ELEVATOR PITCH PRESENTATIONS

EP01 - SURGICAL TECHNIQUE

EP001 ANTICOAGULATION IN SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANTATION (SPK)- ON WHAT BASIS?

J.P. Gopal[1], D. Cosgrave[2], D. Townsend[1], V. Papalois[1], P. Herbert[1], J. Crane[1], F. Dor[1], A. Muthusamy[1]

[1]Imperial College Renal and Transplant Centre, Hammersmith Hospital, Imperial College Healthcare NHS Trust; [2]Department of Anesthesia, Hammersmith Hospital, Imperial College Healthcare NHS Trust

Introduction: Despite technical refinements, early pancreas graft loss due to thrombosis continues to occur. Conventional coagulation tests do not detect hypercoagulability and hence left untreated. Thromboelastogram (TEG) provides a global hemostatic profile. We compared the outcomes between TEG and conventional tests-based anticoagulation in SPK recipients.
Methods: We compared the outcomes of 13 SPK recipients who received TEG directed anticoagulation (TEG-SPK) against 23 contemporaneous SPK recipients matched for donor age and graft type (DBD/DCD), who received clinically directed anticoagulation (Clinical-SPK). Anticoagulation consisted of IV heparin titrated up to 500 IU/hour based on TEG or clinical scenario. Graft outcomes, thrombotic and bleeding complications between the two groups were compared.
Results: There were 11/36 DCD grafts (4 TEG-SPK and 7 Clinical-SPK). Incidence of radiologically confirmed partial graft thrombosis was 46.15% in TEG and 39.13% in Clinical-SPK group. All recipients with thrombus had anticoagulation dose escalation. Thrombus resolution rates in subsequent scans, in TEG-SPK and Clinical-SPK groups were 100% and 83% respectively. Overall clinical incidence of post-operative bleeding (hematoma/GI bleeding/hematuria/re-exploration for bleeding) was 53.84% (TEG-SPK) and 56.52% (Clinical-SPK). TEG group had reduced red cell unit transfusion (35 in TEG-SPK vs. 49 in Clinical-SPK) and increased blood component usage (18 in TEG-SPK vs. 9 in Clinical-SPK). All Clinical-SPK recipients with escalated anticoagulation subsequently developed clinical evidence of bleeding, whereas it was 60% (3 patients) in TEG group. No graft loss in TEG-SPK group, whereas 3 grafts (1 pancreas, 2 kidneys) were lost due to thrombosis in Clinical-SPK group. All patients had functioning grafts in TEG-SPK group, whereas 80.43% of patients in Clinical-SPK group had functioning grafts.
Discussion: TEG is a promising tool in guiding judicious use of anticoagulation.

EP002 INTRA-OPERATIVE DRAIN PLACEMENT IN KIDNEY TRANSPLANTATION UTILISING A STEROID-SPARING IMMUNOSUPPRESSIVE REGIMEN

R. Storey, D. Townsend, I. Bellini Maria, J. Crane, P. Herbert, A. Muthusamy, V. Papalois, D. Frank

Imperial College Renal and Transplant Centre, Imperial College Healthcare NHS Trust, Hammersmith Hospital

Background: Perinephric collections along with wound complications are among the most common complications following kidney transplantation. The aim of this study was to evaluate the impact of intra-operative drain placement on the incidence of these complications after kidney transplantation in a cohort receiving monoclonal antibody induction with a steroid sparing, tacrolimus based maintenance immunosuppression regimen.
Methods: Three hundred and six kidney transplant recipients over a twenty month period were included in the study. Demographic information along with presence or absence of intra-operative drain, radiological imaging and complications were collected retrospectively from an electronic patient database.
Results: Median recipient age was 53.5 years with 25% suffering from diabetes mellitus. The median recipient body mass index was 26 (17–47). 74.5% of transplants came from a deceased donor (DCD/DBD), 10.9% were pre-emptive, and 77.3% achieved primary function. An intra-operative surgical drain was placed in the perigraft position in 67.3% of cases. When a drain was placed, in 62.7% this was a vacuum drain, and in 37.3% a non-vacuum drain. Drains were removed after a median of three days. Perinephric collections within the first three months occurred in 47.3% versus 55.5% of those with or without an intra-operative drain, respectively ($p = 0.5425$). No re-operations were required for perinephric collections. Radiological drainage of a collection was required in 2.7% of patients. Wound complications (any reported; ranging from wound infection, leakage, to deep SSI) occurred in 20% and 16.7% of patients with or without an intra-operative drain, respectively ($p = 0.7979$).
Conclusion: Intra-operative drain placement has no effect on the incidence of perinephric collection or wound complications after kidney transplantation in cohort receiving monoclonal antibody induction with a steroid sparing, tacrolimus based maintenance immunosuppression regimen.

EP003 LYMPHOCELE AFTER KIDNEY TRANSPLANTATION

H. Sozen[1], O. Helvacı[1], A. Sapmaz[2], S. Hazinedaroglu[3], A. Dallgic[1]

[1]Gazi University; [2]Numune Hospital; [3]Ankara University

The lymphocele is a lymphatic collection around the renal graft and urinary bladder. It can arise from either the lymph that drains through the lymphatic vessels in the sinus of the transplanted kidney or the lymphatic vessels surrounding the iliac vessels of the recipient. The reported incidence of lymphoceles ranges widely, from 1–2% to as high as 20%.
Material and Methods: Since January 2006, 244 renal transplantations were performed at Gazi University Transplantation Center, Ankara/Turkey. We retrospectively analyzed those patients from patient chats and hospital files.
Results: Ten (4%) patients have been diagnosed with lymphocele since January 2006. Six out of 10 were male and 4 were female. The mean age of the patients in our study was 46 (range 23-42) years. The median onset was 19 (range 5-32) days post-transplantation, while the median size of the lymphoceles was 5.3 cm (range 1.5-10 cm). All lymphoceles were located at between of the lower pole of the transplanted kidney and urine bladder. Transplantation was done from decease donor in five recipients. One of the patient had hydronephrosis on presentation, three patients had elevated creatinine and two patients' lymphocele diagnosed at routing follow-up without any complains. All were on Prograf based triple immunosuppression. Five patients successfully managed percutaneously by conservative radiology. Two patients required surgery (fenestration- open drainage). Three patients' lymphocele dissolved spontaneously. There was neither graft or patient loss due to lymphocele after kidney transplantation in this study group.
Conclusion: Surgical intervention should be considered early for the treatment of post-transplantation patients with lymphoceles, inorder to able to shorten hospital stay and to prevent further complications.

EP004 HOW MANY ANASTOMOSES ARE IDEAL? KIDNEY GRAFTS WITH MULTIPLE ARTERIES

K. Eitler, L. Piros, G. Telkes, L. Bihari, G. Huszty, Z. Máthé

Semmelweis University, Department of Transplantation and Surgery

Background: Vascular complications cause graft loss in 3-15% of kidney transplantations. Kidney grafts with multiple arteries are at risk for thrombotic or anastomosis related complication. There is a paucity of data whether the number of arteries or the number of anastomoses is a greater risk. Our aim was analyse the arterial anastomosis related complications.
Methods: Data of 779 deceased donor kidney transplantations from 2011 to 2016 were analysed. We prospectively collected the pre-, intra-, and postoperative data, kidney function and survival rate.
Results:
No. of arteries.
84% of the graft kidneys had one, 13% had two, 2.6% had three and 0.2% had four arteries. Handling time with 1, 2 and 3 arteries was 40, 49 and 49 min, $p = 0.000$, operation time was 132, 138 and 144 min, respectively, $p = 0.0168$. No correlation was found between number of the arteries and graft function, graft and recipient survival, incidence of haemorrhage, vascular complications nor the need of reoperation within 30 days.
No. of anastomoses.
Handling time with 1 and 2 anastomoses was 46 and 55 min, $p = 0.00$ while operation time was 132 vs. 141 min, respectively, $p = 0.0045$.
In cases of 2 anastomoses graft function, graft and recipient survival, incidence of bleeding, vascular complications were not significantly different from the group of 1 anastomosis.
Reoperation rate within 30 days was 7.91% with one and 19.23% with two anastomoses (OR = 2.77, $p = 0.005$).

No. of arteries	No. of kidneys	1 anastomosis	2 anastomoses	3 anastomoses	4 anastomoses
all	779	721 (93%)	52 (6.7%)	2 (0.3%)	0
1	662	662 (100%)			
2	91	44 (48.9%)	46 (51.1%)		
3	20	14 (70%)	4 (20%)	2 (0.3%)	
4	3	1 (66.7%)	2 (33.3%)	0	0

Reoperation because of vascular complication was done in 21 cases (2.7% of all), and 18 (85.7%) of these required transplant nephrectomy. There was no patient loss.
Conclusion: Presence of multiple renal arteries increases the operation time and handling time, but of its own has no adverse effect on graft or patient survival and does not impair the kidney function. However performing more than one anastomosis significantly increases the risk of early reoperation. Our policy is to perform the fewest technical feasible anastomoses.

EP005 SINGLE AORTIC- OR DUAL-PERFUSION DURING THE LIVER RETRIEVAL? CLINICAL OUTCOMES

I. Scalera[1], L. Toti[2], F. Melandro[3], G. Arenga[1], L. Campanella[1], C. Migliaccio[1], Q. Lai[3], Z. Larghi[3], G. Mennini[3], M. Manzia Tommaso[2], F. Biasi[2], F. Biasi[2], G. Tisone[2], W. Santaniello[1], L. Lupo[4]
[1]Liver Unit, A.O.R.N. Cardarelli, Naples; [2]Liver Unit, Policlinico Tot Vergata; [3]Azienda Ospedaliera Universitaria Policlinico Umberto I, Rome; [4]Liver Unit, Policlinico di Bari

Background: In the era of the marginal grafts, it is really important optimizing every single surgical technique from the retrieval to the implantation to discard less grafts. The standard perfusion technique consists of cannulation of the aortic circulation otherwise a second cannula can be placed through one of the portal branches for the dual perfusion (DP) and running both circuits contemporary.
A matched pair analysis was performed comparing grafts perfused through the aorta only (SP)and livers retrieved with the dual perfusion (DP).
Methods: Using a prospectively held database of three different centers, all DP grafts were matched against SP cohort. Matching was based on donor DRI and recipient MELD, blinded to outcome. A comparative analysis of the donor and recipient characteristics and immediate post-operative outcomes between the groups was performed. Similar sub-analysis was performed considering only the sub-group of the marginal grafts.
Results: From January 2017 to September 2018, 49 DP grafts were paired with 49 SP, with comparable donor and recipient characteristics.
There was no significant difference in patient and graft survival. However, there was a significantly lower transaminase peak (ALT:694vs.1621; AST:482vs.1066, $p < 0.05$) in DP patients, compared with SP cohort. DP patients experienced of significantly lower AKI incidence (38%vs.62%, $p < 0.05$)and shorter hospital stay. There was a trend of less PNF rate in the DP patients. Similar benefit was found for the marginal DP grafts compared with SP marginal livers (DGF:50% vs. 70%, $p < 0.05$)
Conclusions: Perfusing the liver graft contemporary with aortic and portal cannulation might be a promising technique to reduce the ischemia reperfusion injury consequences. Randomization would be useful to validate these results

EP006 PORTAL FLOW RECONDITIONING IN PEDIATRIC LIVER TRANSPLANTATION FOR BILIARY ATRESIA WITH AN ATROPHIC PORTAL VENOUS SYSTEM – PRESENTATION OF A NOVEL TECHNIC

V. Berchtold[1], R. Oberhuber[2], C. Margreiter[3], B. Cardini[3], W. Pajk [4], A. Entenmann[5], S. Straub[5], U. Klingkowski[6], G.-F. Vogel[5], T. Müller[5], D. Öfner[7], S. Schneeberger[2], S. Schneeberger[2]
[1]Medical University of Innsbruck; [2]Department of Visceral Transplant and Thoracic Surgery, Medical University of Innsbruck; [3]Department of Viscersal Transplant and Thoracic Surgery, Medical University of Innsbruck; [4]Department of Anesthesiology and Critical Care Medicine, Medical University of Innsbruck; [5]Department of Pediatrics, Medical University of Innsbruck; [6]Department of Pediatric Intensive Care Unit, Medical University of Innsbruck; [7]Department of Visceral Transplant and Thoracic, Medical University of Innsbruck

Background: Liver transplantation for biliary atresia in pediatric patients with atrophy of the portal vein in children remains a challenge. We have successfully applied a novel therapeutic approach to this problem.
Methods: A 6-month old boy presented with a heterotaxia syndrome including absence of the inferior cava vein, partial situs inversus and duodenal atresia in addition to biliary atresia. After undergoing Kasai operation, bilirubin levels continued to raise eventually requiring liver transplantation. A living related liver transplantation was performed using segments II/III from the grandmother. Portal flow upon reperfusion was marginal but the immediate postoperative course satisfactory. Postoperative liver swelling and subsequent angulation of the LHV resulted in an outflow obstruction with massive liver damage (GOT: 9422U/l, GPT: 4276 U/l). Despite immediate repositioning, portal flow and liver function remained poor. Eventually, portal vein thrombosis occurred on day 6. Despite immediate thrombectomy, PV flow remained marginal. Progressive liver failure including massive ascites (4.5L/day) indicated high urgency liver re-transplantation.
Results: An ideal liver from a 42-year old donor was accepted for split-liver transplantation. For conditioning of the portal flow, an intraoperative angioplasty of the portal- and superior mesenteric vein was performed to recondition vein diameter and blood flow immediately after hepatectomy. Next, an interposition shunt between the portal vein and vena cava remnant was inserted for further conditioning of the PV flow and left in place during back-table splitting (3 hours). An excellent PV flow was achieved and reperfusion of the split liver graft was normal. The portal flow remained stable with normal flow parameters postoperatively.
Conclusion: Liver transplantation in a child with PV atrophy and low flow was successfully performed applying a conditioning regimen with angioplasty and a transient interposition shunt.

EP007 IMPACT OF VENOUS ANASTOMOSES ON PVGT AND PANCREAS TRANSPLANTATION OUTCOMES

A. Surowiecka-Pastewka[1], M. Matejak-Górska[2], M. Durlik[1]
[1]Mossakowski Medical Research Centre of the Polish Academy of Sciences; [2]Entral Clinical Hospital of the Ministry of the Interior in Warsaw

Background: Pancreas venous graft thrombosis (PVGT) is the most frequently occurring vascular complication in pancreas transplantations, with prevalence as high as 10%-20% of cases . Since the first pancreas transplantation, surgical technique has developed extensively. Notwithstanding, pancreas graft thrombosis is still the most frequent complication leading to graftectomy. Development of PVGT depends on various factors, including the characteristics of the donor, organ, retrieval method, preservation, cold ischemia time (CIT), technical issues, immunological and inflammatory factors, or coagulopathy and prophylactic anticoagulant administration
Aim: The aim of the study was to evaluate the influence of different methods of pancreas graft portal vein systemic drainage on transplantation results.
Material and Methods: This was a retrospective study conducted on a group of 100 patients after pancreas transplantation. We created 4 subgroups: primary anastomosis to common iliac vein “iv/n”, reconstruction and anastomosis to common iliac vein “iv/y”, primary anastomosis with vena cava “vc/n” and reconstruction to cava vein “vc/y”.
Results: The four subgroups did not differ in type of pancreas allograft transplantation, type of dialysis, age and gender distribution. There were differences in overall mortality, presence of venous thrombosis, and graftectomy, but they did not reach statistical significance.
There were 18 graftectomies in our cohort, 45% of which were caused by venous thrombosis ($p < 0.01$). Primary anastomosis of pancreas graft portal vein was performed to the distal vena cava in 22 cases, and to the common iliac vein in 24. Anastomosis to iliac vessels was associated with vein elongation. Caval anastomosis prevented from PVGT. Three-year graft survival was highest in the subgroup “vc/n” ($p < 0.01$).
Conclusions: Our study has shown that the type of systemic portal vein drainage has a significant influence on outcomes of pancr

EP008 LAPAROSCOPY FOR LIVING DONOR NEPHRECTOMY: COMPARISON OF THREE-DIMENSIONAL AND TWO-DIMENSIONAL VISION

T. Prudhomme[1], M. Roumiguié[1], T. Benoit[1], B. Beauval Jean[1], N. Doumerc[1], F. Sallusto[1], M. Soulié[1], N. Kamar[2], X. Gamé[1]
[1]Department of Urology, Kidney Transplantation and Andrology, Toulouse University Hospital, France; [2]Department of Nephrology and Organ Transplantation, Toulouse University Hospital, France

Background: The objective of this preliminary study was to compare three-dimensional laparoscopy versus two-dimensional laparoscopy for living donor nephrectomy.
Methods: All patients who underwent a living donor nephrectomy by laparoscopy were included from January 1st 2015 to April 1st 2018 in a university center.
All surgeries were realized by three experimented surgeons.
Results: Seventy-eight patients were included: sixteen underwent a living donor nephrectomy using 3D laparoscopy (3D group) and sixty-two using 2D laparoscopy (2D group).
The two groups were equivalent for all parameters except the number of patients with medical history of high blood pressure (7 versus 4 in 3D and 2D group respectively, $p = 0.0002$).
The warm ischemia and operative time were significantly lower in 3D group (warm ischemia: 1.7 ± 0.1 versus 2.3 ± 0.1 minutes in 3D group and 2D group respectively, $p = 0.018$), (operative time: 80.9 ± 2.6 versus 113.3 ± 4.7 minutes in 3D group and 2D group respectively, $p = 0.0002$).
The length of hospital stay was significantly shorter in the 3D group (4.4 ± 0.2 versus 5.2 ± 0.1 in 3D and 2D group respectively, $p = 0.0003$).
Conclusions: Three-dimensional laparoscopy decreases warm ischemia, operative time and length of hospital stay for living donor nephrectomy compared to two-dimensional laparoscopy.

EP009 LIVER TRANSPLANTATION WITH SOVRACELIAC AORTO-HEPATIC VS INFRARENAL REVASCOLARIZATION: MULTICENTRIC RETROSPECTIVE STUDY

A. Benedetti Cacciaguerra[1], F. Mocchegiani[1], R. Montalti[1], G. Conte[2], S. Iesari[3], R. Pravisani[4], J. Lanari[5], M. Colledan[2], I. Troisi Roberto[6,7], A. Risaliti[4], U. Cillo[8], J. Lerut[3], M. Vivarelli[1]

[1]Hepatobiliary and Abdominal Transplantation Surgery, Polytechnic University of Marche; [2]Department of Organ Failure and Transplantation, ASST Papa Giovanni XXIII, Bergamo; [3]Starzl Abdominal Transplant Unit, University Hospitals Saint-Luc, Université Catholique de Louvain; [4]Department of Medicine, University of Udine; [5]University of Padua; [6]Department of General and Hepato-Biliary Surgery, Ghent; [7]Dept. of Clinical Medicine and Surgery, Federico II University, Naples; [8]Department of Surgery, Oncology and Gastroenterology, Hepatobiliary Surgery and Liver Transplantation, University of Padua

Introduction: There are numerous conditions, during a liver transplant (LT), that do not allow the use of the recipient's hepatic artery. Aorto-hepatic arterial reconstruction (AHAR) can be performed with direct suture of the graft's artery on to the aorta or with the interposition of an arterial conduit. The anastomosis can be performed on the supra-celiac (SC) or the infrarenal (IR) tract of the aorta. Although the site of the aorta where the anastomosis is fashioned may affect the patency of the graft's artery, no data are available to date in the literature to support either the supraceliac or infrarenal site. The objective of the study was to compare the results of infrarenal vs. supraceliac AHAR with or without interposition of arterial conduit in LT patients.
Methodology: AHAR was performed in 120 consecutive LT recipients across six European Centers; Hepatic artery thrombosis (HAT) was the primary endpoint. We retrospectively analyzed the main intra and post-operative data and a multivariate analysis was carried out to identify the independent predictors of HAT.
Results: In 56/120 (46.6%) cases an infrarenal anastomosis was performed, using a jump-graft in all cases, while in 64/120 (53.4%) cases a supraceliac anastomosis had been made, using a jump-graft in 45/64 (70.3%) cases. No significant differences was found in the incidence of PNF, EAD, biliary strictures, postoperative hospitalization, transfusion of blood products, surgical time.

Multivariate analysis showed that infrarenal anastomosis was an independent risk factor of hepatic artery thrombosis (30.4% vs 10.9%, $p = 0.015$). After an average follow-up of 54.52 ± 49 months, graft and patient survival of infrarenal and supraceliac AHAR were higher in supraceliac group, although not statistically relevant ($p = 0.061$, $p = 0.129$).
Conclusions: In the cases where an AHAR is necessary, arterial anastomosis using the supraceliac aorta significantly reduces the incidence of hepatic artery thrombosis and therefore is recommended.

EP010 RETROSPECTIVE DATA ANALYSIS OF INCIDENCE OF INCISIONAL HERNIAS FOLLOWING LIVER TRANSPLANTATION: A TEN YEAR EXPERIENCE OF A HIGH VOLUME LIVER TRANSPLANT CENTER

N. Caecilia, E. Hannah, A. Florian, F. Margot, I. Thomas, Ö. Dietmar, S. Stefan

Medical University Innsbruck

Introduction: Ventral incisional hernia (VIH) after orthotopic liver transplantation (OLT) limits the patients' quality of life. The high incidence of VIH is related to predisposing risk factors including immunosuppressive treatment, higher age, re-laparotomies, wound infection or ascites. The aim of this study was to analyze the incidence and risk factors for VIH following OLT.
Material and Methods: Between 01/2007-12/2017, 731 OLT were performed at the Medical University of Innsbruck. Medical records of patients were reviewed retrospectively to assess the occurrence of VIH after OLT as assessed by clinical examination and/or CT scan. A risk assessment including all relevant demographic, operative and medical factors was performed using binary logistic regression analysis.
Results: Following OLT, 222 patients (30.3%) showed radiological (41%) and clinical (59%) findings consistent with VIH. In a multivariate analysis, statistically significant differences were found for male gender ($p = 0.001$), BMI (>24.9 kg/m2,$p = 0.015$), donor age (>50 years,$p = 0.021$), status of cirrhosis ($p = 0.033$) and reoperation beyond 180 days after OLT ($p = 0.039$). Independent protective factors for developing VIH were a higher MELD score and patients with high urgent priority for OLT ($p = 0.05$). 77 patients (10.5%) underwent VIH repair after a median of 22.9 months (5.7-101.5). 145 VIH patients were treated conservatively due to either minor complaints or poor condition of the patient. Regarding the surgical technique, 42 cases were treated with lap. IPOM repair, and 35 cases with open hernia repair. Six patients (7.7%) were reoperated as a result of postoperative complications. Recurrent VIH occurred in 10 patients (12.9%).
Discussion: When assessed clinically and radiologically, the incidence of VIH after OLT is higher than indicated in the literature. Radiological imaging should be performed in cases suspicious for VIH after OLT. A prophylactic mesh supply in high-risk OLT patients might be considered.

EP011 THE COMBINED ORTHOTROPIC LIVER AND KIDNEY TRANSPLANTATION - FIRST CLINICAL RESULTS OF A MODIFIED OPERATION TECHNIQUE IN COMPARISON TO THE STANDARD APPROACH

F. Philipp[1], T. Hans-Michael[1], Sascha[1], A. René[2], R. Falk[1], S. Utz[1]

[1]Department of General, Visceral and Vascular Surgery, University Hospital Jena; [2]Department of Radiology, University Hospital Jena

Background: The indication for combined liver and kidney transplantation (cLKTx) is based on chronic liver and kidney dysfunction. A common reason for combined liver and kidney failure is the polycystic liver and kidney disease (PCKLD). The cLKTx in patients with PCKLD is always a challenge due to the organ volume. Here we introduce a modified technique for orthotopic liver and kidney transplantation (mLKTx) for patients with PCKLD.
Material and Methods: The retrospective data analysis included 14 patients who received a cLKTx at the University of Jena between 2004 and 2018. Six patients (Group A) underwent a cLKTx through orthotopic liver transplantation followed by heterotopic kidney transplantation in the iliac fossa. Another 8 patients with PCKLD (Group B) underwent a mLKTx. In course of preparation, a right nephrectomy was performed followed by liver transplantation. After liver reperfusion, the orthotopic right-sided kidney transplantation was performed. The vascular graft anastomoses were established through the inferior caval vein and the common iliac artery.
Results: The mean age of both groups was comparable at the time point of cLKTx(Group A: $57.17(\pm 5.91)$ years, Group B: $53.88 (\pm 3.76)$ years, p-value: 0.24). The aetiology of terminal liver disease in Group A was mainly traced back to virus infection, nutritive toxic genesis and PCKLD. The mean lab-MELD score in Group A was 22 points. The average *Standard-Exceptional*-MELDfor Group B was 28 points. The operation time of both groups was comparable (Group A: 328 ($\pm$28.20) min., Group B: 346 ($\pm$64.90) min., p-value: 0.46). All patients left the hospital after approximately 30 days and had a normal organ function at the 3-month follow up.
Conclusion: We presented a new mLKTx technique for patients suffering from PCKLD. This technique allows a combined transplantation by a single incision resulting in less surgical trauma. The organ function in long time follow-up is comparable between both operation techniques.

EP012 LARGE INCISIONAL HERNIAS AFTER KIDNEY TRANSPLANTATION SUCCESSFULLY REPAIRED WITH INTRAABDOMINAL OR PREPERITONEAL HERNIOPLASTY

G. Helena[1], F. Ulf[2], M. Annika[1]

[1]Dept of Transplantation Surgery Karolinska University Hospital; [2]Dept of Emergency and Trauma Surgery, Karolinska University Hospital

Background: Little is reported about preferred surgical technique for incisional hernia repair following kidney transplantation. Recurrence rate is also reported to be as high as 20%. In 2015 we started a program for incisional hernia repair following kidney transplantation. The program was prompted by an unwillingness among centers specialized in hernia repair to accept kidney recipients for surgery. Although the incisional hernias caused substantial disability most referred patients were declined surgery based on their comorbidities, the immunosuppression and the complexity of the hernia repair.
Methods/Materials: From 2010 to 2017 633 adult patients underwent kidney transplantation with a modified Gibson approach at our institution. Of those, 22 patients (3,5%) were diagnosed with symptomatic incisional hernia, confirmed by computerized tomography and 19 underwent surgery. Thirteen (60%) had abdominal wall defects of > 10 cm, herein defined as large hernias (Figure 1 A-B).
Results: Large hernia repairs were performed with intraabdominal or preperitoneal mesh and in 12 (63%) operations mesh bridging was needed. Men and women were equally at risk of incisional hernia but mean age was higher in patients with incisional hernia (60 years $\pm$ 5,8 years) compared with patients without incisional hernia (50 years $\pm$ 14 years) ($p = 0,01$). Mean operating time was 206 min ($\pm$63 min) and hospital stay 5,3 ($\pm$4,3) days. Complications included respiratory insufficiency $\pm$ pneumonia (26%), urinary tract infection (16%), lingering pain (16%) and acute tubular necrosis (5%). However none of the patients had a recurrence of hernia during follow-up (mean 2,1 years $\pm$ 1,1). Symmetry and function of the abdominal wall was restored after hernioplasty and patient satisfaction was high (Figure 1 C).
Conclusion: With intraabdominal or preperitoneal mesh successful incisional hernioplasty following kidney transplantation can be accomplished even when the abdominal wall defect is large.

EP013 PAEDIATRIC RENAL TRANSPLANTATION-OUTCOMES OF RENAL ALLOGRAFTS REQUIRING EXPLANTATION AND RE-IMPLANTATION

K.M. Arslan[1], J. Helen[2], W. Nick[2], W. Grainne[2], M. Stephen[3], S. Jelena[3], B. Sheila[3], O. Jonathan[2], K. Geoff[4], C. Francis[4], M. Nizam[4], K. Nicos[4]
[1]Guy's and St Thomas NHS trust/Great Ormond Street Hospital; [2]Guys and St Thomas NHS Foundation Trust; [3]Great Ormond Street hopital; [4]Guy's and St Thomas NHS trust

Introduction: Challenges faced in paediatric renal transplantation can be different from the adult population. This can be due to the small recipient size and circulating volumes, thrombophilia, multiple medical/surgical comorbidities and challenging vascular anatomy. Vascular complications are rare but when they do occur, majority of the allografts are lost. We present our outcomes of transplants requiring explantation for vascular complication followed by reimplantation after backbench flushing of allografts with perfusion fluid in paediatric patients.
Methods: Retrospective analysis of all paediatric transplants from two transplant centres over a 5 year period (Jan 2013- Feb 2018)
Results: 85 (61 live donors, 2 altruistic, 22 deceased donor) paediatric renal transplants were performed in a single centre over a 5 year period. Four patients (all living related transplants), required explantation, back bench flushing with perfusion fluid followed by reimplantation. The average follow up is 28 months with mean GFR of 44.2 ml/min/1.73 m^2. Patient survival was 100%, graft survival was 80% with 60% delayed graft function rates. The details of the individual cases as per table.
Discussion: Early recognition of acute vascular complications and keeping a low threshold to re-explore complex paediatric patients leads to good patient and allograft outcomes. Usually these patients require multidisciplinary input as major medical/surgical complications are common.

EP014 LAPDOCTOR: TELL ME HOW DIFFICULT WILL BE MY DONOR

B. Valentina, S. Gionata, I. Roberto, R.F. Emilio, P. Alessandro, R.A. Eugenio, S.M. Paola, C. Franco, R. Jacopo
Fondazione Policlinico Universitario A.Gemelli, IRCCS, Roma, Italy

Background: Laparoscopic donor nephrectomy (LDN) is currently the gold standard technique for living donor nephrectomy. It is usually a straightforward operation, however, in some instances it can unexpectedly turn into a technically difficult procedure. There are no objective criteria for predicting the potential difficulty of LDN. Our aim was to validate the efficacy of a newly developed scoring system (LAPDOCTORLAParoscopic DOnor nephreCTomy scORe) for preoperative assessment of the potential technical difficulty of LDN.
Materials and methods: We developed a score based on 11 parameters that in a previous pilot analysis on 78 living donors showed a significant correlation with the difficulty of the operation as perceived by the operating surgeon (BMI, male sex, abdominal girth at the umbilicus, on the 9th rib and on the anterior iliac spine, thickness of anterior and posterior perirenal fat, density of anterior perirenal fat and at the superior and inferior pole, periumbilical fat density). Each operation was graded according to the score as standard, moderately difficult, very difficult. In the present analysis we attempted the preliminary internal validation of LAPDOCTOR in 20 prospective LDNs. The scores obtained with LAPDOCTOR were blindly compared with the difficulty grades assigned by the operating surgeon.
Results: LAPDOCTOR showed a correspondence of 66.6% with the surgeon's grading and a Pearson correlation coefficient of 0.65 (standard 55.5% vs 44.4%, moderately difficult 33.3 % vs 44.4%, very difficult 11.1% vs 11.1%) with a standard deviation of 0.5 for standard and moderately difficult interventions and 0 for the very difficult cases.
Conclusions: LAPDOCTOR is a very promising tool which could predict LDN difficulty and might help the surgeon in making a better evaluation of the operative risk of a living donor. These results are currently undergoing further validation in a prospective national multicentric study.

	Case 1	Case 2	Case 3	Case 4	Case 5
Age, weight	16y, 88Kg	15y, 49Kg	4y, 15.5Kg	9y, 25Kg	4y 16.6Kg
Aetiology	Reflux nephropathy	VUR	PU valves	Nephronophthisis	Denys-Drash
Renal replacement	Pre-emptive	Peritoneal dialysis	Pre-emptive	Peritoneal dialysis	Peritoneal dialysis
Site	Iliac vessels	Iliac vessels	Intra-abdominal-Aorta + IVC	Iliac vessels	Intra-abdominal-Aorta + IVC
Donor	Live related	Live related	Live related	Live related	Deceased Donor
Arterial anastomosis	1 Renal Artery-EIA	1 Renal Artery-EIA	2 Renal arteries-aorta	1 Renal artery-CIA	1 renal artery-aorta
Venous anastomosis	1 Renal Vein-EIV	1 Renal Vein-EIV	1 Renal vein-IVC	1 Renal vein-CIV	1 renal vein-IVC
Primary non-function	No	No	No	No	No
Delayed graft function	Yes	No	Yes	No	Yes
Thrombophilia screen	Positive	Negative	Positive	Negative ? but has spontaneous Central retinal vein thrombosis	Positive
Day of re-implantation	During initial surgery	During initial surgery	During initial surgery	Day 12	During initial surgery
Operative finding	Initially well perfused kidney. Thrombus in EIA and renal artery. 1St re-anastomosis. No flow on wound closure ? 2nd re-anastomo	Initially well perfused. Doppler suggested proximal renal artery thrombus. Re-anastomosis.	Not perfused. Arterial anastomosis re-done after insitu perfusion (side branch of renal vein as vent) - no improvement. 2nd revi	Necrosed transplant ureter. Arterial anastomosis dehiscence-fresh bleeding. Re-anastomosis.	Slow reperfusion. No thrombus
Visible clot	Yes	Yes (clinically and on US)	No	No	No
Intra/Post op heparin	Yes	Yes	Yes	No	Yes
Significant complications	Ischaemic limb requiring femoral embolectomy and fasciotomies, ipsilateral lower limb paresis	-	Left hemicolectomy due to ischaemia	Perinephric haematoma	Hydronephrosis post stent removal. Nephrostomies. Neo-bladder and itrofanoff
Current eGFR	31 ml/min/1.73 m2	54 ml/min/1.73 m2	55 ml/min/1.73 m2	63 ml/min/1.73 m2	18 ml/min/1.73 m2
Follow up period	11 months	15 months	37 months	62 months	14 months

EP02 - ISCHEMIA-REPERFUSION

EP015 DEVELOPMENT AND EVALUATION OF A DUAL-VESSEL NORMOTHERMIC EX VIVO MACHINE PERFUSION MODEL FOR RAT LIVER GRAFTS

C. Felix, G. Joseph, W. David, M. Simon, N. Maximilian, P. Johann, S. Igor, R. Nathanael
Charité Universitätsmedizin Berlin

Background: Normothermic ex vivo liver perfusion (NEVLP) is a promising strategy to increase the donor pool in liver transplantation. Small animal models are needed to further investigate questions that regard to organ preservation and reconditioning by NEVLP. A dual vessel small animal NEVLP (dNEVLP) model was developed using Metamizole as a potential vasodilatator, and compared to our already established single vessel small animal NEVLP (sNEVLP) model.
Methods: Livers of male Wistar rats were procured and perfused with erythrocyte-supplemented culture medium for six hours by either dNEVLP or sNEVLP. dNEVLP was performed either with or without Metamizole treatment. Perfusion pressure and flow rates were constantly monitored. Transaminase levels were determined in the perfusate at the start and after three and six hours of perfusion. Bile secretion was monitored and bile LDH and bile γGT levels were measured every 60 minutes of perfusion. Histopathological analysis was performed on liver parenchyma and bile duct after perfusion.
Results: Hepatic artery pressure was significantly higher in dNEVLP without Metamizole administration. Metamizole administration significantly ameliorated arterial vasospasm and significantly increased bile production during dual vessel perfusion. Compared to sNEVLP, dNEVLP with Metamizole showed significantly lower levels of transaminases during perfusion. Histopathology of liver parenchyma and bile duct showed significantly less necrosis in livers of the dNEVLPgroup treated with Metamizole. Chemical markers of bile duct injury showed the same trend.
Conclusion: The administration of Metamizole effectively ameliorates arterial vasospasm in our small animal dNEVLP model and enables physiological conditions during dual vessel perfusion. dNEVLP achieves considerably better organ preservation than sNEVLP.

EP016 THE REGULATION OF LEGUMAIN-MEDIATED APOPTOSIS PATHWAY IN RENAL ISCHEMIA-REPERFUSION INJURY

G. Yifeng, W. Xuan, G. Shuai
Shanghai General Hospital

Objective: To establish a mouse model of renal ischemia-reperfusion injury (IRI) in order to investigate the effect of renal ischemia-reperfusion injury on legumain in mice and the possible mechanism.
Methods: Forty one C57BL/6 mice were randomly divided into two groups after right renal resection: the IRI and control group. Injury to the mice was made by blocking the left renal pedicle. Levels of serum creatinine (Scr), blood urea nitrogen (BUN) and morphological changes were observed at 1h, 2h, 4h and 6h after reperfusion. Legumain expression was analyzed by immunohistochemistry and western blotting. Proximal tubular epithelial cells were isolated from mouse and the cell monolayer was covered with oil for different time intervals in different models.
Results: The degree of renal injury in the IRI group was significantly higher than in the control group ($p<0.05$) as demonstrated by the necrosis of the renal tubular cells, the interstitial edema, the increased infiltration of inflammatory cells, and the damage aggravated as the reperfusion time went longer. As analyzed by immunohistochemistry and western blot, the expression of legumain in ischemia-reperfusion group was significantly higher than that in the control group ($p<0.01$). In the cell model, BCL-2 and Caspase-3 showed correlation with legumain expression and legumain interacted with LAMC3 as detected by microarray gene expression technology.
Conclusion: Renal ischemia-reperfusion can lead to decreased renal function, causes renal tubular damage, increased expression of legumain which possibly plays an important role in ischemia-reperfusion injury. We conclude that legumain plays a role in renal ischemia-reperfusion injury through LAMC-3-mediated PI3K-AKT pathway, which affects BCL-2 and Caspase-3 to regulate apoptosis.

EP017 OUTCOME OF HEART TRANSPLANTATION IN SHORT AND LONG-TERM ASSISTANCE DEVICE PATIENTS: COLD STORAGE VS NORMOTHERMIC PERFUSION

S. Sandro, D.N. Concetta, F. Veronica, L. Andrea, T. Vincenzo, V. Igor, M. Massimo, L. Ugolino
Azienda Sanitaria Universitaria Integrata di Udine

Background: The ex-vivo normothermic perfusion (EVP) in Heart Transplantation (HTx) allows to reduce the ischemic time. Short and long-term assistance patients bridged to HTx showed some surgical crucial technical aspects, such as the presence of fibrous adhesions, the vascular girth regression due to non-pulsatile blood flow and the position of the outflow tract.
Aim: To compare the traditional cold storage (CS) vs EVP in short and long-term assistance device patients bridged to HTx.
Methods: We enrolled all extracorporeal life support (ECLS), left ventricular assist device (LVAD) and biventricular ventricular assist device (BiVAD) bridged to Htx.
Results: Since 2015, 33 HTx have been performed in ECLS LVAD BiVAD patients, 22 (66%) in CS vs 11 (34%) in EVP. No significant statistical pre-transplant differences have been reported in the two groups, except for atrial fibrillation. The mean age was 55 ± 11 years old vs 59 ± 10 years old, p=0.26; male sex was 86% vs 100%, p=0.28; ECLS was more frequent in CS than EVP group (59% vs 36%, p=0.20), while LVAD and BiVAD were more frequent in the EVP group (46% vs 64%, p=0.27). Between the two groups, there was a significant statistical difference about clamping time ($p<0.01$) and ischemic time $>$ 4 hours ($p<0.01$). The early term outcome showed no significant statistical differences, but a better trend for primary graft failure (19% vs 0%, p=0.17), need of inotropic support (38% vs 9%, p=0.09) and ICU stay (22 ± 21 days vs 14 ± 11 days, p=0.29) in the EVP group. Furthermore, 30-day mortality after Htx was 14% vs 0% (p=0.28) in CS and EVP, respectively.
Conclusions: EVP assures similar results compared to CS in short and long-term assist device patients bridged to Htx. Moreover, the longer available time to perform the surgery and the reduced ischemic time thanks to EVP could be explained the better trend related to short term results in favour to EVP when compared to CS.

EP018 ECONOMIC EVALUATION OF NORMOTHERMIC REGIONAL PERFUSION (NRP) IN LIVER TRANSPLANTATION

O. Gabriel[1], D. Rohan[2], H. Jennifer[2], C. Edward[2], W. Christopher[3]
[1]Edinburgh Transplant Centre; [2]Healthcare Improvement Scotland, Glasgow, UK; [3]University of Cambridge Department of Surgery, Addenbrooke's Hospital, Cambridge, UK

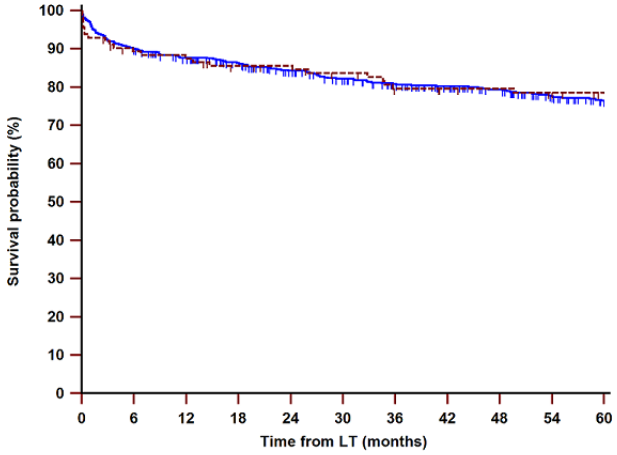
Background: NRP is associated with significant improvements in the outcome of DCD liver transplantation and increased organ utilisation. Herein we assess the cost-effectiveness of using NRP during retrieval of livers from donors after circulatory death (DCD).
Methods: A decision-tree based cost-effectiveness model was developed to compare NRP with standard DCD retrieved livers. The model estimated differences in: costs per surviving patient between the two methods; the number of recipients developing complications up to 1-year (ischaemic cholangiopathy, bile leaks and strictures, primary non-function, hepatic artery thrombosis, early allograft dysfunction) and associated treatment related costs; the number of surviving grafts and avoided cases of re-transplantation. Clinical data was inputed from the NHSBT database. Outcome data for the NRP cohort was obtained from the Edinburgh-Cambridge NRP dataset and the Spanish NRP results were used to derive and test the models. 41 NRP liver transplants and 138 standard DCD liver transplants with a 1-year follow up were compared. NHS reference costs were used for calculating transplant and complication related costs.
Results: The additional costs associated with NRP retrieval (£4,053/patient) were recovered by the significant reduction in post-transplant complications. Total retrieval and post-transplant complication related costs for the NRP arm (£2,382,981) were significantly lower than those of the standard DCD liver transplant (£3,548,631). The model predicted that for a cohort of 100 patients, NRP was associated with fewer cases of re-transplantation, fewer deaths and a higher graft survival rate compared to standard DCD retrieved livers. NRP led to savings of £17,000 per additional surviving patient and is predicted to be an economically dominant strategy (i.e. less costly and better outcomes).
Conclusions: NRP is a cost effective strategy to increase organ utilisation and improve outcomes in DCD liver transplantation.

EP019 LIVER TRANSPLANTATION WITH FATTY GRAFT: HOW FAR CAN WE PUSH THE STEATOSIS LIMIT?

C. Grazia[1], M. Federico[2], D.B. Enrico[1], N. Daniele[1], R. Maurizio[1], V. Andrea[1], P. Domenico[3], C. Michele[3], V. Marco[2]
[1]Ospedali riuniti di Ancona; [2]Università politecnica delle Marche; [3]ASST Ospedale Papa Giovanni 23

Background: Due to organ shortage, the use of steatosic donors is a forced option to decrease waiting list mortality. However, admitted steatosis grade and survival outcomes of liver transplantation (LT) with steatosic grafts remain controversial.
Methods: Data were retrieved from the prospectively maintained databases of two Italian liver transplant centers (Bergamo and Ancona), including LTs from January 2000 to September 2018.

At the time of procurement, each organ was evaluated with biopsy; the study group included grafts with steatosis ≥ 30% (IQR: 30-80%). The study considered all first, adult, non-urgent, ABO-identical liver transplants. Among 709 recipients included, 113 (15.9%) received a steatosic graft and 596 a non-steatosic graft . All data related to the recipient (LT-year, age, gender, liver disease etiology, presence of HCC, lab-MELD) and to the donor (gender, cause of death, Na peak, BMI, anti-HBc positivity, cold ischemia time) were collected.
Results: After a median follow-up of 71.4 (IQR: 0.1-223.3) months, overall patient survival (OS) was 1- 3- and 5-year was 87.7%, 80.6% and 76.8%. The analysis in the two groups showed a OS in the steatosic group of 87.4%, 79.6% and 78.5% vs 87.7%, 80.8% and 76.5% in the non-steatosic group, respectively at 1-3 and 5 years (log-rank p-value:0.65). Early (within 30 days) re-LTx rate in the steatosic group was 0.7 % instead of 4.1% in the control group. Subgroup analysis revealed similar 5-year survival outcomes when steatosic grafts were allocated in higher (≥25) MELD recipients. Results were stratified on the gravity of steatosis (from 30% to 80%). After multivariate analysis, there was no independent prognostic factor for graft loss.
Conclusions: Use of steatosic grafts, even when the grade is very high (80%), is not associated with a worse outcome.



EP021 THE ROLE OF DONOR BRAIN DEATH GRAFT WEIGHT ON POST LIVER TRANSPLANTATION RECOVERY

M.T. Maria[1], L. Quirino[2], P. Marco[3], M. Fabio[4], T. Luca[3], L. L[2], M. Gianluca[2], R. Massimo[2], T. Giuseppe[5]
[1]University of Tor Vergata; [2]Sapienza University, Rome; [3]Tor Vergata University; [4]Sapienza University; [5]Tor Vergata University, Rome

Background: The most common used definition of Early Allograft Dysfunction (EAD) is based on the classification of Olthoff et al, in which a combination of trasaminases peaks and the last available values of total bilirubin and INR at 7thday are considered. However, EAD has shown an overall sub-optimal ability to predict the post-transplant 90-day patient death, with areas under the curve (AUC) typically < 0.7. Moreover, Olthoff criteria are based on too large parameters, typically including a great part of the investigated population. Starting from these assumption, we investigated the role of liver macrosteatosis and graft weight with the intent to "normalize" the transaminases peak, recalibrating the EAD definition in light of this normalization.
Methods: 193 adult (≥ 18 years) patients underwent a first transplant during the period September 2014-August 2018 in the two Roman University Centers. All donor liver underwent protocollary biopsies.
Results: One-hundred-twenty four(64.2%) patients exceeded the Olthoff-EAD criteria. We normalized the transaminases peak considering as referral point the median liver weight of our grafts, corresponding to 1.5 kg. After this, we created a scoring system based on the following criteria: normalized transaminases < 2,000 IU/L=0, 2,000-3,999=1, ≥4,000=2; total bilirubin < 10.0 mg/dL=0, 10.0-19.9=1, ≥20.0=2; INR < 1.60=0, 1.60-1.99=1, ≥2.00=2; macrosteatosis < 5%=0, 5-19=1, ≥20=2. Modified EAD (modEAD) had an AUC=0.71 (p< 0.001) for the risk of 90-day death after transplant, being superior to EAD (0.67, p=0.002). Stratifying the population according to the different modEAD classes, patients with a value ranging 0-3 (n=147; 76.2%) had a 90-day death rate of 11.6

EP022 COMPARISON OF PANCREAS PRESERVATION WITH IGL VERSUS UW IN A SINGLE CENTER COHORT

D. Thomas[1], F. Steffen[2], G. Pieter[1], N. Maarten[1], K. Dirk[1], S.B. Mauricio[1], J. Ina[1], M. Diethard[1], P. Jacques[1]
[1]UZ Leuven; [2]KULeuven

Background: Pancreas remains a difficult organ to transplant because of its susceptibility to preservation and ischemia-reperfusion injury (IRI), and the notorious high risk of graft complications. University of Wisconsin (UW) is the gold standard in pancreas preservation. Institut Georges Lopez (IGL) was introduced for multi-organ procurement at our center in 01/2015. This was based on potential benefits of IGL *vs* UW {low K+; polyethylene glycol (protector of endothelial glycocalix) instead of hydroxyethyl starch; lower viscosity; maintenance of cold temperature from production to use} and promising results in liver preservation.
Methods/Materials: Consecutive simultaneous pancreas-kidney transplantations (SPK) from brain-dead donors performed from 02/2008 to 12/2018 at a single center were analyzed. Within day 1 to 2 peak lipase/amylase (surrogates of pancreatic IRI), 3-month graft complications and 3-month survival were compared between IGL and UW. For peak lipase/amylase values, a linear regression model on log-transformed values was used correcting for differences in pancreas cold ischemia time (CIT).
Results: We included 37 SPK, 18 preserved with UW and 19 with IGL. All had porto-iliacal anastomosis and were enterically-drained. Relevant donor and recipient characteristics were similar except for CIT, shorter in the IGL group. Peak serum lipase/amylase were lower in IGL preserved pancreata (after correction for CIT). No difference was seen in graft complications and patient survival. Kidney graft outcomes were similar in both groups
Conclusion: IGL can be safely used for pancreas preservation with excellent early post-transplant outcome similar to UW, and possibly reduces IRI compared.

	UW	IGL	P-value
Patient survival (%)	100	100	
CIT (h)	9,9 (4.88; 15.05)	6,36 (3.95; 10.15)	0.0003
sLipase (U/l)	77.0 (14.4;412.6)	30.8 (9.7;97.1)	0.0413
sAmylase (U/l)	160.1 (49.7;516.1)	70.2 (31.7;155.2)	0.0108
Intestinal leak (%)	11,1	5,5	
Graft loss to thrombosis (%)	0	0	
Insulin freedom (%)	94.5	95	
Kidney			
DGF (%)	11.1	10.5	
Graft survival (%)	100	100	
Acute rejection (%)	11.1	5.2	

EP023 DOES HYPOTHERMIC RENAL MACHINE PERFUSION HAVE ANY IMPACT IN THE RENAL EVOLUTION OF EXPANDED CRITERIA DONORS AFTER BRAIN DEATH, WITH A PROLONGED COLD ISCHEMIC TIME?

P.-Z. David[1], G. Rosana[2], R.-V. Camino[1], R. Rebeca[1], R. Angel[1], D. Fritz[2], A. Ramon[3]

[1]Donation and Transplant Coordination Section, Hospital Clinic, Barcelona; [2]Kidney Transplant Unit, Hospital Clinic, Barcelona; [3]Donation and Transplant Coordination Section, Hospital Clinic, Barcelona, Spain

Background: A prolonged Cold Ischemic Time (CIT) has a deleterious effect in kidney graft function, in particular in Expanded Criteria Donors (ECD) after Brain Death. Sometimes, logistic problems in the operating room (OR)or recipient preparation increase the CIT, particularly with organs retrieved at night. The Hypothermic Renal Machine Perfusion (HRMP) has been described as a tool to increase kidney acceptance, reduce Delayed Graft Function (DGF) and improve 1 year graft survival in ECD. Study to analyze functionality of ECD kidneys preserved with HRMP with prolonged CIT in comparison with the contra lateral kidney grafted before and preserved in Static Cold Storage (SCS).
Methods & Materials: Descriptive kidney paired study of renal functionality in ECD performed from 2004 to 2017. Inclusion Criteria: Donor age >60 years old, Donor <60 years old with cardiovascular risk factors. Kidney suitability criteria: Renal Biopsy Ramuzzi Score <4 and HRMP with final Renal Resistance (RR) ≤0,4ml/mmHg/mL/min and Renal Flow (RF) >70mL/min. Kidneys preserved in SCS were grafted before the one preserved with HRMP. End-Points: number of transplants, CIT (hours), DGF, hospital length, number of post-transplantat dyalisis sessions, Serum Creatinine (mg/dL) at hospital discharge and after 1 year follow-up.
Results: 119 donors accomplish inclusion criteria (238 kidneys, 50% preserved in HRMP). No statistical differences between groups were found in the number of kidney graft performed, DGF, hospital length, number of dialysis and SC at hospital discharge or 1 year after follow-up. The CIT (h) for kidneys preserved with HRMP (17,54 ± 4,68 hours, range 7 to 40 hours) was significantly longer that those preserved with SCS (14,05 ± 4,13 hours, range 8 to 26 hours (p=0,000).
Conclusion: Preservation with HRMP allow to perform kidney transplant with prolonged CIT without compromising graft evolution. HRMPcan be a valid tool to ameliorate pressure in OR allowing to delay surgery after daily work.

EP024 GRAFT-DERIVED CHARACTERISTICS AND BIOMARKERS CAN DESCRIBE POST-LIVER TRANSPLANT COMPLICATIONS

D. Daniele[1], L. Caterina[1], K. Alessia[1], A. Barbara[1], Z. Alberto[2], G. Rossi[2]

[1]Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico; [2]Università degli Studi di Milano

Background: Acute-kidney-injury (AKI) and early-allograft-dysfunction (EAD) are two of the most frequent and life-frightening post-liver transplant (LT) complications. Many donor derived variables are related to these complications (e.g steatosis), however the biomolecular mechanisms are still unknown. The aim of our study is to identify graft derived variables and biomarkers involved in AKI ad EAD development.
Methods: A prospective observational study was designed. At the end of back-table, preservation fluids (PFs) were collected. Recipients were divided in groups according to the development of post-LT AKI or EAD. Results are expressed as median±standard deviation.
Results: 30 recipients were included in the study: 10 transplanted with graft from standard donors, 16 extened-criteria (ECD) and 4 cardiac-death.

Fourteen (47%) patients suffered AKI. The incidence of donor cardiocirculatory arrests and the level of donor GGT were increased in AKI patients. Conversely, in PFs the levels of TNF-alfa, IL-6, hemoglobin, glucose and the total number of cells (Tab.1) were increased in patients that didn't suffered post-LT AKI. EAD was found in 9 (30%) patients. Graft weight was increased in EAD patients, as well as the length of intensive-care-unit stay. PFs concentration (Tab.2) of GOT, GPT, bilirubin, GGT, LDH, and hemoglobin were increased. No differences in AKI and EAD development were found according to the type of donors. Only recipient transplanted with ECD-graft demonstrated a trend towards significance in the incidence of AKI.
Conclusions: PFs analyses enabled the identification of graft-derived biomarkers that can explain the etiopathogenesis of AKI and EAD. These variables could predict post-LT complications and allow the adoption of strategies to minimize their effect on the recipient.

	EAD	n-EAD	p
GOT U/L	3446 (484-8245)	1603 (61-4404)	0,048
GPT U/L	3143 (215-7371)	1292 (46-2598)	0,024
Bil mg/dL	0,4 (0,02-0,63)	0,2 (<0,03-0,32)	0,014
GGT U/L	6,11 (2-22)	2,85 (<1,5-4)	0,078
LDH U/L	6921 (784-18030)	2931 (125-6846)	0,056
Hb pre-lisi mg/dL	123,27 (16,44-217,13)	72,7 (19,2-132,4)	0,056

	AKI	n-AKI	p
TNFα	4,55 (1,1-18,93)	10,62 (1,8-16,2)	0,008
IL-6	66 (25,1-237,9)	2205 (13-12443,86)	0,066
Hb post-lisi mg/dl	590,97 (219,8-2478,66)	1349,07 (301,56-2296,8)	0,001
Cell tot/ml *10^6	102,7 (57-290)	272,6 (61-1530)	0,029
Glu mg/dl	225 (68-428)	287 (98-458)	0,053
GR/mmq	16200 (10000-20000)	236000 (100000-300000)	0,058

EP025 SIMVASTATIN DONOR THERAPY JEOPARDIZES CELL VIABILTY IN A MURINE HEART TRANSPLANTATION MODEL

T. Maria[1], N. Florian[1], O. Rupert[2], H. Martin[3], W. Katrin[4], R. Thomas[2], S. Georg[5], K. Markus[6], T. Jakob[1], Ö.-V. Dietmar[2], W.E. R[4], M. Manuel[2], C. Benno[2]

[1]Daniel Swarovski Research Laboratory, Medical University of Innsbruck; [2]Department of Visceral, Transplant and Thoracic Surgery, Medical University of Innsbruck; [3]Department of Anaesthesiology and Critical Care Medicine, Medical University of Innsbruck; [4]Division of Biological Chemistry, Biocenter, Medical University of Innsbruck; [5]Department of Pathology, Medical University of Innsbruck; [6]Division of Human Genetics, Medical University of Innsbruck

Introduction: Simvastatin (SV) is widely applied in primary and secondary prevention of cardiovascular disesases. Beisde its well-known lipid lowering effect, several „pleiotropic" effects including antioxidant effects are still under investigation. The aim of this study was to investigate if a single donor SV treatment prevents from ischemia reperfusion injury (IRI) associated graft damage in a murine heart transplantation model.
Methods: Using a syngeneic murine heart transplantation model, male C57Bl6 wild type mice were used as size-matched donor recipient pairs. Donors were either pretreated with a single oral gavage of 20mg/kg b.w. Simvastatin or vector-treated. All grafts were exposed to 9h cold ischemia time (CIT). Following 2h, 12h or 24h reperfusion, graft heart beating score was monitored and cell viability was assessed by confocal microscopy. Mitochondrial stress was assessed by cardiolipin HPLC-MS.
Results: Compared to untreated grafts, 2h reperfusion resulted in a markedly reduced heartbeating score in SV-treated grafts (p=ns). While this difference vanished following 24h reperfusion, confocal microscopy revealed a significantly reduced cell viability following 2h as well as 24 h reperfusion in SV-treated grafts, when compared to respective controls (p=0.024, p=0.03, respectively). Furthermore, mitochondrial stress was present in all transplanted grafts without significant differences between treated and untreated groups.
Conclusion: Simvastatin donor treatment did not protect from IRI-associated graft damage leading eventually to a significant reduction in cell viability in the applied murine heart transplantation model.

EP027 HYDROGEN SULPHIDE INDUCED HYPOMETABOLISM IN PORCINE KIDNEYS: NOVEL PATHWAY IN RENAL PROTECTION

H. Maassen, K. Hendriks, H. Henning Rob, H. Hofker Sijbrand, H. van Goor, G.D. Leuvenink Henri, M. Coester Annemieke

University Medical Center Groningen

Background: Novel therapies to protect against ischemic injury during extraction and cooling/rewarming in deceased donors are necessary. Hydrogen sulphide (H2S) was shown to protect against ischemia/reperfusion in mice through the induction of a systemic hypometabolic state. We tested if H2S induces a reversible hypometabolic state in porcine kidneys during normothermic machine perfusion (NMP).
Methods: Porcine kidneys were subjected to 30 minutes of warm-ischemia, four hours of oxygenated hypothermic machine perfusion (HMP) followed by three hours of NMP. Experimental kidneys (n=5) received a 5-minute infusion of 100 ppm NaHS as H2S donor in the perfusate after 90 minutes of NMP and were compared with control kidneys (n=5). As measurement of metabolic rate, oxygen consumption, mitochondrial activity and tissue ATP levels were determined. To examine renal functional and the protective effect of H2S, kidneys were studied for creatinine clearance (CrCl), fractional secretion of sodium (FEna), damage markers (ASAT, LDH) and histology.
Results: A transient decrease of 61% in oxygen consumption from 409 DhPa×ml/min/gr to 160 DhPa×ml/min/gr was observed during the administration of NaHS (p<0.001) (figure A). This was associated with a marked

decrease of 39% in mitochondrial function while ATP levels were unaffected (p=0.053). Renal function, measured by CrCl (p=0.663) and FEna (p=0.197) were not changed by infusion of NaHS. ASAT and LDH were comparable between control group and the H2S group (p=0.612 and p=0.754). PAS stained tissue showed no histological difference.
Conclusion: H2S can induce a controllable hypometabolic state, most likely by decreasing mitochondrial activity. This makes this treatment regimen a promising possible therapeutic intervention in renal transplant procedures. The rapid decline in metabolic rate following H2S injection is especially relevant during the extraction of the organ to ensure a rapid reduction in metabolism.

EP028 PROLONGED COLD PRESERVATION EXPOSES UTERUS GRAFTS TO MAJOR ISCHEMIA-REPERFUSION INJURY

L. Roth, X. Muller, B. Imthurn, P. Imesch, N. Ochsenbein, P.-A. Clavien, P. Dutkowski, O. De Rougemont
University Hospital Zurich

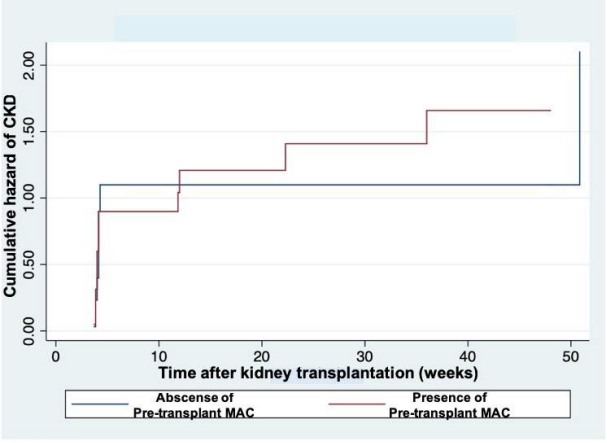
Background and Aim: Since the first successful live birth in 2015, uterus transplantation offers a valid treatment option for patients with absolute uterine factor infertility. To improve outcomes after uterus transplantation from deceased donors, data on ischemia-reperfusion injury (IRI) of uterus grafts is urgently needed. This study aims thus to investigate IRI in uterus transplantation and its impact on short-term viability of the graft.
Method: Uterus grafts were harvested from brain dead donor pigs and cold stored on ice for either 2h (healthy control) or 24h (cold storage). The grafts were then reperfused for 3 hours with autologous blood in an isolated ex-vivo perfusion system to simulate the early phase of transplantation. Perfusion was flow and pressure controlled. IRI was quantified by macroscopic changes of the organ during reperfusion and by analyzing tissue and perfusate samples at different time points before, during and after perfusion. Tissue samples were stained with H&E, while perfusate samples were analyzed for CK and LDH.
Results: The experimental groups included four uteri in the healthy control group and four grafts in the cold storage group. In the control group, tissue reperfusion was homogenous resulting in rhythmic muscle contractions and preserved endometric columnar epithelium and glandular structures at the end of perfusion. In contrast, after 24 hours of cold storage, reperfusion was inhomogenous leading to rapid tissue swelling and necrotic areas with disrupted endometrium and blood stasis. No muscle contractions were observed. LDH and CK did not differ between the groups at any time points.
Conclusion: IRI in uterus grafts from cadaveric donors increases with prolonged static cold storage, potentially jeopardizing graft viability. Specific biomarkers need to be found in this novel field of transplantation. As shown in this preliminary study, an isolated ex-vivo perfusion system seems to be an excellent tool for this.

EP03 - POST-TRANPLANT CHALLENGES

EP030 PROGRESSION OF RENAL ALLOGRAFT FUNCTION AND PRE-TRANSPLANT MEDIAL ARTERIAL CALCIFICATION

T. Ekamol[1], L. Natnicha[2], V. Possawat[3], D. Siroj[3]
[1]University of California Irvine School of Medicine; [2]Faculty of Medicine Ramathibodi Hospital, Mahidol University; [3]Phramongkutklao College of Medicine, Mahidol University

Background: Medial arterial calcification (MAC) detected by mammogram (MMG) is associated with chronic kidney disease (CKD). The association between pre-transplant MAC and renal allograft function is unknown.
Method: MMG performed closest to the date of kidney transplantation (KTx) were examined for presence or absence of MAC. The association between MAC and worsening of renal allograft function to stage 3 CKD (CKD3) defined by an estimated glomerular filtration rate (eGFR) of $\leq$ 60 ml/min/1.73 m2within the first 48 weeks after KTx is examined as time-to-event by Cox proportional hazard analysis.
Results: Of all 51 kidney transplant recipients from a single kidney transplant center followed up 48 weeks after KTx, mean$\pm$SD age was 57.08 $\pm$ 10.47 years. Twenty patients (40%) had pre-transplant MAC and 41% had diabetes. Incidence rate of CKD3 was 0.6 and 0.5 person-weeks in patients with and without MAC, respectively. Median time to developing CKD3 was 4.14 weeks post-KTx (interquartile range 18.4 weeks). Compared to the patients without MAC, MAC patients had 26% greater risk of CKD3 within 48 weeks post-KTx (HR 1.26, 95%CI 0.67, 2.3, p 0.464; Figure 1). After adjusted for age, type of KTx, pre-KTx dialysis modality, presence or absence of pre-KTx diabetes, body mass index, pre-KTx phosphorus, and pre-KTx systolic blood pressure, the association became reversed but remained not statistically significant (HR 0.93, 95%CI 0.45, 1.94, p 0.849).
Conclusion: Unlike non-transplant patients, MAC is not associated with progression of renal allograft function. Successful KTx may modify factors effecting MAC and potentially leads to reversible MAC after KTx or de novo post-KTx MAC.



EP031 ARTERIAL STIFFNESS ASSESSMENT IN RENAL TRANSPLANT RECIPIENTS

H. Zbigniew[1], I. Sarah[2], B. Susanne[2], D.-Ś. Alicja[1], B. Klemens[2], H. Fabian[2]
[1]Department of Nephrology, Transplantology and Internal Medicine Medical University of Gdańsk; [2]Medizinische Klinik mit Schwerpunkt Nephrologie und Internistische Intensivmedizin Charité Universitätsmedizin Berlin

Introduction: Diseases of the cardiovascular system are the most common cause of death renal transplant recipients (RTRs). Pulse wave velocity (PWV), pulse pressure (PP) and pulsatile stress (PS) measurements are noninvasive methods to assess arterial stiffness. The aim of the study was the assessment of arterial stiffness in RTRs.
Material and methods: 344 stable RTRs (62,5% M) transplanted between 1994 and 2018 were randomly enrolled to the study. Following parameters of arterial stiffness as brachial ankle, carotid femoral pulse wave velocity (baPWV left and right, cfPWV), pulse pressure (PP right and left) and pulsatile stress (PS right and left) were measured in each patient. Both PWV and PP were assessed by ABI system 100. PS was calculated according the equation PS=PPxHR (heart rate). Statistical analyses were performed using the STATSTICA 13.3 PL for Windows software package.
Results: The mean age was 52.7 years. The median time of dialysis and after kidney transplantation was 58.5 and 73 months, respectively. Serum creatinine level and eGFR value were 1.47 mg/dl, 50.4 ml/min/1.72 m^2.

Hypertension, cardiovascular disease (CVD - coronary artery disease and/or peripheral obliterans artery disease), any DM (diabetes mellitus) were diagnosed in 86.6%, 26.2% and 18.4% of patients respectively. Immunosuppressive regimen was based on calcineurin inhibitors 83.1% (tacrolimus or cyclosporin), antiproliferative drugs 93.6% (MMF or MPS) and steroids 51.2%.

The values of baPWV, cfPWV, PP and PS showed table 1 in all RTRs and in DM and CVD group separately.

There were observed significant correlation (r) between PP, PS and PWV (table 2).
Conclusion:

1. PWV, PP and PS are simple, non-invasive markers of arterial stiffness in RTRs.
2. CVD and DM deteriorate arterial stiffness parameters.
3. PP and PS can be used as a surrogate of PWV in outpatients clinic, especially in DM RTRs

	All RTRs	CVD	DM
PP right arm (mmHg) Mean value+SD	54.6 + 14.7	63.2 +17.5	59.4 + 16.9
PP left arm (mmHg) Mean value+SD	54.0 + 15.9	65.3 + 21.4	60.3 + 19.5
PS right Mean value+SD	3521 + 1012	4029 + 1055	3792 + 1107
PS left Mean value+SD	3520 + 1225	4223 + 1694	3907 + 1496
ba PWV right (m/s) Median (IQR)	11.8 (10.7-13.3)	14.7 (12.7-15.9)	12.9 (11.6-14.8)
ba PWV left (m/s) Median (IQR)	12.0 (10.9-13.5)	14.1 (12.6-16.0)	13.8 (12.1-16.3)
cf PWV (m/s) Median (IQR)	7,9 (6.9-9.5)	10.5 (8.45-11.9)	8.7 (7.4-11.2)

	RTRs			CVD			DM		
	baPWV right	baPWV left	cfPWV	baPWV right	baPWV left	cfPWV	baPWV right	baPWV left	cfPWV
PP right arm	0.35	0.35	0.36	0.36	ns	0.39	0.44	0.67	0.49
PP left arm	0.39	0.42	0.40	ns	0.43	0.40	0.60	0.68	0.66
PS right	0.46	0.39	0.45	0.41	ns	0.48	0.53	0.68	0.60
PS left	0.42	0.42	0.44	ns	0.47	0.46	0.62	0.71	0.71

EP032 EPIDEMIOLOGY, RISK FACTORS AND OUTCOMES OF OPPORTUNISTIC INFECTIONS AFTER KIDNEY ALLOGRAFT TRANSPLANTATION IN THE ERA OF MODERN IMMUNOSUPPRESSION: A MONOCENTRIC COHORT STUDY

A. Philippe[1], M. Giovanna[2], B. David[3], D.C. Nathalie[4], A. Etienne[5], G. Philippe[1], M. Marie[1]
[1]APHP Hôpital Henri Mondor; [2]APHP Hôpital Henri Mondor - infectious disease Unit; [3]APHP Hôpital Saint Louis - Clinical immunology Department; [4]APHP Hôpital Saint Louis - Infectious disease Department; [5]APHP Hôpital Henri Mondor - Public Health department

Background: Epidemiology of opportunistic infections (OI) after kidney allograft transplantation in the modern era of immunosuppression and the use of preventive infectious strategies is poorly described. We performed a large monocentric cohort study to describe OI epidemiology and impact on patient and allograft survival.
Methods: We retrospectively analyzed a single center cohort of kidney allograft adult recipients engrafted from January 2008 to December 2013. Clinical endpoints were OI episode, death and allograft loss. Control group included all kidney recipients engrafted at the same period without OI.
Results: N = 538 kidney transplantations in 538 patients were analyzed. Proportion of OI was 15% (N = 80 in N = 72 patients). OI delay was 12.8 (6.0-31.2) months after transplantation. Viruses were the leading cause (N = 54, (10%)), including N = 18 (3%) BK virus nephropathy, and were followed by fungal (N = 15 (3%)), parasitic (N = 6 (1%)) and bacterial (N = 5 (0.9%)) infections. Independent risk factors for OI were extended criteria donor (2.53 [1.48-4.31], P = 0.0007) and BK viremia (6.38 [3.62-11.23], P < 0.0001) while higher blood lymphocyte count at the time of transplant was an independent protective risk factor (0.60 [0.38-0.94], P = 0.026). OI was an independent risk factor for allograft loss (2.53 [1.29-4.95], P = 0.007) but not for patient survival.
Conclusions: Currently, OI, after kidney transplantation, were mostly viral and occurred beyond one year after transplantation. Lymphopenia before transplantation but not induction therapy and extended criteria donor are independent risk factors for OI suggesting to define with caution immunosuppressive regiment in such transplant candidates.

EP033 DYNAMICS OF GLUCOSE METABOLISM AFTER LIVER TRANSPLANTATION

G. Julia, F. Judith, M. Nisar, K. Alfred, N. Silvio, H. Nils, B. Christoph, G. Martina

University Hospital Tuebingen

Background: Post transplant diabetes mellitus (PTDM) is a common complication after liver transplantation with serious impact on patient and graft survival. Analyzing the processes and dynamics underlying post transplant glucose metabolism is crucial for targeted intervention.
Methods: In this retrospective study, data of all consecutive adult patients (n = 429) who underwent liver transplantation at the University Hospital of Tuebingen between 2007 – 2017 were collected. Patients with pre-existing diabetes prior to transplantation (n = 102) were excluded from further analysis. Parameters for longitudinal follow-up included fasting plasma glucose and glycated hemoglobin (HbA1c) as well as data on allograft function and immunosuppression.
Results: Median follow-up time was 37 months (IQR 9-64). Immunosuppression consisted mainly of tacrolimus, mycophenolate and corticosteroids with a small number of patients on cyclosporine A or mTOR inhibitors. Median prevalence of PTDM was 9% (IQR 8-12%) and of prediabetes 43% (IQR 40-44%). During follow-up, patients repeatedly shifted between the different states of glucose metabolism (normal glucose tolerance, prediabetes and PTDM). These fluxes into and out of PTDM and prediabetes resulted in persistently high incidence rates throughout follow-up with median incidences of PTDM and prediabetes of 7% (IQR 6-8%) and 19% (IQR 16-20%), respectively.
Conclusion: Glucose metabolism after liver transplantation is subject to considerable fluctuations. Incidences of PTDM and prediabetes remain relevant throughout follow-up with a remarkably high prevalence of prediabetes. Screening as well as intervention are necessary at any time point after liver transplantation and should be part of post-transplant patient care.

EP034 ANTI-POLYOMAVIRUS NEUTRALIZING ANTIBODY TITERS IN COMMERCIAL IMMUNOGLOBULIN PREPARATIONS

S. Morgane[1,2], V. Aurélie[1,2], G. Floriane[1,2], B. Llies[1,2,3], D. Nicole[4], H. Christian[4], K. Martin[4], F.-K. Samira[1,2]

[1]Virology Laboratory, Strasbourg University Hospitals; [2]Inserm UMR S1109, Strasbourg University; [3]Nephrology Department, Strasbourg University, Strasbourg, France; [4]Biotest AG, Dreieich, Germany

Background: The polyomaviruses BK virus (BKV) and JC virus (JCV) cause opportunistic diseases in immunocompromised patients. No polyomavirus-specific antiviral therapies are available. Recent data provided strong evidence that strengthening the polyomavirus-specific humoral response by passive immunization would be an effective antiviral preventive and/or therapeutic strategy. In this study, we evaluated anti-BKV and anti-JCV neutralizing antibody (NAb) titers in samples of 6 commercial Immunoglobulin (Ig) preparations.
Methods: NAb titers directed against major BKV genotypes (I, II and IV) and JCV were measured using a BKV pseudovirion system in three batches of the following Ig preparations (Biotest): Pentaglobin®, Cytotect®, Intratect®, Hepatect®, Zutectra® and Varitect® (concentration 50 mg/ml for all excepted Zutectra® 150 mg/ml).

Results: Median NAb titers in Ig preparations ranged from 5.04 to 5.69 log10 IC50 for BKV genotype I, from 3.65 to 5.09 log10 IC50 for BKV genotype II, from 3.49 to 4.97 log10 IC50 for BKV genotype IV and from 4.10 to 4.91 log10 IC50 for JCV. Intra-batch variation was minimal, with a mean standard deviation ranging from 0.22 to 0.31 log10 IC50 depending on the virus and genotype. Variation between batches was not significantly different for BKV genotype II, IV and JCV, but was observed for genotype I in Ig preparations Pentaglobin®, Cytotect® and Zutectra® ($p = 0.002$, $p = 0.005$ and $p = 0.011$, respectively). Variation between Ig preparations was not significantly different for BKV genotype I and JCV, but was observed for BKV genotype II and IV ($p = 0.015$ and $p = 0.016$, respectively).

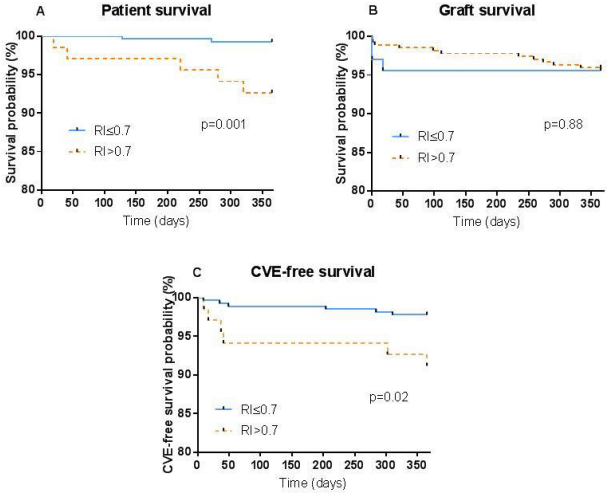
Conclusion: All Ig preparations contained anti-BKV genotype I NAb titers far above the threshold needed for protection against BKV replication (4 log10 IC50). On the contrary, NAb titers against other BKV genotypes varied between Ig preparations, with the Cytotect®, Intratect®, Hepatect®, and Zutectra® samples containing NAb titers above the protective threshold.
Results: Median NAb titers in Ig preparations ranged from 5.04 to 5.69 log10 IC50 for BKV genotype I, from 3.65 to 5.09 log10 IC50 for BKV genotype II, from 3.49 to 4.97 log10 IC50 for BKV genotype IV and from 4.10 to 4.91 log10 IC50 for JCV. Intra-batch variation was minimal, with a mean standard deviation ranging from 0.22 to 0.31 log10 IC50 depending on the virus and genotype. Variation between batches was not significantly different for BKV genotype II, IV and JCV, but was observed for genotype I in Ig preparations Pentaglobin®, Cytotect® and Zutectra® ($p = 0.002$, $p = 0.005$ and $p = 0.011$, respectively). Variation between Ig preparations was not significantly different for BKV genotype I and JCV, but was observed for BKV genotype II and IV ($p = 0.015$ and $p = 0.016$, respectively).
Conclusion: All Ig preparations contained anti-BKV genotype I NAb titers far above the threshold needed for protection against BKV replication (4 log10 IC50). On the contrary, NAb titers against other BKV genotypes varied between Ig preparations, with the Cytotect®, Intratect®, Hepatect®, and Zutectra® samples containing NAb titers above the protective threshold.

EP036 THE RENAL RESISTANCE INDEX IN KIDNEY TRANSPLANT RECIPIENTS IS ASSOCIATED WITH POSTOPERATIVE OUTCOMES AND RECIPIENT CHARACTERISTICS

A. van de Kuit, S. Benjamens, S. Berger, J.-S. Sanders, C. Moers, S. Bakker, D. Yakar, R. Pol

University Medical Center Groningen

Background: The renal resistance index (RI) is routinely assessed after kidney transplantation (KTx) with Doppler ultrasound. To determine the clinical value of the RI, we assessed the association between the RI and patient- and graft outcomes.
Methods/Materials: From November 2015 to September 2017, KTx recipients undergoing Doppler ultrasound within 24 hours after KTx were included in a single-center, retrospective case-control study. The RI was calculated as (peak systolic velocity-end diastolic velocity)/peak systolic velocity. The primary outcome was one-year patient survival. Secondary outcomes were graft failure and cardiovascular events (CVE's) in the first postoperative year and the postoperative morbidity, measured with the comprehensive complication index (CCI) and hospital stay.
Results: We included 339 KTx recipients, 7 (2%) patients died, 14 (4%) developed graft failure and 13 (4%) had a CVE within one-year after KTx. Optimal RI cut-off in predicting patient survival, assessed by ROC analysis, was 0.70. Patient survival and CVE-free survival were significantly lower in patients with a RI>0.70 compared to patients with a RI?0.70 (93% vs 99%, p=0.001 and 91% vs 97%, p=0.02, respectively) (Fig. 1). No association between the RI and graft survival was found. Patients with a RI >0.70 were significantly older, were more often dialysis-dependent before transplantation, had lower diastolic blood pressure and had more often diabetes in their history. Finally, patients with a RI>0.70 had a significantly higher CCI (12 vs. 9, p=0.004) and a longer hospital stay (10 vs. 8 days, p<0.001).
Conclusion: This study showed that a RI>0.70 is associated with worse one-year patient survival, a higher incidence of CVE's and a higher postoperative morbidity. These associations are most likely determined by effects of the cardiovascular status on the RI. We suggest taking recipient characteristics into consideration when interpreting the postoperative RI.



EP037 BLOOD STREAM INFECTIONS DUE TO EXTREMELY DRUG-RESISTANT GRAM NEGATIVE PATHOGENS IN SOLID ORGAN TRANSPLANT RECIPIENTS: EPIDEMIOLOGY, RISK FACTORS AND MORTALITY

C. Erol[1], H. Demirkaya Melike[1], E. Ayvazoglu Soy[2], H. Arslan[1], M. Haberal[2]
[1]Infectious Diseases, Baskent University; [2]Transplantation, Baskent University

Introduction: In recent years, multidrug resistance in gram negative infections is becoming an emergent threat for transplant recipients. In this study we aimed to determine the ratio and risk factors of XDR bacteremia in transplant recipients
Materials and Methods: The data was collected retrospectively from 164 renal transplant, 60 liver transplant and 19 heart transplant recipients performed between 1 January 2016 and 31 December 2018. BSI episodes due to the gram negative bacteria were recorded. Demographic data and risk factors for extremely drug resistant (XDR) bacteriemia were analyzed with chi-square test and logistic regression test.
Results: 39 gram negative BSI episodes were identified in 23 of 243 solid organ transplantation recipients. XDR gram negative bacteria were isolated from 8 of the gram negative BSI episodes. Six (75%) *Acinetobacter baumanii,* 1 (12.5%) *Klebsiella pneumonia*, and 1 (12.5%) *Pseudomonas aeruginosa* were identified.

In the XDR bacteriemia episodes, mean duration of hospitalization, mean age of patients, requirement of hemodialysis, the intensive care unit hospitalization in the previous week, the occurrence of invasive procedures in the last 15 days, and the intensive care requirement in the first week of episode ($p=0.044$) were statistically significant.

In all gram negative BSI, mortality rates in the first seven days was 10.3%. Mortality rates for XDR BSI were higher (12.5% and 37.5%) but the difference was not statistically significant.
Conclusion: The blood stream infections, particularly those caused by XDR gram pathogens, are challenging for SOT recipients because of the lack of antimicrobial drug choices. Our study shows that we can cope with the risk factors like duration of stay, hospitalization in ICU, invasive procedures only with infection control procedures.

EP039 CLEARANCE OF CIRCULATING TUMOR CELLS IN PATIENTS WITH HEPATOCELLULAR CARCINOMA UNDERGOING SURGICAL RESECTION OR LIVER TRANSPLANTATION

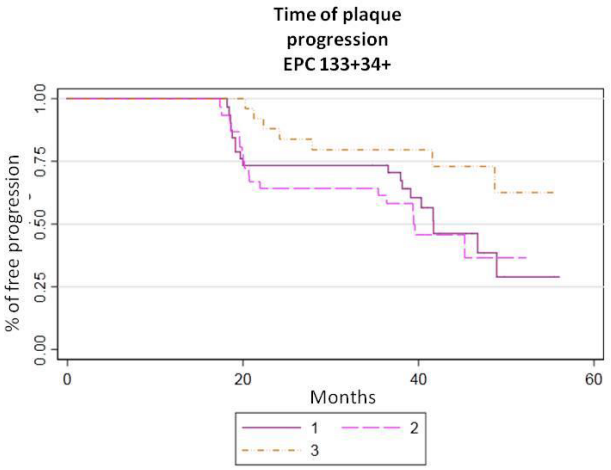
M. Rodríguez-Perálvarez[1], V. Amado[2], R. Fernández[2], G. Ferrín[2], R. González[2], I. Gómez[2], R. Alejandre[2], S. González-Rubio[2], D. Ayllón María[2], R. Ciria[2], P. Aguilar[2], C. Pozo Juan[2], M. Gahete[2], L. Montero Jose[2], M. De la Mata[2]
[1]Reina Sofía University Hospital; [2]Reina Sofía University Hospital, IMIBIC, CIBERehd

Background: In patients with hepatocellular carcinoma (HCC), a complete clearance of circulating tumor cells (CTC) early after liver transplantation (LT) may prevent tumor recurrence.
Methods: Prospective study including HCC patients who underwent surgical resection or LT from Sept-2017 to Dec-2018. Enumeration of CTC was performed in peripheral blood samples (7 ml) by using the Isoflux system (Fluxion biosciences) immediately before surgery, at post-operative day 7 and at post-operative day 30. A clinically relevant amount of CTC was considered if >30 CTC/sample.
Results: 29 patients with HCC were included (mean age 58.7±7.4; 82.8% men). Surgical resection was performed in 12 patients (41.4%) and 17 patients (58.6%) underwent LT. The main aetiology of liver disease was chronic hepatitis C (62.1%). In the pathological assessment, multinodular disease occurred in 31% of patients (largest nodule was 3.1±1.6 cm). Enumeration of CTC was: 91 CTC (IQR 27-186) before surgery, 30 CTC (IQR 16-151) at post-operative day 7, and 17 CTC (8-171) at post-operative day 30. The prevalence of clinically relevant CTC count was 69% before surgery, 37.9% at post-operative day 7, and 24.1% at post-operative day 30. No significant differences were found between patients undergoing surgical resection vs LT in terms of baseline CTC enumeration ($p=0.76$), absolute or relative delta change of CTC within the first post-operative month ($p=0.78$ and $p=0.98$ respectively). Those patients showing clusters of CTC before surgery ($n=6$) had increased CTC count at post-operative day 30 (183 [IQR 137-529] vs 13 [IQR 7-21]; $p=0.003$). A clinically relevant CTC count was more frequent among patients with baseline clusters of CTCs (71.4% vs 5.9%; $p=0.003$).
Conclusion: Although CTC are progressively reduced within the first month after LT, a significant proportion of patients show incomplete clearance of CTC after surgery particularly when clusters of CTC are present at baseline.

EP040 ENDOTHELIAL PROGENITOR CELLS AND CAROTID PLAQUE PROGRESSION IN KIDNEY TRANSPLANTS

M. Azancot, N. Ramos, A. Caraben, C. García-Carro, I. Torres, F. Moreso, E. Espinel, D. Serón
Hospital Universitari Vall d´Hebron

Background: Endothelial progenitor cells (EPCs) and circulating endothelial cells (CECs) are related with vascular repair and damage, respectively. The aim is to evaluate the relationship between EPCs, CECs and the prevalence and/or progression of the number of subclinical carotid plaques in stable kidney transplants.
Methods: Consecutive kidney transplants without cardiovascular events attending our outpatient clinic, with a glomerular filtration rate < 60 ml/min/1.73 m2 were included. Progenitor and circulating endothelial cells were determined at entry and presence and numbers of carotid plaques were recorded at entry, 18 and 36 months after inclusion.
Results: One hundred patients were included. Of those, 98 and 77 attended the 18 and 36 month visits. Prevalence of carotid plaque (yes/no) at first, second and third visit was 55.5%, 61.1% and 62.3%, respectively. Progression of the number of plaques between first and second visit was observed in 27.7 % and between the second and third visit in 23.4% of patients. In Cox regression analysis, age (HR: 1.06, 95%CI: 1.03-1.09, $p=0.0001$) and low number of early EPC (CD34+, VEGFR2+, CD133+) (HR:0.14, 95%CI: 0.07-0.28, $p=0.0001$) were associated with plaque progression.
Conclusion: Age and low number of early EPC is associated with progression of carotid plaques in kidney transplants, suggesting that this EPC population is related with vascular repair.



EP042 DIAGNOSTIC EFFICACY OF COLOR DOPPLER ULTRASOUND ON RECIPIENTS WITH TRANSPLANTED RENAL ARTERY STENOSIS: A SINGLE-CENTER EXPERIENCE

X. Ju, Z. Wang, S. Fei, H. Chen, Z. Han, J. Tao, R. Tan, M. Gu
The First Affiliated Hospital of Nanjing Medical University

Our study was to explore the diagnostic efficacy of Color Doppler ultrasound (CDUS) on the diagnosis of allogeneic transplanted renal artery stenosis (TRAS) during the follow-up period in allogeneic renal transplantation recipients. CDUS parameters and medical records of 287 patients who underwent an allogeneic renal transplantation surgery from January 2014 to December 2016 in our center were enrolled. 69 renal transplantation recipients were screened by using new CDUS thresholds from January 2017 to September 2017. At same time, following CDUS examination, all patients were scheduled for a magnetic resonance angiography (MRA) test of allogeneic transplanted renal. Diagnostic accuracy of the new criteria was calculated at this stage. Consistent with results of MRA, a renal artery peak systolic velocity (PSV) of >250 cm/s, which was used as CDUS threshold to diagnose TRAS, showed a sensitivity of 83.3% and a specificity of 96.8%. Moreover, ratio of renal artery PSV / interlobar artery PSV (RA-to-IA) of >10 and interlobar artery resistance index (RI) presented sensitivities of 83.3% and 33.3% and specificities of 98.4% and 98.4% to diagnose TRAS, respectively. According to our findings, we suggested regular CDUS monitor aided as an early diagnosed method of TRAS in the postoperative follow-up of renal transplantation recipients. And we also proposed the diagnostic criteria of TRAS as one of the following: i) Recipients with symptoms include elevated serum creatinine or refractory hypertension; With at least one of CDUS factors: CDUS thresholds were transplant renal artery PSV >250 cm/s, PSV ratio of the RA-to-IA >10. ii) Asymptomatic recipients, existence with two CDUS factors.

EP04 - ETHICS/LAW/PSYCHOSOCIAL/PUBLIC POLICY

EP044 PROCUREMENT OF 5000 ORGANS WITH DECEASED DONATION PROGRAM IN A SINGLE CENTER

F. Sadegh Beigee, M. Mojtabaee, M. Mazaheri
Lung transplantation research center

Introduction: In this abstract we have looked back to 14 years of organ donation practice as one of the most active organ procurement unit in the region. (2005 to September 2018). Different progress strategies will be discussed chronologically in order to introduce a suggestive pattern for young founded center in the region.
Materials and Methods: All donors as well as organs and tissues statistics were collected and donors' characteristics were studied. In addition chronological sequence of performed strategies in different aspects of organ donation enhancement was achieved.
Results: Our analyses included 1850 deceased donors from 2005 to September 2018 resulting in procurement of 5000 organs; of these, 649 were female donors (35.11%), and mean age was 37.11 years old. During the 14 years, 2955 kidneys, 1498 livers, 397 hearts, 93 lungs (single or double) and 57 Pancreases along with 748 sets of tissue donation including bones, skin and heart valves were procured. Social awareness enhancement, training and recruitment of new procurement professionals, new approaches regarding critical care of the donors, family consent rate increase and research projects were among numerous programs that have been unstoppably designed and performed.

During the study period, donor age significantly increased. Cause of death shifted to cerebral hemorrhage due to trauma. We observed a significant increase in donors with diabetes mellitus and hypertension as well as demographic changes during the period which are show in Figures 1 and 2.
Conclusion: After reaching a PMP of 32, no will to stop any activity and perform new programs regarding organ donation and procurement increase is neither expected nor accepted.

EP045 NETWORK-BASED KNOWLEDGE PLATFORM ON KIDNEY TRANSPLANTATION FOR NEFHROLOGICAL NURSES IN DENMARK

W. Madsen Gitte[1], P. Lauenborg[2], B. Pedersen Kirsten[1], G. Jørgensen[2], M. Jakobsen Signe[3], S. Linde[4], M. Engby Marith[5]
[1]Rigshospitalet; [2]Aarhus University Hospital Skejby; [3]Odense University Hospital; [4]University Hospital of Roskilde; [5]Regions hospital Horsens

Background: Patients today place greater demands on information about their own illness and treatment options. They often also have greater insight into their own illness when they meet the healthcare staff, as many have sought knowledge about their illness/disease on the Internet. This is a new situation for healthcare professionals. The nephrological nurses, in particular dialysis nurses, express a great need for the ability to acquire more knowledge about kidney transplantation and the kidney transplanted patients. This knowledge will help ensure that the patients receive the highest possible quality nursing care and thus a good transplant process.
Purpose: The purpose of a web-based knowledge platform on kidney transplantation is to support and promote the level of knowledge of its nephrological nurses, thereby helping to develop and ensure evidence-based nursing practice for the kidney transplanted patient.
Method: The Knowledge Platform's professional documents are all prepared by the members of the SIG group. The knowledge platform will contain both evidence based knowledge, eg immunology, non-adherence, cognitive changes in uremia, etc., but also experience-based knowledge such as investigation programs, pamphlets, patient stories, etc.
Results: The domain name is www.nynyre.dk/sig.
Conclusion and significance for trade/practice: The website went live in September 2017 and was presented at the annual meeting. In 2018, the website was promoted by providing specific website instruction in dialysis departments throughout the country. This work continues into 2019. Dialysis nurses have expressed great pleasure in having a common knowledge platform and searches on the website have tripled.

EP046 ABUSE OF BRAIN DEATH DEFINITION IN ORGAN PROCUREMENT IN CHINA

H. Li[1], N. Paul[1]
[1]Johannes Gutenberg University Medical Center, Mainz

China has no brain death legislation, and circulatory death is the legal standard. Despite these facts, organ donation after brain death has been practiced in China since 2003. Similar to international standards, China's brain death diagnostic criteria include coma, absence of brainstem reflexes, and the lack of spontaneous respiration. The Chinese criteria require that the lack of spontaneous respiration must be verified with an apnea test by disconnecting the ventilator for 8 min to provoke spontaneous respiration. However, we have found publications in Chinese medical journals, in which the donors were declared to be brain dead, yet without apnea test. The organ procurement procedures started with "intratracheal intubation for mechanical ventilation after brain death". Because an apnea test can only be done in intubated, mechanically ventilated patients, the description of organ procurement in these publications indicates that a brain death diagnosis was not performed. The purpose of the intubation was not to resuscitate the patient but rather directly related to facilitating the explantation of organs. Moreover, it was unmistakably stated in some of these publications that the cardiac arrest was induced in these after-brain-death-intubated patients by cold St. Thomas cardioplegic solution or other cold myocardial protection solutions. This means that the so-called "donors" were neither brain dead, nor did they meet cardiac death criteria. In other words, the donor organs were procured in these cases from living human beings, and the "donors" were killed by the medical professionals through organ explantation. Thus, a systematic investigation is needed to clarify the situation of organ donation after brain death in China.

EP047 INFLUENCE OF AFFECT IN LUNG TRANSPLANT CANDIDATES

K. Pennington[1], R. Benzo[1], T. Schneekloth[1], M. Budev[2], S. Chandrashekaran[3], D. Erasmus[4], E. Lease[5], D. Levine[6], E. Stevens[1], K. Thompson[1], C.C. Kennedy[1]
[1]Mayo Clinic; [2]Cleveland Clinic; [3]University of Florida; [4]Mayo Clinic Florida; [5]University of Washington; [6]University of Texas Health Sciences

Background: Individuals with high positive affect to negative affect (positivity ratio, PR), as determined by the Positive and Negative Affect Schedule (PANAS), have greater flexibility and resilience to adversity compared to those with a low PR. PR has been described as a mediator of self-management. Lung transplant candidates must self-manage for complex medical regimens while awaiting lung transplantation. We hypothesized that PR would be associated with waitlist death.
Methods: A questionnaire, including the PANAS, was mailed to all listed adult lung transplant candidates at 6 transplant centers. Non-responders were mailed a second questionnaire at 1-month, and continued non-responders were contacted by phone and mailed a third questionnaire. Clinical data including date of transplant, date of delisting, and date of death were recorded. Recruitment and follow-up occurred from 9/16/2015 to 12/21/2018. Mean positive affect, negative affect, and PR were compared between patients who died during the study period to those who survived.
Results: Questionnaires were completed by 161 lung transplant and 8 heart-lung transplant candidates. 97 patients received a transplant, 17 patients were de-listed, and 24 patients died (15 on the waitlist and 9 post-transplant). The mean positive and negative affect were 36.3 (SD 7.8) and 17.3 (6.3), respectively. The mean PR was 2.4 (1.1). Negative affect was higher (20.7 +

7.3 vs 16.9 + 5.9, p = 0.07) and positivity ratio was lower (1.82 + 0.92 vs 2.45 + 1.05, p = 0.02) in patients who died on the waitlist compared to those who survived (**Table 1**). Positive affect (35.9 + 10.3 vs 36.2 + 7.8, p = 0.94), negative affect (15.9 + 4.5 vs 16.8 + 6.3, p = 0.58), and PR (2.51 + 1.26 vs 2.49 + 1.11, p = 0.96) did not vary between those who died following lung transplantation compared to those who survived.
Conclusion: Positivity Ratio was associated with waitlist death in lung transplant candidates but not overall survival.

EP050 EDUCATION ON ORGAN DONATION AND TRANSPLANTATION IN PRIMARY SCHOOL; TEACHERS' SUPPORT AND THE FIRST RESULTS OF A TEACHING MODULE

M. Siebelink[1], A.A.E. Verhagen[1], P.F. Roodbol[1], M.J.I.j. Albers[2], H.B.M. van de Wiel[1]

[1]University Medical Center Groningen; [2]Elisabeth Hospital Tilburg

Background: Organ and tissue donation can also involve children. Because of its sensitivity, this topic requires careful decision making. Children have the ability to carefully reflect on this subject and enjoy participating in family discussions about it. Therefore, what children need is proper information.

When schools are used to educate children about this subject, information about teacher support for this type of lesson along with its effects on the depth of family discussions is important.
Methods: A questionnaire was sent to all 7,542 primary schools in the Netherlands. The goal was to gather information on teachers' perspectives about a neutral lesson devoted to organ and tissue donation, and also on the best age to start giving such a lesson. The second part of our study examined the effects of a newly developed lesson among 269 primary school pupils.

Results: The school response was 23%. Of these, 70% were positive towards a lesson; best age to start was 10-11 years. Pupils reported 20% more family discussions after school education and enjoyed learning more about this topic.
Conclusions: There is significant support in primary schools for a school lesson on organ and tissue donation. Educational programs in schools support family discussions. These family discussions are likely to increase parental insight into the child's reasoning and provide access to the child's views about organ and tissue donation. For the government educational programs can be seen as an important way to inform the general public.

EP051 GUARDIANS OF THE GIFT: AN ANTHROPOLOGICAL STUDY OF THE EMOTIONAL CHALLENGES OF HEART AND LUNG TRANSPLANT PROFESSIONALS IN DENMARK

A.M. Jensen

University of Copenhagen

Background: Organ transplantation enables body parts from the dead to become usable in patients with no other life-saving option. These exchanges are not possible without transplant professionals carefully selecting, guiding and interacting with organ recipients before, during and after the transplant. While much literature is devoted to patient outcomes and psychosocial well-being, the experiences, dillemmas and daily struggles of the transplant staffs has not received much attention. This paper deals with the emotional challenges encountered by doctors and nurses caring for heart and lung transplant patients.
Methods/Materials: Based on anthropological fieldwork at a Danish heart and lung transplant unit during a 6 month period and interviews with 20 doctors, nurses and organ recipients, the paper explores how doctors and nurses experience and handle the emotional challenges of their working life.
Results: By focusing on the everyday life of the transplant unit which, contrary to public understanding of transplant miracles, is sometimes characterised by sad cases and devastation, this paper argues that transplant professionals operate in the presence of death. Medically and emotionally they are at risk. They must take the difficult decisions of whether to admit critically ill patients onto the organ waiting list; face the distress of post-transplant sufferings and deaths; and deal with organ recipients who do not behave according to post-transplant recommendations.
Conclusion: Drawing on a familiar metaphor for donated organs, it is suggested that transplant doctors and nurses are 'guardians of the gift'. Attention to the emotional burdens and rewards of this particular position enables new understandings of the practices of transplant medicine, of gift exchange in organ transplantation, and of the role of emotion in medical practice.

EP052 ORGAN DONATION IN THE YUNNAN PROVINCE IN CHINA. SEUSA PROGRAM

A. Quiralte Baglietto[1], C. Ballester[1], E. Kondi[1], C. Li[2], R. Boni[3], M. Dominguez Jose[4]

[1]DTI Foundation; [2]KMOPO; [3]OPO Cardiology Institute Dante Pazzanes;

[4]Nuero Intensive Care, Virgen del Rocio Hospital

Introduction: The Third Global Consultation on Organ Donation and Transplantation organised by the World Health Organisation (WHO) held in Madrid in 2010 stated that every country is responsible for meeting their transplantation needs Self-sufficiency in organ donation is every nation's goal. The main barriers to be faced in the Yunnan province are unbalanced healthcare infrastructure and coverage, complex political policies, insufficient public awareness, low religious engagement & shortage of trained healthcare professionals. The Donation and Transplantation Institute (DTI) Foundation is been cooperating with the Organ Procurement Organisation of First People's Hospital of Kunming City (KMOPO) over the last four years for the establishment and consolidation of a deceased organ donation program. The SEUSA cooperation model has been the method followed when coordinating the project.
Methodology: SEUSA methodology is based on a comprehensive model combining the best practices of the Spanish, European and USA models. The implementation of specialised training program based on the Transplant Procurement Management (TPM) model also plays a fundaments role in the SEUSA methodology. Starting in 2014 yearly TPM courses have been organized targeting especially ICU physicians and nurses. To add a stronger layer of supports the SEUSA will introduce regular DTI experts visits to the

	n	PA		NA		PR	
Died on waitlist			0.17		0.07		0.02*
Yes	15	32.9 ± 8.8		20.7 ± 7.3		1.82 ± 0.92	
No	154	36.3 ± 6.3		16.9 ± 5.9		2.45 ± 1.05	
Died post-transplant			0.94		0.58		0.96
Yes	9	35.9 ± 10.3		15.9 ± 4.5		2.51 ± 1.26	
No	89	36.2 ± 7.8		16.8 ± 6.3		2.49 ± 1.11	
De-listed			0.29		0.77		0.86
Yes	17	38.1 ± 6.3		17.0 ± 3.7		2.36 ± 0.72	
No	152	35.8 ± 7.8		17.3 ± 6.3		2.39 ± 1.09	

Table 1. Comparison of the critical pathway for organ donation between 2017 and 2018.

	Hospital 1 - 2017	Hospital 1 - 2018	Hospital 2 - 2018	Hospital 2 - 2018	Hospital 3 - 2017	Hospital 3 - 2018	Hospital 4 - 2017	Hospital 4 - 2018	Total - 2017	TOTAL - 2018	% increase 2017 Vs. 2018
Possible	51	94	37	140	9	32	3	32	100	298	66
Potential	48	75	27	130	6	24	2	21	83	250	67
Eligible	41	35	22	45	5	10	1	11	69	101	32
Consented	8	7	10	14	2	1	0	4	20	26	23
Actual	7	7	9	14	2	1	0	4	18	26	31

hospitals. During the hospital visits, interviews with healthcare professionals were also conducted and an alert system for donor identification was outlined.
Result: A total of 193 healthcare professionals, mainly from the high potential hospitals, have been trained asTPMs. The donation rate in 2018 in the Yunnan province was 1.3 donors pmp.
Conclusion: Establishing a self-sufficient & sustainable organ donation program is a multifaceted process. The main elements to be considered are supportive hospitals' governance, governmental endorsement, a robust educational program to expand the proficient professionals' pool & international collaboration.

EP053 ORGAN TRANSPLANT ABUSE IN CHINA (2): UNETHICAL PROCUREMENT CONTINUES DESPITE CLAIMS OF REFORM

G. Yin[1], D. Li[1], H. Li[2]
[1]China Organ Harvest Research Center; [2]Johannes Gutenberg University Medical Center

Background: In response to international condemnation of its procurement of organs from prisoners of conscience, the People's Republic of China announced that it transitioned organ sourcing entirely from death-row prisoners to voluntary donations in 2015. The claimed reform has gained the endorsement of some Western transplant experts through the presentation of falsified data and unimplemented plans. China is also extending the influence of its "Chinese mode of donation and transplantation" and organ sharing agreements beyond its borders. This study evaluates the organ sources used in China, extent of China's transition to an ethical transplant framework, and drivers of abuse.
Methods: We examined the implementation of the donation system by analyzing hundreds of transplant hospitals, government and industry statements, legislation, regulations, medical journals, and media reports. We also tracked the timeline and evolving policies surrounding official organ sources, including death-row prisoners and voluntary donations, as well as number of donations by region.
Results: Despite the government's claim that donations became the sole organ source in 2015, neither the number of registered donors nor the sum of reported donations from various regions (mainly from non-registered donors in ICUs) can support the number of transplants performed. China continues to perform transplants on demand on a scale far larger than its official total of 15,000/year. The abrupt development and subsequent growth of China's transplant system in the absence of significant donations are driven by national strategy, government funding, and financial gain. The government continues to cover up rather than address systemic abuses and thriving transplant tourism.
Conclusions: Most transplant organs in China do not and cannot come from the national donation and allocation system; instead, they continue to be procured systematically from prisoners of conscience in extrajudicial killings.

EP054 IMPACT ON DONOR DETECTION AFTER THE IMPLEMENTATION OF A QUALITY SYSTEM ON THE KINGDOM OF SAUDI ARABIA (KSA)

E. Arredondo[1], M. Barros[1], L. Escalante José[1], F. Procaccio[1], C. Balleste[1], M. Alghonaim[2], F. Shaheen[2], B. Attar[2], H. Zakaria[2], E. Gadalla[2], M. Kamal[2], A. Akbar[2], S. Obbed[3], M. Adam[4], A. Alharthy[4], G. Issa April[4], K. Sharkawy[5], R. Alhubail[6], M. Manyalich[1]
[1]DTI Foundation; [2]SCOT; [3]King Abdulaziz National Guard Medical City; [4]King Saud Medical City; [5]King Abdulaziz Hospital; [6]King Fahad Specialist Hospital

Background: Organ shortage represents an obstacle preventing further increase of transplantation in KSA. In this framework, in late 2017 the Ministry of Health launched a 3-year project coordinated by DTI Foundation with the support of the SCOT (Saudi Center for Organ Transplantation) aiming to improve the donation rates by implementing an organ donation quality system based on the most successful models in organ donation (SEUSA) and quality indicators (ODEQUS).
Methods: The present study compares the organ donation critical pathway in 4 Saudi hospitals between 2017 (no quality program) Vs. 2018 (quality program implementation).The participant hospitals were selected cosidering their existing donation and transplantation programs and organ donation potentiality.
The first year of the project included a diagnosis study to achieve a comprehensive vision of the current situation; a monthly registry to detect brain deaths in the hospitals; monthly videocalls to analyze the data collected lead by organ donation experts; an external audit per hospital in the 6th month to evaluate the implementation.
Results: The possible donation alerts have increased from 100 in 2017 to 298 in 2018. 250 potential, 101 eligible and 26 actual donors have been registered during the project implementation. An increase in the possible donor detection (66%) and the potential donor referral (67%) has been identified, plus a 32% in elegible donors and a 31% in donation rate.
Conclusions: The implementation of a quality system has allowed an improvement of the donation program, which can also be reflected in the donation rates of the evaluated hospitals. Moreover, the program has been useful to stablish the donor detection and audit methodologies and to identify weak spots. Overall, in-hospital protocols have been reviewed and refined, specifically regarding brain death diagnosis and donor maintenance.

EP055 DEVELOPING THE EDUCATIONAL PATHWAY FOR ORGAN DONATION IN CHINA: INTERNATIONAL-JOINT TRAINING PROGRAM TO INCREASE ORGAN DONATION RATE

W. Jiang[1], Q. Ye[2], L. Li[3], G. Feng[4], Y. Liu[5], X. He[1], C. Balleste[6], G. Paez[6]
[1]Intelligent Sharing for Life Science Research Institute; [2]Zhongnan Hospital of Wuhan University; [3]The First Hospital of Kunming; [4]The First Affiliated Hospital of Zhengzhou University; [5]Zhujiang Hospital of Southern Medical University; [6]Donation and Transplant Institute (DTI)

Background: Based on the guiding principles of the World Health Organization (WHO), China has established a scientific-ethical system to foster the organ donation (OD) and transplantation practices. A few studies indicated the lack of awareness of Chinese medical staffs toward brain death and OD. The need of knowledge transfer from international community was desired.
Methods: The aim of the Chinese OD educational pathway is to popularize the knowledge among different groups to improve donation rate. The 1st level, implemented by the Red Cross Society of China, is a 3-day national course & examination for coordinators with multidisciplinary background. The 2nd level, implemented by Chinese medical societies/hospitals & international organizations, is an international program to train, especially those in the donor generating units. The 3rd level, implemented by Chinese and European universities under the Erasmus+ program: EU-CHINA Knowledge Transfer and Leadership in Organ donation (KeTLOD),is a postgraduate course of 625 hours for medical staffs with experience in the fields.
Results: More than 2200 coordinators have been certified at the 1st level. In the 2nd level, adopting the TPM methodologies, 17 international courses have been organized. 1048 Chinese participants were trained, among them 54% were medical staffs from 206 donor hospitals. An increasing OD rate trend has been identified in all cities that hosted the course. In the 3rd level, 21 Chinese were trained to be the trainers and 144 participants completed the postgraduate course in 7 Chinese universities under the KeTLOD curriculum. This project successfully brought OD the first time as a formal subject into the Chinese higher education system.
Conclusion: By the end of 2019, the total numbers of professional trained by the 2nd & 3rd level are estimated to be 1500. Each of them can perform more than 3 cases on average after the training in a year, extra total number of 4,500 OD performed in China.

EP056 FACTORS INFLUENCING ACCESS TO KIDNEY TRANSPLANTATION (FIAT): A QUALITATIVE STUDY ON STAKEHOLDERS' PERSPECTIVES

A. Luchtenburg[1], K. Kloss[1], S. Redeker[1], J. van Busschbach[1], J. van de Wetering[2], S. Ismail[1]
[1]Dept of Psychiatry, section Medical Psychology and Psychotherapy, Erasmus MC, Rotterdam; [2]Dept of Internal Medicine, section Nephrology & Transplantation, Erasmus MC, Rotterdam

Background: Disparities in access to kidney transplantation are suggested in literature like for older patients and patients with a migration background. Moreover, pre-emptive transplantation was announced as a quality indicator of best practice in renal replacement therapy. In practice it is unclear if the bigger part of those patients who are eligible indeed merely have the opportunity to be transplanted pre-emptively. With this study we will explore factors influencing access to kidney transplantation.
Methods: Factors on different organizational levels will be investigated by analyzing interviews held with various stakeholders involved in the access to transplantation, namely, patients, renal nurses, social workers, nephrologists, health insurers and policy makers. The interviews will be audio-recorded and transcribed verbatim. This qualitative data will be analyzed according the principles of Grounded Theory.
Procedure: Participants nationwide will be interviewed in three phases about their perceptions, opinions and attitudes on access to kidney transplantation. The topic list for the interviews contains the following domains: clinical, psychological, ethical, social, economic and policy regarding the access to kidney transplantation. In a first phase, stakeholder group perspectives will be explored through individual or focus group interviews. In a second phase, focus groups will be held in which participants will be confronted with other stakeholders' perspectives. In the third phase, stakeholders will be invited to focus group discussions and suggesting solutions.
Towards Solutions: Multi-level factors influencing access to kidney transplantation will be investigated by exploring the perspectives of multiple stakeholders, including those who have rarely been represented in literature (health insurers and policy makers). The final goal is to present a report with national policy recommendations pointing towards a more optimal access to kidney transplantation.

EP057 INCREASING ORGAN DONATION: EXPERT OPINION FROM AUSTRIA, GERMANY, SPAIN AND THE UK

H. Schrem[1], F. Becker[2], J. Roberts Keith[3], M. de Nadal[4], M. Zink[5], P. Stiegler[6], S. Pemberger[7], T. Pont Castellana[8], C. Kellner[6], A. Kaltenborn[9], A. Tuffs[9], V. Amelung[2], C. Krauth[2], T. Breidenbach[10], J. Bayliss[11]
[1]Medical University of Graz; [2]Epidemiology, Social Medicine and Health Systems Research, Hannover Medical School, Hannover, Germany; [3]Liver Unit, Queen Elizabeth Hospital, University of Birmingham, UK; [4]Department of Anesthesiology Surgical Intensive Care Unit, Hospital Universitari Vall d'Hebron, Vall d'Hebron Barcelona Hospital; [5]Department of Anesthesiology and Intensive Care Medicine, General Public Hospital Brothers of Saint John of God, St. Veit/Glan; [6]Department of General, Visceral and Transplant Surgery, Division of Transplant Surgery, Medical University Graz, Austria; [7]Intensive Care Unit 2, KABEG Klinikum Klagenfurt am Wörthersee, Austria; [8]Transplant Coordinator, Donation and Transplant Procurement & Management, University Hospital Vall d'Hebron, Barcelona, Spain; [9]Management Team of the Transplant Center, Hannover Medical School, Germany; [10]Deutsche Stiftung Organtransplantation (DSO), Organisationszentrale München, Martinsried, Germany; [11]Midlands Organ Donation Services Team, NHS Blood and Transplant & Queen Elizabeth Hospital Birmingham, UK

Background: Post-mortal organ donation rates and organizational approaches to organ donation differ drastically between countries at a similar level of health care. Expert opinions from Austria, Germany, Spain and the UK on the respective system and practice of organ donation can help to improve organ donation.
Methods: Opinions from intensive care nurses, physicians, transplant coordinators and transplant surgeons in the four countries were obtained in semi-structured interviews followed by qualitative analysis.
Results and conclusions: Interviews show that a variety of factors can have a beneficial effect on organ donation rates, e.g. standardized screening for potential donors, family approach and mandatory training for family approach teams. The role of ICU doctors is crucial, but they need to be supported by full-time in-house special nurses for organ donation who organize donor evaluation, transport logistics and coordination and need to be further supported by pastoral workers if required. Failure to report potential organ donors should have consequences, but incentives are not effective. Awareness campaigns should encourage families to discuss organ donation. An opt-out system is likely to stimulate family discussions. Public trust can be achieved by full transparency in organ donation and transplantation and by prevention of scandals. Broad public consensus on the concept of brain death and donation after cardiac death is a sound basis for organ donation. Standards and best-practice procedures need to be regulated and supervised by state authorities.

EP058 PROMOTING MEDICATION ADHERENCE AND SELF-MANAGEMENT AMONG KIDNEY TRANSPLANT RECIPIENTS (MARS-TRIAL): THE PILOT-STUDY

D. Beck[1], M. Tielen[1], M. Rechards[1], S. Ismail[1], J. Van de Wetering[1], T. van Gelder[1], C. Boonstra[2], J. Versteegh[1], K. Cransberg[1], W. Weimar[1], J. van Busschbach[1], J. van Saase[1], E. Massey[1]
[1]Erasmus Medical Center; [2]De Viersprong

Introduction: After kidney transplantation nonadherence has been demonstrated to be substantial in all age groups, undermining optimal health outcomes. In this pilot-study we assessed feasibility and acceptability of an intervention to enhance adherence among kidney transplant recipients anticipating shortcomings of previous interventions.
Method: The intervention is outreaching (home-based) and systemic (involves social network of the transplant recipient). During the intervention sessions, determinants of nonadherence are assessed with the patient in dialogue with the social network and treatment goals are formulated. Duration and frequency of the intervention are determined by the achievement of goals coached by a therapist. Evidence-based theories and methods were selected and translated to the population of nonadherent adolescent and adult kidney transplant recipients (ages > 12 yrs).
Results: Of the 12 (thought to be nonadherent) patients invited, 6 patients participated. Reasons for declining were too busy or no interest. Median age was 24yr (range 20-51yrs) and 1 was a woman. A median of 13,5 (range 7-18) sessions were carried out. Patients appreciated the home-based approach of the intervention and the methods used. They were motivated intrinsic to achieve and maintain their goals. Family members were positive about the intervention because of more understanding about patient perspective and their own role in the problems and solutions addressed. Patients set goals aimed at achieving medication adherence, intimacy/relations, lose weight/more exercise, and work/income.
Conclusion: This unique intervention is outreaching, tailored to the needs and situation of each individual and its system. The greatest challenge of this study is motivating nonadherent patients to participate in this study. This pilot offered valuable insights into the feasibility of the intervention and allowed fine-tuning prior to the RCT.