM, and 21.7% of recipients with impaired FBS) and 17.8% in non-diabetic subjects (p < 0.001).
Conclusion: Diabetes mellitus is associated with the significant increase in post liver transplant mortality rate.

PLB042 LIVER TRANSPLANTATION RESULTS IN OUR CENTER NEWLY ESTABLISHED

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Background: Liver transplantation is the current treatment for end-stage liver failure. In this study, we aimed to present our experience with cadaveric donor liver transplants between 30.07. 2015 and 30.07.2016 in our newly established organ transplant center. Patients and
Method: The organs were provided from brain deaths declared cadavers in hospitals linked to the coordination system in Isparta and its district. Organ pairings were achieved according to the data of the Ministry of Health. Surgical technique; All livers were transplanted orthotopic and completely. Vena cava anastomosis were performed the piggy-back method by applying partial clamping. Portal vein and hepatic artery anastomosis were performed end-to-end. Bile duct anastomosis were performed duct-to-duct over the stent.
Results: Six patients (5 male, 1 female), mean age 55.3 (45–72) years, had cadaveric donor liver transplantation. Patients' characteristics, diagnosis, operation times, the amount of transfusion and complications are summarized in Table 1. The histopathology reports of the removed livers were the compatible preoperative diagnosis. Acute myeloid leukemia (AML) was detected in one patient. No preoperative or early postoperative mortality were observed.
Conclusion: Since the establishment of our organ transplantation center 9 cadaveric donors were acquired to the national system and 6 liver transplantations were performed in our center. All of our patients were discharged without any complication. However, 6 months from the operation AML was diagnosed in one patient. We consider that the reasons why no early complication are the patient selection, careful follow-up, and treatment of the patients in a newly established transplantation center.

Patient No	Mean Age 55.3	Sex	Preoperative diagnosis	Operation Date	Duration Mean / 298.3 min	Transfusion Unit
1	72	M	Primary biliary cirrhosis	01. 10. 2015	345	3 ES, 5 FFP
2	62	M	Hepatitis B	14. 01. 2016	250	4ES, 7 FFP
3	45	F	Primary biliary cirrhosis	11. 06. 2016	330	12 ES, 12 FFP
4	46	M	Hepatitis B	26. 02. 2016	265	1 ES, 3 FFP
5	46	M	Alcoholic cirrhosis	20. 04. 2016	240	5 ES, 3 FFP
6	61	M	Alcoholic cirrhosis	09. 08. 2016	360	9 ES, 7 FFP

PLB043 PSYCHOLOGICAL RESPONSE AND QUALITY OF LIFE AFTER TRANSPLANTATION

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Background: The purpose of this study was to evaluate the quality of life and psychological response after liver transplant recipients.
Methods: The subjects of this study were 154 liver transplant recipients who were receiving follow-up after liver transplant at one general hospital in Seoul. QoL and psychological response were evaluated using SF-36, and TxEQ (Transplant effects questionnaire).
Results: The mean scores of worry, disclosure, adherence, and responsibility in liver transplant patients were higher than those of the sub-domains, but the level of guilt was intermediate. The QoL was higher in scores of PCS than in scores of MCS. The mean score of bodily pain was the highest with 53.50 points and the role emotional was lowest with 42.20 points. As a result of examining the relationship between psychological response and QoL, there was no statistically significant correlation between psychological response and PCS. However, MCS showed a statistically significant negative correlation with psychological response; worry ($r = -0.175$) and a positive correlation with psychological response; disclosure ($r = 0.420$).
Conclusion: These results suggest psychological responses are closely related to the quality of life. Therefore, in order to improve the overall quality of life of these patients, there is a need for the medical staff to provide counseling related to the patient's health condition and emotional problems on a regular basis do.

PLB044 EVALUATION OF DISCARDED STEATOTIC LIVERS BY NORMOTHERMIC MACHINE PERFUSION: IS THERE A CHANCE TO INCREASE OUR DONOR POOL?

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Background: The scarcity of liver grafts and the enlargement of indications for liver transplantation (LT) have a negative impact on the waiting list mortality. Moderate to severe steatosis is a contraindication in LT; mechanisms why some steatotic livers failed to function remain unclear. Our aim is to evaluate the functionality of this type of grafts by the "*ex vivo*" normothermic machine perfusion (NMP).
Methods: 10 steatotic livers declined for transplantation prior to a frozen section biopsy (>50% macrosteatosis), were procured and perfused during 6 h

by NMP. Perfusate samples were taken to measure transaminases, lactate, electrolytes and glucose. Quantification of bile production and vascular resistance and flow were analysed at different moments. Complete anatomopathological examination was done after perfusion.
Results: Non-alcoholic fatty liver disease (NAFLD) was found in 50% of the cohort and the rest had Non-alcoholic steatohepatitis (NASH). The median percentage (range) of macrosteatosis (MaS) and microsteatosis (MiS) was of 40% (10–90%) and 40% (20–50%), respectively. Significantly higher bile production was seen in NALFD grafts ($p < 0.05$) as well as lower vascular resistance. Lactate levels were lower at the end of perfusion in NALFD grafts ($p < 0.05$) however only 3 (30%) were under normal values. Transaminases were significantly higher in the group of NASH ($p < 0.05$). No difference was found concerning electrolytes and glucose.
Conclusion: NMP enables assessment of hepatic function and suggest a possible route for the recovery of fatty livers discarded on conventional criteria. We demonstrate that NAFLD grafts could be used potentially in the future to address the shortage of organs for transplantation.

PLB045 BIOLOGICAL CHARACTERIZATION OF EXTENDED CRITERIA LIVER GRAFTS

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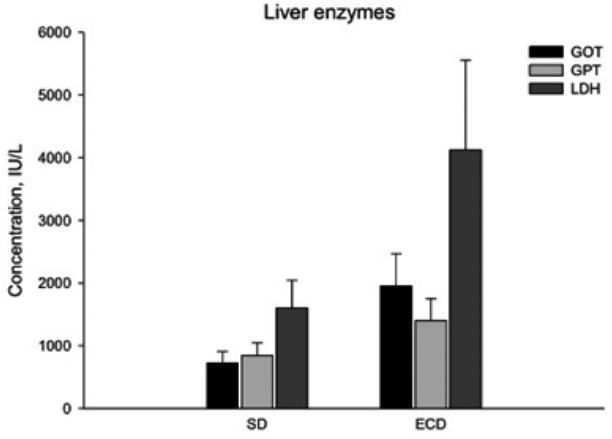
Introduction: A definition of Extended Criteria Donors (ECD) is not precisely stated in literature. Risk evaluation for liver graft nonfunction (PNF) or initial poor function (IPF) is based on donor variables rather than graft itself. Here we would provide graft characterization during cold ischemia of standard and ECD donors.
Material and Methods: After complete caval clamp, the graft was flushed with preservation fluid (PF). The PF was collected using a cannula placed in the posterior aspect of cava vein. PFs were dived in 2 groups according to donor's features: Standard (SD) and ECD. Analysis performed on PFs were: basic metabolic panel, liver enzyme evaluation, cell count and characterization, free hemoglobin. Data were analyzed using t-test.
Results: 15 PFs were included: 6 in SD and 9 in ECD group Overall mean donor age was 61 (33–79) years. No differences among the two groups were found according to donor and procurement features. Only Donor Risk index, as expected, was increased in ECD: 2.02 (1.88–2.11) vs 1.68 (1.24–1.86) ($p = 0.027$). No PNF/IPF were observed. Compared to SD, ECD showed increased PF levels of GOT ($p = 0.045$) and a trend towards higher concentration of GPT ($p = 0.176$), LDH ($p = 0.132$) (Figure). Azotaemia likewise tended to increase in the ECD group (3.7 ± 1.5 *vs* 6.4 ± 0.9, $p = 0.185$). As regards circulating cells, 334.5 ± 99.9*106 cells were counted in PFs of ECD (*vs* 390.4 ± 113.3*106 cells, $p = 0.739$), of which 18% were lymphocytes (*vs* 12%), 8% granulocytes (*vs* 5%), and 10% neutrophils-monocytes (*vs* 3%). Finally, a greater release of free hemoglobin (Hb) was detected following erythrocyte lysis in the ECD group (217.7 [129.4–362.3] *vs* 517.58 [42.6–731.3], $p = 0.042$).
Conclusions: Increased liver enzyme concentration indicates greater hepatic cytolysis in ECD, while higher Hb concentration suggests a worst sinusoidal flush. This phenomenon could be a consequence of reduced tolerance to ischemia/reperfusion injury and increased edema formation of ECD livers during cold storage.



PLB046 LIVER ABSCESS IN LIVER TRANSPLANT RECIPIENTS

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Introduction: Infections after solid organ transplantation are an important cause of mortality and morbidity. Liver abscess is a rare complication after liver transplant (previous studies describe an incidence around 2.6% with a mortality rate of 41%). The aim of this study is to review our experience in this pathology.
Material and Methods: Between January 2000 and December 2015, 1202 orthotopic liver transplants (OLT) were performed. We analyze the incidence, clinical characteristics, treatment and survival of patients who developed a liver abscess after OLT.
Results: 13 patients were diagnosed with hepatic abscess (1.1%). Average age was 54 years (SD 15.17); 11 males and 2 females. 53.8% of patients were diabetic; indications for OLT were HBV cirrhosis (3), HCV cirrhosis (3), alcoholic liver disease (4), primary biliary cirrhosis (2) and cryptogenic cirrhosis (2). 3 patients were living donor recipients and 1 patient received a donor after cardiac death type II graft. Most patients (11) were being treated with calcineurin inhibitors. The diagnosis of liver abscess was associated with hepatic artery thrombosis in 8 patients (61.5%), ischemic cholangiopathy in 7 cases and bile duct stricture in 10 (76.9%). Mean time from transplantation to liver abscess diagnosis was 1278 days (50-4211). All patients were initially diagnosed using ultrasound. The study was completed with computerized tomography in 12 cases and MRI in 7. 9 patients underwent CT-guided percutaneous drainage, only one required open surgical drainage. 2 patients needed liver retransplantation. Klebsiella Pneumoniae was isolated in 3 cases and E. Coli in 4 cases. Patient survival rate was 67.3%, 57.7% and 46.2% at 1, 3 and 5 years respectively.
Conclusion: Ischemic cholangiopathy is frequently related to the development of liver abscess after OLT. The appearance of this complication is associated with a decrease in patient survival.

PLB047 HUMAN PARVOVIRUS B19 INFECTIOUS DISEASE FOLLOWING LIVER TRANSPLANTATION

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Background: Human Parvovirus B19 infectious disease is a rare complication following liver transplantation which is clinically significant for liver transplant practice.
Method: we reviewed data for liver transplant recipients from all donations of cardiac death March 2010 through March 2017, 5 cases with Human Parvovirus B19 infectious diseases were selected out, and diagnoses were made from positive serological marker and bone marrow puncture. Severe anemia and its comorbidities were confirmed, blood transfusion was needed, immunosuppression was changed and immunoglobulin was employed for all 5 recipients.
Results: 4 male and one female recipients were diagnosed with Human Parvovirus B19 infectious disease, the onset time from liver transplantation varied from 29–415 days, anemia improved in all patients, comorbidities existed for 2 patients and cause 2 death, 3 more patients fully recovered from this infection, one patients died from carcinoma of the tongue, this was 2 were still alive
Conclusions: PVB19 is a rare but clinically significant infection whose comorbidities will bring about a refractory intervention.

PLB048 IMMUNOSUPPRESSION REGIME CHANGE OF TACROLIMUS TO ONCE DAILY IN LIVER TRANSPLANTATION IS SAFE AND PROMOTES ADHERENCE: A SYSTEMATIC REVIEW AND META ANALYSIS

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Background: Immunosuppression (IS) remains a critical topic in liver transplantation also due to the evolution of new substances, especially Calcineurin Inhibitors (CNI). CNIs are frequently used in order to prolong graft survival but the infectious and renal complications involved can be grave. Another concern is the amount of medication patients need to consume daily which causes non-adherence and can lead to rejection.
Methods/Materials: A systematic review was conducted in March 2017. Randomized controlled trials (RCTs) and Controlled clinical trials (CCTs) meeting the following criteria were included: adult patients

undergoing first liver transplantation; comparison of Tacrolimus once daily to twice daily; The primary outcome was the patient adherence to the medication regime. Secondary outcomes were as follows: safety (measured as rate of medication complications), graft survival and pharmacokinetics. Taking clinical heterogeneity in trial participants and treatments into account, a random-effect model was chosen for the meta-analyses.
Results: Change of the immunosuppression regime showed improved adherence of patients according to individual criteria and the Basel Assessment of Adherence Scale to Immunosuppressives. There was no statistically significant increase in Serious Adverse Events (SAEs) or rejection.
Conclusion: Based on validated adherence evaluation and SAEs the change in Tacrolimus-based immunosuppression is safe and promotes adherence in liver transplant patients.

PLB049 PRESERVATION OF RENAL FUNCTION WITH EARLY USE OF MTOR INHIBITOR OR LATE CHANGE IN IMMUNOSUPPRESSION IN LIVER TRANSPLANTATION

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Introduction: Early use of everolimus (EVR) associated with reduced calcineurin inhibitor (CI) in liver transplantation (LTx) has been shown to be effective in preventing acute cellular rejection (ACR) with reduced nephrotoxicity caused by chronic use or high doses of CI. The objective of this study was to compare the benefit of early (≤30 days post-LTx), intermediate (>30 days and ≤180 days) and late (> 180 days) use of EVR in preserving renal function (RF) in the LTx patients.
Methods/Materials: A prospective study of 98 patients submitted to LTx with hepatocellular carcinoma and / or acute renal injury (GRF <60 ml/min), as measured by the Cockcroft-Gault formula on days 1 (1st day EVR), 30, 90, 180, 360. The initial dose of EVR was 0.75 mg or 1.0 mg bid with a serum level (SL) adjusted between 3–6 ng/ml (the same for reduced dose tacrolimus). For the evaluation of efficacy, the presence of ACR confirmed by biopsy was considered.
Results: Comparing the three groups, it was observed that GRF remained stable, with no difference over time ($p = 0.620$). In the early group, the GRF profile of the patients with SL adjusted TAC, showed a tendency to improve the RF. In patients with SL TAC> 6 ng/ml, despite the stability of RF, there was a tendency for GRF to drop ($p = 0.034$). Regardless of the group, no patient had biopsy-confirmed ACR from the onset of EVR.
Conclusion: Stability of RF throughout the sample was observed over the follow-up period regardless of the lower GRF in those patients who started EVR late. There was a trend for improvement of GRF in those patients treated early with adjusted SL TAC, without impairing efficacy. These results are promising for further studies with a larger number of patients and longer follow-up.

PLB050 CONCANAVALIN-A STIMULATED CD8 + CD40L+ T-CYTOTOXIC LYMPHOCYTES AND DONOR AGE AS POTENTIAL SURROGATE BIOMARKER FOR HCV RECURRENCE RISK IN LIVER TRANSPLANTATION

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Introduction: Currently, liver transplant (LT) is a well-established treatment for patients with chronic HCV-related cirrhosis. Upon LT, HCV infection recurs virtually in every recipient. Progression of chronic HCV is more aggressive after LT with a probability of developing graft cirrhosis estimated in 30% at 5 years. This life-treating condition requires a major effort searching for quick and reliable biomarkers capable of predict HCV recurrence.
Objectives: Based on these instances, our group evaluated CD8 + CD154 + T-cytotoxic (Tc) cells in a *de novo* cohort of LT recipients as measures of the risk of post-LT HCV recurrence, using polychromatic flow cytometry over the first year post-LT.
Material and Methods: Thirty Caucasian *de novo* LT recipients were consecutively recruited from the University Clinical Hospital 'Virgen de la Arrixaca' in Murcia Region in the Southeast of Spain. A peripheral blood sample was taken at baseline as well as at different time points over the first year post-LT (7 and 15 days, 1st, 2nd, 3rd, 6th and 12th months). Whole peripheral blood samples were cultured with Concanavalin-A (Con-A) in a humidified 5% CO2 incubator at 37°C for 72 h. Upon cell culture, samples were subsequently stained with MoAb for its assessment by Flow Cytometry. Eleven (36.7%) LT recipients (LTr) developed HCV recurrence (HCVr) during the follow-up period.
Results: Donor age, but not other demographic characteristics, showed significant differences among LTr with and without HCVr. CD8 + CD154 + Tc cells were significantly increased among HCVr study group at 90, 180 and 365 days post-LT. Furthermore, we found that a percentage of CD8 + CD154 + Tc cells>0.68% ($p < 0.001$) along the long-term was able to stratify LTr at high risk of HCVr. CD8 + CD154 + Tc cells [HR = 3.28, 95% CI 2.1–5.2, $p < 0.001$] for a percentage (%) >0.68% had a significant impact on HCVr. In the univariate Cox regression model of LTr, older donor and CD

PLB051 DO MESENCHYMAL STROMAL CELLS PROMOTE HLA SPECIFIC ANTIBODIES FORMATION AFTER INFUSION IN LIVER TRANSPLANT RECIPIENTS?

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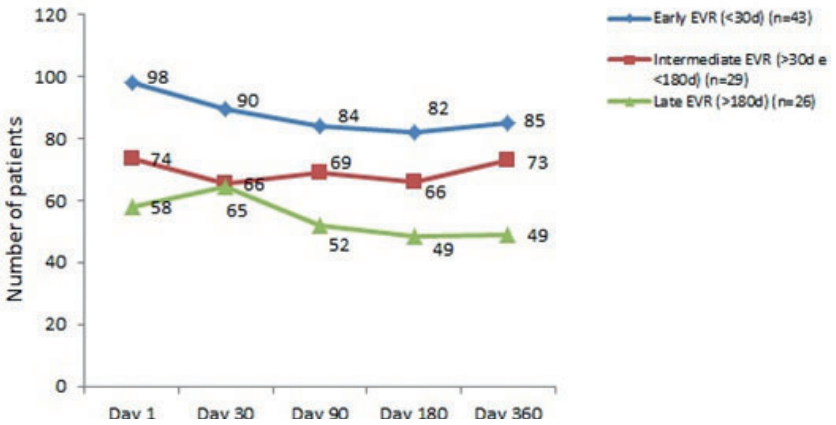
Background: Mesenchymal stromal cells (MSC) immunogenicity is debated. We recently published a prospective, controlled, phase I study evaluating a single administration of third-party MSC in 10 liver transplant recipients (LTR). Here, we focus on the development of antibodies (Ab) against MSC-donor HLA ($_{MSC}$DSA) in LTR following MSC infusion.
Methods: Ten LTR under standard immunosuppression received 3rd-party unrelated MSC on postoperative day 3, and were prospectively compared to 10 control LTR. Recipients and donor of either liver or MSC were genotyped for HLA A/B/C/DR/DQ. Recipients were tested for HLA Ab before and 1, 3 and 6 months after transplant by Luminex®. Ab were considered as positive in case of MFI >1500 and in accordance with the manufacturer's recommendations.
Results: In MSC-treated group, 2 patients showed pre-transplant $_{MSC}$DSA. During follow-up, $_{MSC}$DSA were detected in 6 additional patients who had received multiple red blood cell allo-transfusions before and/or rapidly after transplant. These patients also developed Ab against various MSC-unrelated



HLA. Two patients did not develop any $_{MSC}$DSA throughout the follow-up, and one of them did not receive any allo-transfusion. MFI of detected $_{MSC}$DSA were not significantly different from MFI of other detected HLA Ab. In control group, 3 patients were sensitized pre-transplant, and 6 patients developed *de novo* multiple HLA Ab. Four of these had received multiple allo-transfusions.
Conclusion: In the large pool of HLA Ab identified in LTR post transplant, the detection of $_{MSC}$DSA is most likely caused by allo-transfusions rather than related to MSC infusion. Further studies are required to confirm that MSC are "immune privileged".

PLB052 IMPACT OF DONOR-RECIPIENT GENETIC RELATIONSHIP ON OUTCOME OF LIVING DONOR LIVER TRANSPLANTATION. A SINGLE CENTER EXPERIENCE

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Introduction: Living donor liver transplantation (LDLT) is a valuable option for expanding donor pool, especially in localities where deceased organ harvesting is not allowed. In addition, rejection rates were found to be lower in LDLT, which is attributed to the fact that LDLT is usually performed between relatives. However, the impact of genetic relation on the outcome of LDLT hasn't been studied. In this study, we examined the difference in rejection rates between LDLT from genetically related (GR) donors and genetically unrelated (GUR) donors.
Patients and Methods: All cases that underwent LDLT during the period from May 2004 till May 2014 were included in the study. The study group was divided into 2 groups; LDLT from GR donors and LDLT from GUR donors.
Results: Three-hundred and eight patients were included in the study; 214 from GR donors and 94 from GUR donors. HLA typing wasn't included in the workup for matching donors and recipients. GUR donors were wives (36; 11.7%), sons in law (7; 2.3%), brothers in law (12; 3.9%), sisters in law (1; 0.3%) and unrelated (38; 12.3%). The incidence of acute rejection in GR group was 17.4%, and in GUR group was 26.3% (p-value = 0.07). However, there was a significant difference in the incidence of chronic rejection between the 2 groups; 7% in GR group and 14.7% in GUR group (p-value = 0.03). In terms of overall survival, there was no significant difference between both groups.
Conclusion: LDLT from GUR donors is not associated with higher incidence of ACR. However, CR was significantly lower when grafts are procured from GR donors. HLA matching may be recommended before LDLT from GUR donors.

PLB053 RESULTS OF BILIARY COMPLICATIONS WITH THE USE OF LIVER GRAFTS FROM 70 TO 94 YEARS

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Introduction: The incorporation of the use of grafts from marginal donors, elderly donors, as a good source of production, under a very careful prior selection of the organ currently its use is limited for fear of obtaining poor results, being a challenge despite the results observed so far.
Methods: A retrospective, longitudinal, comparative and unicentric study of patients transplanted with hepatic grafts aged 70 to 94 years who developed biliary complications and those who did not present them.
Results: From January 1994 to June 2016, 212 liver transplants were performed with donors aged 70 to 94 years. A total of 16 patients (7.54%) developed biliary complications: 2 ischemic cholangiopathies (12.5%), 11 stenoses (68.75%) and 3 fistulas (18.75%). Donors with similar characteristics, with Males 10 (62.5%) vs 77 (39.3%), AHT 12 (75%) vs 110 (56.1%), CRA 2 (12.5%) vs 12 (6 (50%), vasoactive drugs 8 (50%) vs 151 (77%), prothrombin activity 87 (24) vs. 75 (27) (p = 0.04). Similar characteristics of the etiology, AHT 1 (6.2%) vs 40 (20.4%), low platelets in the complications group (p = 0.01) Bile duct choledocho-choledochostomy was performed without T-Tube 12 (75%) Vs 184 (93.9%) (p = 0.02), immunosuppression with tacrolimus and steroids, both groups comparable for times of cold and hot ischemia. We can highlight that the development of biliary complications is associated with a higher rate of medical, infectious, vascular, cardiovascular and respiratory complications, post-transplant reoperations 3 (19%) vs 19 (10%), re-transplantation 2 (12.5%) vs 10 (5.1%).
Conclusions: The rate of bile complications in liver transplants with grafts older than 70 years was similar to the described with the use of younger donors. The development of biliary complications is associated with a greater development of medical, infectious, vascular, cardiovascular and respiratory complications, being more frequent the need for post-transplant reoperations and re-transplants in this study group.

PLB054 PREDISPOSING FACTORS FOR THE DEVELOPMENT OF ARTERIAL COMPLICATIONS WITH THE USE OF LIVER GRAFTS ≥70 YEARS

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Introduction: The use of liver grafts from elderly donors has shown good results in recent years, a problem when considering the use of this type of grafts is the condition or arterial changes typical of aging.
Methods: Retrospective, longitudinal and comparative study of all recipients with hepatic grafts ≥70 years who developed arterial complications and those who didn't present them.
Results: From 1994–2016, 212 liver transplants were performed with donors ≥70 years. A total of 14 patients (6.6%) developed vascular complications: 5 stenosis (35.71%) and 9 thrombosis (64.28%). Donors with similar characteristics, regarding longer ICU stay 39 (73) vs 25 (24) h, as well as hypotension 5 (35.7%) vs 55 (27.8%) and use of vasoactive drugs 11 (78.6%) vs 148 (74.7%), similar analytical parameters between both groups without clinically relevant differences. Receptor with a mean of 60 (9.55) years, the characteristics were similar between both groups except for a lower rate of HCV 1 (7.1%) vs 72 (36.4%) (p = 0.01), DM 4 (28.6%) vs 35 (17.7%), previous abdominal surgeries 3 (21.4%) vs 22 (11.1%) and a lower platelet count 71 000 (56 500) (P = 0.04). We couldn't analyze the characteristics of the arterial anastomosis as it is a retrospective study and we lack this information. Bile duct choledocho-choledochostomy was performed without T-Tube, immunosuppression with tacrolimus and steroids in both groups. We can highlight that the development of arterial complications is associated with a higher rate of biliary complications, medical complications and post-transplant renal failure, which resulted in a longer stay in the ICU.
Conclusions: The rate of vascular complications in liver transplants with grafts older than 70 years was similar to that described with the use of younger donors. The development of vascular complications is associated with a longer stay in the ICU and a higher rate of development of medical complications, biliary and acute renal transplant post-transplant.

PLB055 FIRST CASE OF LIVER RETRANSPLANTATION USING DCD (DONOR AFTER CARDIAC DEATH) MAASTRICHT TYPE II

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Background: The scarcity of organs for liver transplantation (LT) is even more dramatic in liver retransplantation (LRT). Occasionally, in life threatening situations such as primary graft failure, we have to consider new sources for LRT. The safe employ of grafts from DCD type II from our team's experience, by far the longest in the world, allowed us to consider these grafts as an adequate option for liver retransplantation, despite the increased rate of long-term biliary complications, and the possibility of a new graft failure.
Methods/Materials: We present a case report of LRT in a 37- year-old man with hepatic HCV cirrhosis plus HCC, MELD score 17; Child B8; performed in our institution.
Results: The patient underwent a first LT from right hepatic split graft, from a 32-year-old brain death donor after 11 h of cold ischemia, and 45 min of warm ischemia. Transfusion requirements were 1 unit of PRBC and 2 FFP units. There were no incidents.

After 24 h the patient presented with deteriorating liver function tests and renal failure, requiring renal replacement therapy and respiratory support. A CT scan was performed that showed hepatic artery thrombosis and multiple liver abscesses. He was placed on code 0 for retransplantation and for 3 days he progressively deteriorated until we were offered a DCD type 2 graft from a 35 years old female with 5 min of cardiac arrest, ECC up to 3 l, no alteration of liver enzymes and no macroscopic disease, with less than 5% macrosteatosis.

Retransplantation was performed with no complications, 3 RBC and 1 FFP were transfused. Postoperative course was uneventful except for initial renal dysfunction, solved by the 3rd day. Patient was discharged on the 8th day on MMF and low-dose Tacrolimus. After 3 months the liver is doing well, without evidence of either biliary or arterial disease.
Conclusion: To our knowledge, this is the first case of LRT using DCD type II grafts, which could be considered an acceptable source for liver retransplantation

PLB056 USING NONAGENARIAN LIVER GRAFTS FOR TRANSPLANTATION. PRELIMINARY EXPERIENCE

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Introduction: According to our experience, careful selection of octogenarian livers is the secret to obtain results similar to those obtained with younger donors. With the same criteria, it is possible to extend the use of nonagenarian donors.
Objectives: Analysis of the results obtained with the use of two nonagenarian liver donors.
Case reports: We present two donors of 90 and 94 years old, respectively, with the following characteristics: both were females that died because cerebrovascular accident, needing a ICU stay of 16 and 36 h, respectively, that did not required vasopressor use, and the liver biopsy did not showed steatosis or preservation injury.

Liver grafts were implanted in two female recipients of 65 and 68 years old, respectively, diagnosed of viral B cirrhosis (1 case), and viral B+C cirrhosis and hepatocarcinoma (1 case). MELD scores were 15 and 18, respectively. Cold ischemia times were 510 and 455 min, respectively, while warm ischemia times were 55 and 50 min, respectively. Recipient hepatectomy was performed according piggy-back technique and choledocho-choledochostomy was performed without T-Tube. Both recipients were transfused with 1500 ml of PRBC and 600 ml, respectively. Post-transplant ICU stay were 3 and 4 days, respectively. Both patients normalized their liver function at 7 and 15 days. Hospital stay was 12 and 15 days, respectively. Immunosuppression regimen consisted in steroids and tacrolimus. Recovery of liver function was normal in both patients, and, currently, after a follow-up period of 31 and 12 months, respectively, none of the patients has developed graft rejection.
Conclusions: Although this is an analysis of only two cases of nonagenarian donors, the age *per se* do not constitutes a contraindication for using these kinds of donors if we performed a good selection.

PLB057 LIVER TRANSPLANTATION WITH GRAFTS OLDER THAN 70 YEARS IN RECIPIENTS <60 YEARS VERSUS RECIPIENTS ≥60 YEARS

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Introduction: The remarkable increase in the demand of organs for transplantation that occurs year after year, forces the maximum use of organs, which is why liver transplantation becomes a limited therapeutic resource due to the disproportion between donors and recipients.
Methods: Longitudinal and prospective study of a historical cohort composed of liver transplants performed at our center with donors ≥70 years who were employed in a group of recipients <60 years (Group A) versus a group of recipients ≥60 years (Group B)
Results: From April 1986 to June 2016 we performed a total of 212 liver transplants with donors ≥70 years in our center, which were divided into recipients <60 years (group A $n = 129$) and recipients ≥60 years (group B $n = 83$). Donor characteristics were similar between the two groups, except for a greater presence of brain cranial trauma as cause of donor death in group A (20.9% vs 8.2%) ($p = 0.02$). The characteristics of the recipient were also similar between the two groups except for a higher rate of hepatocellular carcinoma in group B (46.4% vs 33.3%) ($p = 0.05$). Recipients ≥ 60 years of age required a longer stay in the Intensive Care Unit (5 days vs 9 days) ($p = 0.01$). In addition, the development of acute renal failure after transplant (32.0% vs 17.4%) was more frequent in this group of patients ($p = 0.01$). Patient survival at 1, 3 and 5 years was 87.8%, 80.1% and 71.6% in group A, compared to group B, 79.2%, 74.5% and 64.9%. The graft survival at 1, 3 and 5 years was 83.4%, 74.7% and 66.2%, compared to group B, 77.1%, 74.7% and 66.2%. Differences in survival were not significant.
Conclusions: The use of donors ≥70 years is a good alternative that presents good results regardless of the age of the recipient, taking special care in an increased risk of developing an acute renal failure after transplant among the elderly recipients.

PLB058 IMPACT OF HEPATITIS C VIRUS ON SURVIVAL OF PATIENTS UNDERGOING LIVER TRANSPLANTATION WITH HEPATOCELLULAR CARCINOMA

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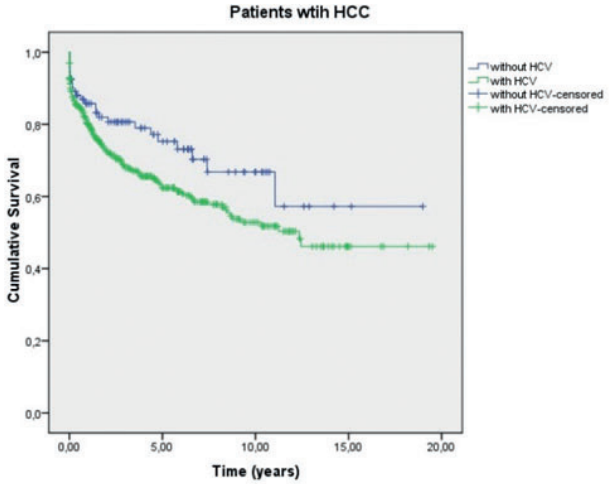
Background: Cirrhosis of the hepatitis C virus (HCV) associated with hepatocellular carcinoma (HCC) is the most common indication for liver transplantation (LTx) in the west. The availability of new drugs for HCV treatment with improved sustained virologic response is promising. The objective of this study was to evaluate the impact of the etiology of liver disease on the survival of patients submitted to LTx by HCC.
Methods/Materials: In the period from June 1991 to May 2017, 1298 LTx were done. HCC receptors, associated or not with HCV; And HCV patients were retrospectively included. Exclusion criteria were re-LTx, double Tx and viral co-infection. Of the 1298 patients, 733 had HCV, 388 of them with HCC. Of the total of 484 HCC patients, 93 had no associated HCV. Kaplan-Meier survival curves were evaluated over a 15-year follow-up.
Results: The survival rate in the studied groups: HCV without HCC, HCC with or without HCV were respectively 78.8%, 79.9% and 85.7% at 1 year; 67.3%, 62.4% and 75.2% over 5 years; 53.6%, 51.8% and 66.8% over 10 years; 40.1%, 46.1% and 57.2% in 15 years. When the survival of patients with HCV was compared, the presence of HCC did not interfere in the outcome over the 15-year follow-up ($p = 0.765$). In patients with HCC, it was observed that those with HCV had worse survival than those with other HCC-associated diseases and this difference was maintained during the follow-up time ($p = 0.050$). Patients with non-HCV HCC, even including cases outside the Milan criteria, had a better survival rate than HCV patients without HCC.
Conclusion: Diagnosis of HCV in HCC patients was associated with increased mortality. The new drugs available for HCV treatment are promising to change these results.



PLB059 IMMUNOHISTOCHEMICAL MARKERS FOR HEPATOCELLULAR CARCINOMA PROGNOSIS AFTER LIVER RESECTION AND LIVER TRANSPLANTATION

Bong Jun Kwak, Dong-Goo Kim
Seoul St. Mary's Hospital, Korea, Republic of

Background: There were differences in progression and prognosis of hepatocellular carcinoma (HCC) after surgery between liver resection (LR) and liver transplantation (LT). In this study, immunohistochemical (IHC) markers associated with the prognosis of HCC were assessed.
Materials & Methods: Data were collected from 167 patients who underwent LT ($n = 41$) or LR ($n = 126$) for HCC. IHC markers including alpha-fetoprotein (AFP), p53, Ki-67, cytokeratin 7 (CK7), and cytokeratin 19 (CK19) were compared between the treatment methods in tumor tissue.
Results: AFP- and p53-negative patients had a significantly higher survival rate than AFP- and p53-positive patients (AFP: disease-free survival [DFS] $P = 0.006$, overall survival [OS] $p = 0.016$; p53: DFS $p = 0.005$, OS $p = 0.038$) in the LR group. CK19 was related to DFS ($p = 0.005$), while CK7 ($p = 0.014$) and CK19 ($p = 0.06$) were related to OS in the LT group. When we combined

factors that were significant in both groups (LR: AFP and p53, LT: CK7 and CK19), all-negative patients had a higher survival rate (LR: DFS p = 0.025, OS p = 0.043, LT: DFS p = 0.034, OS p = 0.008).
Conclusion: p53 and AFP were predictors for poor prognosis of HCC after LR; CK7 and CK19 could be predictors for poor prognosis of patients with HCC after LT.

PLB060 CURATIVE SALVAGE LIVER TRANSPLANTATION IN CIRRHOTIC PATIENTS WITH HEPATOCELLULAR CARCINOMA: AN INTENTION-TO-TREAT ANALYSIS

Daniel Azoulay, Robert J. De Haas, Chetana Lim, Prashant Bhangui, Chady Salloum, Compagnon Philippe, Cyrille Feray, Alain Luciani Henri Mondor, France

Background: The salvage liver transplantation (SLT) strategy was conceived for initially resectable and transplantable (R&T) hepatocellular carcinoma (HCC) patients, to try to obviate upfront LT, with the 'safety net' of SLT in case of post-resection recurrence. The SLT strategy is successful or curative when patients are recurrence-free following primary resection alone, or after SLT for recurrence. The aim of the current study was to determine the SLT strategy's potential for cure in R&T HCC patients, and to identify predictors for its success.
Methods: From 1994–2012, all R&T cirrhotic HCC patients were enrolled in the SLT strategy. An intention-to-treat (ITT) analysis was used to determine this strategy's outcomes and predictors of success according to the above definition.
Results: In total, 110 patients were enrolled in the SLT strategy. Sixty-three patients (57%) had tumor recurrence after initial resection, and in 30 patients SLT could be performed (recurrence transplantability rate = 48%). From the time of initial resection, ITT 5-year overall and disease-free survival rates were 69% and 60%, respectively. The SLT strategy was successful in 60 patients (56%), either by resection alone (36%), or by SLT for recurrence (19%). Pre-resection predictors of successful SLT strategy at multivariate analysis included model for end-stage liver disease (MELD) score >10, and absence of neoadjuvant transarterial chemoembolization (TACE). Additional post-resection predictive factors were absence of post-resection morbidity, and T-stage 1–2 at the resection specimen.
Conclusions: The SLT strategy is curative in only 56% of cases. Higher MELD score at inception of the strategy, and no pre-resection TACE are predictors of successful SLT strategy.

PLB061 SALVAGE LIVER TRANSPLANTATION OR REPEAT HEPATECTOMY FOR RECURRENT HEPATOCELLULAR CARCINOMA: AN INTENT-TO-TREAT ANALYSIS

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[1]Henri Mondor Hospital, France; [2]Tokyo, Japan

Summary Background Data: The salvage liver transplantation (SLT) strategy was conceived for initially resectable and transplantable (R&T) hepatocellular carcinoma (HCC) to obviate upfront LT, with SLT in the case of recurrence. The feasibility and short and long-term outcomes of repeat hepatectomy (re-Hep) for recurrent HCC following primary resection have improved.
Objective: An intention-to-treat (ITT) analysis of overall survival (OS) comparing the SLT and re-Hep strategies for R&T recurrent HCC.
Methods: From 1994 and 2011, 391 patients with HCC enrolled in the SLT (n = 77) or re-Hep (n = 314) strategy were analyzed. Of 77 patients in the SLT group, 21 presented with R&T recurrent HCC following resection, and 18 underwent SLT. Of 314 patients in the re-Hep group, 81 presented with R&T recurrent HCC following resection, and 81 underwent re-Hep. The ITT-OS between the SLT and re-Hep groups was compared before and after propensity score matching (PSM).
Results: The 5- year ITT-OS values were comparable between the two strategies (72% for SLT vs. 77% for re-Hep; p = 0.57). In patients who completed the SLT or re-Hep strategy, the 5-year OS values calculated from the time of the second surgery (i.e., SLT or re-Hep) were comparable between the two strategies (71% vs. 71%; p = 0.99). Similar results in terms of ITT-OS and OS were observed after PSM.
Conclusions: The SLT and re-Hep strategies achieve similar 5-year ITT-OS before and after PSM. Re-Hep should be considered for recurrent HCC when both resection and transplantation are deemed feasible.

PLB062 INTENTION-TO-TREAT OUTCOMES OF PATIENTS WITH HEPATOCELLULAR CARCINOMA (HCC) AFTER MULTIDISCIPLINARY DECISION OF LIVER TRANSPLANTATION

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Background: our goal was to analyze the outcomes and the intention-to-treat overall survival (OS) of cirrhotic patients with hepatocellular carcinoma (HCC), for whom liver transplantation (LT) was decided upon in multidisciplinary team meeting (MDT). We also focused on the outcomes of patients who dropped out of list and the reasons for dropping out.
Methods/Materials: Cohort study based on data from a MDT dedicated to HCC, recruiting every patient presented between 2006 and 2013 with a newly diagnosed HCC and a decision of LT.
Results: Among 136 patients included, 63 patients (46%) did not get LT because of progression (n = 28, 45%), patient refusal (n = 13, 21%), contraindication (n = 9, 14%) or death (n = 9, 14%). 1-, 3- and 5-year intention-to-treat OS were 88%, 44% and 25%. In the subgroup of transplanted patients, 1-, 3- and 5-year OS reached 96%, 69% and 60%. When initial decision was not respected, 1-, 3- and 5-year OS were only 78%, 16% and 7%. Patients who did not get LT had another curative treatment in only 21% of cases (n = 13), mostly radiofrequency ablation (n = 12). In 79% of cases (n = 50), only palliative treatment was performed with 5-year OS of 0%.
Conclusion: 54% of cirrhotic patients with HCC eligible for LT when presented in MDT were transplanted. Patients who did not get LT mostly had palliative treatments, with much poorer outcomes.

Characteristics	Patients: n=136
Median age (years)	59 (28-70)
Gender: male/female	124 (91%) / 12 (9%)
Diagnosis of HCC: radiology/biopsy	101 (74%) / 35 (26%)
Cause of hepatopathy	
NASH	5 (4%)
Alcoholic	57 (42%)
Hepatitis B	6 (4%)
Hepatitis C	37 (27%)
Mixed (alcohol+virus)	13 (10%)
Other cause	18 (13%)
Oesophageal varices: yes / no	94 (78%) / 27 (22%)
Median Child-Pugh score	6 (5-12)
Median serum albumin level (g/L)	34 (14-48)
Median MELD score	11 (6-25)
BCLC-staging	
Very early (BCLC 0)	0 (0%)
Early (BCLC A)	88 (65%)
Intermediate (BCLC B)	35 (26%)
Late (BCLC C)	0 (0%)
Terminal (BCLC D)	13 (9%)
Number of HCCs	
1	51 (37%)

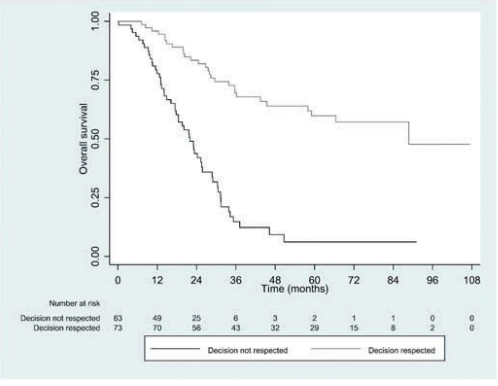
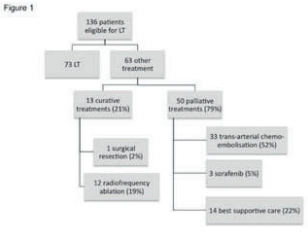


Figure 1



2 or 3	73 (54%)
>3	12 (9%)
Median size of the largest HCC (mm)	30 (10-60)
Meeting the Milan criteria: yes / no	97 (71%) / 39 (29%)
Median serum alpha-fetoprotein level (ng/mL)	12.2 (0.8-4299)
Median blood platelet count (103/mm3)	92 (24-378)

PLB063 MODIFIED MCCLUSKEY INDEX FOR MARGINAL DONORS, IN LIVER TRANSPLANTATION

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Introduction: The McCluskey index is a good parameter to select recipients for liver transplantation (LT) with higher and lower risk of transfusion. The main limitation of this index is the few categories it includes (3), as well as not taking into consideration the donor type. This modified index tries to overcome both limitations.
Patients and Methods: Between May 1998 and Jan 2017, we performed 1017 LT, out of which 808 required transfusion. We divided the groups using the classic McCluskey index (Age 0–1 point, Hemoglobin 0–1, Platelets 0–1, INR 0–2, Creatinine 0–1 and Albumin 0–1). As novel parameter we added the category of marginal donor, which added 2 points to this index. Patients were divided with the new score into: Low risk (LR 0–1 points, 159 patients); Medium risk (MR 2–3 points, 533); High risk (HR 4–5 points, 270); Very High risk (VHR >6 points, 55).
Results: Mean age was 52.7 ± 12 years for LR; 53.1 ± 11 for MR; 54.2 ± 10 for HR and 55.1 ± 10 for VHR (p = 0.37).

Mean MELD score was 10.13.4 for LR; 15.15.4 for MR; 19.27 for HR and 227.5 for VHR (p = 0.000). Average MELD-Na score was 124.1 for LR; 17.45.8 for MR; 21.57 for HR and 23.97 for VHR (p = 0.000).

Diagnosis of hepatocellular carcinoma was 49.7% for LR; 29% for MR; 17% for HR and 18.5% for VHR (p = 0.000). HCV distribution was 38.4% for LR; 46.5% for MR; 45.6% for HR and 44.4% for VHR (p = 0.344).

Mean requirements of RBC transfusion for each group were 6.28 units for LR; 8.51 for MR; 12.81 for HR and 17.21 for VHR (p = 0.000). Average plasma use was 9.77 units for LR; 14.51 for MR; 16.71 for HR and 18.21 for VHR (p = 0.000).

Recipient survival rates at 1, 3 and 5 years were respectively 88.2%, 82.2% and 79.3% for LR; 84.1%, 77.3% and 73% for MR; 81.9%, 77.3% and 73% for HR; and 77%, 66.9% and 64% for VHR (p = 0.11).
Conclusion: We observe in this study that this new index divides bleeding risk in more groups, and is well related to transfusion requirements and patient survival. These results must be confirmed in future trials

PLB064 URETERO-ILEOPLASTY FOR URINARY TRACT SALVAGE AFTER KIDNEY TRANSPLANTATION

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Introduction: Urinary tract complications after kidney transplantation (KT) occur in 2 to 10% of cases. Their treatments can be complex. Aim of our study was to evaluate the feasibility and functional outcomes of salvage uretero-ileoplasty after KT.
Material and methods: Retrospective and monocentrique study from 2005 to 2017 including all of the salvage uretero-ileoplasty (sUI) performed in last-line treatment of complications of the urinary tract of the kidney graft 6 male and 1 female were included. Mean age was 54.7 (20–73) and mean BMI was 25.4 (18.6–36) kg/m^2. The average time between the KT and the sUI was 21.3 (1–65) months. There were there living donors, one standard criteria donor, three extended criteria donors. No one were transplanted pre-emptively. Initial urinary anastomosis techniques were Lich-Grégoir (n = 2), pyelo-ureteral (n = 4) et uretero-ileal (n = 1) in bricker. All of cases, there were a stenosis and/or an ischemic necrosis of the urinary tract.
Results: Mean operative time and mean length of stay were 287.2 (247–337) min et 21.2 (13–36) days respectively. Blood losses were 415 (10–750) ml. There was no transfusion and no peroperative complications. The mean follow-up was 92.8 (29–189) mois. 2 patients have had a Hyperbaric Oxygen Therapy. 6 patients have had post-operative complications (grade 2 (n = 4), grade 1 (n = 2) according to Clavien-Dindo Classification). 6 patients have been rehospitalized at least once during the follow-up (one for infectious endocarditis at M15 and one for internal hernia at 6 years postoperatively. At day 0, M1, M6, M12 and at the date of the last news, mean serum creatinine was 240, 158, 160, 168, 170 micromol/l, respectively. There was no digestive fistula, no graft loss and no death.
Conclusion: Salvage uretero-ileoplasty is helpful, feasible and efficient. This technique has to be reserved as last-line treatment in cases of urinary tract complications after kidney transplantation.

PLB065 INCIDENTAL FINDING OF ACCESSORY SPLEEN ON RENAL PARENCHYMA INTO GEROTA'S FASCIA

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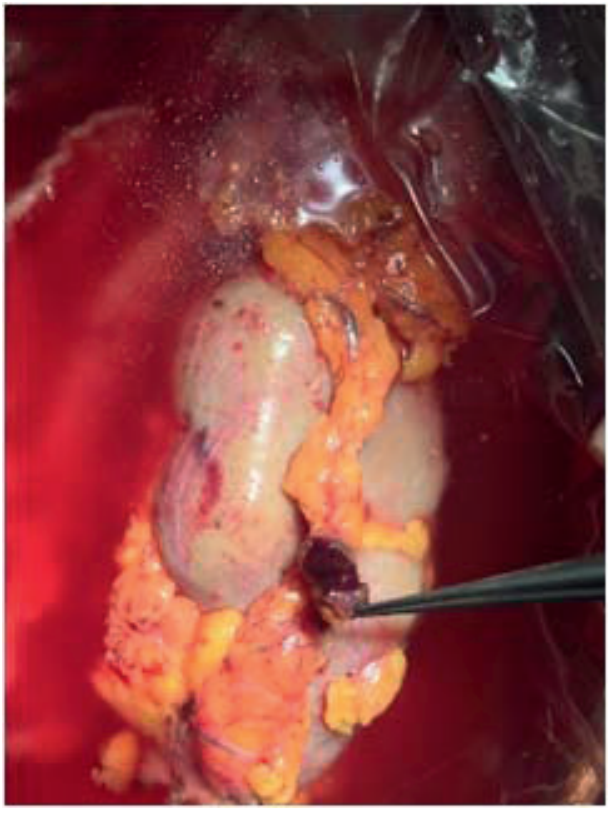
Background: Accessory spleens result from the failure in the fifth week of fetal life of groups of mesodermal cells in the dorsal mesogastrium. Whilst the pancreatic tail and the splenic hilum are the most common sites, accessory spleens can be found in the stomach, jejunum, mesentery as well as the ovaries and testis. Accessory spleens themselves have no clinical consequence unless a patient suffers from a disease like idiopathic thrombocytopaenic purpura. However, as they are commonly mistaken for tumours, patients undergo needless operations for removing the lesion. Consequently, it is important to accurately differentiate an accessory spleen from other malignant lesions requiring more aggressive treatment or cancelation of cadaveric donor nephrectomy.
Objective: The objective of this presentation is to share an experience of an incidental finding of an accessory spleen, which is found during a cadaveric donor nefrectomy. A 39 years old male patient referred to our clinic for cadaveric renal transplantation, who had a diagnosis of end stage renal disease.
Result: Donor nefrectomy was completed with a Gerota's fascia. After dissection of the kidney incidentally accessory spleen has found and isolated from renal graft. End to end anastomosis was performed and 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.
Conclusion: There are not enough publications about incidental finding spleen. a new approach for the reconstruction of short renal arteries in living donor kidney transplantations.



PLB066 REPAIRMENT OF RENAL CRUSH INJURY: A CASE REPORT

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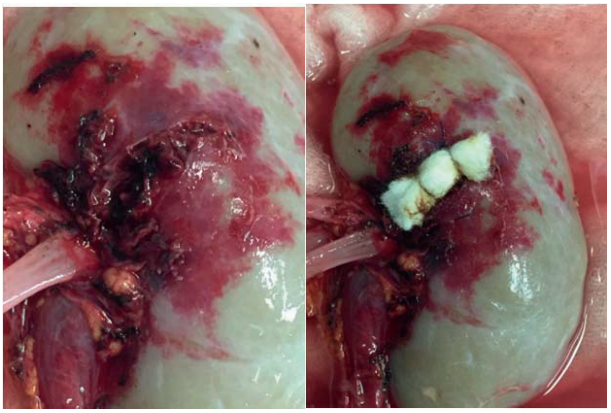
Background: The incidence of renal trauma somewhat depends on the patient population being considered. Renal trauma accounts for approximately 3% of all trauma admissions and as many as 10% of patients who sustain abdominal trauma.
Method: The objective of this presentation is to share an experience of a traumatic renal injury with a successful reconstruction of an absorbable material, which occured before cadaveric donor nefrectomy. A 27 years old male patient referred to our clinic for cadaveric renal transplantation, who had a diagnosis of end stage renal disease. Donor was cadaveric with blunt abdominal trauma because of the traffic accident. Donor nefrectomy was completed with a crush injury of kidney.
Results: Repairment of graft renal parenchyma using absorbable material After repairment of graft renal parenchyma 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.
Conclusion: There are not enough publications about repairmen of graft renal parenchyma using absorbable material. Repairment of a short remaining graft renal parenchyma by using absorbable material seems to be a simple, safe and reliable method.



PLB067 ALLOGRAFT ANATOMICAL ABNORMALITIES ON THE RESULTS OF LIVING DONOR TRANSPLANTATION

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Background: Preoperative recognition of anatomical condition is an essential component of the preparing for living donor nephrectomy. Advanced imaging techniques are in a standard use to minimize the risk related with donation and to ensure the best outcome for the recipient as well.
Material/Methods: Retrospective data analysis of 60 patients positively qualified for living donor nephroureterectomy in 2013–2015 was performed. The effectiveness of preoperative imaging for the proper diagnosis of anatomical conditions was assessed. The impact of anatomical abnormalities on initial and longterm functioning of transplanted kidney was evaluated. Recipients CKD-EPI GFR and serum creatinine concentration levels were compared on 5th day and 1st, 6th and 12th months after transplantation between analyzed groups: Group I - with single renal vessels, Group II - with anatomical abnormalities of transplanted organ.
Results: There were 35 cases in Group I and 25 cases in Group II (multiple arteries (21) and venous (1), hemodynamically significant artery stenosis (2), renal artery aneurysm (1), vascular dysplasia (1), or medial reversal of the organ (1); 8 (13.3%) of these were only intraoperatively diagnosed). Immediate graft function was observed in 23 (66%) cases in Group I and 16 (64%) cases in Group II [not statistically significant]. One early graftectomy was performed because of renal artery thrombosis (Group I). No significant differences were found between both groups in terms of mean serum creatinine concentration (SCr) and glomerular filtration rate (GFR), when assessed in 1st, 6th and 12th postoperative months postoperatively.

	Group I	Group II
SCr -1st month [mg/dl]	1.6	1.78
SCr - 6th month [mg/dl]	1.46	1.78
SCr - 12th month [mg/dl]	1.44	1.65
CDK-EPI GFR - 1st month [ml/min/1.73m^2]	54.3	59.8
CDK-EPI GFR - 6th month [ml/min/1.73m^2]	59.9	57.6
CDK-EPI GFR - 12th month [ml/min/1.73m^2]	61.0	59.8

Conclusions: Making a precise diagnostic imaging gives to the surgeons the ability of being well-prepared for any technical difficulties resulting from anatomical anomalies. Results of the living donor transplantations of kidneys with anatomical abnormalities are not different when compared to those of typical anatomy.

PLB068 ΩOUR EXPERIENCE IN EN-BLOC KIDNEY TRANSPLANTATION INCLUDING PARTIAL BLADDER PATCH TECHNIC PATIENTS, INTO CHILDREN RECIPIENTS

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Background: The concept of en-bloc kidney transplantation was born due to high discard rate of young donor patients kidneys (5-year-old, <15 kg in weight, 6 cm in kidney diameters). Despite improved outcomes are reported in pediatric kidney transplantation, literature is still limited about en-bloc kidney transplantation with/without partial bladder segment.
Methods: This retrospective study was conducted in 4 children who underwent en-bloc kidney transplantation with/without partial bladder segment between 2005–2016. Baseline donor, patient and transplant features and also, protocol biopsy results were collected.
Results: There are totally 71 pediatric kidney transplantation was performed (en-bloc kidney transplantation in 4 patients (5.6%)). The mean donor age and weight are 8 months and 9.5 kg, respectively. Recipient number 4 is in the 3rd month of follow-up. The mean age at the transplantation and body weight were 8 years and 20.9 kg, respectively. En-bloc kidney transplantation was applied with partial bladder segment in two. There was only one renal artery thrombosis due to organ displacement required unilateral donor nephrectomy (recipient 4). Five years of follow-up serum creatinine, eGFR and urinary protein excretion of 3 patients were in normal range. There were no biopsy proven rejection or chronic allograft nephropathy detected in protocol biopsies. Also, growth of these graft pairs were detected in routine ultrasonographic imaging.
Conlusion: In the setting of inadequate donor pool, for maximize of organ usage en-bloc kidney transplantation seems suitable approachment. The outcomes of en-bloc kidney transplantation in adults are same as an ideal kidney transplantation. To delineate effectiveness of en-bloc kidney transplantation into children further studies are needed.

PLB069 RITUXIMAB AS MONOTHERAPY FOR THE TREATMENT OF CHRONIC ACTIVE ANTIBODY-MEDIATED REJECTION AFTER KIDNEY TRANSPLANTATION

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Background: Chronic active antibody-mediated rejection (caAMR) is a major cause of graft-loss after kidney transplantation. Currently, the treatment of caAMR remains poorly defined.
Methods: We retrospectively analyzed 12 adult renal transplant recipients diagnosed with biopsy-proven caAMR (BANFF 2013). All patients were treated with 2 doses of rituximab (375 mg/m^2) at one week interval, as monotherapy. Clinical responders were defined as patients who improved or maintained stable kidney function at 12 months post-rituximab (<20% change of the basal creatinine) with a decrease of DSA titers below 2000 MFI (or >75% DSA titer decrease). Chronic and active histopathological lesions were analysed before and at 1 year.
Results: Seven out of 12 patients with caAMR were clinical responders. Baseline serum creatinine, proteinuria as well as time between transplantation, DSA detection and rituximab therapy were not significantly different between

responders and non-responders. Serum creatinine levels and proteinuria were not significantly different after rituximab. Regarding active histological antibody-mediated vascular lesions, 4/6 patients with positive C4d deposits, 6/8 patients with peritubular capillaritis and 3/4 patients with glomerulitis improved under rituximab, independently of being a responder or not. Chronic lesions including transplant glomerulopathy, fibrous intimal thickening in arteries, interstitial fibrosis and tubular atrophy did not improve 1 year after rituximab. Clinical responders had significantly lower active microvascular inflammatory score at baseline compared to non-responders.
Conclusion: Most (7/12) patients were clinical responders after rituximab administration. Rituximab was associated with significant reduction in the activity of the microvascular inflammatory score. However, no improvement of serum creatinine nor of chronic caAMR lesions was observed. Altogether, these data suggest that rituximab is effective for the early management of caAMR.

PLB070 ANTIBODY- MEDIATED REJECTION OF KIDNEY GRAFTS: COMPARISON OF STANDARD THERAPY AND THERAPY WITH ADDITION OF BORTEZOMIB AND/OR RITUXIMAB

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Background: Plasmapheresis (PP) or immunoadsorption (IA) with intravenous immunoglobulin infusion is the essential therapy in antibody-mediated rejection (ABMR) of kidney grafts. The aim was to compare an outcome of standard therapy (PP/IA and Cytomegalovirus hyperimmune intravenous IgG) (ST group) and additional therapy with bortezomib (B) and/or rituximab (R) (B/R group) in ABMR.
Methods: Kidney transplant recipients with ABMR, treated at our institution in years 2005–2017, were included into retrospective analysis.
Results: We analyzed 78 patients with ABMR, 41 men and 37 women with average age 49.5 ± 13.8 years. ST group consisted of 48 patients (62%) and B/R of 30 (38%). Median time from Tx was 84 months (IQR 39–240) in ST and 98 months (IQR 24–276) in B/R group. At time of kidney graft biopsy, serum creatinine was 267 ± 164 μmol/l in ST and 208 ± 112 μmol/l in B/R group, with 27% and 13% dialysis-dependency, respectively. There were 24 (50%) acute ABMR in ST and 10 (33%) in B/R group, where majority of rejections were late-presenting. All patients were treated with standard therapy, i.v. methylprednisolone and immunosuppression modification. Thirty patients were additionally treated either with B (9/30%), B and R (16/53%) or R (5/17%). Concomitant T-cell mediated graft rejection (TCMR) was present in 30 (62%) and 13 (43%) patients in ST and B/R group respectively. Patient survival at 2 years was 89% in ST and 100% in B/R group ($p = 0.125$). Cumulative proportion of kidney graft survival at 1 and 2 years was 67% and 53% in ST group and did not significantly differ from B/R group (73% and 48%, respectively; $p = 0.641$). Chronic ABMR ($p = 0.004$) was significant, while dialysis dependency ($p = 0.072$), serum creatinine ($p = 0.082$) and presence of DQ-DSA ($p = 0.062$) at biopsy were borderline significant predictors of worse graft outcome.
Conclusions: Short-term kidney graft survival at two years after ABMR therapy was not significantly influenced by B/R added to standard protocol.

PLB071 EARLY POSTTRANSPLANTATION LYMPHOPROLIFERATIVE DISORDER LIKE PICTURE IN A KIDNEY TRANSPLANT RECIPIENT: A CASE REPORT OF UNUSUAL FORM OF ACUTE REJECTION

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Objectives: Post-Transplantation Lymphoproliferative Disorder (PTLD) is a well-recognized complication of renal transplantation. The typical histopathological changes of PTLD could be a large increase in the number of B cell lymphocytes in lymphoid tissues, accompanied by multiple focal areas of necrosis. Plasma cell-rich acute rejection (PCAR) is a relatively new clinical entity and is characterized by the presence of mature plasma cells that comprise more than 10% of the inflammatory cells infiltrating a renal graft. PCAR shows findings similar to those of post-transplantation lymphoproliferative disorder (PTLD). So we should differentiate between PTLD and PCAR for appropriate treatment.
Case Report: We report a 32-year-old male underwent living donor kidney transplantation from his 40- year sister at March, 2014. Unfortunately, at 8th day post transplantation his serum creatinine increased suddenly to 1.8 mg/dl with good urine output and unremarkable physical examination. Graft Ultrasound and Doppler showed no back pressure, perfect perfusion, so graft biopsy was carried out with starting empirical pulse steroid and plasma exchange. Graft biopsy revealed picture of Lymphoproliferative disorder which is uncommon picture at this early post-transplantation.
Conclusion: PCAR shows findings similar to those of PTLD and has a poor response to standard antirejection therapy and worse graft outcome. Hence, early diagnosis and management of this morphology in a renal allograft biopsy is essential for appropriate patient and graft survival.

PLB072 IMPACT OF AGE AND GENDER ON OCCURENCE OF ACUTE REJECTION EPISODES AFTER LIVE DONOR RENAL TRANSPLANTION: A SINGLE CENTER EXPERIENCE

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Renal transplantation represents the optimal treatment for patients with ESRD. When compared with dialysis, a successful renal transplant not only offers improved quality of life, better social rehabilitation, and less economic cost, even in high risk patients, but also allows a longer life expectancy. Acute rejection episodes are a major determinant of renal allograft survival and still a major challenge for contemporary transplantation. This work aimed to evaluate the Impact of age and gender of both donor and recipient on occurrence of acute rejection episodes after live donor renal transplantation. This retrospective single Center study included 2227 kidney transplant recipients who were transplanted at Mansoura urology & nephrology Centre between 1976& 2016, the patients divided into three groups according to number of acute rejection episodes.

First group: rejection free.
Second group: acute rejection (only one rejection episode).
Third group: acute rejection (more than one rejection episode).

We found that donor age was statistically significant in univariate analyses with (p-value 0.026). As regard recipient age also a highly statistical significance was found between the three groups (p-value <0.009). In contrast there was no a statistically significant difference among the three groups regarding the gender of recipient (p-value 0.502) and the gender of donor (p-value 0.488).

We can conclude that Old donors and young recipient are facing high risk for occurrence of acute rejection episodes post-transplantation and on the other hand, there is no impact of donor or recipient gender on occurrence of acute rejection episodes post-transplantation

PLB073 EARLY FOCAL SEGMENTAL GLOMERULOSCLEROSIS AS A CAUSE OF DELAYED GRAFT FUNCTION WITH COMBING ACUTE ANTIBODY REJECTION

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Background: Focal segmental glomerulosclerosis (FSGS) is one of the commonest causes of glomerular disease and if left untreated will often progress to established renal failure. FSGS after transplantation may rapidly recur in renal allografts and may contribute to delayed graft function. We describe a case where biopsy has proven that early recurrence of FSGS at postoperative 1 day is the cause of delayed graft function.
Case: 39-year old man in hemodialysis for 15 years due to polycystic kidney disease, received cadaveric renal transplantation. The postoperative 1 days, his hourly urine output decreased from 700–800 ml to 50 ml. There were no abnormal findings in duplex. FK levels were within therapeutic range. The graft biopsy showed the mild acute kidney injury confusing nephrotic syndrome. We managed the delayed graft function so that performed the hemodialysis up to postoperative 20 days. His creatinine level decreased to 2.0 mg/dl and urine output increased up to 3000 ml/day. But proteinuria remained from grade 2 to 3. At postoperative 45 days, his creatinine level increased to 3.02 with severe proteinuria. Kidney biopsy showed focal segmental glomerulosclerosis. After steroid pulse therapy, his creatinine decreased and proteinuria recovered. At postoperative 120 days, his creatinine elevated again with proteinuria. Kidney biopsy showed FSGS with antibody-mediated rejection. We performed the plasmapheresis. At 1 year after transplantation his creatinine decreased to 1.4 with mild proteinuria.
Conclusion: De novo or recurrent FSGS as a potentially aggressive process that, once active in the allograft, in this case may be managed by accurate diagnosis and appropriate treatment

PLB074 ARE ANTIBIOTICS NEEDED DURING KIDNEY EX 'VIVO' NORMOTHERMIC PERFUSION (EVNP)? A SINGLE CENTRE ANALYSIS

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Background: EVNP involves the perfusion of kidneys using an oxygenated erythrocyte-based perfusate at normothermia. Prophylactic antibiotics during EVNP is not unanimously practiced. The aim of this study was to determine whether antibiotics are required during EVNP. This is the first study to examine the microbiology of normothermic organ perfusion.
Methods: Between July 2016 and June 2017, consecutive deceased donor kidneys eligible for EVNP were enrolled in this prospective observational study. EVNP perfusate was cultured for organisms. Cold transport preservation fluid was also cultured to determine concordance. All recipients received a single dose of amikacin 7 mg/kg at induction. Post-transplant infection in the recipient was prospectively recorded.
Results: 14 deceased donor kidneys underwent EVNP. Two kidneys were deemed untransplantable and three kidneys were excluded from analysis, as cultures were not processed. Nine kidneys were transplanted into 8 recipients (one dual and 7 single transplants). Five of nine (56%) EVNP perfusate cultures had positive bacterial growth. These organisms included coagulase-negative *Staphylococcus*, and were not treated. *Staphylococcus aureus* was cultured once, and the recipient was treated with flucloxacillin. 2 out of 9 (22%) transport fluid cultures had positive growth, but had no concordance with EVNP cultures. None of the EVNP cultured organisms were implicated in episodes of infection in recipients (follow up period between 4 weeks to 6 months).
Conclusion: There is a high rate of contaminants during kidney EVNP, with no apparent clinical implications. These results indicate that our recipient induction antibiotic adequately covered the organisms cultured during EVNP. Following discussion with our microbiology department, it was agreed that there was no indication for antibiotics during EVNP. Centers starting EVNP should consider perfusate cultures to determine if their induction antibiotic adequately covers organisms cultured during perfusion.

PLB075 AKI AND DCD KIDNEYS AS A RESEARCH PLATFORM FOR KIDNEY REGENERATION AND REPAIR: BRIDGING REGENERATIVE MEDICINE TO ORGAN TRANSPLANTATION

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Background: We aimed at tracking and identifying molecular changes that occur during the initial 30 days following renal transplantation (RT). The primary objective was to evaluate peripheral blood gene expression as a surrogate for repair and regenerative processes occurring in the allograft.
Methods/Materials: RT patients (pts) receiving LD, DCD or AKI grafts were recruited. Whole blood was collected longitudinally in each patient as follows: at admission, daily following surgery until discharge and bi-weekly thereafter up to day 30. Total RNA purified from peripheral blood was used to query whole-genome microarrays (HumanHT-12 v4 Expression BeadChip; Illumina Inc.). Longitudinal gene expression profiles were compared across all recipients and in comparison between LD and DCD/AKI pts.
Results: We found that gene expression profiles in peripheral blood from RT pts who received LD grafts revealed longitudinal, time-dependent, changes consistent with an initial response to the transplant itself (i.e. up-regulation of genes related to immune response, inflammatory cell signaling, etc.) followed by a return to baseline by 30 days post-transplant. Moreover, the pattern of gene expression in peripheral blood from pts receiving either DCD or AKI grafts differed from those receiving LD kidneys. The largest number of differentially-expressed transcripts (DETs) between the two groups was observed for the "middle" time point (days 7–21) samples. Analysis using Ingenuity Pathway Analysis Suite showed significant activity occurring during this time in several key pathways (e.g. inflammasome, MIF-mediated glucocorticoid regulation, interferon signaling, and antigen presentation pathway) in DCD/AKI recipients that are important for tissue repair and regeneration.
Conclusions: AKI/DCD kidney recipients display a molecular signature consistent with renal repair and regeneration processes.

PLB076 OUTCOME OF PREEMPTIVE VERSUS NON-PREEMPTIVE LIVE-DONOR KIDNEY TRANSPLANTATION IN UROLOGY AND NEPHROLOGY CENTER, MANSOURA UNIVERSITY

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Background: Kidney transplantation (KT) is the best renal replacement therapy, resulting in lower morbidity and mortality rates and improved quality of life compared to maintenance dialysis. Preemptive kidney transplantation (PKT) is defined as transplantation performed before initiation of maintenance dialysis and reported to be associated with superior outcomes of graft and patient survival compared to non-preemptive kidney transplantation (NPKT).
Materials: Three hundred kidney transplantation (100 PKT, 200 NPKT) recipients were included in our study. All patients were evaluated for adverse effects, complications, comorbidities, clinical symptoms, monthly laboratory parameters, acute rejection episodes, graft, and patient survival.
Results: The dialysis-dependent group received more blood transfusions (16% vs. 3%) before transplantation. Also, there was statistical significance between the two groups regarding hepatitis C transmission. Graft and patient survival was comparable in both groups (p_0.2 and p_0.5, respectively). The incidence of acute and chronic rejection was not different between the two groups. Mortality rate was also similar in the two groups.
Conclusion: preemptive kidney transplantation offers comparable patient and graft survival to non-preemptive kidney transplantation and eliminates the complications, inconvenience, and cost of dialysis.

PLB077 IMPACT OF A THERAPEUTIC PATIENT EDUCATION PROGRAM FOR ADULT KIDNEY TRANSPLANT RECIPIENTS ON MODIFICATION OF HEALTH BEHAVIORS AND QUALITY OF LIFE

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Introduction: Non-adherence to immunosuppressive medications is one of the causes of graft loss in adult kidney transplant recipients (KTR). Therapeutic patient education (TPE) is designed to enable patients to manage their treatment to prevent avoidable complications, and to maintain or improve quality of life. We aimed to assess the impact of a TPE program for adult KTR on modification of health behaviors and quality of life.
Patients and Methods: Patients who received a kidney graft between January and October 2015 (period without TPE program)(group TPE-) were compared to KTR grafted and registered on TPE program from November 2015 to May 2016 (group TPE+). Learning, adherence to treatment (BAASIS survey) and quality of life (R-TRANS-QOL survey) were assessed one year post-transplantation and compared between the two groups.
Results: Within the 115 patients who received a kidney transplant between January and October 2015, 97 responded to the surveys (group TPE-). Among the 36 patients registered on TPE program, 32 responded to the surveys (group ETP+). TPE+ patients had significantly better knowledge about the immunosuppressive medications and a better assessment of medical care than TPE- patients (1.85/2 versus 1.64/2, $p = 0.002$ and 84.4% versus 77.6%, $p = 0.009$ respectively). Feelings concerning physical health, mental health, fear of graft loss and/or adherence to treatment were not different between both groups.
Conclusion: Our TPE program shows an improvement of health behavior, medication understanding and relationship patients/carer. Thus the TPE program may be a step to increase therapeutic adherence.

PLB078 SLEEP QUALITY IMPROVEMENT IN RENAL TRANSPLANT PATIENTS

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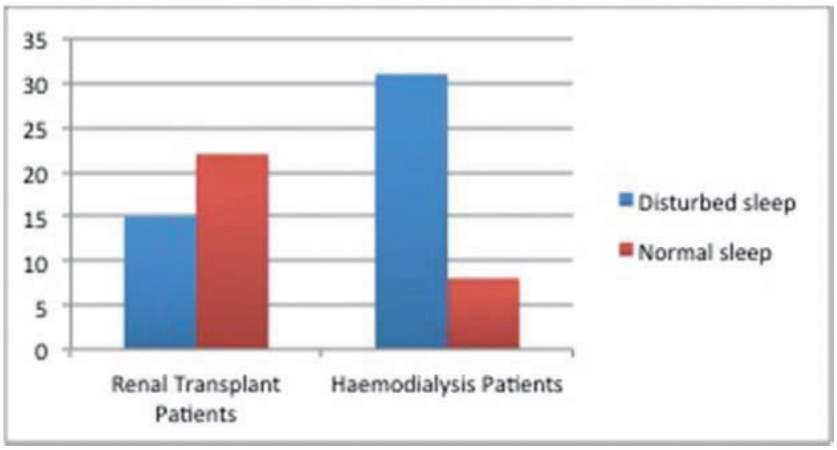
Background: One of the most disturbing symptoms experienced by patients in haemodialysis (HD) treatment is the sleep disturbance. Sleep complaints are associated with reduced health-related quality of life (HRQoL) and depression in renal patients. Studies have shown that poor sleep quality is an independent predictor of mortality in patients with end stage renal disease (ESRD).

Kidney transplantation is the optimal treatment option for patients with ESRD as it alleviates the problems associated with uraemia and prolongs survival. Sleep disorders however continue to be a huge clinical issue in transplant patients significantly impacting patients' quality of life. The aim of the study is to access and compare sleep quality in renal transplant and dialysis patients.
Material/Methods: Prospective comparative study was done comparing sleep quality in renal transplant and HD patients. Pittsburgh Sleep Quality Index (PSQI) was given to 40 (64% M; 36% F) HD patients and 40 (62% M; 38% F) renal transplant patients to self-access their sleep quality. The mean



age in renal transplant group was 50.7 (21–75). In HD group mean age was 62.3 (26–90). Patients scoring 5 or above on PSQI were deemed to have sleep disturbance. The scores of the two cohorts were compared.
Results: In renal transplant patients 15 out of 37 (40.5%) had disturbed sleep compared to 39 out of 37 (79.5%) haemodialysis patients ($p < 0.5$). The highest PSQI score was 17 in renal transplant patients and 16 in haemodialysis patients. None of the patients had sleep disturbance issues prior to renal problems neither did they have any previous psychiatric history.
Conclusion: Sleep quality improved in renal transplant patients post transplant however significant proportion of this cohort still experienced sleep disturbances compared to the general population. The reasons are multifactorial and further research and clinical attention for sleep disturbances in these patients is warranted.

PLB079 RANGE AND CONSISTENCY OF OUTCOMES REPORTED IN RANDOMIZED TRIALS CONDUCTED IN KIDNEY TRANSPLANT RECIPIENTS

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Background: The potential for clinical trials to impact patient care may be limited if the outcomes reported are heterogeneous and lack direct relevance to patients. Despite the many trials conducted in kidney transplantation, premature death due to cardiovascular disease, infection or malignancy remains high. We aimed to assess the range and consistency of outcomes reported in trials in kidney transplantation.
Design: Systematic review.
Methods: We searched for the randomized trials conducted in adult kidney transplant recipients included in Cochrane systematic reviews to December 2015 and trials registered in ClinicalTrials.gov (2010 to June 2016). We extracted all the outcome measures, classified them into outcome domains, and into three categories (clinical, surrogate or patient-reported outcome). We assessed the different measures used for the top four outcome domains.
Results: The 397 trials reported 12 047 outcomes measures and time points (median 19 per trial, interquartile range 9 to 42) across 106 different outcome domains, of which 55 (52%) were surrogate, 35 (33%) were clinical and 16 (15%) were patient-reported outcome domains. The top four most frequently reported outcome domains (and number of measures) were graft function (322 (81%) trials, 118 outcome measures), acute graft rejection (234 [59%], 93 measures), graft loss (215 [54%], 48 measures) and mortality (204 [51%], 51 measures). The remaining 102 outcomes domains were reported in less than 50% of trials. Patient-reported outcomes were present in 10% of trials.
Discussion: Mortality and graft related outcome domains were frequently reported, and assessed with a multiplicity of measures. The majority of outcome domains were surrogate outcomes, and the reporting of relevant life-threatening complications and patient-reported outcomes were uncommon. Establishing core outcomes based on the shared priorities of patients/caregivers and health professionals in kidney.

PLB080 DEVELOPING CONSENSUS-BASED PRIORITY OUTCOME DOMAINS FOR TRIALS IN KIDNEY TRANSPLANTATION: A MULTINATIONAL DELPHI SURVEY WITH PATIENTS, CAREGIVERS AND HEALTH PROFESSIONALS

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Background: Inconsistencies in outcome reporting and frequent omission of patient-centered outcomes can diminish the value of trials in treatment decision-making. We identified critically important outcome domains in kidney transplantation based on the shared priorities of patients/caregivers and health professionals.
Methods: In a 3-round Delphi survey, patients/caregivers and health professionals rated the importance of outcome domains for trials in kidney transplantation on a 9-point Likert scale and provided comments. During Round 2 and 3, participants re-rated the outcomes after reviewing their own score, the distribution of the respondents' scores, and comments. We calculated the median, mean, and proportion rating 7–9 (critically important), and analyzed comments thematically.
Results: 1018 participants (461 [45%] patients/caregivers and 557 [55%] health professionals) from 79 countries completed Round 1, and 779 (77%) completed Round 3. The top eight outcomes that met the consensus criteria in Round 3 (mean $\geq$7.5, median $\geq$8 and proportion >85%) in both groups were graft loss, graft function, chronic rejection, acute rejection, mortality, infection, cancer (excluding skin) and cardiovascular disease. Compared with health professionals, patients/caregivers gave higher priority to six outcomes (mean difference of 0.5 or more): skin cancer, surgical complications, cognition, blood pressure, depression, and ability to work. We identified five themes: capacity to control and inevitability, personal relevance, debilitating repercussions, gaining awareness of risks, and addressing knowledge gaps.
Discussion: Graft complications and severe comorbidities were critically important for both stakeholder groups. The stakeholder-prioritized outcomes will inform the core outcome set to improve the consistency and relevance of trials in kidney transplantation.

PLB081 CAN ACTUAL KIDNEY AGE IMPROVE GFR ESTIMATION IN KIDNEY TRANSPLANT RECIPIENTS?

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Background: Glomerular filtration rate (GFR) declines with increasing age. Available equations for estimation of GFR (eGFR) are not accurate in kidney transplant (KTx) recipients. A plausible explanation may be the fact that the equations include the age of the recipient rather than the age of the kidney. We aimed to evaluate if replacing recipient age with kidney age could increase the accuracy of the most commonly used creatinine-based eGFR equations.
Methods: A single centre prospective study was conducted in renal transplant recipients. Immunosuppression consisted of low-dose tacrolimus (3–7 μg/l), mycophenolate mofetil (1.5 g/day) and prednisolone (5 mg/day at 1 year post transplant). Measured GFR (mGFR) was calculated at one year post-transplant as iohexol clearance based on two samples; at 2 h and, respectively, 5 or 8 h after iohexol administration depending on if eGFR (CKD-EPI) was above or below 40 ml/min/1.73 m^2. eGFR and eGFR-TX, the latter replacing recipient age with kidney age, was calculated for a range of different creatinine based equations using data from the one-year investigation. Bias (mean and median), precision (SD of bias and interquartile range) and accuracy (proportion within 30% (P30) and 15% (P15) of mGFR) were evaluated for each equation.
Results: Data from a total of 405 adult KTx recipients were included. Mean recipient age was 51.2 (95% CI: 50.0–52.4) years and mean kidney age was 49.1 (95% CI: 47.4–50.8) years. Bias, precision and accuracy for each equation are presented in Table 1.

	Mean Bias	Median Bias	SD of Bias	Interquartile range	P30 (%)	P15 (%)
MDRD	1.41	0.21	12.25	15.07	88.7	58.6
MDRD-TX	3.34	1.38	14.17	16.77	83.7	55.6
CKD-EPI	6.99	5.28	13.30	16.55	79.3	52.0
CKD-EPI-TX	9.62	6.45	16.10	19.52	73.1	44.2
FAS	6.87	5.83	12.76	14.93	80.3	55.4
FAS-TX	7.81	5.44	14.56	18.71	73.6	49.4
Cockcroft & Gault	21.51	17.98	20.71	25.06	47.8	24.4
Cockcroft & Gault-TX	24.79	20.21	25.85	33.37	42.5	21.0

Conclusions: Replacing recipient age with kidney age did not improve the performance of the eGFR equation in adult kidney transplant recipients. Other equations combining recipient and kidney age should be further explored.

PLB082 THE FIRST YEAR EXPERIENCE ABOUT KIDNEY TRANSPLANTATION IN UNIVERSITY OF SULEYMAN DEMIREL

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Objective: In last 25 years, a great success has been achieved with the development of immunology, anti-rejection drugs and surgical techniques in organ transplantation. The aim of this study is to present our one year experience about live and cadaveric donor kidney transplants during 2015 and 2016 in Organ Transplantation Center which was newly established.
Material and Method: The organs were obtained from living donors and cadavers. The kidneys were transplanted successfully into the right iliac fossa after oblique incision to the right lower abdominal quadrant by the same transplant team. All patients received standard immunosuppression therapy with polyclonal anti-thymocyte-globülin (ATG) in the induction, and subsequently triple immuno-suppression therapy including steroid, tacrolimus, and mycophenolate mofetil.
Results: The patients received 12 kidneys from 12 cadavers and live donors (10 were left and 2 were right kidneys). The mean duration of dialysis was 4.3 years. The mean follow-up time after transplantation was 4.5 months. None of the patients had died and no surgical complication and rejection were observed. The mean blood creatinine levels at the 1st week, 1st month and 3th month were 3.42, 1.65 and 1.68 mg/dl, respectively. The patient and graft survival rates were 100% for same periods.
Discussion: Since the establishment of organ transplantation center in our university, 9 cadaveric donors have been brought in to our national system and 7 cadaveric and 5 living dönor kidney transplantations have been performed. Also, they were discharged without any problem. The cadaveric and live donor organ transplantation program was started and successful result were obtained in a short time.
Conclusion: In conclusion, we consider that to step about organ transplantation by establishing a center in a university hospital is efficient for providing cadaveric donor and living donor kidney transplantation.

PLB083 DONOR KNOWLEDGE OF PROVIDED INFORMATION – A PROSPECTIVE NATIONWIDE INVENTORY STUDY

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Introduction: Informed consent is mandatory for every (surgical) procedure, but is even more important in living kidney donors, undergoing surgery for the benefit of others. Informed consent procedures for live donor nephrectomy vary. By assessing the information donors need, the basis for a standardized, uniform surgical informed consent procedure for live donor nephrectomy can be created.
Methods: Donor knowledge of the procedure and postoperative course was prospectively evaluated by means of pop quizzes in a multicenter national study. All potential donors who were seen outpatient clinic (Cohort A) completed a pop-quiz, prior to receiving any information. A second group completed the same pop-quiz on the day of admission for donor nephrectomy (Cohort B). The primary endpoint was donor knowledge, secondary endpoints donor satisfaction, and current informed consent practices in the different centers.
Results: A total of 604 pop-quizzes (378 Cohort A, 226 Cohort B) were completed. Average donor score was 6.9 out of 25 (±3.9) in Cohort A and 10.4 (±2.8) in Cohort B. Donors scored best on duration of admission and convalescence, worst on long-term complications. Younger donors, donors with a higher educational level and those who were registered as deceased donors scored higher in Cohort A, donors who were registered as deceased donors scored higher in Cohort B. Donors felt relatively well prepared for surgery after receiving all information: 8.3 (±1.3) out of 10, average postoperative satisfaction with the informed consent procedure was 8.1 out of 10 (±1.6).
Conclusion: Donor knowledge of the procedure and postoperative course improves during the informed consent process but is still low. Long-term complications deserve more attention during the preoperative educational process of living kidney donors. Incentives to standardize the informed consent procedure will further improve donor knowledge and satisfaction, and will benefit consult efficiency at the outpatient clinic.

PLB084 ASSESSMENT OF DIABETES KNOWLEDGE AMONG RENAL TRANSPLANT RECIPIENTS WITH POST-TRANSPLANT DIABETES MELLITUS: KUWAIT EXPERIENCE

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Introduction and Aim: Diabetes knowledge among kidney transplant recipients with post-transplant diabetes (PTDM) is not assessed exhaustively. We aimed to evaluate the level of diabetes knowledge among our kidney transplant patients using 35-items diabetes self-care management questionnaire.
Methods: The study comprised 157 diabetic renal transplants that were referred from Hamed Al-Essa Organ Transplant Center of Kuwait to Dasman Diabetes Institute. Patients' data were collected through patient identification form, metabolic control parameters form and diabetes self-care scale questionnaire (with score between 0–7).
Results: Out of 490 kidney transplants with PTDM, 157 cases were enrolled in this study. Most of patients were Kuwaiti (63%), men (59.9%), and with high school education level (61%). The minority were smokers (16.4%) and with hypertensive nephropathy (33.1%). Bone disease was found in (36.8%) and most of patients (91.2%) were hemodialyzed pre-transplant.

The majority of patients (>60%) reported low mean score of healthy diet (0–3); (>85%) reported low mean score of practicing exercise (0–3); (>62%) of them were not checking blood sugar at home and 85% of them did not follow the recommended frequency; and (>62%) were not caring their feet (except washing in 86.7%). Moreover, most of patients were lacking information advices about sharp disposal, diet regimen, using logbook, hypo-and hyperglycemia, sick day management, and the importance of HbA1c and regular fundus examination.
Conclusion: Diabetes knowledge is deficient in patients with PTDM. Therefore, randomized controlled studies are recommended to evaluate the impact of diabetes education on their self-care activities and metabolic control variables.

PLB085 ÀCUTE KIDNEY DYSFUNCTION WITH NO REJECTION (ADNR) » IS ASSOCIATED WITH POOR OUTCOMES IN KIDNEY TRANSPLANT RECIPIENTS

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The entity "acute kidney dysfunction with no rejection (ADNR)" has been proposed for kidney transplant recipients (KTR) presenting with acute elevation of serum creatinine without histological evidence of acute rejection (AR). The prognosis of ADNR is unknown. From 2007 to 2015, we retrospectively categorized all KTR with for-cause kidney biopsy within 12 months post-kidney transplantation (KTx) into 2 groups: ADNR and biopsy-proven AR. Controls (C) included KTR with no ADNR or AR within 24 months post-KTx. BK virus nephropathy and primary nonfunction were excluded. Glomerular filtration rate (eGFR) was estimated using MDRD equation. Linear mixed models established intercepts and slopes of eGFR decline from 6 to 24 months post-KTx. Cubic spline analysis calculated the percentage of patients with ≥30% reduction of eGFR from 6 to 24 months post-KTx. The mean age (years) at KTx was 50.2 ± 14.2, 47.9 ± 17.8 and 53.6 ± 12.4 for ADNR (n = 93), AR (n = 22) and C (n = 135), respectively. The female/male ratio was 39.8% (ADNR), 45.5% (AR) et 34.1 (C). The rate of delayed graft function was not significantly different among groups. The median time for for-cause graft biopsy was 22 [10–70] and 13 [7–43] days post-KTx for ADNR and AR, respectively. ADNR included 21 "borderline" cases. At 6 months post-KTx, eGFR was higher in C (55.2 ± 1.6 ml/min) vs. ADNR (45.5 ± 1.9 ml/min; $p < 0.05$) and vs. AR (48.6 ± 3.9 ml/min; p, 0.13). The eGFR slope from 6 to 24 months post-KTx was positive in C (0.16 ± 0.06 ml/min/month) compared to negative slopes in ADNR (−0.04 ± 0.08 ml/min/month, $p < 0.05$) and in AR (−0.04 ± 0.16 ml/min/month, p, 0.26). The proportion of KTR presenting with ≥30% reduction of eGFR from 6 to 24 months post-KTx reached 7.4% in C vs 25.8% in ADNR ($p < 0.05$) and 19.1% in AR ($p < 0.05$). In the present cohort, ADNR occurs frequently and early post KTx, and is associated with a significantly lower eGFR at 6 months and a significantly faster eGFR decline from 6 to 24 months post KTx, in comparison to controls.

PLB086 HYPOTHYROIDISM, A RARE CAUSE OF RHABDOMYOLYSIS AND ACUTE KIDNEY INJURY

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Objectives: Rhabdomyolysis is potentially a life threatening syndrome. It usually present with red coloured urine, either with normal kidney function or acute kidney injury. Patients with hypothyroidism may present with myopathy and mild elevation of creatine kinase level, however, overt rhabdomyolysis is extremely rare, and few cases have been described. Hypothyroidism should be considered in patients presenting with renal impairment and rhabdomyolysis.
Case Report: A 25-year-old young man presented with oliguria, dark coloured urine lasting for 3 days, generalized myalgia, profound weakness of proximal and distal muscles, nausea and vomiting. Neurological examination revealed bilateral marked weakness and tenderness of both upper and lower extremities. Urinalysis revealed a blood reaction with dipstick and no erythrocytes with microscopic examination. Serum creatine phosphokinase and myoglobin levels were elevated. Kidney function tests revealed acute kidney injury. All causes for rhabdomyolysis were excluded like muscle trauma, exercise, infections, toxins, polymyositis, etc. Thyroid function tests revealed high (TSH) and very low free (T4) and (T3). We started renal replacement therapy in the form of hemodialysis for five sessions with good hydration. After L-thyroxin therapy, thyroid function tests normalized, muscle strength improved, muscle enzymes returned to normal and recovery of the acute kidney function. The patient had normal kidney function on discharge and after three-year follow up.
Conclusion: Hypothyroidism should be considered in patients present with rhabdomyolysis and renal impairment.

PLB087 RAMADAN FASTING AND KIDNEY TRANSPLANTED RECIPIENTS: FRIEND OR FOE?

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Ramadan fasting is one of the five pillars of Islam and is compulsory for all adult Muslims who had no medical or religious excuses. Ramadan is the ninth lunar month (a 29–30 day) of Islamic calendar so; its duration varies in different seasons year to year. Ramadan fasting is defined as a complete abstinence from food, drink, medications, sexual activity, and smoking from dawn to dusk. Unfortunately, there is a lack of strong evidence of research to guide the

nephrologists because of low quality of observational studies that addressed this issue and all advices given to patients are largely based on individual basis and nephrologist experiences . The aim of this work is to review the most recent studies regarding Ramadan fasting effect on renal transplantation (RT) patients. Most of data in the literature suggest that Ramadan fasting is safe for the kidney transplanted recipients when the function of the renal graft is acceptable and stable for at least 1 year post transplantation. No study has reported any bad effects of Ramadan fasting for the transplanted kidneys, only one author reported adverse effects due to cyclosporine toxicity, acute rejection episodes, and urinary infections. The immunologic changes in renal transplant recipients during Ramadan fasting was evaluated in a study. Total white blood cell counts, serum C3, serum IgA level, serum IgM level cell count and B cell count were assessed. There was a statistically significant decrease in B cell count, serum IgM concentration, and serum C3 after Ramadan without any adverse effects of Ramadan fasting on renal allograft function. Also, the concentration of immunosuppressive drugs tends to remain stable during Ramadan with acceptable medication compliance during the fasting period. The main limitation of all the studies on this topic was the small sample size so, large studies are needed to determine if Ramadan fasting is foe or friend to the renal transplanted patients.

PLB088 CHANGES OF THE CARBOHYDRATE METABOLISM AFTER KIDNEY TRANSPLANTATION AND EFFECTS ON THE CARDIOVASCULAR RISK

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Introduction: Cardiovascular diseases are the major causes of deaths after transplantation, and the main risk factor for cardiovascular diseases is diabetes mellitus. *Aim*: The aim of our study was to assess the prevalence of new onset diabetes mellitus and the cardiovascular risk predicted by the HEART Score.
Methods: 44 patients were involved in our study; their baseline data were overviewed, OGTT was performed, and after that, the patients were put into one of the following groups: normal, impaired fasting glucose/impaired glucose tolerance and new onset diabetes mellitus. Insulin resistance and kidney function were also assessed.
Results: Concerning the baseline data, cold ischemic time ($p = 0.016$), body weight ($p = 0.035$), BMI ($p = 0.025$), and HbA1C ($p = 0.0024$) were significantly different between normal patients and diabetic patients. Significant difference was found based on HOMA IR between normal patients and diabetic patients (1.69 ± 0.51 vs 6.46 ± 1.42; $p = 0.0017$). Serum creatinine ($p = 0.0013$), and eGFR ($p = 0.0026$) and urea ($p = 0.0157$) was significantly difference between the normal and new onset diabetes mellitus groups. After the OGTT in the 120 min, elevated blood glucose levels increase significantly in creatinine. According to the HEART Score, patients with new onset diabetes mellitus were put into Group 3, which also reflects the risk diabetes has for the development of cardiovascular diseases.
Conclusion: Cardiovascular risk can be decreased and the allograft survival can be increased by diagnosing diabetes in time and managing it. Follow-up can occur at the clinic of the transplantation center by the community nephrologist and diabetologist with experience in the care of transplant recipients. We are not only able to preserve the allograft function, but we may also increase the survival of the patients.

PLB089 HAS THE EXPANSION IN EXTENDED CRITERIA DECEASED DONORS LEAD TO A DIFFERENT TYPE OF DELAYED GRAFT FUNCTION AND POORER OUTCOMES?

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Background: There has been considerable change in deceased kidney transplantation in the past 15 years with more extreme phenotypes implanted. It is unclear if this has altered clinical outcomes. The aim of this study was to determine whether the increased use of expanded criteria donors (ECD) affected clinical outcomes, particularly the incidence and outcomes from delayed graft function (DGF).
Methods/Materials: A retrospective analysis of 1359 renal transplants was performed in a single unit over the course of 15 years. The first 10 years of data (group 1) were compared with the subsequent 5 years (group 2). Patient and donor characteristics were recorded. Patient and graft outcomes were analysed at 6 months and 12 months post-transplant, in addition to serum creatinine and patterns of DGF (post-transplant times on haemodialysis, to peak creatinine, for creatinine to half, for creatinine to fall within 10% of baseline).
Results: There was a significant increase in the percentage of ECD allografts used in group 2 with a significant increase in the incidence of DGF. Despite this serum creatinine measured at 1 year was significantly lower in group 2 and the incidence of biopsy proven acute rejection was less than half. Graft and patient survival at 1 year were the same in both groups. Cold ischaemic time (CIT) was significantly reduced in group 2. Regarding the pattern of DGF, group 2 ECD kidneys had a significantly lower incidence of Type 1 DGF and a significantly higher incidence of Type 3 & 4 DGF. Time for creatinine to half in both groups was the best predictor of a serum creatinine <180 at 1 year, confirming previous reports.
Conclusion: The increased use of ECD kidneys has led to a higher incidence of DGF and the pattern of DGF was different in the two time-periods, however long-term outcomes have not been affected. The key marker of future allograft function remained the time for creatinine to half in both the older and more recent more extreme cohort.

PLB090 CHOOSING BETWEEN SCYLLA AND CHARYBDIS: POLYOMA VIRAL NEPHROPATHY OR ACUTE REJECTION?

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Objective: Analyse interaction of Polyoma Viral Nephropathy (PVN) with Biopsy Proven Acute Rejection (BPAR) and impact on outcomes.
Methods: Retrospective single centre analysis of adult Kidney (Kx) and Simultaneous Pancreas-Kidney (SPK) Transplants (Tx) performed between 07/2004 and 06/2014. Median follow-up was 61 months. Induction agent was Basiliximab for all, and Alemtuzumab for SPKTx after 09/11. Primary immunosuppression (IS) was tacrolimus/mycophenolate and steroids. All KxTx biopsies performed for cause were reviewed. PVN diagnosis was based on SV40 staining.
Results: PVN was diagnosed in 23/1618 (1.4%) KxTx and 3/239 SPKTx (1.2%) at a median time of 8 and 24 months respectively. Total incidence of PVN was 26 (1.4%). In this cohort, 1 patient died (unknown cause), and 7 were death-censored graft losses (DCGL). Total incidence of BPAR was 216 (11.6%), and in this cohort, 36 died (sepsis-8, malignancy-2, other causes-26), and DCGL were 134. DCGL in BPAR cohort was greater than PVN (62% vs 27%). Sub-group analysis of PVN showed 3 patterns: A. PVN developing after treatment (Rx) of BPAR ($n = 3$), TMA ($n = 1$) or mild inflammation ($n = 1$, and died). All had DCGL. B. PVN with synchronous foci of rejection on biopsy ($n = 11$). No DCGL. C. PVN without background of rejection ($n = 10$). DCGL were 2 (1-on going BKN, and 1- acute antibody mediated rejection after reduction of IS). DCGL was significantly greater for PVN developing after Rx of Rejection/TMA (100%) compared to PVN developing on maintenance IS only [2/21 (9.5%)]. Univariate analysis showed male recipients and long-waiters to have a significant association, and sensitized recipients to have trend as risk factors for PVN.
Conclusion: Incidence of PVN was low at our centre possibly due to avoidance of depleting antibodies. Since BPAR have far more deleterious consequences for graft survival than PVN, the balance is tilted in favour of robust immunosuppression to prevent rejection even at the cost of accruing a small risk for PVN.

PLB091 EFFICACY AND SAFETY OF NEW DIRECT ANTIVIRAL THERAPY IN TREATMENT OF CHRONIC HEPATITIS C VIRUS INFECTION AMONG RENAL TRANSPLANT RECIPIENTS

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Introduction: Consideration for drug-drug interactions is extremely important in the post-transplantation period in treatment of HCV infection, particularly with regard to immunosuppressant medications, such as cyclosporine or tacrolimus. Investigators will need to establish that use of all-oral direct-acting agents in this setting does not increase the risk for renal allograft rejection. Various regimen of DAA could be used in renal transplant recipients.
Patients: 55 patients who underwent kidney transplantation in mansoura urology and nephrology center in the period between March, 1976 and june, 2016 with HCV infection and +ve HCV PCR.
Methods: All patients were thoroughly investigated for serum creatinine, ALT, AST, Serum bilirubin, Serum albumin, Serum cholesterol. Graft US, Liver and Spleen US, Liver Fibroscan, ANA, Alpha fetoprotein. After exclusion of CHILD B and C Patients and auto-immune hepatitis, the patients were classified according to renal function into 2 groups: the 1st group 51 patients with Crcl more than 30 ml/min received Sofosbuvir+Daclatasvir. The 2nd group 4 patients with Crcl less than 30 ml/min and they received Ritonavir/Ombitasvir/

Paritaprevir Pak. Period of treatment: 6 months. Follow up monthly during treatment course and 1 month, 3 months and 6 months after stoppage of treatment course. Follow up was performed by S.Creatinine, Liver function tests and HCV PCR. Ribavirin was added for patients who received Previous treatment with INF.
Results: Out of 51 Patients who received Sofosbuvir-based Regimen, 4 patients showed rise of serum creatinine and needed graft biopsy. The 4 patients who received Ritonavir-based regimen showed significant changes and variability in immunosuppressive drug trough level and dose modification was done but all of them successfully completed 6 months course of DAA's.
Conclusion: HCV eradication could be achieved successfully in kidney transplant recipients using direct antiviral agents.

PLB092 SAFETY AND EFFICACY OF LOW-DOSE CYTOMEGALOVIRUS PROPHYLAXIS REGIMENS IN RENAL TRANSPLANT RECIPIENTS AS AN ECONOMY-SAVING STRATEGY: A PROSPECTIVE RANDOMIZED COMPARATIVE STUDY

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Background: Cytomegalovirus (CMV) seropositive patients constitute the most common risk group among the renal transplant population for CMV infection. Valganciclovir (VGCV) is usually used in prophylactic dose of 900 mg once daily with the drawbacks of being expensive and leucopenia as a major side effect. Despite the indicated dose, several centers reported acceptable efficacy and tolerability with low-dose VGCV (450 mg/daily), which may provide a significant cost avoidance benefit. High dose valaciclovir (VCV) regimen (8 gm/daily) is also widely used. However, some studies that practiced low-dose VCV regimen (4 gm/daily) have reported acceptable outcomes with less adverse effects. A head-to-head comparison of both low-dose regimens is lacking.
Methods: In this prospective randomized study of 60 newly seropositive renal transplant recipients, treatment with low-dose VCV ($n = 30$) was compared to low-dose VGCV ($n = 30$). Quantitative CMV viral load testing was assessed routinely after 1 month, 3 months and 6 months. All patients included in the study were followed-up for 6 months, during which full clinical assessment, chemistry profile and complete blood picture were done. Posttransplant complications were documented. Economic costs of the study drugs were calculated.
Results: The 6- month incidence of CMV viraemia was slightly higher in the VCV arm (16.6% vs. 13.3%, $p > 0.05$) without statistical significance while the incidence of CMV disease was not different (6.6% in each arm). Elevated liver enzymes were more observed in VCV arm while leucopenia was more evident in VGCV arm but without statistical significance. There was no statistical difference regarding patient and graft survival between the 2 arms. Regarding the cost, there was significant reduction in prophylaxis costs in VCV arm.
Conclusions: Low-dose VGCV and low-dose VCV regimens are safe and effective in CMV prophylaxis with superiority of low-dose VCV as an economy-saving strategy.

PLB093 SUCCESSFUL MANAGEMENT OF LATE ONSET CYTOMEGALOVIRUS INDUCED HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS IN KIDNEY TRANSPLANT RECIPIENT AFTER CABG

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Introduction: Hemophagocytic syndrome (HPS) combines febrile hepatosplenomegaly, pancytopenia, hypofibrinemia, and hepatic dysfunction. It is characterized by bone marrow and organ infiltration by activated, nonmalignant macrophages which phagocytize blood cells. It is rare among renal transplant recipients. We reported successful management of late onset cytomegalovirus induced hemophagocytic lymphohistiocytosis in kidney transplant recipient after CABG.
Case: Our patient was suffering end stage kidney disease due to diabetic nephropathy and underwent live related renal transplant at 2012. He was known hypertensive, hyperuricemic and ischemic heart for which PCI for triple vessel disease was performed before transplant. On March 2017, he underwent aortic valve replacement and coronary artery bypass graft (CABG) successfully but it was associated with persistent thrombocyctopenia. Heparin induced thrombocytopenia was negative. His bone marrow (figure 1) showed hemophagocytosis possibly due to CMV. Moreover, anti-GP IIb/IIIA auto antibodies came positive. His PET scan came negative for malignancy. He started anti-CMV treatment with modification of his immunosuppressive regimen (pulse steroid). We hold his antiplatelet therapies (only resumed if the count exceeded 30 000 per l). Moreover, he received IVIG and Romiplostim with partial response. He has stable kidney graft function with improving platelet count.
Conclusion: Multidisciplinary approach is needed to manage such cases of HPC especially among renal transplant recipients. Late onset CMV is an important cause for such syndrome.
Keywords: Renal transplant, hemophagocytic lymphohistiocytosis, cytomegalovirus

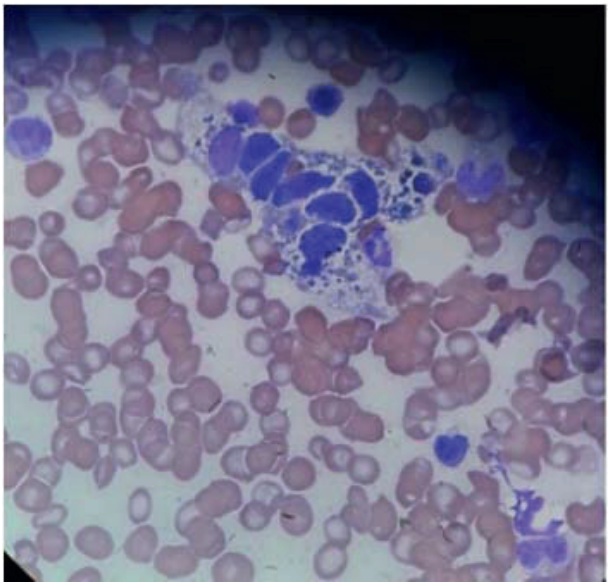

Figure 1 showed hemophagocytes in bone marrow biopsy.

PLB094 DETECTION OF HCV RELATED IMMUNOLOGIC MARKERS AND ITS IMPACT ON THE LIVE DONOR KIDNEY TRANSPLANT RECIPIENT

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Objectives: Liver disease is an important cause of morbidity and mortality among recipients of transplanted organs, Hepatitis C virus (HCV) infection still has a significant prevalence among kidney transplant recipients and is related to worse graft and recipient survival as the kidney is an important component of the HCV clinical syndrome, besides the liver,
Materials and Methods: This retrospective single center study included 336 patients with end stage renal disease who were transplanted in Mansoura Urology and Nephrology Center from beginning of January 1992 to end of December 1995. 63 patients excluded, the remaining 273 patients were divided into three groups viremic active (72 patients), viremic inactive (108 patients) and non viremic (93 patients); based on HCV RNA PCR, complement level (C3 and/or C4 consumption), circulating cryoglobulins and rheumatoid factor detection.
Results: Our study showed insignificant differences regarding the patients' characteristics and demographic data with significantly higher incidence of transaminitis in viremic (active& inactive) patients. Non-significant differences were found as regard proteinuria among the three groups either nephrotic or non-nephrotic range. Also, biopsy proven acute rejection episodes among three groups of recipients were statistically comparable with significantly higher frequency of chronic rejection episodes among viremic active patients. Non-viremic recipients had significantly lower s.creatinine than viremic (active and inactive) recipients. As regard graft or patient survival, comparable data were obtained.
Conclusions: Presence of HCV immunologic markers doesn't have a significant impact on patient and graft survival, but on the other hand, it may be a clue for long-term incidence of chronic rejection.

PLB095 SUCCESSFUL TREATMENT OF POSTTRANSPLANT RECURRENT C3 GLOMERULOPATHY WITH ECULIZUMAB

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Background: C3 glomerulopathy (C3G) is due to dysregulation of the alternative complement pathway in which C3 deposition in the glomerulus may be accompanied by minimal immunoglobulin. Two thirds of C3G recur after transplantation and commonly cause graft loss. Eculizumab is monoclonal C5 antibody and is an alternative treatment for C3G (1).
Case: A 53-year-old male patient without a history of a systemic disease was diagnosed as membranoproliferative glomerulonephritis on renal biopsy performed in 2013. The patient was first given medical treatment with ACE inhibitor, mycophenolate mofetil and steroids. In 2015, the patient had biopsy again due to elevated creatinine (cr) and proteinuria and was diagnosed as C3G. When cr levels progressively increased, hemodialysis was started. In July 2016, the patient received live transplant from his wife. When proteinuria and hematuria occurred and cr levels increased after transplantation, the patient was diagnosed as C3G on graft renal biopsy. The patient was administered pulse methylprednisolone and had five sessions of plasmapheresis. However, elevated cr levels and proteinuria persisted. Therefore, treatment with eculizumab was instituted. He was given eculizumab 900 mg/week for induction therapy followed by maintenance treatment at doses of 1200 mg for 15 days. A considerable improvement was observed in clinical and laboratory results of the patient during three-month maintenance treatment (Table1).
Conclusion: There has been limited experience in eculizumab use for treatment of C3G. The most important restrictive factors in eculizumab use are infections and high costs. Controlled studies are needed to evaluate effectiveness and safety of eculizumab in treatment of C3G.
References: 1. Bomback AS, Smith RJ, Barile GR et al. Eculizumab for dense deposit disease and C3 glomerulonephritis. Clin J Am Soc Nephrol 2012;7:748–56.

	Before treatment	1. Dose after induction	4. Dose after induction	4. Dose after maintance therapy
Creatinine (0.84 1.25 mg/dl)	2.11 mg/dl	1.38 mg/dl	1.22 mg/dl	1.19 mg/dl
CKD-Epi ml/min/ 1.73 m^2	35	58	67	69
Proteinuria (O-300 mg/day)	3200 mg/day	675 mg/day	500 mg/day	384 mg/day
C3 (0.79–1.52 g/l)	0.55 g/l	0.6 g/l	0.71 g/l	0.82 g/l
C4 (0.16–0.38 g/l)	0.26 g/l	0.21 g/l	0.24 g/l	0.35 g/l

PLB096 ONCE-DAILY MELTDOSE TACROLIMUS FORMULATION IN KIDNEY TRANSPLANT RECIPIENTS: EVALUATION OF RENAL FUNCTION IN CAUCASIAN FAST TACROLIMUS METABOLIZERS

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Background: Tacrolimus (TAC) is an effective immunosuppressant, with nephrotoxicity even at low blood trough levels; other factors besides trough levels might contribute to TAC-related kidney injury. Studies in Caucasian patients showed that TAC fast metabolizers have a low trough over dose (C/D) ratio, are at risk of worse renal function, BKV nephropathy, and patient survival. Envarsus® (LCPT) is a MeltDose® tacrolimus formulation with improved bioavailability, reduced C_{max} and peak-to-trough fluctuations. A recent study (Trofe-Clark ATC2015) showed higher peak levels in fast metabolizers of black origin vs. slow metabolizers for TAC immediate release (TacIR, Prograf®), with LCPT showing no PK difference. This post-hoc analysis compared the effect of LCPT and TacIR on renal function in Caucasian fast metabolizers.
Methods: Data from a phase III study in de novo kidney transplant recipients (Budde AJT2014) were extracted for Caucasian patients, and divided in tertiles based on day 14 post-transplant C/D ratio. Change from baseline (CFB) in eGFR in patients in the lowest C/D ratio tertile (fast metabolizers) was compared between TacIR and LCPT at 12 and 24 months.
Results: C/D ratio at day 14 (LCPT 0.83 ng/ml*1/mg; TacIR 0.76 ng/ml*1/mg) correlated with day 30 and day 180 C/D ratio in both treatment groups ($p < 0.001$). Fast metabolizers (LCPT $n = 53$; TacIR $n = 56$) had an absolute eGFR of 55.08 and 55.79 ml/min*1.73 m^2 at 12 months, and of 60.03 and 57.07 ml/min*1.73 m^2 at 24 months, respectively; CFB was comparable at 12 (5.38 ± 2.63 vs. 4.94 ± 2.19 ml/min*1.73 m^2), and significantly higher at 24 months in the LCPT arm as compared to TacIR (12.33 ± 2.68 vs. 4.58 ± 2.53 ml/min*1.73 m^2; $p < 0.04$) [Fig.1].
Conclusion: Caucasian fast metabolizers treated with LCPT showed improved CFB two years post-transplant when compared to TacIR, representing a first proof-of-concept of the potential benefit of LCPT flatter PK on renal function in fast metabolizers. These results warrant confirmation.

PLB097 PHARMACOKINETIC DIFFERENCES FOLLOWING MORNING AND EVENING ADMINISTRATION OF TWICE-DAILY TACROLIMUS

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Background: Following organ transplantation current dosing recommendations for tacrolimus (Tac) are based on monitoring morning trough concentrations as a surrogate marker of systemic drug exposure (AUC), assuming similar exposure day and night. In the present study we investigate if the assumption of similar Tac pharmacokinetic (PK) profiles following morning and evening doses holds true in renal transplant recipients.
Method: Full 24-h PK profiles (14 samples after the morning dose and 12 samples after the evening dose) were investigated in the early post-transplant phase in stable renal transplant recipients. All recipients were treated with twice-daily Tac, with equal morning and evening doses, in combination with prednisolone and mycophenolate mofetil. The recipients were instructed to administer Tac as in their everyday routine with regards to food consumption and concomitant medication. Estimation of PK variables was performed by non-compartmental analyses.
Results: Investigation of 30 recipients shows high interindividual variability and a significantly higher systemic exposure of Tac following the morning dose; AUC_{0-12} (96.6 ± 30.9 µg*h/l) compared to AUC_{12-24} (87.8 ± 21.3 µg*h/l) ($p = 0.001$) and C_{max} of 12.05 ± 6.26 µg/l compared to 9.80 ± 3.21 µg/l ($p = 0.003$) after the evening dose. There was also a tendency of a more rapid absorption after the morning dose, with a shorter T_{max} (3.8 ± 2.3 h), compared to after the evening dose (4.7 ± 2.7 h) ($p = 0.100$).
Conclusion: Our results indicate significant differences in the PK patterns following the morning and evening dose of Tac. Data from the present study will be valuable to improve the current understanding of Tac dosing in the everyday treatment of renal transplant recipients.

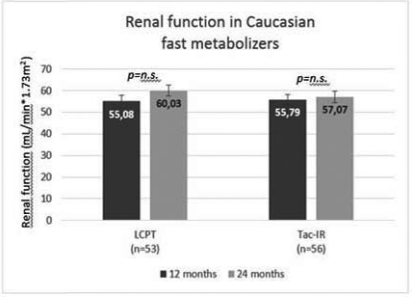

Fig. 1A: 12 and 24 months post-transplant renal function in Caucasian fast metabolizers treated with LCPT or Tac-IR

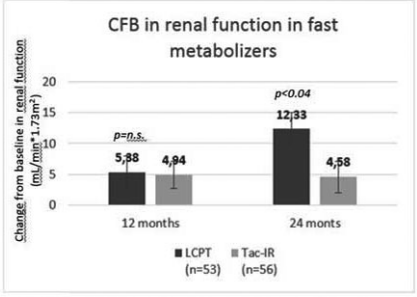

Fig. 1B: 12 and 24 months change from baseline (CFB) post-transplant renal function in Caucasian fast metabolizers treated with LCPT or Tac-IR

PLB098 THYMOGLOBULIN INDUCTION IS ASSOCIATED WITH A LOW INCIDENCE OF ACUTE REJECTION IN LOW–IMMUNOLOGICAL RISK KIDNEY TRANSPLANT RECIPIENTS

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Background: KDIGO recommends that T-cell depleting agents should be used only for kidney transplant (KT) recipients at high immunological risk. However, the effects of thymoglobulin (ATG) induction therapy in low-immunological-risk kidney transplant recipients on tacrolimus/mycophenolic acid/steroids have not been elucidated yet.
Methods: We retrospectively collected 12-month postoperative clinical data for low immunological risk KT recipients at Soonchunhyang University Hospital. Recipients were divided into two groups, the ATG and basiliximab groups, according to the induction agent used. Low–immunological-risk recipients were defined as those having PRA levels less than 30% at the time of the kidney transplantation. The incidence of biopsy-proven acute rejection was compared between the two groups.
Results: Of the 43 low-immunological-risk patients, 24 had received ATG. The incidence of biopsy-proven acute rejection was 0% ($n = 0$) in the ATG group. The basiliximab group had a significantly higher incidence of rejection, 26.3% ($n = 5$, $p = 0.008$). No significant difference in estimated glomerular filtration rate (CKD-EPI) was found between the two groups at 6 months after KT.
Conclusions: In the KT recipients with low immunological risk who were receiving tacrolimus/mycophenolic acid/steroids, ATG induction therapy more significantly reduced the incidence of biopsy-proven acute rejection than did basiliximab induction.

PLB099 ATHENA STUDY OUTCOMES ON ALLOGRAFT FUNCTION AFTER 12 MONTHS WITH EVEROLIMUS-CNI VS TACROLIMUS-MPA REGIMEN IN DE NOVO RENAL TRANSPLANT RECIPIENTS

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Background: The ATHENA study was designed to compare efficacy, safety and outcomes on renal function [GFR] of everolimus [EVR] combined with tacrolimus [TAC] or cyclosporine A [CyA] vs. a standard regimen of mycophenolic acid [MPA] +TAC in de novo kidney transplant [KTx] recipients.
Methods: In this 12 months [M], prospective, open-label, randomized study with 15 German and 12 French sites, 612 patients [pts] were randomized 1:1:1 at time of Tx to either EVR (C0 target: 3–8 ng/ml M1-M12) +TAC (C0 target: 4–8 ng/ml M1-M3; 3–5 ng/ml M3-M12), or EVR (3–8 ng/ml M1-M12) + CyA (C0 target: 75–125 ng/ml M1-M3; 50–100 ng/ml M3-M12) or control TAC (C0 target: 4–8 ng/ml M1-M3; 3–5 ng/ml M3-M12) + MPA. Steroids were to be continued. Here we report M12 outcomes on allograft function from ITT full analysis set with 208 EVR+TAC vs 199 EVR+CyA vs 205 TAC+MPA pts.
Results: From randomization to M12 allograft recovery was good in all 3 treatment groups with increase in GFR (Nankivell) as ΔeGFR M1-M12: a) EVR+TAC +6.6 ml/min, b) EVR+CyA +9.6 ml/min, c) TAC+MPA +7.6 ml/min (not significantly different). Analysis of donor age categories [<35; 35–49; 50–64; >65 years] showed that donor age >65 years had worst renal allograft outcomes, regardless of treatment. Urinary protein excretion at M12 was not different between groups with a category analysis showing only 3.7% of TAC+MPA vs 1.3% of TAC+EVR vs 0.7% of CyA+EVR pts had proteinuria in nephrotic range [>339 mg/mmol] at M12.
Conclusion: ATHENA, the largest European KTx study, showed comparable improvement in renal allograft function between all treatment groups with no difference in measured urinary protein excretion after 12 Mo drug exposure. Strongest impact on post Tx GFR appears to be determined by donor age, which is shown here for the first time in a large prospective study.

PLB100 IMPACT OF THERAPEUTIC DOSE MONITORING OF MYCOPHENOLIC ACID ON THE OUTCOME OF LIVE-DONOR KIDNEY TRANSPLANT RECIPIENTS. A PROSPECTIVE CONTROLLED STUDY

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Objectives: Although an adequate level of immunosuppression is required to dampen the immune response to the allograft, the level of chronic immunosuppression is slowly decreased over time (as the risk of acute rejection decreases) to help lowering the overall risk of infection and malignancy.
Materials and Methods: This prospective single center study included 40 patients with end stage renal disease who were transplanted in Mansoura Urology and Nephrology Center from beginning of February 2015 to end of December 2015. eight patients were excluded, the remaining 40 patients were divided into two groups, study group (40 patients) who were followed up using therapeutic trough level monitoring of MPA, control group (40 patients) who were followed up using the fixed dose strategy. The 80 patients were followed up for one year post-transplantation as regard graft function, rejection, gastrointestinal (GI) and hematological side effects, incidence of infection or malignancy, patient survival and graft survival.
Results: Fifteen patients from the study group (37.5%) needed dose reduction of MPA, no patients needed increase in dose. Significantly higher incidence of GI manifestations was noted in the control group (p: 0.001). Although higher frequency of incidence of infection, anemia, leucopenia and thrombocytopenia was seen in the fixed dose group, the difference was statistically insignificant. Significantly higher percentage of recipients in the study group is still enjoying perfectly functioning graft (p: 0.02). Also recipients in the control group showed inferior patient survival after one year follow up (p: 0.0.04). The decrease in dose of MPA decreased the annual cost by around six five thousand US dollars.
Conclusions: MPA as an immunosuppressive agent has its advantages and disadvantages, the dose which the patient receives should be adjusted by level monitoring even once or twice post transplantation to be sure that the patient receives the suitable dose.

PLB101 ADHERENCE OF IMMUNE SUPPRESSIVE DRUG TREATMENT AND QUALITY OF LIFE IN PATIENTS WITH RENAL TRANSPLANTATION

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Background: Chronic Renal Failure (CRF) is an important health problem in our country as it is all over the world. CRF is a disease that affects the quality of life negatively. Adherence to immunosuppressive treatment is very important after transplantation (Tx). Harmonization of the patient can reduce symptom intensity and improve quality of life positively by increasing treatment success.
Methods/Materials: This study was conducted as a descriptive study. The consent of ethics committee, permission from scale developer, related institution and persons were taken. In the selection of the sample, it was aimed to reach the whole of the universe and 206 patients were reached. The data were collected by face-to-face interview technique.
Results: The mean age of the patients in our study was 41.40 ± 11.88. 92.7% of the patients consisted between 46–59 years old. 54.4% of the patients were transplanted from live donors, 54.9% had side effects and 2.9% had rejection due to incompatibility. It was determined that the "46–59" age group had the highest compliance scores. The role power physical function scores and role power emotional function scores were both higher in males and the compliance scores were higher in the group without side effects. There was no significant change in the compliance scores according to the age of the patients and the duration of the disease. As the Tx duration increased, the compliance scores decreased. It was determined that the physical function, vitality and mental health scores increased as well as the compliance score increased.
Conclusion: When the results of this study are taken into consideration, it is considered that there is a significant relation between harmony and quality of life. Therefore, it is considered that the frequency of side effect development will decrease and the quality of life will increase. Suggestions have been made to make new researches about the issue.

PLB102 LONG-TERM OUTCOME OF INDUCTION IMMUNOSUPPRESSION USING ANTI-THYMOCYTE GLOBULIN VERSUS BASILIXIMAB IN KIDNEY TRANSPLANTATION

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Introduction: Renal transplantation is the best choice treatment for patients with end-stage kidney disease, to enhance both life style quality and life expectancy. Almost all renal transplant recipients receive immunosuppression drugs to help to prevent acute rejection and prolong the renal allograft survival. Induction treatment is regularly viewed as an vital step on streamline graft outcome. The aim of this study is to assess the long-term efficacy of anti-thymocyte globulin versus basiliximab as an induction therapy in live donor kidney transplantation on the graft outcome.

Patients and Methods: 1397 patient were included in this study, 215 patients received Anti-thymocyte globulin another 1182 patient received Basiliximab. Assessment of patients clinically for adverse effects during drugs administration and Infections and malignancy, laboratory assessment through measurement of s.Cr, FBS, CBC, urine analysis and CNI level in blood, regular sonographic examination and the graft biopsy in cases of graft dysfunction.
Results: There was statistical significant difference regarding prevalence of acute rejection (47%) in ATG group Vs (13%) in basiliximab group, also statistical significance difference between two groups regarding chronic rejection (30%) in ATG group Vs (6%) in basiliximab group also significance of malignancy more in ATG group (5%) while (0.8%) in basiliximab, long term follow up of s.cr was statistically significant whereas basiliximab results was better (p-value <0.001). also there were statistically significance between two groups regarding patient and graft survival.
Conclusions: basiliximab has better outcome on both patient and graft survival, ATG associated with higher incidence of acute rejection, ATG associated with higher incidence of malignancy and ATG associated with higher incidence of mortality

PLB103 STANDARD IMMUNOSUPPRESSIVE PROTOCOL WITH OR WITHOUT BASILIXIMAB IN PEDIATRIC RENAL TRANSPLANTATION

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Background: Several randomized clinical trials performed in adult renal transplant recipients have shown a significant reduction in the incidence of acute rejection by using Basiliximab as induction therapy; however a few studies have conducted on kidney graft survival following use of Basiliximab among pediatric transplant recipients. Hence, the present study came to address the efficacy and safety of Basiliximab in improvement of survival of kidney transplantation among children.
Methods: This was a case control study conducted on 28 children (57.1% male) with renal transplantation that were randomly assigned to case group receiving Basiliximab (10 mg in patients <40 kg or 20 mg in patients ≥40 kg) as induction therapy ($n = 14$) and control group ($n = 14$). The mean age of patients was 12.1 ± 4.2 years. All donors were living unrelated. The outcome was assessed by measurement of the level of serum creatinine before as well as 24, 48, and 72 h and also 3, 6 and 12 months post-transplant, the estimation of glomerular filtration rate at 12 months post-transplant, graft survival and also by assessment of the number of acute rejection episodes in transplant recipients.
Results: No difference was revealed between the two groups in serum creatinine before and also after kidney transplantation at different post-transplant time points. The repeated measure ANOVA test showed no difference in 12-month trend of the change in eGFR between the two groups ($p = 0.977$). Acute rejection episodes occurred in 25% of patients received basiliximab and 33% of patients in control group and this difference was insignificant.
Conclusion: Adding basiliximab to common immunosuppressive regimens may not improve graft survival as well as not reduce acute rejection episodes in children renal transplant recipients.

PLB104 KIDNEY GRAFT FUNCTION AND SURVIVAL ARE NOT ASSOCIATED WITH PARAMETERS OF BLOOD CONCENTRATIONS OF TACROLIMUS METABOLITES MI AND MIII

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Tacrolimus (Tac) remains one of the main components of immunosuppressive regiment after kidney transplantation (KTX). However, Tac therapy is associated with some adverse events and nephrotoxicity. The role of Tac metabolites has not been fully understood. The aim of the study was the assessment of associations of blood levels of Tac and its two metabolites MI and MIII with kidney function after KTX. The study included 215 patients (94 [43.72%] women), median age 47.06 [range: 18.1–77.94] years after KTX (median time after KTX 43.17 [0.23–404.1] months) who were taking tacrolimus as component of immunosuppressive regimen. Blood levels of tacrolimus and its metabolites were measured using liquid chromatography with tandem mass spectrometry (LC/MSMS). Tacrolimus metabolites levels were analysed as whole blood concentrations [ng/ml], Tac metabolites, Tac and MI/MIII ratios. Median observation time was 60 [3–60] months, during this time 28 (13%) of patients have lost the graft and were placed on dialysis. We have observed positive correlation between MI/MIII ratio and eGFR change per year ($r = 0.21$; $p = 0.039$). In the KTX recipients who have lost their graft we have observed significantly higher eGFR variation coefficient (36.02 vs. 13.08 ml/min/1.73 m^2; 0.000002) and lower blood Tac concentrations (4.9 vs. 6.03 ng/ml; $p = 0.01$). There were no correlations between Tac, MI/Tac, MIII/Tac and MI/MIII ratios with eGFR at the time of study inclusion and eGFR at 3, 12, 24, 36, 48 and 60 month of follow-up, and the time of graft survival. Our results suggest that tacrolimus and its metabolites MI and MIII do not influence significantly KTX function and the graft survival, and that higher eGFR variation during 5-year follow-up is a prognostic factor for graft loss.

PLB105 GENE EXPRESSION OF MOLECULES IMPLICATED ON MTOR ROUTES IN RENAL BIOPSIES WITH REJECTION

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Introduction: Antibody-mediated rejection (AMR) is the major cause of kidney transplant failure. While some patients presenting with DSAs develop either chronic or acute AMR and ultimately reject their allograft, others maintain stable functioning allografts and continue to demonstrate normal biopsy histopathologies. In addition, several genes expressed in the transplanted tissue could integrate responses from a wide variety of signals to regulate cell growth, metabolism, and survival.
Objectives: Our aim was to determine the gene expression of genes implicated in fibrosis and rejection in kidney biopsies.
Materials and Methods: The study population consisted of 269 patients who were transplanted and anti-HLA antibody monitored (OL) during 5 years. An assay of human mTOR signaling (RT2 Profiler PCR Array, Quiagen) that profiles the expression of 84 key genes involved in mTOR pathway was used to assess the gene expression profiles of kidney recipients who presented DSAs and showed anomalous biopsy histopathology and developed AMR ($n = 14$). RNA was extracted from biopsies and cDNA obtained (RT-First-Strand). Biopsy profiles for these DSA+/AMR+ patients were compared to biopsies as DSA+/AMR- and DSA- controls. Fold-Change [2^(-Delta Delta Ct)] was the normalized gene expression [2^(-Delta Ct)] in the Test Sample divided the normalized gene expression [2^(-Delta Ct)] in the Control Sample.
Results: Eukaryotic translation initiation factor 4E binding protein 1 (EIF4EBP1) ($p < 0.005$), Vascular endothelial growth factor A (VEGFA) ($p = 0.002$), Protein kinase AMP-activated alpha 2 catalytic subunit (PRKAA2) ($p = 0.017$), Ribosomal protein S6 (RPS6) ($p = 0.012$) were significantly over expressed in AMR biopsies compared with control group. Other genes were also over-expressed, although not significant respect to control (INS, PIK3CG, PIK3CD, PRKCG, PRKCB, VEGFC and HGDC. EIF4EBP1 would be important to mediate the regulation of protein translation by growth factors and others.

PLB106 ANTI-HUMAN LEUKOCYTE ANTIGEN ANTIBODY MONITORING POST KIDNEY TRANSPLANTATION: A PROSPECTIVE STUDY

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Objectives: The identification of the anti-human leukocyte antigen (HLA) antibodies by the new sensitive assays became more percise, as donor-specific anti-HLA antibodies (dnDSAs) considered to be used as an important predictor of poor patient and graft survival, understanding the circumstances surrounding the development of dnDSAs may allow us to avoid their later development, our aim is to monitor the prevalence and consequences of anti HLA antibodies post kidney transplantation.
Materials and Methods: A prospective single Centre study included 48 kidney transplant recipients with different anti HLA antibodies level pre transplantation. Who were transplanted at Mansoura urology & nephrology Centre, Mansoura, Egypt. From April to October 2016, from which 5 patients were excluded (Lost follow-up) the remaining 43 patients divided into two groups (those developed antibodies post transplantation versus those anti-bodies free). All patients were monitored by peripheral blood anti-HLA antibodies analysis at serial time point pre, 3, 12 months post transplantation by single antigen coated multiplex beads for HLA Class I&II (SAB), Protocol graft biopsy at the end of the first year was done.
Results: Up till now 17 out of 48 developed de novo anti HLA antibodies [class I (9.7 ± 3.1), class II (6.4 ± 2.6)], only one patient had dnDSAs, the incidence of rejection is comparable between the both groups $p = 0.96$, thirty two protocol graft biopsy was done [two patient had Borderline Changes (BLC) in the first group versus three in the second group and one had Acute T-cell-mediated

rejection (ACR) grade 1A in the second group] without statistically significant differences.
Conclusions: Monitoring of the anti-human leukocyte antigen antibody at regular interval post kidney transplantation may be essential to guard against acute cellular and antibodies mediated rejection

PLB107 IMPACT OF PRE-TRANSPLANT ANTI-HUMAN LEUKOCYTE ANTIGEN ANTIBODIES CLASS I AND II ON LIVE KIDNEY TRANSPLANTATION OUTCOME

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Objectives: Panel reactive antibodies (PRA) have a very important role worldwide in detecting the level of sensitization of prospective solid organ transplantation and they are one of the important factors that detect the outcome and survival of solid organ transplantation. The percentage of (PRA) detects the probability of deceased donor kidney transplantation, Sensitized kidney transplant recipients to HLA antigens have obstacles to the availability and success of kidney transplantation so there is a relationship between the percentage of PRA and increased risk for not receiving kidney transplantation. Class I anti-HLA antibodies are considered more important than class II regarding the level of sensitization. Donor non-specific anti-HLA antibodies are considered of less importance than donor specific ones in deceased donor kidney transplantation. This work aims to study the impact of pre-transplant donor-nonspecific anti-HLA antibodies on live kidney transplantation outcome and revealing the difference between class I and II anti-HLA antibodies regarding sensitization.
Material and Methods: This retrospective single center study included 628 kidney transplant recipients who.

PLB108 CLINICAL VALIDATION OF A NOVEL ELISPOT-BASED IN VITRO DIAGNOSTIC ASSAY TO MONITOR CMV-SPECIFIC CELL-MEDIATED IMMUNITY IN KIDNEY TRANSPLANT RECIPIENTS

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Background: Impaired cytomegalovirus (CMV)-specific cell-mediated immunity (CMV-CMI) is a major cause of CMV reactivation and associated complications in solid-organ transplantation. Reliably assessing CMV-CMI is desirable to individually adjust antiviral and immunosuppressive therapy. This study aimed to evaluate the suitability of a novel IFN-γ ELISpot assay (T-Track® CMV), based on the stimulation of peripheral blood mononuclear cells with pp65 and IE-I CMV proteins, to monitor CMV-CMI following kidney transplantation.
Methods/Materials: A prospective, longitudinal, observational, multicenter study was conducted in 96 intermediate risk (D-/R+, D+/R+) renaltransplant recipients. Patients underwent pre-emptive antiviral therapy. CMV-CMI, CMV viral load (CMV DNAemia by qPCR or pp65 antigenemia) and clinical complications (CMV disease, opportunistic infections and graft dysfunction) were monitored over six months post-transplantation.
Results: IFN-γ ELISpot assays showed a sensitivity of 95% pre-transplantation and of 88–92% post-transplantation. CMV-specific response was reduced following immunosuppressive treatment and increased in patients with graft rejection, indicating the ability of the ELISpot assay to monitor the patients' immunosuppressive state. Interestingly, median pp65-specific response was 9-fold higher in patients with self-clearing viral load compared to antivirally-treated patients prior to first viral load detection ($p < 0.001$), suggesting that reactivity to pp65 represents a potential immunocompetence marker.
Conclusion: Altogether, this novel IFN-γ ELISpot assay (T-Track® CMV) is a highly sensitive immune-monitoring tool, suitable for the follow-up of renal transplant recipients, and with a potential use for the risk assessment of CMV-related clinical complications.

PLB109 IMPACT OF DIABETES MELLITUS AND GLYCAEMIC CONTROL ON KIDNEY ALLOGRAFT HISTOLOGY

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Background: Diabetes mellitus is very common after kidney transplantation, either present prior to transplantation or new onset post transplantation. The impact on the histology of the transplanted kidney, and the role of glycaemic control (HbA1c) herein, remains insufficiently understood.
Methods: We performed a cohort study based on a prospectively collected database (2004–2013) at a single kidney transplant center. In total, 869 transplantations and 3138 protocol biopsies, up to 5 years after transplantation, were included. The primary outcome was the time to first detection of a chronic lesion in the kidney after transplantation. The effect of having pre- and post-transplant diabetes was investigated via a standard survival model for interval-censored data. The longitudinal effect of HbA1c was analyzed via a multivariate joint model.
Results: Pre-transplant diabetic patients showed higher risk ($p < 0.001$) of developing chronic histological lesions after transplantation (arteriosclerosis, tubular atrophy, mesangial matrix expansion), independent of classical demographic factors like donor and recipient age. The most significant lesion associating with pre-transplant diabetes was mesangial matrix expansion. In contrast to the significant effect of pre-transplant diabetes, new onset diabetes did not affect the histological evolution. Patients who were exposed to higher levels ($p = 0.03$) and who had steeper increases ($p < 0.001$) in HbA1c, were more inclined to experience mesangial matrix expansion, already within the first 5 years after transplantation.
Conclusion: Pre-transplant diabetic patients are prone to developing chronic lesions in the allograft, already in the first few years after transplantation. The lesion most related to diabetes mellitus was mesangial matrix expansion. The effect of diabetes can be explained by poor glycaemic control: being exposed to higher levels and having a steeper increase in HbA1c augments the risk of developing mesangial matrix expansion.

PLB110 THE EFFECTS OF OMEGA-3 POLYUNSATURATED FATTY ACIDS ON GLOMERULAR FILTRATION RATE, PROTEINURIA, CARDIOVASCULAR RISK MARKERS, INFLAMMATION AND FIBROSIS IN RENAL TRANSPLANTATION (ORENTRA)

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Background: Marine omega-3 polyunsaturated fatty acids (n-3 PUFAs) lower triglyceride levels and may have beneficial anti-inflammatory, anti-fibrotic, anti-arrhythmic, anti-atherosclerotic and renoprotective effects.
Methods: RCT. 132 patients who received a renal transplant at Oslo University Hospital in 2013 to 2014 were randomized to receive either 2.6 g marine n-3 PUFA daily (Omacor® 3 capsules of 1 g) or 3 capsules of placebo (olive oil) in addition to standard care. Patients were followed from baseline 8 weeks post-transplant until one year after renal transplantation. Study measurements were performed at baseline and at the end of study, including iohexol clearance (mGFR), proteinuria, plasma glucose and lipids, heart rate variability, pulse wave velocity, brachial artery flow mediated vasodilation and Chronic Allograft Damage Index (CADI). Semi-quantitative estimation of percent inflammation and interstitial fibrosis in renal graft biopsies was determined.
Results: 1 out of 4 patients were lost to follow-up (withdrawal $n = 19$, non-adherence $n = 9$, other reasons $n = 2$), many of whom had to stop study drug ($n = 6$) or placebo ($n = 8$) early due to gastrointestinal side-effects. The incidence of adverse events (AEs) did not differ between the active treatment group (218 AEs in 65 patients) and the control group (239 AEs in 67 patients). In the per-protocol population, there was no change (Δ) in mGFR during the study period between groups (Table 1). We found lower Δ percentage

Table 1.

PP population		Study group				Controls				
Variable	n	Mean				Mean				
		Base.	End	Δ	±SD Δ	Base.	End	Δ	±SD Δ	p Δ
Age, *years*	100	53.0				53.2				
Gender, *% female*	100	27.1				21.2				
Marine n-3 PUFA, *wt%*	100	6.14	10.76	4.63	2.10	6.18	6.19	0.01	1.74	<0.001
mGFR, *ml/min*	100	54.5	60.4	6.31	11.42	55.0	59.5	4.27	10.35	0.35
FEPR	100	0.0041	0.0024	-0.0017	0.0042	0.0048	0.0036	-0.0011	0.0041	0.45
p-triglyc., *mmol/L*	100	1.80	1.31	-0.47	0.79	1.78	1.72	-0.08	0.95	0.02
p-chol., *mmol/L*	100	5.77	4.64	-1.13	1.26	5.71	4.73	-0.98	1.13	0.52
fPG, *mmol/L*	85	5.70	5.94	0.28	1.23	5.46	5.47	0.07	0.61	0.34
2hPG, *mmol/L*	84	7.02	6.27	-0.23	2.32	6.46	5.80	-0.41	1.76	0.72
rHR, *bpm*	96	75.8	70.7	-6.3	12.6	71.9	70.5	-3.1	11.0	0.25
HRV	92	1.09	1.25	0.18	0.56	1.15	1.14	-0.02	0.14	0.04
PWV, *m/sec*	97	9.79	9.13	-0.66	2.21	10.35	9.35	-0.72	2.30	0.89
FMD, *mm*	90	0.18	0.26	0.08	0.15	0.20	0.23	0.03	0.10	0.09
CADI	79	4.4	3.9	-0.4	2.4	4.0	4.8	1.0	3.1	0.02
Inflammation, %	86	6.2	6.4	0.2	8.1	5.6	7.6	2.0	8.5	0.38
IF, %	86	13.1	12.4	-0.8	9.0	12.4	16.0	3.6	11.1	0.03

Mean value for selected study measurements at baseline 8 weeks post-transplant (Base.), at end of study 1 year post-transplant (End) and change between these time-points (Δ). For the latter (Δ) standard deviation (SD) and p-value is also given. Differences between groups were evaluated using Student t-test for normally distributed data and Mann Whitney U test for change in marine n-3 PUFA level and histological indices that showed a non-normal distribution of data.

Abbreviations: PUFA: Polyunsaturated fatty acid. wt%: Weight percentage. mGFR: Measured glomerular filtration rate by iohexol clearance. FEPR: Fractional excretion of protein in urine. triglyc: Triglyceride. chol: Total cholesterol. fPG: Fasting plasma glucose. 2hPG: Two hours post-challenge plasma glucose during an oral glucose tolerance test. rHR: Resting heart rate. HRV: Heart rate variability (Vagus®). PWV: Pulse wave velocity (SphygmoCor®). FMD: Ultrasound guided brachial artery flow mediated vasodilation. CADI: Chronic Allograft Damage Index. IF: Interstitial fibrosis in the cortex of renal grafts.

interstitial fibrosis, lower Δ CADI, Δ heart rate variability and lower Δ plasma triglycerides in the active treatment group compared with the control group (Table 1).
Conclusions: High-dose marine n-3 PUFA supplementation is safe and may prevent graft fibrosis, improve heart rate variability and lower plasma triglycerides after renal transplantation. Large clinical trials with a long follow-up period are warranted to evaluate whether these beneficial effects might improve patient and graft survival.

PLB112 CAN ESTIMATED GLOMERULAR FILTRATION RATE BE A PREDICTOR FOR IMMEDIATE GRAFT FUNCTION IN LIVING DONOR KIDNEY TRANSPLANTATION?

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Background: At least 5% of living donor kidney transplants are affected by diagnosis of delayed graft function. Meanwhile, immediate graft function is closely related with better long-term outcome of the procedure. Predictive factors for immediate function of living donor kidney transplant have not been well defined yet.
Material/Methods: Glomerular filtration rate (GFR) was estimated with using CKD-EPI formula in 48 living kidney donors before nephroureterectomy procedure. Comparative analysis was performed between groups: Group I consisting of cases with immediate graft function (defined as recipient's serum creatinine concentration level below 3 mg/dl in 5th postoperative day) and Group II including all other cases.
Results: There were 29 cases in the mean age of 45.65 ± 12.31 years (19 were female) included to Group I and 19 cases in the mean age of 47.89 ± 8.88 years (16 were female) included to Group II. Mean estimated GFR was 100.55 ± 14.25 ml/min/1.73 m^2 (ranged, 69.89–118.43 ml/min/1.73 m^2) in the Group I and it was significantly higher than in other cases (Mann-Whitney U = 183, p = 0.03). Mean estimated GFR was 91.27 ± 20.94 ml/min/1.73 m^2 (ranged, 50.6–151.15 ml/min/1.73 m^2) in Group II.
Conclusions: GFR of living kidney donor candidate must be appropriate to provide him sufficient filtration after unilateral nephrectomy and to ensure satisfactory renal graft function to recipient as well. The qualification process usually ends with a positive decision with GFR estimated above 80 ml/min/1.73 m^2, but any such decision should be considered on a case by case. Higher donor's glomerular filtration rate correlates with the incidence of immediate graft function in living donor kidney transplantation, thus also affects long-term outcome.

PLB113 EFFECTIVE AND SAFE SINGLE KIDNEY TRANSPLANTATION FROM PEDIATRIC DECEASED DONORS WITH ACUTE KIDNEY INJURY TO ADULT RECIPIENTS

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Background: Serious shortage of organ supply and reluctant acceptance of deceased donors with acute kidney injury (AKI), let alone pediatric donors, impelled us to investigate the safety and effectiveness of transplantation from pediatric donors with AKI.
Methods: We conducted a cohort study including 52 transplantations from deceased donors with AKI between March 2012 and February 2017. These patients were divided into two groups according to their donor age (group a < 18 years, *n* = 10; group c ≥18 years, *n* = 42). The contemporaneous 41 patients with non-AKI pediatric donors (group b) and 153 patients with non-AKI adult donors (group d) were as controls.
Results: According to Risk, Injury, Failure, Loss, End-Stage (RIFLE) criteria and pediatric- modified RIFLE (pRIFLE) criteria, pediatric donors was consisted of 4 Risk, 6 Injury, 0 Failure, as well as14 Risk, 14 Injury, 14 Failure in adult donors. Mean age and weight were 9.65 (range 3.25–15 years old) and 34 (range 15–50 kg) of pediatric AKI arm, and 8.61 (range 10 days-17 years old) and 28.4 (range 3.8–55 kg) of pediatric non-AKI arm. The median follow-up was 8 months (range 1–49). Characteristics of recipients were similar except gender (p = 0.016), cold ischemia time (p = 0.046) and induction therapy (p = 0.029). Recipients receiving kidneys from donors with AKI had high incidence of DGF (group a 10%, group c 9.8%, group b 40.5%, group d 19.6%). There was no difference of duration of DGF (p = 0.59), acute rejection (p = 0.904), and estimated glomerular filtration rate (eGFR) at 1 month and 3 years. Moreover, 1-year patient survival (100.0%, 95.1%, 100.0% and 97.4%, respectively, p = 0.556) and graft survival (90.0%, 97.6%, 100.0% and 95.4%, respectively, p = 0.365) were similar among four groups.
Conclusion: Transplant with kidneys from pediatric AKI donors could achieve excellent intermediate term clinical outcomes, potentially expanding the donor pool. Larger sample-size and prospective trials are needed to confirm our results.

PLB115 LACK OF COMMUNICATION BETWEEN TWO CENTERS PREVENTED TRASHING A KIDNEY FOR TRANSPLANT

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Organs from cadaveric donors carry many risks, including cancer. Clinical evaluation of the donor after organ donation may allow determination of these risks. Imaging methods can minimize these risks, but cannot be completely eliminated. Liver and kidneys of a 67-year-old male patient was donated after being declared brain death due to subarachnoid hemorrhage in the intensive care unit at another center. No suspicious lesions were observed on ultrasound. A surgical team from another center performed harvesting of organs, and no major anomalies were also reported. The liver and left kidney were directed to one center, and the right kidney was directed to our center. A 4 × 3 × 3 cm mass lesion was noticed in the lower pole of the left kidney during the back table procedure. Histopathologic examination of the mass showed renal cell carcinoma (Fuhrman Grade 2) and transplantation was abandoned. Then, this situation was reported to the National Coordination Center. The Central Scientific Board required that the right kidney should not be used for transplantation. However, since the recipient operation was already started in our center and no findings were found in favor of cancer in both macroscopic examination and allograft biopsy, it was decided to continue to transplantation. After successful transplantation, the patient was discharged under close surveillance. The patient completed 36 months of follow-up free of cancer with stable kidney function. The supply of organs from cadavers, organization of organ removal, organ preservation and organ sharing are a difficult and serious process. Also every effort has to be shown to recover more organs in the shortage of organ donors. Radiologic imaging studies performed during this period may miss major pathologies. They may not be even noticed by harvesting teams. It should be kept in mind that such problems can be minimized with effective communication and organization between centers and that one may not always be lucky as in our case.

PLB116 LIVE RELATED KIDNEY TRANSPLANTATION WITH RENAL DONORS MORE THAN 65 YEARS OLD

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Background: Family members more than 65 years are the most commonly available potential renal transplant donors in India, in our experience. Furthermore, GFR value of a healthy Indian adult is significantly less than the normal value of western population. Considering the large gap between the growing list of patients waiting for renal transplantation in India and the paucity of cadaveric donor organs, it is compulsory to utilize live related kidney donors ≥65 years age having low GFR.
Methods: A prospective study from 2006 to 2017 enrolled 27 donors. Mean donor age was 67 years. The mean donor DTPA total GFR was 55 ml/min (48–80) and mean serum creatinine of donors pre transplant was 0.9 mg%.
Results: Actuarial graft survival rate was 100% for our cohort. 74% (n = 20) patients showed good graft function with serum creatinine below 2 mg % in initial 48 h post operative. Delayed graft function (DGF) with requirement of dialysis medicines & serum creatinine <2 mg % after 3 weeks post transplantation was seen in 5 (18.5%) patients. DGF with serum creatinine ≥3 mg% at 3 weeks post transplantation but not requiring dialysis was observed in 2 (7.4%) patients. Mean serum creatinine ≥1 year follow up was 1.3 mg % and at ≥2 year follow up was 1.4 mg %. The mean serum creatinine in donors at 6 months was 1.1 mg %. Long term complications were post-transplant diabetes mellitus in 7 patients (26%), BK Virus infection in 1 patient (4%), and anemia requiring erythropoietin in 3 patients (11%). No malignancy, CMV infection or death was recorded in any of the enrolled patients.
Conclusion: In view of acute donor shortage, the use of kidneys from donors aged ≥65 years yielded excellent results in the intermediate-term, in spite of having low GFR. We conclude that the use of kidneys from donors older than 65 years allows us to optimize donor pool and increase the rate of renal transplantation, without compromising mid-term graft survival and donor safety.

PLB117 SINGLE KIDNEY TRANSPLANTATION FROM PEDIATRIC DECEASED DONORS TO ADULT RECIPIENTS – EXPERIENCE OF A SINGLE CENTER IN CHINA

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Background: Kidneys from pediatric deceased donors (DDs) are increasingly used to narrow the huge gap between incremental demand and static supply. Transplant as en bloc may be considered as underused resource while single kidney transplant (SKT) may lead to greater overall life expectancy for yielding two recipients per donor. However, there is still controversy on the clinical outcome of SKT.
Methods: We conducted a cohort study with total 441 adult patients in our center between March 2012 and February 2017. Clinical outcomes of patients with SKT from pediatric DDs (<18 years old, group a: n = 51) were compared with patients with adult DDs (≥18 years old, group b: n = 195) and living donors (group c: n = 195).
Results: The age of pediatric donor is 8.5 ± 5.7 years (0.3–17 years). During the median 18-month (range 1–60 months) follow-up, the incidence of delayed graft function (DGF) was significantly different between group a and b (9.8% vs. 24.1%, p = 0.026) while no DGF happened in group c. Age of DDs [OR=0.304, 95% confidence interval (CI): 0.109–0.851, p = 0.023] was an independent risk factor of DGF, as well as acute kidney injury [OR=0.414, 95%CI: 0.198–0.866, p = 0.019], cold ischemia time [OR=1.083, 95%CI: 1.001–1.172, p = 0.047] and recipient age [OR=1.045, 95%CI: 1.007–1.084, p = 0.020]. Moreover, group a and c had similar incidence of infection 1 month post-transplant (5.9% and 3.1%, p = 0.595) while group b had the highest incidence (10.8% vs. 3.1%, p = 0.003). There was no significance of incidence of acute rejection (13.7%, 16.4% and 9.7%, respectively, p = 0.149), re-operation (9.8%%, 6.2% and 3.1%, respectively, p = 0.115), 3-year graft survival (96.1%%, 96.4% and 97.9%, respectively, p = 0.405) and 3-year patient survival (96.1%%, 97.9% and 99.0%, respectively, p = 0.281) among groups.

Figure1. Graft survival between deceased donors 0-17years, deceased donor >18years, living donors.

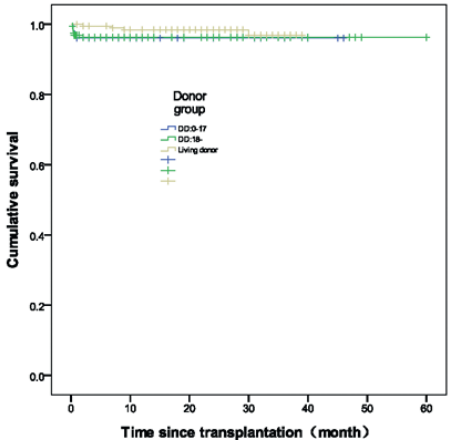
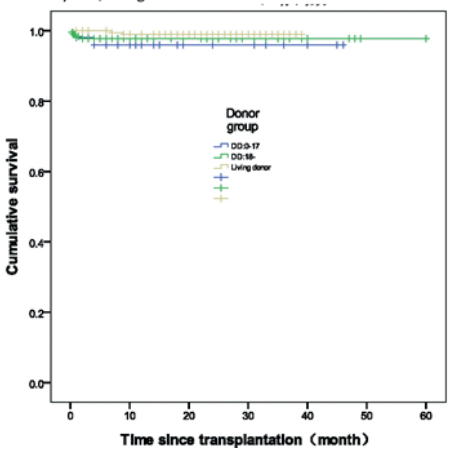


Figure2. Patient survival between deceased donors 0-17years, deceased donor >18years, living donors.



Conclusion: SKT from pediatric DDs to adult recipients is effective and safe, and it will be a promising access to expand donor pool. Prospective controlled trials are needed.

PLB118 EN BLOC KIDNEY TRANSPLANTATION OF PEDIATRIC DONORS LESS THAN 15 KG TO ADULT RECIPIENTS

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Introduction: The organ shortage has led to the expansion of the criteria used for donor selection. The high rate of vascular thrombosis in pediatric recipients explains that the pediatric donors less than 15 kg are often refused by transplantation teams. Those kidneys could be proposed to a "en bloc" kidney transplantation (EBKT) to adult recipients. Aim of this study was to evaluate the feasibility, survival and functional outcomes of these grafts.
Material and methods: Retrospective analysis of 12 EBKT of pediatric donors less than 15 kg performed from February 2002 to December 2016. All patients received antithrombotic prophylaxis. Glomerular Filtration Rate (GFR) was estimated by the simplified MDRD. The pre/per/post operative data, the complication rate, the functional and morphologic outcomes were also analysed.
Results: Donors/recipients characteristics are resumed in Table 1. The mean follow-up was 45.5 (6–180) months. One patient was lost to follow-up at 24 months. There were no Primary Non Function and no Delayed Graft Function. The function recovery was immediate and the patient survival was 100%. There were: 3 surgeries at day 1 for arterial thrombosis ($n = 2$) or compressive hematoma requiring a nephrectomy of one of the two kidneys ($n = 1$), one lymphocele, 2 arterial stenosis requiring surgical repair and one angioplasty/stent at M17 and M18 and one uretero-vesical reimplantation at M2 for necrosis of the bladder patch. At M3, M12 and at the end of latest news, mean MDRD was 76 ± 20.1, 93 ± 20.1 et 93.4 ± 16.3 respectively. There were 2 acute rejections treated at M3 and 2 proteinuria spontaneously resolving.

Donor age (months)	15 ± 11.3
Donor sex ratio (male/female)	6/6
Mean donor weight (kg)	10 ± 5.37
Recipient age (months)	30 ± 10.2
Recipient sex ratio (male/female)	7/5
HLA mismatch	4 ± 0.7
Dialysis before transplantation (yes/no)	10/2
Dialysis duration (months)	54 ± 33.6
Total ischemia time (min)	669 ± 284
Mean vascular time (min)	32 ± 11
Mean MBI (kg/m^2)	21 ± 1.8
Mean blood loss (ml)	313 ± 213
Mean Length of Stay (days)	17 ± 9.3

Conclusion: EBKT of pediatric donors less than 15 kg to adult recipients could be proposed to transplantation teams when pediatric transplantation teams refused them because of their good functional outcomes. Surgical complications are mainly vascular and should be screened during all the patient's follow-up.

PLB119 THE INFLUENCE OF SURGICAL SITE INFECTIONS ON QUALITY OF LIFE IN LIVE KIDNEY DONORS

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Introduction: Live kidney donors are healthy individuals who undergo donor nephrectomy in favor of someone else. In Erasmus MC we observed an increase in surgical site infections (SSI) in donors. Risk factors of SSI in donors are unknown. Also little is known about the effect of SSI on daily life of donors.
Aim: The aim of this study is to examine the effect of SSI on quality of life, activities and the need of care. Identify risk factors for SSI in case of donors and to develop a risk profile to quicker identification of SSI.
Methods: Baseline characteristics, intra- and postoperative findings were measured. Quality of life (QoL) was recorded preoperatively and 1 and 3 months postoperatively. SSI influence on daily life was measured using questionnaires. The study population was divided into 2 groups; donors with SSI and without SSI.
Results: All donors who underwent donor nephrectomy between January 2012 and December 2015 were included. No significant characteristics differences between both groups were found. Donors with SSI ($N = 35$) underwent a hand-assisted approach ($p = 0.020$) and had significant higher postoperative pain at day 2 ($p = 0.017$). Hospitalization time was longer (5 vs. 3 days) in donors with SSI ($p < 0.001$). Small significant differences in QoL 4 weeks postoperatively, between both groups were detected. After 3 months, QoL did not differ between donors with SSI and donors without SSI. Donors 4 weeks postoperatively needed care at home. Not all donors ($N = 6$) with SSI had returned to work after 3 months.
Conclusion: In this cohort the hand-assisted donor nephrectomy was a risk factor for developing SSI. Although small differences exist 4 weeks postoperatively with respect to 2 dimensions, in general, donors with SSI, have similar outcome of QoL after 3 months when compared with donors without SSI. A risk profile could not be developed.
Keywords: Live donor nephrectomy, Live kidney donors, Risk factors, Surgical Site in.

PLB120 QUANTITATIVE STUDY OF THE BARRIERS TO DONATION IN THE SIKH COMMUNITY IN UK

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Background: Ethnic minorities are overrepresented on waiting lists and wait longer for a compatible transplant, there are 400 000 Sikhs in the UK. We aimed to study barriers to registering and donating solid organs in this group.
Methods: Phase1 of the study was in Leicester, researchers conducted surveys in Gurdwara's using specific paper questionnaires in English and Punjabi. In phase2, an online survey was emailed to Sikh community organizations. Results of both phases were pooled for analysis. Parametric and non-parametric methods used, multinomial regression used for hypothesis testing of ordinal variables.
Results: There were 268 responses in total (table 1). In regression models, participants were likely to be registered on the Organ Donation Register (ODR) if they were aware of an organ shortage ($p = 0.023$, 95% CI −1.6, −0.12), aware of organ donor in family ($p = 0.04$, 95% CI −0.85, −0.19) or knew of someone who has had a successful transplant ($p < 0.01$, 95% CI −2.1, −0.66). Likely to donate if aware of organ shortage ($p = 0.03$ 95% CI −2.4, −0.07) and when education level was higher ($p = 0.01$, 95% CI 0.23, 1.6). Those on ODR are more likely to have discussed organ donation with family ($p < 0.01$, 95%CI −2.9, −1.4).22 said they would donate only to Sikhs and there was no association between religiosity and intention to donate only to Sikhs. 25 said they would only receive a transplant from a Sikh, religiosity showed a trend towards significance for this outcome (p0.07, 95%CI −0.8, 1.6). There was no association of those saying yes they would overrule others wishes to donate with other variables ($p > 0.05$).
Conclusions: Awareness of organ shortage, knowing a donor in the immediate family determined registration on ODR and willingness to donate. Lack of knowledge of donation process impaired registration on ODR. Majority would only donate kidneys. Insufficient knowledge, perception of alternation to the body after death, willingness to donate only to family members are barriers to donation.

PLB121 ARTERIAL HYPERTENSION AS RISK FACTOR FOR RENAL DISEASE IN LIVING KIDNEY DONORS

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Background: Living kidney donation represents the optimal renal replacement therapy, but recent data suggest an increased long-term risk for the donor. Here, we evaluated the risk for reduced eGFR, proteinuria or albuminuria, and major cardiovascular events in 305 donors, who underwent live donor nephrectomy between 1985 and 2014 at our center.
Methods: Different renal outcomes during follow-up were evaluated. Cardiovascular outcomes were defined as death or a major cardiovascular event. All covariates showing univariate association with the outcome variable with a p-value less than 0.100 were entered into a multivariable cox regression model. Results are expressed as hazard ratios (HRs) with 95% confidence intervals (95% CIs).
Results: The median follow-up time was 8.9 years (1.0–29.1). In multivariate analysis age and arterial hypertension at baseline were significantly associated with a higher risk of adverse renal outcomes, such as (1) eGFR <60 ml/min/1.73 m^2 or new onset of albuminuria/proteinuria during follow-up (age per year: HR 1.05; 95% CI: 1.03–1.08), hypertension: HR 2.07; 1.17–3.64), (2) eGFR <60 ml/min/1.73 m^2 (age: HR 1.05; 1.03–1.08, hypertension: HR 2.25; 1.22–3.98), (3) eGFR <45 ml/min/1.73 m^2 (age: HR 1.12; 1.05–1.20, hypertension: HR 5.06; 1.49–17.22), and (4) eGFR <60 ml/min/1.73 m^2 and loss of ≥40% from baseline (age: HR 1.08; 1.03–1.13, hypertension: HR 4.22; 1.72–10.36). Age was the only significant predictor for death or major cardiovascular event (HR 1.06; 1.00–1.12). Donors with arterial hypertension at baseline were significantly older (median age: 55 years, range 30–68 years vs. 45 (21–71), $p < 0.001$), had a higher BMI (26.6 (17.4–34.2) vs. 24.2 (17.4–38.3, $p = 0.020$), and were less frequently related to the recipient compared to donors without hypertension (48.8% vs. 71.4%, $p = 0.008$).

Conclusion: Arterial hypertension and age at time of donation are strong predictors for adverse renal outcomes in living kidney donors.

PLB122 POST-TRANSPLANT GRAFT FUNCTION IS ASSOCIATED WITH MAJOR CARDIOVASCULAR EVENTS IN KIDNEY TRANSPLANT RECIPIENTS: A MULTICENTER COHORT STUDY

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Background: Reduced kidney function is an independent risk factor for cardiovascular disease in the general population. However, the association between post-transplantation graft function and subsequent cardiovascular disease remains uncertain. Therefore, we investigated the outcomes of transplantation in kidney transplant recipients.
Methods/Materials: A total of 2419 kidney transplant recipients in a multicenter cohort were included to evaluate the effects of post-transplant graft function on major adverse cardiovascular events (MACE: cardiac death, nonfatal myocardial infarction, or coronary revascularization), graft failure, and mortality. Recipients were classified into 3 groups according to their estimated glomerular filtration rate (eGFR): group 1 (eGFR $\geq$60 ml/min/1.73 m^2, n = 1441), group 2 (30 $\leq$ eGFR < 60 ml/min/1.73 m^2, n = 907), and group 3 (eGFR < 30 ml/min/1.73 m^2, n = 71). Multivariate Cox hazard model was used to explore the association of eGFR with MACE.
Results: Median age was 42 years and 58.8% were male. Median eGFR was 63.6 ml/min/1.73 m^2. In 2419 participants, there were 93 cases of MACE, 214 cases of graft failure, and 76 patient deaths over a median of 6.1 years. The cumulative rates of MACE were higher in the group of lower graft function. In multivariate Cox regression, lower graft function was significantly associated with the occurrence of MACE (hazard ratio 1.5, 95% confidence interval 1.0–2.3, p = 0.04) compared to higher graft function. Additionally, cumulative rates of graft failure and mortality were also significantly higher in recipients with lower graft function.
Conclusion: Post-transplant graft function independently correlates with MACE, graft failure, and mortality, suggesting management of graft function may improve the patient and graft survival and cardiac outcome of kidney transplant recipients.

PLB123 ALTRUISTIC KIDNEY DONATION AND USAGE OF THE ALLOCATIVE ALGORITHM IN THE NATIONAL CROSS-OVER PROGRAM

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Background: Cross-over (X-o) kidney transplant (KTx) is a living donor KTx, with particular characteristic: it is performed between a donor and recipient who are not related, resulting from an exchange between 2 or more pairs who are incompatible. Since the 2007 the Italian National Transplant Centre (CNT) has introduced X-o KTx as National Program, using a specially developed algorithm to cross-match all donors and recipients data.
Methods: In order to activate X-o chains, the Italian registry for X-o enrolled 25 pairs (ABO incompatibility and Donor Specific Antibody) from Milan, Padua, Pisa, Siena, Rome and Palermo KTx centers. It also involved 3 altruistic kidney donors. All donors and recipients data were anonymized and processed by the special algorithm to obtain possible pair chain for X-o transplant. This allocative algorithm takes into evaluation these variables: blood group, year/month of dialysis, age, HLA typing, region, PRA and immunological characterization. The first X-o chain with an altruistic donor from Pavia has triggered 6 KTx. The second chain started with altruistic donor from Milan and it performed 4 KTx.
Results: The first X-o chain involved 5 Transplant Centers, 6 donors (average age-51.3) 6 recipients (average age-52.1). All graft harvestings were performed on laparoscopic technique. The X-o process was operated in 72 h. The kidney of last donor of last pair was transplanted on cadaveric-list recipient from the same region as the altruistic donor. The second chain involved 3 Centers, 4 donors (average age-57.5) 4 recipients (average age-39.7). All transplant centers performed laparoscopic harvestings. This second X-o process has lasted only 48 h.
Conclusion: After these 2 X-o pair chains, we establish that using altruistic donor graft in combination with the allocative algorithm allows X-o compatible pair chains. CNT main purpose is to offer patients with chronic kidney failure the possibility of living donor kidney donation and transplant when there is not compatibility donor/recipient.

PLB124 DONOR CHARACTERISTICS OF INTESTINAL GRAFT IN TURKEY

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Background: Intestinal transplantation is a challenging procedure. The success of the transplantation depends on many factors. Suitable donor selection is the one of the important points. Number of deceased donor has increased over past 10 years in Turkey (2.7 pm in 2002- 7.5 pm in 2013). But suitable donor pool for intestinal transplantation is still limited. We aimed to analysis the donor characteristics of intestinal grafts and donor statistics in Turkey.
Methods: We retrospectively analyzed the donor characteristics (age, weight, cause of death, blood type, creatinine level, serum Na, etc) of intestinal graft. Also the organ donor statistics (from database of the Ministry of Health) were used for analysis. The results were presented by percentage and numbers.
Results: The number of brain death patients were 14.428 since 2003 in Turkey. Organ donation rate was 28.9%. Thirtytwo patients enrolled for intestinal transplantation since 2003. Three patients on waiting list were died. Median recipient age and weight were 29 years (min 7 months, max 72 years) and 41 kg, respectively. Median waiting time for transplantation was 47 days. Median donor age and weight were 32 years and 67 kg, respectively. All donors were fit for minimum criteria for intestinal transplantation. But only 33 percent of transplantation was performed with suitable weight match.
Conclusion: Intestinal transplantation activity in Turkey is in progress. Waiting time for intestinal graft is favorable. The most important problem for intestinal transplantation is scarcity of weight match donor.

PLB125 PEDIATRIC HEART TRANSPLANTATION ON NORTH-WEST OF RUSSIAN FEDERATION

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Background: First pediatric heart transplantation (HTx) was performed in 1967 by Dr. Adrian Kantrowitz. In Russia it is prohibited to transplant children from donors under 18 years old. In 2011 we performed 1st pediatric HTx from adult donor. Now our centre is the only hospital in Russia to heart transplant children.
Purpose: To estimate outcomes of pediatric HTx from adult donors.
Methods: From January 2010 to May 2017 we performed 87 HTx, 5 of them were children (15 [13; 15] years old, female). Causes of heart failure were dilated cardiomyopathy (DCM, n = 2), non-compacted myocardium (n = 1), ARVD (n = 1) and Ebstein's anomaly (n = 1). They spent in HT waiting list 76.0 [23; 204] days. One recipient underwent BiVAD EXCOR implantation (250 days) as a «bridge» to transplant. According to right heart catheterization results: PASP – 33 [26; 37] mmHg, PVR – 2.5 [2.2; 3.2] WU. Children were transplanted from adult donors (37 [27; 41] years old; m-3, f-2), 2 of them were older than 40 years old. Due to CAG results 1 patient underwent HTx and CABG simultaneously. Recipients treated with triple-drug therapy (calcineurin inhibitors, mycophenolate mofetil and steroids), induction (n = 4 – thymoglobulin, n = 1 - basiliximab). We estimated early and long-term outcomes.
Results: Survival after HT – 32.2 [23.3; 59.4] months, all of them alive. Patients spent in ICU 12.5 [9.5; 15.5] days, one patient – 18 days due to posterior reversible encephalopathy syndrome (PRES). They required inotrope support during 4 [3; 6.5] days. In 6 months after HT TTE results got to normal values. According to EMB (n = 48) results there was no clinical signs of rejection, R2 was diagnosed in 12.5% cases. Due to AMR2 with donor-specific antibodies (class II - DQ06, PRA 6%, MFI < 5000) 1 patient underwent plasmapheresis with I.V. Ig. CAV was found in 1 patient 4 years after HT, no hemodynamically significant stenosis.
Conclusion: Pediatric HTx is successful way of treatment end-stage HF. Adult donors are acceptable to transplant children if they are matched.

PLB126 SEVERE HYPOGAMMAGLOBULINEMIA AFTER HEART TRANSPLANTATION IS ASSOCIATED WITH SIGNIFICANT LOWER LEVELS OF DISTINCT SPECIFIC ANTIBODIES

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Post transplant severe hypogammaglobulinemia (defined as IgG < 400 mg/dl) has been found to be a risk factor of bacterial, viral and fungal infection in solid

organ transplantation according to single center, multicenter and metanalysis studies. In the present study we report on the concentrations of different specific antimicrobial antibodies in heart recipients that were found to have severe hypogammaglobulinemia after heart transplantation to further characterize this immunological risk factor. In a prospective single center follow-up study we evaluated in 131 heart recipients the kinetics of total IgG and of specific antibody concentrations at baseline (pre-transplant) and day 7 and 30 after transplantation. IgG was performed by nephelometry. Specific antibodies included: IgG, IgA and IgM anti-pneumococcal polysaccharide (whole 23 serotypes), IgG anti-CMV, IgG anti-HBs, IgG anti- tetanus toxoid, IgG anti-varicella zoster, IgG anti-salmonella typhi and IgG anti-haemophilus influenzae type B antibodies. All specific antibodies were tested by ELISA tests. During follow-up, 17 (12.9%) patients developed severe IgG hypogammaglobulinemia at least in one study point after transplantation. These patients were found to have significantly lower concentrations of IgG anti-pneumococcal polysaccharide antibodies [at day 7, $p = 0.002$, day 30, $p = 0.010$], IgG anti-HBs [day 7, $p = 0.001$], IgG anti-CMV [day 7, $p = 0.046$], IgG anti-varicella zoster [day 7, $p = 0.042$], as compared with patients without severe hypogammaglobuliemia. Severe hypogammaglobulinemia was a risk factor of severe infection (OR 6.20, 95% confidence interval 2.09–18.39, $p = 0.0010$) and a risk factor of death (OR 4.86, 95% confidence interval 1.39–16.89, $p = 0.01$). Secondary severe IgG hypogammaglobulinemia early after heart transplantation is associated with specific antibody deficiency that could further explain why these patients are at a higher risk of developing severe infections.

PLB127 SEVERE COMBINED IMMUNODEFICIENCY PROFILE AND OPPORTUNISTIC FUNGAL DISEASE IN HEART TRANSPLANTATION

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Heart recipients are a population at higher risk of invasive aspergillosis. The role of humoral immunity has been poorly investigated in this setting. We report the case of a patient with proven cardiac invasive aspergillosis with a long-term survival, despite the severity of this complication, after addition of long-term intravenous immunoglobulin (IVIG) to antifungal therapy. A 52-year old woman received a heart transplant. Several complications appeared in the post-operative period, including acute cellular rejection 3A, need of ventricular assist device and severe infectious complications (bacterial pneumonia, CMV infection and aspergillosis). Immunological risk factors of severe infection at day 7 included severe IgG hypogammaglobulinemia (IgG < 400 mg/dl), C3 hypocomplementemia (C3 28.7 mg/dl), C4 hypocomplementemia (C4 4.5 mg/dl), CD3 lymphopenia (258 cells/μl), CD4 lymphopenia (171 cells/μl) and NK-cell lymphopenia (14 cells/μl). Non specific 5% intravenous immunoglobulin (IVIG) was used during the first year with the goal of maintaining IgG levels > 750 mg/dl. Two years after transplantation multiple lung embolisms and a mass in the retroxiphoid, invading the right atrium and the tricuspid valve were observed in a thoracic CT-scan. Septated hyphae invading this tissue were observed and Aspergillus fumigatus was isolated. Serum galactomannan determinations were negative. At this time IgG levels were low again (IgG < 600 mg/dl). Voriconazole was started. IVIG was added and maintained during follow up to maintain IgG > 750 mg/dl. During follow-up of IVIG-therapy an increase of specific IgG anti-aspergillus fumigatus and IgG anti-aspergillus versicolor titers was demonstrated (from 16 to 113 mg/l; 13 to 20.3 mg/l, respectively). Long term-survival of more than 2 years was observed with a reasonable good quality of life. The patient finally died of a sudden death. Long term IVIG therapy might be necessary in selected cases of severe fungal infection.

PLB128 THE EFFECT OF INFORMING THE FIRST-DEGREE RELATIVES OF THE PATIENTS DIAGNOSED WITH BRAIN-DEATH ABOUT THE ORGAN TRANSPLANTATION ON THE ORGAN DONATION

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Introduction: It is required to diagnose the brain-death and receive the permission of the first-degree relatives of the patients about the organ donation for organ transplantation. Our aim is to analyze the effect of informing the first-degree relatives of the patients, diagnosed with brain-death that will permit the organ transplantation before the organ donation.
Methods: We have included the first-degree relatives of the 43 patients, who are diagnosed with brain-death at Amasya University S.Ş. Train and Research Hospital (Amasya, Turkey) between January 2013 and June 2017 in the study. The relatives of the patients, diagnosed with brain-death, have been categorized as those having information on the brain-death and organ transplantation and those who have no information. Then, we have identified the number of the donor in these groups and analyzed their percentile distribution.
Results: While 14 (32.5%) families out of 43 relatives of the patients diagnosed with brain-death gave consent to the organ donation, 29 (67.5%) families did not provide consent. When we asked whether at least one relative has correct information about the brain death and organ donation beforehand to the families of the patients who is diagnosed with brain death; we saw that informed families have a higher rate of donation and this ratio has been identified as 38.4% (10/26). The donation ratio of those who do not have any information about the brain-death and organ transplantation is 23.5% (4/17).
Conclusion: Providing training in the society on the brain-death and organ transplantation helps the society understand the brain-death and importance and conditions of the organ transplantation and increases the sensitivity of the families that will donate taking into consideration that organ donation saves lives. In our study, we have observed that organ donation in the families with a prior, right and sufficient information about the brain-death and organ transplantation is high.

	First-degree relatives with information	First-degree relatives without information	Total
Brain-death not being donor	16 (61.6%)	13 (76.5%)	29 (67.5%)
Brain-death being donor	10 (38.4%)	4 (23.5%)	14 (32.5%)
Total brain death	26 (100%)	17 (100%)	43 (100%)

PLB129 ORGAN DONATION AFTER EUTHANASIA: THE ROLE OF THE TRANSPLANT COORDINATOR, A CASE FROM PRACTICE

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LUMC

Background: Organ donation after euthanasia (ODE) has been performed 27 times in the Netherlands since 2012. An increasing number of patients with unbearable suffering asks independently explicit to their (general)) practitioner for this possibility. A guideline Organ donation after euthanasia [1] was released in March 2017. Acts, tasks and responsibilities were discussed. It is a condition that the legal legitimacy of the individual processes "Organ donation" and "Euthanasia" do not be affected. Both procedures should be separated and the dead donor rule should be strictly applied. Because practical implementation is more complex and more comprehensive in comparing to guidelines, the question rises "To what extent is the current guideline supporting to the multidisciplinary approach of organ donation after euthanasia?
Method: In this case description, one assumed, a 47 years old patient with Huntington disease, who donated in January 2017 his organs after euthanasia in a hospital in the Netherlands. The new roles of the transplant coordinator (TC) and other multidisciplinary professionals in this process are described and are evaluated in comparing to the guidelines. The guidelines goes out of the patient and his last lifetime. It describes four phases:

- Decision-making about the end of life
- Preparation of the end of life
- End of life: execution of euthanasia
- Organ donation and mourning guidance

Conclusion: ODE guidelines give the medical team support. In practice, it is possible to separate both procedures of euthanasia and organ donation and the dead donor rule is strictly applied. In the executive phases of ODE extensive multidisciplinary approach is necessary. During phases of decision-making and perform of the euthanasia there is no direct involvement of donor professionals. During preparation and organ donation the TC has an important role together with the main role of the treating doctor and the leading wishes of the patient and his family.

1) transplantatiestichting.nl

PLB130 A WIDER DISCUSSION ABOUT ORGAN DONATION CAN BE STIMULATED THROUGH A TARGETED EDUCATION PROGRAMME FOR GENERATION Z

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Background: There is no minimum age limit on becoming an organ donor. 'Generation Z' (born after 1995) are a unique cohort who are part of the national donor pool, but who receive no official help to navigate complex organ donation paradigms or ethical dilemmas. To address this, we undertook a pilot educational programme designed to discuss transplantation in it's wider social and ethical context. The study programme was aimed at 'Generation Z'.
Methods: An interactive case based tutorial was delivered to groups of 16 to 18 year old students in full time education. All students were invited. Opinion questionnaires were completed before and after the tutorial, with a follow-up questionnaire one week later. The questions focussed on organ donation and opinions were drawn from free text answers and qualitative summation.
Results: 67 students (64 females, age 16–18 years) participated in the tutorials. Before the tutorial, 22% of participants were already on the organ

donor register and 65% had spoken to their family about donation. Only 42% were aware of the need for family consent. Surprisingly, over half of participants (53%) expressed a willingness to pay for an organ.

Following the tutorial, 42% of participants changed their attitudes towards donation. Qualitative feedback highlighted an improved awareness of the UK NHS transplant pathway, the ethical decisions faced by transplanting teams, and the consent process. 95% of follow-up respondents had engaged with family and friends afterwards.

Conclusion: This short educational programme is in development and efforts are being made to engage more male students. We have shown that a small, cost-effective tutorial can stimulate a wider discussion at home and at school in almost all participants. There is a need to include this overlooked group within the broader discussion of organ donation; understanding their unique perspective will help to develop effective strategies to improve donation rates in the future.

PLB131 URGENT ORGAN RETRIEVAL FROM NON-HEART-BEATING DONOR WITH DECLARED BRAIN DEATH

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Objective: Due to insufficient donor number to meet the needs of organ transplantation, new researches are ongoing. In this context, the cases with cardiac arrest and brain dead are assessed as probable donors in recent years. The aim of this study is to discuss the healthfully techniques of organs retrieval with minimum damage and maximum rapidity in conditions of our center and to present our own experiences.

Material and Method: A total 4 of 13 patients brain dead declared and developed cardiac arrest while awaiting for laboratory test results in our center between 2015 and 2016, were urgently taken into operation under external heart massage and urgent organ retrieval were performed. The clinical data of this specific group were analyzed.

Results: Thirteen donors with brain dead organ procurement were performed in our center between 2015 and 2016. Of the 13 cases, 9 had undergone urgent laparotomy and cannulation, and the organs were retrieved after in-situ cold perfusion and no problems occurred in these cases. However, in 4 cases who developed cardiac arrest ex-vivo cold perfusion was performed due to lack of facilities in operation room, vascular and parenchymal damage occurred in 2 livers and the 2 kidneys. With this technique, four liver and eight kidneys were removed and transplanted.

Conclusion: Urgent laparotomy, cannulation, and in-situ cold perfusion is ideal approach for shorter warm ischemia time and less organ damage in cadavers in difficult conditions such as sudden cardiac arrest in hospital, however ex-vivo cold perfusion perfusion technique should be kept in mind to meet the increasing of more and more organ needs.

PLB132 START OF THE FIRST RUSSIAN INTERDISCIPLINARY SOCIO-HUMANITARIAN STUDY FOR DECEASED ORGAN DONATION (OD)

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Background: The innovation process in its essence is a mix of knowledge production, discoveries and technological inventions in conjunction with the creation of a favorable social environment for the positive perception of scientific achievements, their uptake, public support and successful implementation in practice. Existing difficulties in the progress of national OD and Tx programs as a form of innovative research and clinical field to some extent are related to the insufficient theoretical understanding of emerging social, humanitarian and other problems.

Materials and Methods: Interdisciplinary team will conduct adequate research, based on current scientific knowledge and socio-humanitarian innovation policy including modern socio-humanitarian assessment. Particularly, the philosophical, religious, moral and anthropological problems of commodification (including commercialization) of the human body and its organs will be explored in order to analyze the moral paradoxes of development of OD and Tx as a kind of Hi-Tech technologies. Next the problems of perceptions of BDD and DCD will be studied among different groups of populations and professionals.

Results: Project results will have essential value in respect of deepening of theoretical interpretation of a human body as a gift, a resource, and a property. On specific material of technologies of OD essentially important aspects of interaction of innovative science and society will be presented, crucial importance of procedures of co-production of scientific knowledge and technologies with production of social values, normative ethical and legal systems will be described and interpreted.

Conclusions: Creation of methodological framework for assessment of bioethical risks in deceased OD and Tx, development of the systems of media support and diagnostics of public perception of Tx will be essential for the future of innovation programs and will be helpful for promotion of trust between innovative medicine and citizens.

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Correction added on 21 December 2017, after first online publication: The grant has been added for abstract PLB132 in this current version.

PLB133 INTRAMYOCARDIAL IMPLANTATION OF AUTOLOGOUS BONE MARROW CELLS TREATED WITH ERYTHROPOIETIN IN ISCHEMIC HEART DISEASE SURGERY (6-MONTH RESULTS)

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Background: According to a series of studies bone marrow cells (BMC) therapy during ischemic heart disease (IHD) surgery has shown mixed results. BMC preconditioning using different growth factors becomes the promising direction of cell therapy. Experiments with laboratory animals have shown that the erythropoietin using leads to the myocardial ischemia zone restriction and facilitates the neoangiogenesis. The aim of the study is a clinical evaluation of the new indirect revascularization method.

Methods: We estimated half-yearly results of erythropoietin treated BMC implantation in cases of the distal coronary lesions (45 patients – BMC-group). The control group consists of 43 patients with diffuse and distal coronary disease (artery with distal lesion was not shunted). In addition, the phenotype and functional properties of implanted cells were estimated by the flow cytofluorometry.

Results: According to perfusion scintigraphy, the stable perfusion defect (SPD) before surgery in BMC group was 9.1% $\pm$ 2.7%, and 7.4% $\pm$ 1.9% after six months ($p = 0.047$), SPD in the control group decreased from 8.8 $\pm$ 1.7% to 7.9 $\pm$ 1.7% ($p = 0.07$). However, there is a moderate improvement of the left ventricle functional parameters, more significant in the main group. Left ventricular ejection fraction (LVEF) increased from 55% $\pm$ 17 to 61 $\pm$ 25% ($p = 0.041$). According to the flow cytometry BMC stimulation with erythropoietin increases CD34 + pool of cells at different stages of differentiation, initiates cell retention in the phase of rest and initial growth, decreases the number of cells at the early stage of apoptosis and reduces the proliferative capacity of the cells.

Conclusions: Preparation of autologous bone marrow cells by erythropoietin treatment improves BMC functional properties. Intramyocardial implantation of BMC treated with erythropoietin improves myocardial perfusion and contractility in the affected area.

PLB134 TGF-β PRODUCTION BY GMSCS REGULATE B CELLS AND B CELL-MEDIATED SUPPRESSION OF T CELLS IN CHRONIC-GVHD

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Human gingival tissue-derived mesenchymal stem cells (GMSCs) are a convenient source of MSCs for treating autoimmune disease. B cells play an important role in the pathogenesis of autoimmune diseased especially in chronic-GVHD. Here we separated B cells from the PBMCs and co-cultured with GMSCs. Humanized chronic graft-versus-host disease (GVHD) model was moderated to evaluate the function of GMSCs. GMSCs injection prevented the lethality in humanized chronic graft-versus-host disease (GVHD) model successfully *in vivo*. GMSCs regulated the proliferation of B cells and reduced the expression of cytokines and immunoglobulins *in vitro*. Also, GMSCs regulated B cells lost the antigen presenting ability to T cells which suppressed the proliferation of T cells indirectly. Mechanism study showed that GMSCs suppressed the proliferation of T cells and protected chronic-GVHD both *in vitro* and *vivo* via the TGF-β pathway. These data indicate the potential prophylactic and therapeutic effects of human GMSCs in reducing chronic GVHD.*in vivo in vitro. in vitro vivo*

PLB135 ORGAN TRANSPLANTATION FROM THE VIEWPOINT OF EMERGENCY MEDICINE PHYSICIANS

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Background: In our country, on average, 2000 people die every year while waiting for an organ transplant. However, the issue that emergency medicine departments (ED) should be integrated in the process to increase the number of organ donor (OD) and successful organ transplantation (OT) is noticed in recent years.

Methods/Materials: The participants of the study consist of 140 emergency medicine physicians (EMP) who had answered the questionnaire send via e-mail.

Results: Only 30% of the participants evaluated their knowledge about brain death (BD), 22% of the participants evaluated their knowledge about or OD and OT process as good and very good. Of the participants. 20.7% did not have any idea about whether the organ transplant team (OTT) was exist in their hospital or not. 46.4% of the participants stated that the OTT was working in the hospital. Of these, 78.4% never, 1.5% once a month, 7.7% once a year, 12.3% several times a year had a meeting with the OTT. While 92.9% of participants supported OD, 6.4% were undecided. Those who had an OD card were 20%. 64.3% of those who did not have OD card but thought about donating their organs, and 26.8% were undecided. 87.1% said they would donate their relatives organs if BD occurred, and 10.8% said they were undecided. Those who did not believe that the diagnosis process of BD was correctly performed were 13.6% and those who were undecided were 33.6%. 56.4% unwillingness of family, 55% religious belief, 53.6% ignorance and indifference of the EMP, 42.1% not believing in BD, 39.4% presupposition of refusal, 36.4% negative reaction of relatives of patient, 36.4% the lack of OTT, 29.3% fear of medicolegal, 17.9% additional workload were shown as reasons for not getting enough donors from ED.
Conclusion: In order to increase the knowledge of EMP and their belief about the process of OT, OTT should be in tight relationship with ED. For this aim, we suggest that regular meetings and visits should be arranged to ED.

PLB136 IMPACT OF TEAM WORK AND ORGAN DONATION AWARENESS TRAINING ON ORGAN DONATION COUNT: EXAMPLE OF BURDUR PROVINCE

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TAKIM ÇALIŞMASI VE KAMU EĞİTİMİ VE ORGAN BAĞIŞIK BÜYÜME AYARI: Treatment of some diseases is only possible with organ or tissue transplantation. However, the laws in force in Turkey have been authorized for the transfer of cadaver to the organ transplantation. For this reason volunteerism is essential in organ donation in Turkey. Regarding the transfer of cadaveric heirs to organ transplants; The Organ Donation Senate, whose life has been left to his heirs in life, makes it easier for them to make decisions and the organ is waiting for hope. Organ Donation Acts play an important role in this phase. Public education also plays an important role in raising organ donations. In our work, we have been trained to organ donation training in charge of organ donation responsibilities in Community Health Centers and State Hospitals in Burdur Center and Districts for 5 years from 2012 onwards. The annual targets for the organ donation unit in Burdur province are set relative to the population they serve. Subsequently, health personnel assigned as organ donor instructors systematically trained organ donors throughout the year in the areas they were responsible for. Following this, the health personnel who were assigned as organ donation officers trained organ donors throughout the year systematically in the regions they were responsible for. It is convened every 6 months to assess the achievement of the identified targets.
Method: In our study, organ donation records of the last 5 years in Burdur province and public information in official site of Ministry of Health were evaluated retrospectively.
Results: When the obtained data are compared with the number of donations received in 2012: the number of donations received in 2013 increased by 397%; the number of donations received in 2014 increased by 548%; the number of donations received in 2015 increased by 801%; the number of donations received in 2016 has increased by 864%.

PLB137 ATTEMPTS RELATED TO BRAIN DEATH DIAGNOSIS AND ORGAN DONATION BY BURSA STATE HOSPITAL

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Introduction: Activities conducted by Bursa State Hospital to promote organ donation were investigated.
Objectives: To determine what could be done to increase organ donation rates by evaluating organ donation activities within the last 8 years.
Methods: The relationship between "brain death / donor rates from 2008 to 2016", and "trainings given and managerial strategies developed by Bursa State Hospital" was investigated.
Results: Organ donation activities were started in Bursa State Hospital, where the Bursa Region Coordination Center (BRCC) was first founded in 2007 after a trained coordinator and a responsible physician were appointed there. In 2007–2008 emphasis was especially placed on training, and activities were conducted to establish common consciousness among all the health personnel in the hospital. As a result, in 2008, 9 brain deaths and 4 donors were reported and the donation rate reached 44%. In 2009, because the responsible physician left the hospital upon the onset of the family physician system and the BRCC was transferred to another hospital, there was a decline in reporting brain deaths and donors. This decline continued until 2012.

With the hospital management's emphasis on organ donation activities in 2012 and the participation of a physician working in the intensive care unit to the team, training activities were accelerated again under the leadership of the BRCC. In 2012 after 8 specialist physicians working in the brain death board were educated about brain death diagnosis and family donation, in 2013 and 2014, reporting of brain death and donor was resumed. After 23 specialist physicians were trained, in 2015, 15 brain deaths and 2 donors were reported by the hospital. Then, after the changes made in the coordinator's working style and the training of all the personnel working in the hospital, the number of brain deaths and donors increased to 12 and 6 respectively in 2016.
Conclusion: In-hospital organ donation activities can be sustained by the managerial support and the presence of trained competent coordinators. Providing training on brain death diagnosis and family interviews for specialist physicians working at the Brain Death Board at certain intervals can effectively eliminate hesitations. The coordinator's day-to-day visits to the intensive care unit strengthen communication between employees and increase awareness of organ donation. Each hospital will be able to succeed in its work on organ donation by developing strategies responding its own needs.

PLB138 STUDY ON EFFECTS OF PHYSICIANS TRAINING REGARDS TO CADAVERIC ORGAN DONATION IN BURSA

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This study was conducted to investigate the effect of the training the physicians who are affiliated to the Regional Coordination Center for Organ and Tissue Embryo Bursa within the scope of European Union "Technical Assistance for Harmonization in Organ Donation" project. Method: As a part of the "Technical Assistance for Organ Donor Adjustment Project", brain death, donor care, family interview was told to 150 physicians selected from 6 different cities in the province of Bursa. 365 physicians have attended to the training courses were delivered on a regional basis in Bursa Balıkesir, Duzce. To see the effects of physician trainings held in 2014, 2015 and 2016 on brain death to donor results, brain death to donor ratio before and after the training were examined retrospectively. Findings: When the effects of trainings were examined, the total number of donors after the training of all the participants in the region first increased from 54 in 2014 to 80 in 2015 (48%), while the number of donors in 2016 increased by 116.6% from 117 in 2014. In 2014, the number of brain deaths detected 154. It is 226 in 2015 and 241 in 2016. Donation in 2014 has been done with family consent is 54 (35%), 80 in 2015 which represents 35% of the total deaths again it has hit 117 with 48.5%. While the number of donors in Balıkesir whose physicians had attended the trainings, in 2014 number of donors were 17, in 2015 30 (76%) and in 2016 with 35 donors 105%. In Duzce province, there were no donors in 2014 or 2015 but in 2016 4 deaths has become donors. When it comes to Bursa province, in 2014 there were 28 donors, it has increased to 33 in 2015 (17.8% of the total death cases) and the number for 2016 has been recorded as 58 donors which corresponds 107% of the total deaths. Conclusion: The European Union's "Brain Death- Donor Care and Family Interview" trainings have shown that even in hospitals where there are no donor reports in our region, major awakenings are caused. Research conducted; it has been shown that physician training on a repeated basis has a significant influence on the brain death cases and the increase of the number of donors detected by creating awareness and sensitivity in physicians. Correspondingly, the training has to be done repeatedly region by regional.

PLB139 TURKISH NURSES' AND NURSING STUDENTS' ATTITUDES TOWARDS ABOUT ORGAN DONATION: A REVIEW OF THE LITERATURE

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Background: Lack of donors is a global problem for organ transplantation. Especially in Turkey, for all organ transplants, rate of deceased donor per million population is 5.3%. Health professionals can effect the people' attitudes about the organ donation in the society, therefore firstly we need to learn how are the nurses and nursing student's attitudes about organ donation.
Aim: To explore the Turkish nurses' and nursing students' attitudes toward organ donation through a review of the literature.
Method: A review of available literature relating to nurses' and nursing students' attitudes toward organ donation. A literature review data were obtained by using English and Turkish language keywords and publications since 2000 was undertaken. Nineteen papers were examined in accordance with the aim in this study.
Results: A great majority of the studies stated that the nurses and nursing students were undecided to the organ donation. There is a very few research showed that the nursing students were willing to be a donor, displayed positive attitudes about organ donation and volunteerism. Some of the results indicate that they were hesitant about organ donation. The reasons of the negative attitudes toward organ donation were religion and physical integrity. All the research data were obtained by questionnaire. But there is need a reliable and valid instrument to measure attitudes toward donation.
Conclusion: It was found that nurses and nursing students had considerably lacked knowledge regarding organ donation and transplantation. There is a

very few nurses' and nursing students' wish to make an organ donation. It is suggested that it would be beneficial to include information about organ donation and transplantation in the curriculum of nursing schools. It is believed that there is need to study to improve nurses attitudes toward organ donation with intervention.

Keywords: Nurse, organ, organ donation, nursing students

PLB140 RELEASE OF MEDIUM AND HIGH-SIZED HYALURONAN FRAGMENTS DURING EX VIVO PERFUSION OF THE RAT LUNG

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Background: Hyaluronan (HA) is the most represented glycosaminoglycan of the lung and is essential for its structural integrity. Ischemia, oxidative stress, and mechanical ventilation can induce HA fragmentation. HA fragments exert different biological activities based on their chain length. High molecular weight (MW) HA promotes tissue repair, whereas low MW HA activates the inflammatory response. Aim of the present study was to investigate HA fragmentation in a rat model of ex vivo lung perfusion (EVLP).
Methods/Materials: EVLP was run for 180 min ($N = 5$). Samples of the outflow perfusate were collected throughout the procedure. Concentration of total HA was determined by ELISA. HA fragmentation was evaluated using a two-step protocol, including an initial sample fractionation according to MW (size-exclusion) and subsequent HA quantification in each fraction. Gene expression was evaluated at the end of EVLP in lung tissue. Controls were biopsies harvested from rats in resting conditions (native, $N = 5$).
Results: Perfusate HA concentration steadily increased during EVLP (from 8.8 ± 1.4 ng/ml at 60 min to 33.0 ± 2.4 at 180, $p < 0.001$). At the end of ex vivo perfusion, 96% of total HA had MW>200 kDa. Perfused lungs showed a marked induction of the synthases involved in high-sized HA polymerization (Has1: 20.89 ± 1.83 *vs* 1.29 ± 0.21, $p < 0.001$; Has2: 5.65 ± 0.72 *vs* 1.26 ± 0.13, $p = 0.002$), whereas the shorter chain-HA synthase Has3 was down-regulated relative to native group (0.44 ± 0.02 *vs* 1.28 ± 0.19, $p < 0.001$). Hyaluronidase Hyal2 was reduced after EVLP (0.49 ± 0.05 *vs* 1.25 ± 0.12, $p < 0.001$).
Conclusion: Data show that EVLP is associated with increased perfusate concentration of medium and high-sized HA fragments. The release appears to depend on activation of de novo synthesis rather than on enzymatic fragmentation. This observation suggest a potential mechanism underlying the EVLP beneficial influences observed in lung transplantation

PLB141 DONOR SPECIFIC ANTIBODIES AND C4D POSITIVITY ARE NOT ALWAYS RELATED TO SPECIFIC HISTOPATHOLOGICAL PATTERNS IN LIVER ALLOGRAFT

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The presence of alloantibodies and antibody mediated injury of the transplanted liver is suggested to be an important risk factor for decreased graft survival. However, the liver is relatively resistant to alloantibody mediated rejection as compared to transplanted kidney and in many patients with detectable donor-specific antibodies (DSA), no antibody mediated injury of the liver allograft occurs. With the goal to analyze the potential clinical role of antibody mediated injury in liver transplantation, we performed a retrospective single-center study in 86 patients who underwent liver biopsy in the time period 1.1.2013 – 1.7.2015. Data from patients were retrospectively examined and correlated with histopathological changes, immunohistochemical staining for C4d and the presence of pretransplant DSA using Luminex single-antigen assays. Signs of antibody mediated rejection were observed in 47 patients, with 21 having detectable DSA and 26 showing C4d positivity. No correlation was found between C4d staining and DSA positivity, with only 9 patients showing positivity in both parameters. Neither DSA nor C4d correlated with specific histopathological patterns (endothelial inflammation, centrolobular necrosis, steatosis, periportal or perivenular fibrosis) or other clinical data. In patients with DSA, both periportal and perivenular fibrosis were the most frequent finding (61.9%) but did not statistically differ from DSA negative patients. Perivenular fibrosis was associated with the presence of diabetes ($p = 0.0276$). Steatosis was found in 19 patients with C4d positivity (73.07%) but the difference against the C4d negative liver transplant recipients did not reach statistical significance. Conclusion: in liver transplant recipients, the presence of DSA or C4d positivity might not reflect antibody mediated injury as expressed by specific histopathological parameters. Acknowledgement: This study was supported by Ministry of Health of the Czech Republic, grant nr. 16-27477A.

PLB142 A NEW MEDICAL DEVICE IN TRANSPLANTATION FOR LIVER TRANSPORT AND PRESERVATION

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Background & Aims: The injury of the graft sustains during cold ischemia time negatively results in a poor quality of life for the patient, the need for transplanting again, and more problems in the availability of organs for transplant because liver grafts from extended criteria donors are extremely vulnerable to cold ischemia injury. Our aim is provide a new device in transplantation based on the combination of ultrasounds and hypothermia for liver transport and preservation that increases viability of liver grafts during cold ischemia before being implanted in the recipient, in comparison to what could be obtained with known devices
Methods: Pig livers grafts were perfused with preservation solution at 4°C and kept in the cooler with or without ultrasound for 8 h. To assess damage induced by ischemia, transaminases and lactate dehydrogenase were measured in perfusate and caspase 3 in liver. MDA and ATP levels were determined in liver as oxidative stress and energy metabolism preservation index, respectively
Results: The protection of liver grafts (confirmed by the reduction in transaminases, lactate dehydrogenase, caspase 3 and MDA as well as ATP preservation) conferred by UW solution under cold conditions (2-6oC) is higher than that obtained with Celsior or Ringer solution. A synergistic protective effect was observed because the protection obtained when both treatments (cold conditions and ultrasounds at low frequency and intensity) are combined is much better than the sum of protections obtained when both treatments are applied separately. The benefits conferred by ultrasounds were independently of the preservation solution used
Conclusions: We provide a method and equipment for transporting and storing liver grafts based on hypothermal and ultrasound treatment under better conditions than those currently available. All this allows reducing the harmful effects of cold ischemia and increasing viability of grafts before they are implanted.

PLB143 MYELOID NOTCH1 DEFICIENCY ACTIVATES RHOA/ROCK PATHWAY AND AGGRAVATES HEPATOCELLULAR DAMAGE IN MOUSE ISCHEMIC LIVERS

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Background & Aims: Notch signaling has been implicated in playing an emerged role in the regulation of immune cell development and function during inflammatory response. Activation of ras homolog gene family, member A (*RhoA*)/Rho-associated protein kinase (ROCK) pathway promotes leukocyte accumulation in tissue injury. However, it remains unknown whether Notch signaling regulates RhoA/ROCK-mediated immune responses in liver ischemia and reperfusion injury (IRI).
Methods and Results: In a mouse model of IR-induced liver inflammatory injury, we found that mice with myeloid specific Notch1 knockout (Notch1M-KO) showed increased hepatocellular damage and serum ALT levels, macrophage/neutrophil trafficking, and pro-inflammatory mediators compared to the Notch1-proficient (Notch1FL/FL) controls. Unlike in the Notch1FL/FL controls, myeloid Notch1 ablation diminished hairy and enhancer of split-1 (Hes1) but augmented c-Jun N-terminal kinase (JNK)/stress-activated protein kinase-associated protein 1 (JSAP1), JNK, ROCK1, and PTEN activation in ischemic livers. Disruption of JSAP1 in Notch1M-KO livers improved hepatocellular function but depressed JNK, ROCK1, PTEN, and TLR4 activation. Moreover, ROCK1 knockdown inhibited PTEN and promoted Akt, leading to depressed TLR4. In parallel *in vitro* studies, transfection of lentivirus-expressing Notch1 intracellular domain (NICD) promoted Hes1 and inhibited JSAP1 in LPS-stimulated bone marrow-derived macrophages (BMMs). Hes1 deletion enhanced JSAP1 and JNK activation whereas CRISPR/Cas9-mediated JSAP1 knockout diminished ROCK1/PTEN and TLR4 signaling.
Conclusions: Myeloid Notch1 deficiency activates the RhoA/ROCK pathway and exacerbates hepatocellular injury by inhibiting the transcriptional repressor Hes1 and inducing JNK binding protein JSAP1 activation in IR-triggered liver inflammation. Our findings demonstrate that Notch-Hes1 axis is a novel regulator of RhoA/ROCK-mediated innate immunity.

PLB144 MICRORNA-122 AS A BIOMARKER OF LIVER INJURY AND RECOVERY DURING NORMOTHERMIC REGIONAL PERFUSION IN DCD DONORS

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Background: Normothermic Regional perfusion (NRP) offers a means to assess and recondition livers from donors after circulatory death (DCD) prior to transplantation. Currently there is no specific biomarker to indicate which livers should be utilised. Blood microRNA-122 (miR-122) is a biomarker for acute liver injury that outperforms ALT and all other markers in terms of sensitivity and specificity. The aim of this study was to evaluate the effect of normothermic regional perfusion (NRP) on the miR-122 concentration in the perfusate and to determine 'proof of concept' if miR-122 could facilitate the decision to use the livers recovered from donors undergoing NRP.
Methods: Nine donors after circulatory death (DCD) underwent NRP. Serum from the NRP circuit was sampled before NRP, at 60 and 120 min (end of NRP). miR-122 concentration was determined by quantitative real time RT-PCR. Two-sample t tests were run to compare miR-122 concentrations between groups. The discriminative ability of miRNA-122 was compared with the ALT changes during perfusion (on which clinical decision to utilise the livers was based).
Results: Five livers were transplanted successfully. In the remaining four cases, biochemical and clinical factors precluded liver utilisation. In all cases miR-122 could be measured in the NRP circuit serum. There was a higher miR-122 level at 1 h in the discarded livers, but NRP appeared to improve the injury in all livers (Figure 1). There was a different pattern of expression between used/discarded livers. At the end of NRP (120 min) miR-122 was significantly lower in the donors whose livers were successfully transplanted compared to those deemed not suitable with no overlap in the two groups.
Conclusion: miR-122 is a sensitive and specific marker of liver injury that was able to differentiate transplantable from non-transplantable livers following a period of NRP. Point of care development may aid real-time decision regarding organ viability.

PLB145 REAL-TIME, IN VIVO MEASUREMENTS OF PYRUVATE METABOLISM IN THE LIVER AND KIDNEYS OF BRAIN-DEAD RATS WITH HYPERPOLARIZED [1-13C]-PYRUVATE MAGNETIC RESONANCE IMAGING

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Introduction: A recent study performed by our group indicates major metabolic changes occur during brain death (BD): increased oxidative metabolism in the liver, yet anaerobic metabolism with decreased perfusion in the kidneys. To investigate in more detail, we used a novel MRI technique called hyperpolarization (HP) MRI. HP MRI increases the signal increase of otherwise MRI-neutral metabolites, allowing for real-time, *in vivo* metabolic assessment. In this study, we used HP MRI to visualize pyruvate metabolism in the liver and kidneys of brain-dead rats during BD.
Materials and Methods: BD was induced in mechanically-ventilated rats by inflation of an epidurally placed Fogarty catheter; sham-operated rats served as controls ($n = 5$ per group). At 0, 2, and 4 h after BD confirmation, 1.5 ml of 13C-pyruvate was injected via the femoral artery, immediately followed by NMR to obtain the metabolic spectra with a 9.4T preclinical MRI system.
Results: Immediately after BD confirmation, lactate/pyruvate ($p = 0.008$) and bicarbonate/pyruvate ($p = 0.019$) ratios increased in the kidneys of brain-dead compared to sham animals. Renal alanine/pyruvate tended to be higher in brain-dead compared to sham animals ($p = 0.090$). In the liver, the ratio of lactate to pyruvate increased in brain-dead versus sham animals at BD onset ($p = 0.012$). All these changes were transient, as no differences were observed between groups at 2 and 4 h of BD.
Conclusion: The results show increased metabolic activity in the kidneys immediately following BD, with increased anaerobic (lactate) metabolism, flux through the TCA cycle (bicarbonate), and glucose-alanine cycling (alanine). In the liver, anaerobic metabolism increases following BD onset. However, normalization of these metabolic processes occurs as BD proceeds. Given that nutritional support is usually withheld from brain-dead donors, our data suggest that metabolic support should be considered as a part of donor management, particularly at the onset of BD.

PLB146 THE COMBINATION OF ULTRASOUND AND COLD STORAGE IMPROVES KIDNEY GRAFT VIABILITY AND SURVIVAL IN EXPERIMENTAL TRANSPLANTATION

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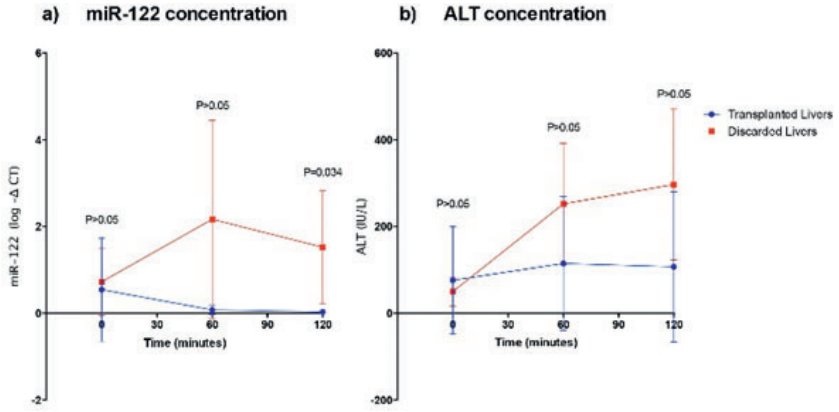
Background: *Ex vivo* organ storage and length of cold ischemia time (CIT) negatively impact on kidney graft survival and function in renal transplantation. Grafts from extended criteria donors seem to be especially vulnerable to ischemic injury. The aim of this study was to evaluate a new therapeutic strategy based on the combination of ultrasounds and hypothermic conditions for kidney graft preservation.
Methods: Lewis rat donor kidneys were perfused with preservation solution, Celsior, and kept in cold storage at 4°C (CS group) or in ultrasound device at



4°C (US group) during 18 or 29 h. Perfusate samples were collected to assess the renal damage. In addition, we performed a syngenic heterotopic renal transplantation (Lewis-to-Lewis) using kidneys with the above mention CIT with or without ultrasound device. Serum BUN and creatinine levels were measured daily to determine kidney function. The animals that survived were sacrificed 7 days after kidney transplant.
Results: Longer cold ischemia time was associated with worse rat survival in both CS and US groups. CS-18 h survival was 55% and 0% in CS-29 h ($p = 0.0147$). In US-18 h, rat survival was 100% ($p = 0.0273$ *vs* CS-18 h) whereas US-29 h rat survival 33% ($p = 0.0281$ *vs* CS-29 h). Serum BUN and creatinine levels were restored earlier and were lower at day 7 in ultrasound groups. Ultrasound treatment was associated with lower NGAL and αGST concentration in perfusate at 29 h of CIT.
Conclusions: Ultrasound treatment in addition to cold storage improves viability of syngenic kidney grafts and final graft function in a rat model of kidney transplantation.

PLB147 RESVERATROL ALLEVIATES INFLAMMATORY RESPONSES AND OXIDATIVE STRESS IN RAT KIDNEY IRI AND H2O2-INDUCED NRK-52E CELLS VIA NRF2/TLR4/NF-κB PATHWAY

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Background: Ischemia reperfusion injury (IRI) is one of the main causes of postoperative renal allograft dysfunction, which mainly related with proinflammatory reaction, including inflammatory responses, oxidative stress, and metabolic disorders. Resveratrol plays an important role in protecting various organs in IRI because of its anti-oxidative stress, anti-inflammatory response, and anti-apoptosis effects. This study aims to find the renoprotection of resveratrol in inhibiting inflammatory responses, reducing oxidative stress, and decreasing cell apoptosis *in vivo* and *in vitro*.
Methods: Resveratrol treated before renal ischemia and H_2O_2 induced. Serum and kidneys were harvested 24 h after reperfusion and NRK-52E cells were collected 4 h after the H_2O_2 stimulation. Renal function, HE staining, proinflammatory cytokines and markers of oxidative stress were assessed in this study.
Results: Resveratrol can inhibit inflammatory responses and improve renal function after renal IRI. Additionally, resveratrol can decrease oxidative stress and reduce cell apoptosis by upregulating Nrf2 expression and downregulating TLR4/NF-κB signaling pathway, as well as decreasing caspase-3 activity and caspase cascades.
Conclusion: Our study demonstrates the mechanism of resveratrol renoprotection. We indicate that resveratrol shows its great function in anti-inflammatory responses, anti-oxidative stress and anti-apoptosis via Nrf2/TLR4/NF-κB pathway.

PLB148 IMMUNOGENICITY OF HLA-DRB MOLECULES

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Introduction: The increased sensitivity of new methodologies based on X Luminex® platform to identify anti-HLA specific antibodies (HLA-SA) allows improving the studies on the impact of the expression and antibodies generation in the high-risk patients. This study evaluates the differences of expression in HLA-DR (II) molecules in hypersensitized patients (PRA max ≥50%) using DR52, DR53 and DR51 as alloantigen and its immunogenity to produce antibodies. We study differences between the main HLA-DRB1 locus and HLA-DRB3, HLA-DRB4 and HLA-DRB5 that generally have been considered "functionally secondary loci" to define alloresponse and predict the immunogenicity of these molecules as antigens to the rest of HLA molecules using epitope binding algorithms
Methods: 83 hyper sensitized patients have been included in the study. HLA-DR (II) antibodies were identified by Luminex® technology (*LSA-I and LSA-II Gen-probe Inc. San Diego CA*). We compared the different MFI between DRB1 and the corresponding DRB3, DRB4 or DRB5 in all patients and the MFI depending of the patient typing, and the different affinity binders for the different HLA-DR molecules. On the other hand, we use HLA-DR proteins with population frequencies higher that 0.5% as source of epitopes to study their immunogenicity.
Results: In the global analysis of reactivities, there are no differences in the MFI between DR52 (DRB1* associated with DRB3) and DRB3. While DRB5 is able to produce more immunogenicity that its DRB51 associated (DRB1*15 and DRB1*16), DRB4 is the secondary loci that produce less immunogenicity. When analysis was restricted by patient typing, these general rules show some differences related with the original typing of each recipient.
Conclusion: The difference between MFI for each allele could be explained by the different expression of these loci. Alloreactivity of these secondary loci can reinforce the differential role of these complementary molecules.

PLB151 THE COMMUNICATION BETWEEN THE PATIENTS' RELATIVES AND THE PHYSICIANS IN INTENSIVE CARE UNITS WITH RESPECT TO BRAIN DEATH

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Background: To communicate with the patient's relatives in intensive care units with respect to brain death is crucial. The sharing of patient treatment information for patients undergoing treatment in ICUs is therefore directly related to the communication attitudes governing a patient's relatives and the physician.
Objective: To analyze the attitudes held by the relatives of patients and the physician for the purpose of determining the communication the two parties was aimed.
Methods: Two similar survey forms, one for the relatives of the patient and one for the ICU physicians was used. Three sub-dimensions: informing, empathy and trust were included in the questionnaire. The study included 181 patients' relatives and 103 ICU physicians from 3 different cities and 6 hospitals.
Results: Identification of the mutual expectations and substance of the messages involved in the communication process between the ICU patients' relatives and physicians was made from the results of the questionnaire. The gender and various disciplines of the physicians and the time of the interview with the patients' relatives were found to affect the communication attitude towards the patient. Moreover, the age of the patient's relatives, the level of education, the physician's perception, and the contact frequency with the patient when he/she was healthy were also shown to have an impact on the communication attitude of the physician.
Conclusion: It is believed that the communication between patient relatives and physicians can be strengthened through a variety of training programs to improve communication skills

Keywords: Brain death, Communication, intensive care unit, professional-family relations and questionnaire.

PLB152 DEMOGRAPHIC CHARACTERISTICS AND THE ROLE OF EDUCATIONAL ACTIVITIES ON THE CADAVERIC DONATIONS IN SAMSUN REGION OF TURKEY

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Background: Although the number of the patients in need of organ transplantation continuously increases, cadaveric organ donation numbers lag behind resulting in patient fatality while waiting for transplant. Our objective is to investigate the brain death and donor data for the last five years in our region in order to understand the effects of demographic variables on donor rates. We believe this study will direct our educational programme to increase organ donation.
Methods: Brain death data during 2012–2016 in the regions of Samsun Organ and Tissue Transplantation Regional Coordination Centre were collected from the Turkish Ministry of Health web-site. The data were first categorised as donors and non-donors followed by a sub-divisions based on gender and age. In the donor / non-donor categories, gender and age distributions were determined from the sample sizes.
Results: Image 1 shows the gender and age distributions of the donor group during the 2012–2016 period following brain death while Image 2 illustrates the corresponding distribution for non-donors. It is shown that the males have a higher donation rates than females. For example, in 2016, the corresponding donor rates are 24.2% and 20.2% respectively.

The examination of the donor age distribution indicates that donor rate is the highest in young adults and but it decreases with increasing age. For example, in 2016 donor rates in the 4 age groups are 35%, 38%, 24% and 10% respectively.
Conclusion: It is found that the male donation rates are higher than female rates while donation rate decreases with increasing age. In the light of these findings, our educational programme to increase donor rate will focus on developing strategies to address age and gender factors as well as traditional family structure and educational level of the potential donors.

Image 1. Gender and age distribution of donors

YEAR	GENDER		AGE GROUP				TOTAL
	MALE	FEMALE	0-18	19-35	36-64	65+	
2012	18	10	2	7	11	8	*28*
2013	30	11	6	2	25	8	*41*
2014	23	20	1	8	24	10	*43*
2015	33	11	8	3	21	12	*44*
2016	25	16	6	10	19	6	*41*

Image 2. Gender and age distribution of non-donors

YEAR	GENDER		AGE GROUP				TOTAL
	MALE	FEMALE	0-18	19-35	36-64	65+	
2012	83	70	17	19	74	43	*153*
2013	74	57	17	18	62	34	*131*
2014	110	84	23	24	90	57	*194*
2015	119	76	26	15	85	69	*195*
2016	78	63	11	16	60	54	*141*

PLB153 DOES THE ESTABLISHMENT OF ORGAN TRANSPLANT CENTER EFFECT ON THE ORGAN DONATION IN THE REGION?

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Background: Organ transplantation is carried out with multidisciplinary, which requires big effort, dedication and sacrifice. The weakest part of this work is shortcomings in cadaveric organ donation. T. C. Ministry of Health, both medical and social aspects of organ transplantation and organ sharing the significant progress has been made in our country.

The aim of study is to present the effects of newly established 'Organ Transplantation Center' on organ donation in Isparta, and examples of multiple organ harvesting in the region and to share our experience in this field.
Materials and Methods: On 15.05.2015 the permission for organ transplantation were taken from T. C. Health Ministry. Subsequently, ventilator-assisted intensive care units, transplant outpatient, inpatient services. hemodialysis unit and the technical infrastructure was prepared. Coordination and informing meetings were held for 112 emergency, hospitals and hemodialysis units in the region. Later, the declaration of brain death occurred in Isparta were evaluated by the relevant coordinator of The National Coordination Unit and statement was made. Nine organs of brain-dead patients were distributed to hospitals.
Results: While an average of 4–5 cadaver donations have been made in the past years, within one year following the establishment of the center an increase of approximately 50% with 9 cadaver donations was provided. Seven kidneys and 6 livers were transplanted to the patients in transplantation center.
Conclusion: The success of organ transplantation can be achieved with a sufficient number organ donation. The establishment of organ transplantation center has increased the rate of organ donation in the region. Everyone has a great responsibility.

PLB154 NATIONAL FUNDINGS FOR PROCUREMENT COORDINATION TEAMS IN FRENCH HOSPITALS

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Background: In France, hospital activities are supported by collective funds; most of them are financed by Diagnosis Related Groups-like system and by other funding, not DRG'S linked, but allocated for one year and adjusted to previous year level's activity. Like for transversal activities related to transplantation, such as procurement coordination. In 2015, the Agence of biomedecine proposed to the French Ministry of Health, amendments to improve the financing model of procurement coordination teams, which presented gaps between activity (number of registered potential death donors, either DBD or DCD), financing levels, inequity between centers, and inefficiency of the model. The constraint was to keep the same global financing devoted envelope.
Methods: We established an exhaustive list of the new organizations required (quality improvement process for identification of potential donors, management of DCD Maastricht II, and implementation of hospitals network). We checked the composition of a team's panel, and related to their observed level of activity for the 3 past years. Besides we collected expert opinion about ideal composition of team, in the same way, i.e. related to a level given by number of deceased counted donors. We also took into account the medium salaries for each kind of implicated professional (nurse, doctor).
Results: the new financing model is built on 13 levels instead of 4, and adds supplements for the new organization network and commitment in the quality procedure, both evaluated on predefined criteria. We also proposed new coordination team's composition. It has been accepted and came into effect in 2016.
Conclusion: this model is more discriminant and linked to activity. Moreover it now allows to take in account when procurement coordination completely integrate a quality program to improve its practice, and/or establish a concrete and organized network with non-authorized hospitals, and/or manage more than 5 DCD Maastricht II in one year.

PLB155 ATTITUDE, KNOWLEDGE, AND INFORMATION SOURCES TOWARD ORGAN DONATION AMONG KUWAITIS: A SOCIOCULTURAL PERSPECTIVE

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Organ transplantation is the most significant solution that most physician choice for end-stage of organ failures in developing and developed countries. It provides a longer better life for the patient and reduce the suffering and pain for both the patients and his family. The study aim to examine the knowledge, attitudes, and source of information of organ donation (OD) among Kuwaitis. A total of 1227 Kuwaiti respondents aged 18 to 82 years was selected by using nonrandom opportunistic sampling. The questionnaire as the study major tool comprised of 24 items, grouped in five main domains: 1) socio-demographic data, 2) knowledge of OD, 3) attitudes toward OD, 4) sources of information concerning OD, 5) factors that prevent participants to donate their organs, and 6) factors that positively influence ones to donate. SPSS (Version 21.0) used for data analysis. The data show a statistical significant relationship between 1) participants' attitude of organ donation and age, educational level, religious sect ($p < 0.05$), and gender ($p < 0.001$), 2) participants' knowledge of Kuwaiti society of OD and transplantation and age, and educational level ($p < 0.001$), and marital status ($p < 0.05$), 3) participants' awareness of legal issues of OD and gender and ethnic roots ($p < 0.05$), and age ($p < 0.001$), and 4) participants' knowledge of religious perspective of OD and educational level ($p < 0.05$), and marital status, and age ($p < 0.001$). Media was the main means of information regard organ donation (65.7%), the first reason that prevent participants from donation was " did not think about it" reported by 43.1%., and " if it is approved by religious rules and principles" was the main factors that encourage participants to accept donating their organ reported by (54.3%).

Keywords: organ donation, attitude, knowledge, Kuwaiti, source of information

PLB156 Â PREDICTORS OF CYTOMEGALOVIRUS INFECTION IN CHILDREN WITH RENAL TRANSPLANTATION, A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Cytomegalovirus infection is one of the serious complications of renal transplantation in children. In this meta-analysis, we assessed the incidence and risk factors of cytomegalovirus infection in pediatric renal transplant recipients.
Data Sources: Massive search was done in searching systems such as PubMed, Ovid, MD-consult and ProQuest databases until February 2014. We also assessed reference lists of all articles which were included in this meta-analysis.
Study Selection Criteria: Any study that was about the cytomegalovirus infection and its risk factors in pediatric renal transplant recipients.
Results: Eight articles were included in this meta-analysis. Totally 876 pediatric recipients were assessed. In the different studies, cytomegalovirus infection ranged from 7.5% to 40% with a pooled incidence of 25.1%. Positive donor for CMV IgG regardless of serostatus of the recipient was the most important independent risk factor for CMV infection in this meta-analysis (relative risk: 4.17, 95%CI: 2.62–6.64, $Pv < 0.0001$). There was not any association between the use of anti-lymphocyte antibodies, recipient sex and age and source of transplant with the incidence of CMV infection.
Conclusion: In summary, D+ serostatus is an important risk factor for CMV infection/disease in pediatric renal transplantation. We think that recipients with CMV positive donors regardless of their serology are suitable candidates of prophylactic treatment.

PLB157

DISRUPTION OF MYELOID NOTCH SIGNALING EXACERBATES HEPATOCELLULAR DAMAGE IN LIVER ISCHEMIA AND REPERFUSION INJURY

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Background: Notch signaling has been implicated in playing an emerged role in the regulation of immune cell development and function. Activation of ras homolog gene family, member A (*RhoA*)/Rho-associated protein kinase (ROCK) pathway promotes leukocyte accumulation in tissue injury. However, it remains unknown whether Notch signaling regulates RhoA/ROCK-mediated immune responses in liver ischemia and reperfusion injury (IRI). This study investigated intracellular signaling pathways regulated by Notch receptor in IR-stressed liver and *in vitro*.
Methods and Materials: Myeloid specific Notch1 knockout (Notch1M-KO) and floxed Notch1 (Notch1flox/flox) mice (n = 6/group) were subjected to 90 min partial liver warm ischemia followed by 6 h of reperfusion. In parallel *in vitro* study, Bone marrow-derived macrophages (BMMs) from these conditional mutant mice were transfected with CRISPR/Cas9-mediated hairy and enhancer of split-1 (Hes1) or c-Jun N-terminal kinase (JNK)/stress-activated protein kinase-associated protein 1 (JSAP1) knockout vectors followed by LPS (100 ng/ml) stimulation.
Results: Notch1M-KO mice showed aggravated hepatocellular damage, with increased serum ALT levels, hepatocellular apoptosis, macrophage/neutrophil trafficking, and pro-inflammatory mediators compared to the Notch1FL/FL controls. Unlike in the Notch1FL/FL controls, Notch1M-KO diminished Hes1 but augmented JSAP1, JNK, ROCK1, HMGB1, and PTEN activation in ischemic livers. Disruption of JSAP1 in Notch1M-KO livers improved hepatocellular function and reduced JNK, ROCK1, PTEN, and TLR4 activation. Moreover, ROCK1 knockdown inhibited PTEN and promoted Akt, leading to depressed TLR4. For *in vitro* studies, deletion of Notch target gene Hes1 enhanced JSAP1/JNK activation and HMGB1 release whereas JSAP1 knockout diminished ROCK1/PTEN and TLR4 signaling in LPS-stimulated BMMs.
Conclusions: Myeloid Notch1 deficiency activates the RhoA/ROCK pathway and prom.