POSTERS

KIDNEY – CLINICAL ASPECTS

P001A CONSEQUENCES OF ACCEPTING A LEFT VERSUS RIGHT DONOR KIDNEY AND TRANSPLANTING IT EITHER INTO THE LEFT OR RIGHT ILIAC FOSSA

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Introduction: Data on the consequences of accepting a left versus right donor kidney and transplanting it into either the left or right iliac fossa is lacking. This study evaluates the impact of these decisions on surgical outcome.
Methods: This retrospective single center study analyzed 1262 deceased donor adult kidney transplants into a pristine iliac fossa. Multivariable linear regression and logistic regression were used to determine risk factors for prolonged operating time (OT) and complications.
Results: Transplantation into the right iliac fossa and anastomosis to the caval or common iliac vein independently reduced OT while lower recipient's age, daytime transplantation, higher BMI and multiple arterial anastomoses significantly prolonged OT as confounders ($p < 0.05$). Transplantation of right and left donor kidneys into the right iliac fossa was significantly faster (Δmedian: 11:00 min, $p < 0.001$) without increasing surgical complications. Transplanting left donor kidneys into the right iliac fossa with venous anastomosis to the caval vein or common iliac vein yielded shortest OT (median: 112:30 min). Prolonged OT was associated with an increased risk for venous macro-thrombosis (OR = 1.023, 95%-CI: 1.015–1.031) and arterial micro-thrombosis (OR = 1.012, 95%-CI: 1.000–1.024). Frequencies of observed surgical complications were equally distributed between all four combinations of right or left donor kidneys transplanted either into the right or left iliac fossa.
Conclusion: Transplantation should be performed into the right fossa with anastomosis to the caval vein or the common iliac vein to save operating time and to reduce thrombotic complications. Acceptance of a left donor kidney in this situation likely reduces operating time further.

P002A THE KIDNEY DONOR PROFILE INDEX IS VALID FOR A EUROPEAN COHORT

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Introduction: The global shortage of organs enforces the need for an optimized allocation process. In the United States the Kidney Donor Profile Index (KDPI) was introduced in 2014 to provide guidance in the clinical decision whether to accept or decline a donated kidney by evaluating the graft's quality based on ten variably weighted donor parameters.
Methods: We retrospectively assessed and correlated the KDPI and the short- and long-term outcomes of 580 adult patients following renal transplantation at our center between January 2007 and December 2014 to examine if this regionally successful score can be effectively applied in a European cohort.
Results: We found a correlation between the KDPI and the estimated glomerular filtration rate at one year after transplantation and with the death-censored allograft survival. Incidences of delayed graft function, acute rejections, and surgical complications as well as the overall patient survival did not correlate with the KDPI. Additionally, we analyzed the individual input factors of the KDPI regarding their potential to evaluate donor organ quality and found that donor's age alone is significantly predictive as well.
Conclusion: We conclude that donor's age may serve as a simple estimate for future graft function. As our findings suggest that the outcome of recipients of either high KDPI- or high age-organs is still acceptable, especially compared to the outcomes of patients remaining on dialysis, we would advise against defining a distinct KDPI cut-off in the decision making process of accepting or declining a kidney graft.

P005A IS OUR CHOICE THE RIGHT ONE? OUTCOME OF DECEASED DONOR KIDNEY TRANSPLANTATION DEPENDING ON THE SITE OF ARTERIAL ANASTOMOSIS AND SIDE OF IMPLANTATION

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Introduction: The following study uses a prospective kidney-transplant databank to reevaluate the best possible surgical technique for the arterial anastomosis and side of implantation.
Methods: Analyses were carried out including 540 adult patients (203 female, 337 male). The mean age was 45.6 ± 16, years mean BMI was 24 ± 4.8 kg/m^2. Donors age was 47.5 ± 17.7 years. The common iliac artery (*AIC*) was used 428, the external iliac artery (*AIE*) 112 times. 227 kidneys were implanted on the left and 308 on the right side. Average time of surgery was 193 ± 94 min. The warm ischemic time (WIT) was 39.7 ± 18.9 min and the cold ischemic time (CIT) was 712 ± 396 min. Perioperative complications and renal function (GFR, graft survival) were compared.
Results: The different sites of arterial anastomosis (*AIC* ($n = 428$), *AIE* ($n = 112$)) were equal for time of surgery (*AIC:* 193 ± 94 min and *AIE* 195 ± 67 min, p: 0.7), warm ischemic time (*AIC*: 41 ± 18 min and *AIE*: 43 ± 18 min), inpatient stay (*AIC*: 30 ± 16 days, *AIE*: 31 ± 22 days), GFR and graft survival. Grafts with multiple arteries had more perioperative complications: 29/256 patients (11.3% vs 18/286 6.2%; p: 0.037). Postoperative hemorrhage was determined in 14 cases (29.7%, p: 0.0478). Mean WIT in singular anastomosis was 40.7 min and multiple anastomosis needed 50.6 min, p: 0.003. Patient-age >60 years, CIT >720 min, intraoperative, and postoperative complications were independent prognostic factors for graft-survival. The side of kidney transplantation and the site of arterial anastomosis had no impact on short and long term results.
Conclusion: A single arterial anastomosis, shorter WIT and the absence of perioperative complications are associated with better general outcome. However, the postoperative GFR as marker for post-operative organ function and the long-term results showed no correlation with the type of anastomosis or the side of implantation.

P007A ACCELERATED ORGAN ALLOCATION PROCEDURE (AOAP) FOR KIDNEY DONATION (REAL, RESCUE, CENTRE OFFER) IN THE EUROTRANSPLANT KIDNEY ALLOCATION SYSTEM (ETKAS), IS IT WORTH? – 5 YEAR SINGLE CENTER EXPERIENCES

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Introduction: Germany, the most populous member of Eurotransplant (ET) Alliance, has seen a >30% decline in post mortem kidney donation since 2010, as there are currently only 9 to nearly 10 donors per million inhabitants. Thus, waiting times for a kidney transplantion (ktx) for German recipients (recp) on dialysis are increased to over 8 years and more. In this situation of lack of organ donation, every effort is now made to allocate each donated kidney organ so that it has a transplant opportunity. In practice, this means that, in the event of repeated kidney offer refusal by at least 5 transplant centers, Eurotranspant will accelerate the allocation process (AOAP) by offering the kidney donation competitively to several transplant centers.
Methods: Comparing ktx of AOAP offers to ktx of ETKAS primary offer 12/2013 – 12/2018, $n = 264$ ET donor ktx, AOAP = 56 (21%), ETKAS = 208.
Results:

- AOAP donors are older and significantly more likely diabetics, but do not differ in renal function on explantation.
- AOAP recp have waiting time on list, median 3.3 years, compared to ETKAS recp median 6.6 years.
- AOAP recp do not experience a significantly prolonged hospital stay.
- AOAP transplants (2 year completed, $n = 37$ (66%)) show no significant difference on renal function on month 6, 12, 24.
- AOAP transplants show more frequently delayed graft function (>1 dialysis post transplantation).
- AOAP transplants show more lost of function within 3 years (12.5%) compared to ETKAS (5.8%).

Conclusion: Our 5-year retrospective analysis shows that it is worthwhile for recipients to take part in the AOAP because compared to the ETKAS recipients

they only have to accept half of the waiting time until transplantation after being put on the waiting list. AOAP recipients show a non-significant difference in renal function compared to the ETKAS recipients after only 6 months, even though the donors are older, more frequently diabetics and the transplants have more primary DGF in comparison to ETKAS.

P010A *DE NOVO* DONOR-SPECIFIC ANTIBODY FORMATION AFTER CONVERSION FROM CALCINEURIN INHIBITOR TO EVEROLIMUS VS. SIROLIMUS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: The formation of *de novo* donor-specific antibodies (DSA) posttransplant is associated with decreased graft survival. There is increasing evidence that mTOR inhibitor based immunosuppressive regimens may be associated with an increased risk for the development of *de novo* DSA compared to calcineurin inhibitors (CNI). To date, however, there are no data comparing everolimus to sirolimus in this context.
Methods: We performed a monocentre retrospective analysis on the incidence of de novo DSA after conversion from CNI to either sirolimus or everolimus in kidney and simultaneous pancreas kidney transplant recipients. Inclusion criteria were >12 months of transplant function, a triple immunosuppressive regimen containing CNI, mycophenolic acid and prednisolone, conversion from CNI to everolimus or sirolimus, and negative DSA before conversion.
Results: 47 subjects met inclusion criteria and were enrolled in the study. 13 were converted to sirolimus and 34 were converted to everolimus. 3 (23.1%) developed de novo DSA after conversion to sirolimus and 15 (44.1%) after conversion to everolimus. The trend to a lower incidence of DSA with sirolimus was not significant in log rank analysis ($p = 0.33$). Median time on sirolimus or everolimus until detection of de novo DSA was 26 (15–52) and 32 (21–44) months, respectively.
Conclusion: There was a non-significant trend to a lower incidence of de novo DSA after conversion from CNI to sirolimus compared to everolimus. These retrospective findings may be biased by several aspects and should therefore be interpreted with caution. They should be regarded, however, as a rationale for further comparative investigation.

KIDNEY – BENCH TO BEDSIDE

P011A C5AR2 DEPENDENT FGF1 AND AKT SIGNALLING IS ASSOCIATED WITH IMPROVED REGENERATION AND RESTAURATION OF RENAL PERFUSION AFTER RENAL ISCHEMIA REPERFUSION INJURY

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Introduction: Ischemia reperfusion injury (IRI) causes rapid complement activation and inflammation. This leads to the reduction of renal perfusion, rarefaction of peritubular capillaries and might result in progressive renal fibrosis Here, we studied the distinct functions of complement 5a receptor 1 and 2 (C5aR1; C5aR2) in severe renal IRI using C5aR1 and C5aR2 deficient mice in comparison to wild type (WT) mice.
Methods: IRI was induced by 45 min unilateral renal pedicle clamping and longitudinal follow-up for 1, 7 and 21 days. High content antibody array (ScioDiscovery) was done to study differential protein expression at d1. Renal morphology, inflammation and fibrosis were investigated by histology, immunohistochemistry and qPCR. *In vivo* lectin stain of the glycocalyx was done to investigate patency and integrity of the peritubular capillary network.
Results: All mice showed a decrease of renal perfusion due to IRI already at d1. From d7 onwards C5aR2-/- mice restored renal perfusion and showed much better integrity of the peritubular capillary network with significantly less renal fibrosis compared to WT mice. By antibody array differential expression of FGF1 and pAKT was observed and validated by Western blotting. Furthermore, better renal regeneration was indicated by enhanced Ki-67 expression in C5aR2-/- IRI kidneys.
Conclusion: Taken together, the results point towards C5aR2 dependent improved angiogenesis after IRI via FGF1 and AKT signalling. Targeting C5aR2 in the context of IRI might be an interesting new therapeutic approach to attenuate IRI in the field of transplantation.

P012A CIRRUS I – STUDY: EVALUATION OF EFFICACY, SAFETY, PHARMACOKINETICS, AND PHARMACODYNAMICS OF THE ANTI-CD40 ANTIBODY ISCALIMAB (CFZ533) IN RENAL TRANSPLANT RECIPIENTS – STUDY RATIONALE AND DESIGN

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Introduction: Over the last years, short-term efficacy outcomes in transplantation improved, but long-term use of calcineurin inhibitors (CNIs) is associated with side effects, such as nephrotoxicity. Strategies that allow CNI reduction while retaining immunosuppressive efficacy and improving long-term outcomes are highly desired in renal transplant recipients (RTxRs). Iscalimab (CFZ533) is a new, fully human, Fc-silenced, non-depleting, IgG1 mAb preventing CD40 pathway signaling and activation of CD40+ cell types. It blocks T cell-dependent responses in humans and thus may facilitate CNI-free immunosuppressive regimen in RTxRs. Here, we present the rationale and design of the CIRRUS I study (NCT03663335).
Methods: CIRRUS I is a 12-month (M), multicenter, partially-blinded Phase 2 clinical trial in adult RTxRs with 2 cohorts. **Cohort 1 (C1):** *de novo* RTxRs with deceased heart-beating, living unrelated or HLA non-identical living related donors are randomized (1.5:1.5:1) post-Tx to receive either low-/high-dose CFZ533 or tacrolimus (TAC) in combination with mycophenolate mofetil (MMF) and steroids (CS); all RTxRs will receive induction with basiliximab or rabbit antithymocyte globulin. **Cohort 2 (C2):** *maintenance* RTxRs on TAC+MMF±CS with primary graft received within 6–12 M before randomization (1.5:1) are switched to medium-dose CFZ533 or continue TAC with MMF±CS. The primary objective is to demonstrate that CFZ533 (any dose) is non-inferior to TAC for composite endpoint of biopsy-proven acute rejection, graft loss or death at M12 post-Tx (C1) or at M12 post-conversion (C2). Key secondary objective is to demonstrate the superiority of CFZ (any dose) to TAC for mean estimated glomerular filtration rate (eGFR) at M12 (C1) and mean change in eGFR from baseline to M12 post-conversion (C2). Other objectives are safety, pharmacokinetics and pharmacodynamics of CFZ533.
Results: Patient recruitment is currently ongoing, and about 200 (C1) and 125 (C2) RTxRs are planned to be enrolled. Study protocol will be amended soon to extend the trial by additional 4 years.
Conclusion: The findings from this study will provide insights on CFZ533 dose and regimen for further clinical development in RTxRs.

P013A LOW FREQUENCY OF CMV-SPECIFIC CYTOTOXIC T-HELPER CELLS IS ASSOCIATED WITH SYMPTOMATIC CMV INFECTION IN RENAL TRANSPLANT PATIENTS

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Introduction: Cytomegalovirus (CMV) infections occur frequently in renal transplant patients due to immunosuppressive therapy inhibiting CMV-specific T-cell immunity. It was the aim of this study to investigate CMV specific T-helper-cells in renal transplant patients.
Methods: Peripheral blood was sampled from 52 renal transplant patients and PBMC were isolated. After labelling with a tracking dye, PBMC were cultured in presence of CMV lysate, SEB or were left unstimulated. CMV specific T-cells were defined as $CFSE^{low}$ T-cells after culture in presence of CMV lysate. The cytokine pattern of CMV-specific T-cells was assessed by intracellular flow cytometry. Symptomatic CMV infection was defined as CMV syndrome or tissue invasive disease. Asymptomatic CMV infection was defined as detectable CMV replication in absence of clinical manifestations.
Results: One renal transplant patient was at low risk for CMV infection according to donor /recipient CMV IgG sero-status at the time of transplantation (D neg / R neg). 15 patients were at high risk (D pos /R neg) and the remaining 36 patients were at intermediate risk (D pos /R pos, D neg / R pos). 20 patients had at least one episode of symptomatic CMV infection in the past, 32 patients had a history of asymptomatic CMV infection and never showed any signs of CMV syndrome or tissue invasive disease. The frequency of CMV-specific T-helper-cells was slightly reduced in patients with symptomatic CMV infection ($n = 20$) as compared to patients with asymptomatic CMV ($n = 32$) infection (T-Helper-cells: $\%CFSE^{low}$ $12.6 \pm 11.3\%$ vs. $24.9 \pm 22.2\%$, $p = 0.04$). Moreover, perforin producing CMV-specific T-helper-cells were significantly diminished in patients with symptomatic versus asymptomatic CMV infection ($CFSE^{low}$ T-Helper-cells: $\%Perforin^{+}$ $24.2 \pm 13.2\%$ vs. $44.1 \pm 27.0\%$, $p = 0.009$). There was no difference comparing the fraction of Interferonγ-producing T-helper-cells in symptomatic versus asymptomatic patients.
Conclusion: Patients with symptomatic CMV infection showed reduced numbers of cytotoxic CMV-specific T-helper-cells. Cytotoxic CMV-specific T-helper-cells might be crucial for immunological control of CMV infection and could serve as biomarker to stratify patients at risk.

P014A POSITIVE EFFECTS OF CMV-IMMUNOGLOBULINS ON ANTIVIRAL CELLULAR IMMUNITY IN A KIDNEY TRANSPLANT RECIPIENT WITH MULTIDRUG-RESISTANT CMV-INFECTION

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Introduction: Cytomegalovirus (CMV) infection is one of the most common infectious complications after kidney transplantation and management of multidrug-resistant strains is a particular challenge.
Methods: A 51 y old highly immunized CMV-positive recipient developed active CMV-infection with DNAemia (57 200 IU/ml) after his 5th kidney transplantation from a CMV-positive donor at end of prophylaxis (EOP) with valganciclovir (VGC). The immunosuppressive regimen consisted of ATG induction, tacrolimus (Tac), mycophenolate (Myf), prednisolone. Eight days after EOP, VGC p.o. was restarted. Increasing CMV-DNAemia led to hospitalization and i.v. ganciclovir treatment. Meanwhile he developed leukopenia, thrombopenia, malaise and fever. He was treated with 5000 U CMV-IVIG/week and switch from Tac/Myf to CyA/ mTOR inhibitor. As viral load increased further, resistance testing was initiated and showed the UL54 DNA polymerase gene mutation A834P. This mutant is known to confer multidrug-resistance towards ganciclovir, foscarnet, cidofovir. Although combined treatment with foscarnet/ high dose GCV is recommended, leuco and thrombopenia resulted in reluctance to follow this recommendation. High dose CMV-IVIG (10 000 U/ day) was given for 8 days, and reconstitution of CMV-specific cellular immunocompetence was monitored in parallel.
Results: Thereafter CMV DNAemia decreased significantly (day 4: 2 208 000-day 25: 205 IU/ml) and the patient was discharged from hospital. CMV-IVIG was continued to be given intermittently (10 000 U/week). CMV-PCR remained persistently negative after end of therapy. Of note, CMV specific T-cell counts were low during high viral load and increased following CMV-IVIG treatment. In addition, CMV-specific T-cells during viremia showed phenotypical and functional signs of anergy which normalized after long-term control of DNAemia.
Conclusion: In conclusion, switch of immunosuppression to CyA, mTOR inhibitors, and high IVIG is an option in multidrug-resistant CMV infection and led to reconstitution of CMV-specific cellular immune function and long-term control of viremia.

P015A ANALYSIS OF THE ANTIVIRAL IMMUNE RESPONSE AS AN INDICATOR OF IMMUNOSUPPRESSION INTENSITY AND OUTCOME AFTER KIDNEY TRANSPLANTATION: FIRST RESULTS FROM THE VIRENO STUDY

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Introduction: Early identification of kidney transplant recipients at risk of complications, including rejection and infections, represents a critical health need. The VIRENO study is an interdisciplinary, multicenter, and non-interventional research project aimed to identify immunological parameters able to predict the occurrence of such adverse events.
Methods: The viro-immunological characterization of our cohort is performed pre-Tx as well as 3 weeks and 6 months post-Tx. It includes assessment of anti-BKPyV IgGin both living donor and recipient and of TTV-DNA in recipients. In addition, the cellular immunity to CMV is assessed by two different IFN-γ release assays (Quantiferon and Elispot). The viro-immunological status is correlated with clinical information focusing on major immunological and infectious events including, denovo DSA, graft survival, rejection, and hospitalization due to infections.
Results: So far, 82 patients have been enrolled and 52 patients started the viro-immunogical monitoring. TTV was detected at baseline, 3-weeks, and 6 months in 34/52 (65%), 37/52 (71%), and 30/32 (94%) recipients respectively, showing a median viral load of 1.4E+04 (baseline), 4.7E+04 (3-weeks), and 1.7E+08 (6-months) copies/mL (baseline *vs* 6 months $p < 0.0001$). The BKPyV antibody titer of recipients showed a significant increase by comparing pre-Tx *vs* 6-month values ($p = 0.021$) and 3-week *vs* 6 month titers ($p = 0.002$). By comparing BKVPyV IgG of recipients and donors, the latter showed a titer higher than the baseline ($p = 0.059$) and the 3-week recipient group ($p = 0.009$), whereas no differences were found between donors and recipients at 6 months post-Tx. By the assessment of CMV cellular immunity, the Elispot assay identified a higher number of reactive patients to CMV compared to the Quantiferon assay. All patients detected reactive by Elispot showed a positive CMV serostatus.
Conclusion: Overall, these data provide a preliminary overview on the ability of the viro-immunological monitoring to measure the changes in the functionality of immune system pre- and post-Tx. The identification of such parameters is crucial to enable tailored therapies and improve the outcome of this vulnerable group of patients.

P016A A COMPARISON OF LONG-TERM RENAL OUTCOMES IN ISCHEMIA-INDUCED ACUTE KIDNEY INJURY MODELS WITH OR WITHOUT UNILATERAL NEPHRECTOMY AT THE TIME OF ISCHEMIA

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Introduction: Acute kidney injury (AKI) is a risk factor for chronic and progressive kidney disease. In rodent models however, there is ambiguity regarding warm ischemia models to inflict long-term kidney damage. We compared long-term outcomes using two different rat models of ischemia-induced AKI: unilateral ischemia with and without contralateral nephrectomy at the time of ischemic injury. We also addressed if xenogeneic human adipose-derived mesenchymal stromal cells (hASC) have a therapeutic efficacy when implemented in the model with the most severe damage.
Methods: AKI was induced by clamping the left renal artery and vein for 60 min in uninephrectomized (Nx0, $n = 9$) or non-uninephrectomized (Nx170, $n = 6$) male Lewis rats. The latter rats underwent unilateral nephrectomy at day 170. Nx170 rats were either or not injected intravenously with hASC (Nx170+hASC, $n = 10$), 14 days after AKI induction. Plasma creatinine (p-Crea), glomerular filtration rate (GFR) and fibrosis, were assessed by clinical chemistry, FITC-sinistrin clearance and Masson-Goldner staining respectively.
Results: In contrast to the animals from the Nx0 group, animals from the Nx170 group had normal p-Crea one to three days after induction of ischemia. This remained stable until unilateral nephrectomy at day 170. Hereafter, p-Crea significantly increased ($p < 0.01$) accompanied by a decrease in GFR ($p < 0.05$). In the Nx0 group renal function deterioration was significantly less compared to the Nx170 group and there was a trend towards a decreased percentage of fibrosis in the renal cortex in these rats. Treatment of rats in the Nx170 group with hASC was able to decrease p-Crea ($p < 0.05$), interstitial infiltration of ED1+ cells ($p < 0.05$) and fibrosis in the renal cortex ($p < 0.05$), compared to untreated rats.
Conclusion: Ischemia-induced AKI in uninephrectomized animals does not result in severe long-term kidney function impairment. Removal of the contralateral kidney 170 days after ischemia seems to have a more profound long-term effect making this model more suitable for intervention studies. hASC treatment significantly improved kidney function and reduced interstitial inflammation and fibrosis.

P017A THE BKPyV SPECIFIC T-CELL IMMUNITY IS NOT REGULATED BY THE PD-1/PDL PATHWAY

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Introduction: The BK-polyomavirus (BKV) associated nephropathy (PyVAN) is observed in 1–10% of renal transplant recipients, of which up to 80% undergo graft failure. The main risk factor for BKPyV reactivation is a reduced T-cell specific immunity. T-cell specific response is controlled by co-stimulatory signal pathways. The current study analyzes the effect of the PD-1/PDL pathway on BKPyV specific T-cell immunity.
Methods: Renal transplant patients received regular follow-up examinations after renal transplantation including screening for BKPyV reactivation based on the KDIGO guidelines. Patients were grouped into two groups (i) patients with BKV reactivation (viremia of >10 000 copies/ml in PCR) (BKV positive, $n = 19$) and (ii) patients without BKV (BKV negative $n = 27$[BW1] [F2]). Peripheral blood mononuclear cells were isolated from whole blood and labelled with the tracking dye CFSE. PBMC were then stimulated with BKPyV VP1,LTAg peptide mix or left unstimulated for 72 h and proliferation was assessed by CFSE dilution.
Results: T-cell responses to VP1 and LTAg stimulation could be detected in all patients. Patients in the BKV positive group showed reduced $CD3^+$T-cell responses upon stimulation with VP1 and LTaG, although the effect was not significant BKV positive vs. BKV negative; VP1 stimulation: $46.16 \pm 5.32\%$ vs. $57.81 \pm 3.76\%$, $p = 0.07$ and LTag stimulation: $37.83 \pm 6.21\%$ vs. $50.78 \pm 5.05\%$, $p = 0.10$).

CD4+ and CD8+T-cell proliferation was not different between the groups (CD 4+: $57.71 \pm 3.53\%$ vs $51.15 \pm 6.76\%$ ($p = 0.65$) and CD 8+: $60.05 \pm 3.88\%$ vs. $51.21 \pm 7.62\%$ ($p = 0.26$))[F1]. In addition, there was no difference in PD-1 receptor expression in CD3+ T-cells under VP 1 stimulation between the groups $6.44 \pm 1.01\%$ vs. $9.65 \pm 2.94\%$, $p = 0.38$). ($p = 0.075$).
Conclusion: The proliferative response of BKV-specific T-cells was comparable between BKV positive and negative patients. Our data do not indicate

major differences regarding PD-1 expression on BKV-specific T-cells. BKV specific T-cell responses are not hampered by PD1/PDL1-pathway in BKV positive patients.

P018A Fy(a) ANTIGEN POSITIVE RENAL TRANSPLANTATION INTO AN ANTI-Fy(a) ANTIBODY POSITIVE RECIPIENT

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Introduction: Various studies suggest that the Duffy blood group works as a minor histocompatibility antigen in kidney transplants and is involved in acute cellular and humoral rejections via the expression of DARC on erythrocytes and the endothelium of postcapillary venules. More chronic leasons are described in Duffy incompatible recipients. The feasibility of a Duffy incompatible renal transplant with detection of Fy(a) antibodies is discussed on this background.
Methods: Case report: The case of a renal transplantation of a Fy(a+b-) phenotype allograft in a recipient with proven Anti-Fy(a) antibodies is presented. The recipient underwent plasmapheresis and induction therapy with ATG, mycophenolate, steroids and tacrolimus. Immediately after transplantation, the detoxification function and diuresis began. Acute cellular rejection of Borderline-type (Banff classification) was observed. There was no evidence of antibody mediated rejections.
Conclusion: Due to the known immunological characteristic of Duffy antigens, it can be estimated that Fy(a) antibodies in renal transplant recipients cause acute cellular and antibody mediated rejections. Further investigations are needed to determine the relevance of rejection and transplant survival in Fy-incompatible transplantations. Mismatching in the Duffy blood group or proof of Anti-Fy(a) should already now not be a contraindication for transplantation while using the resources of AB0 incompatible organ transplantation.

P019A IL-10 AS A KEY PLAYER IN CHRONIC BK-VIRUS INFECTION OF RENAL TRANSPLANT RECIPIENTS

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Introduction: It has previously been shown in a mouse model of chronic LCMV infection that sustained IL-10 production induces increasing N-glycan branching of surface molecules on CD8+ T cells, resulting in decreased sensitivity of virus-specific T cells and viral persistence (Smith LK et al, Immunity 2018). To look for a possible role of IL-10 in chronic BK virus infection after renal transplantation, we analyzed IL-10 responses in a prospective randomized renal transplant study.
Methods: We analyzed intracellular cytokine responses, CD4+ T helper function and in-vitro B cell responses pretransplant and up to 24 months posttransplant in a prospective study of 105 renal transplant recipients, who were randomized to a CsA/MMF ($n = 35$), Tacr/MMF ($n = 37$) and Tacr/ERL ($n = 33$) regimen, respectively. 18 drop-outs were excluded from analysis.
Results: Pretransplant, increased IL-10R expression was detected in patients developing BK viremia (CD4+ T cells, $p = 0.005$; CD8+ T cells, $p = 0.004$; CD14+ monocytes, $p = 0.004$). Posttransplant, we found an increased CD4 helper activity ($p = 0.008$, 4 months) and increased IL-10 responses of CD4+ and CD8+ T cells (CD4: $p = 0.003$, 1 year; $p = 0.038$, 2 years; CD8: $p = 0.013$, 1 year) in these patients.

Risk of BK viremia was lowest in Tacr/ERL and highest in Tacr/MMF patients (CsA/MMF: 4/30 (13%); Tacr/MMF: 14/36 (39%); Tacr/ERL: 1/21 (5%); $p = 0.005$). Tacr/ERL patients showed the lowest CD4, CD19 and CD14 cell IL-10 responses (CD4: $p = 0.009$, 1 year; CD19: $p = 0.002$, 4 months; CD14: $p = 0.048$, 2 years), but increased T-dependent B cell responses ($p = 0.004$, 4 months; $p = 0.019$, 1 year) compared to CsA/MMF and Tacr/MMF patients. Luminex-based screening, however, showed no significant differences in HLA class I and II or MICA antibody formation between the immunosuppressive regimens ($p \geq 0.510$).
Conclusion: Our data suggest that IL-10 plays a major role in chronic BKV infection after renal transplantation. Immunosuppressive treatment with Tacr/ERL significantly downregulates IL-10 responses and thereby appears to affect the key player in chronic BKV infection, resulting in a significantly diminished BK viremia incidence.

KIDNEY/PANCREAS (INCL. PAEDIATRICS)

P022B PROPHYLACTIC ONLAY REINFORCEMENT WITH ABSORBABLE MESH (POLYGLACTIN) IS ASSOCIATED WITH LESS EARLY WOUND COMPLICATIONS AFTER KIDNEY TRANSPLANTATION: A PRELIMINARY STUDY

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Introduction: Incidence of wound complications after kidney transplantation (KTx) is still considerable. Here, we report the impact of prophylactic absorbable polyglactin (Vicryl®) mesh reinforcement on the incidence of short-term post-KTx wound complications.
Methods: Sixty-nine patients were analyzed; 23 with and 46 without preventive onlay mesh reinforcement.
Results: Surgical site infections (SSI) were seen in six (26%) patients in the mesh group and in 17 (37%) patients in no-mesh group. A lower, but not statistically significant, rate of early postoperative wound complications occurred in the mesh group. Wound complications were observed in seven (30%) patients in the mesh group and in 23 (50%) patients in the no-mesh group. There was no association between mesh placement and SSI incidence (odds ratios [OR] 0.60, 95% confidence interval [CI] 0.20–1.82, $p = 0.369$) and wound complications (OR 0.44, 95% CI 0.15–1.26, $p = 0.126$).
Conclusion: We conclude that mesh reinforcement does not increase the risk of SSI and overall wound complications. Long-term outcomes have to be evaluated in a randomized trial setting.

P024B INFORMATION NEEDS OF PATIENTS IN A GERMAN KIDNEY TRANSPLANT SAMPLE: PREVALENCE AND CORRELATES

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Introduction: Worldwide clinical guidelines for the care of kidney transplant (KT) recipients recognize the importance of health care providers imparting appropriate immunosuppressive medication (ISM) information for the facilitation of safe medication self-management. The extent of medication information made available is, however, not necessarily what patients require to know about their prescribed medicines. A useful indicator for determining the quality of prescription practice is to what degree the provided information meets the personal needs of patients. This study aims to investigate how satisfied KT patients are with the provided ISM information and to examine the association between satisfaction levels and socio-demographic, psychosocial, and transplant-related variables.
Methods: KT patients ($n = 440$) were asked to complete a series of self-report questionnaires to evaluate variables such as adherence, medication experience, perceived social support, ISM knowledge, symptoms of anxiety and depression and transplant-related variables. ISM information needs were assessed with the Satisfaction with Information about Medicines Scale.
Results: On average, 35.9% of the answers to the SIMS-D items indicated dissatisfaction with the received information; dissatisfaction was more prevalent for the SIMS-D subscale "potential problems" (46.1%) than the SIMS-D subscale "action and usage" (26.7%). On an individual item level the dissatisfaction with information concerning ISM side effects on drowsiness (57.1%) and sex life (56.3%) was most notable. A higher satisfaction with ISM information was associated with higher age, a better adherence, higher perceived social support, lower anxiety level, and a better knowledge about ISM.
Conclusion: The data indicate that a substantial proportion of KT patients have unmet ISM information needs, especially with regard to potential problems of ISM. Dissatisfaction with ISM information is a potential amendable risk factor for KT patients engaging in non-adherent behavior, thus justifying further research in this area. ISM information should be tailored to meet the individual needs of KT patients in order to promote optimal medication self-management and adherence behavior.

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P025B EARLY OUTCOME AFTER PEDIATRIC KIDNEY TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

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Introduction: The field of pediatric kidney transplantation remains challenging due to an ongoing lack of size-matched grafts and anatomical characteristics. In the current study we investigated early graft and patient outcomes in pediatric kidney transplantation in a large single center series with respect to recipient-donor-ratios (RDR).
Methods: We retrospectively reviewed all kidney transplantations at our institution from 2005 until the end of 2018. Pediatric recipients were defined as under the age of 18.
Results: In the 14 year ongoing period 2386 consecutive kidney transplantations were performed at our institution. Of these, 231 (9.7%) were pediatric recipients with a rate of living donation of 35.9%. Median recipient age and weight were 10.9 years (0.3–17.9) and 30.0 kg (3.0–118.0) with RDR for weight and height of 0.62 (0.05–8.00) and 0.89 (0.29–2.27), respectively. Median cold ischemia and operating times were 621.5 (90.0–1761.0) and 129.0 min (60.0–441.0), respectively. Postoperative complications requiring surgical intervention resulted mainly from vascular complications (thrombosis/stenosis) (7.6%), hemorrhage (6.7%) and ureteral complications (4.3%). Early graft loss occurred in 9 cases (4.3%). Median serum creatinine at discharge was 64 μmol/l (11–535). Initial non-function (INF), defined as need for dialysis after transplantation, was observed in 23 patients (10.1%) whereas 1-year-graft-survival was 96.4%. No significant influence of severe RDR mismatches (<0.5) on postoperative complications, INF or 1-year-graft survival was found. Vascular or bleeding complications were associated with a higher rate of INF and a reduced 1-year-graft survival.
Conclusion: Pediatric kidney transplantation can be achieved with excellent early clinical outcome despite severe size-mismatch of donor and recipient.

P029B PREOPERATIVE REDUCTION OF BMI IMPROVES GRAFT SURVIVAL AFTER KIDNEY TRANSPLANT

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Introduction: The following study uses a prospective kidney-transplant databank to determine the correlation between BMI and surgical outcome.
Methods: 540 patients were analyzed, 203 women and 337 men. The mean age was 45.6 ± 16 years, mean BMI was 24 ± 4.8 kg/m^2. Donor age was 47.5 ± 17.7 years. The common iliac artery (AIC) was used in 428, the external iliac artery (AIE) was used in 112. Average time of surgery was 193 ± 94 min. The warm ischemic time (WIT) was 39.7 ± 18.9 min and the cold ischemic time (CIT) was 712 ± 396 min. 227 on the left and 308 on the right side. Four groups were designed, left vs. right, kind of anastomosis (AIE vs. AIC) and BMI <25 kg/m^2 and BMI >25 kg/m^2 (high-risk group) side specific.
Results: A high BMI was associated with more intraoperative complications in total (BMI 24.9 kg/m^2 (n = 438) vs. BMI 26.7 kg/m^2 (n = 82) p: 0.005), such as art. thrombosis (BMI 25.2 kg/m^2 (n = 506) vs. BMI 27.8 kg/m^2 (n = 14) p: 0.019) and postoperative complications (BMI kg/m^2 24.6 (n = 271) vs. BMI kg/m^2 25.9 (n = 249) p: 0.008) like wound healing disorders (BMI kg/m^2 24.8 (n = 400) vs. BMI 26.7 kg/m^2 (n = 120) p: <0.001). Two groups, the first BMI ≤ 25 kg/m^2 n = 265 and the second, the high-risk group (HR-GR) with 246 patients >25 kg/m^2 were compared. The HR-GR was associated with a significant prolongation of surgery in the (BMI <25 kg/m^2: 181.2 ± 52.8 Min (n = 259) and BMI >25 kg/m^2: 210.1 ± 116.9 min, p: 0.004). Wound healing disorders were more frequent in the HR-GR (BMI <25 kg/m^2: 47 of 265 and BMI >25 kg/m^2 73 of 246, p: 0.001). A higher rate of intraoperative bleedings using the left side for implantation (9/96 left and 2/145 right p: 0.0036) were significant for both kind of arterial anastomosis. Function, duration of surgery, WIT and postoperative complications showed no significant correlation between the side and kind of anastomoses in the HR-GR.
Conclusion: Perioperative complications and duration of surgery can be decreased with reduction of BMI. This leads to improved graft survival, since intraoperative (p: 0.011) and postoperative complications (p: 0.043) are independent prognostic factors. Reduction of bodyweight could be a possibility to prolong graft survival.

KIDNEY – CASE REPORTS

P030B CMV INFECTION WITH SIGHT THREATENING CMV RETINITIS REFRACTORY TO CONVENTIONAL TREATMENT: SALVAGE THERAPY WITH AUTOLOGOUS CMV-SPECIFIC T CELLS – A CASE REPORT

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Introduction: Here we report a case of a 61 year-old patient with primary cytomegalovirus (CMV) infection after deceased-donor kidney transplantation in 2013 and recurrent CMV infection with multiple organ involvement, including sight threatening CMV retinitis and CMV pneumonia. Despite receiving different antiviral and antireplicative therapies with everolimus, ganciclovir, foscavir (after detection of a viral resistance due to a L95S mutation in the UL97 gene) and HCMV hyperimmunglobulin, viral load remained elevated with a viral load of up to 130 million copies in the vitreous body and systemically a persistent high copy count of up to 30 000 CMV copies per milliliter blood.
Methods: As an individualised salvage therapy, stimulation and retransfusion of autologous CMV-specific T lymphocytes were attempted. In this approach, leukapheresis was performed to isolate a sufficient amount of leucocytes out of whole blood. CMV-specific CD8+ T cells were then stimulated, expanded and quantified ex vivo using the HLA-A2 restricted nonapeptide NLVPMVATV (NLV) derived from the CMV-pp65 protein. After leukapheresis, 0.29% NLV-specific CD8+ T cells were detected in the patient's leukapheresis product by NLV-tetramer binding using flow cytometry. After cell expansion 1.3% NLV-specific CD8+ T cells could be detected.
Results: Infusion of autologous CMV-specific CD8+ T cells was performed after prophylactic administration of antihistamines and acetaminophen, as well as monitoring of vital parameters. Furthermore, daily monitoring of whole blood count, hepatic and renal function parameters ensued. No adverse events occurred after T cell infusion. NLV-specific CD8+ T cells were quantified on day 3 and day 17 after T cell infusion. On day 3, 1.37% of NLV-specific CD8+ T cells equivalent to 6 cells/ml whole blood and on day 17, 1.8% of NLV-specific CD8+ T cells equivalent to 20 cells/ml whole blood were detected. Functionality was confirmed by IFNγ release of CMV-specific T cells after infusion as measured by an IFNγ ELISpot assay.
Conclusion: The latest quantification of viral load showed a falling CMV copy count of 600 copies/ml, normal blood cell count and no sign of current CMV organ involvement.

P031B TRICHODYSPLASIA SPINULOSA WITH DISFIGURING FACIAL FEATURES AFTER KIDNEY TRANSPLANTATION IMPROVED BY mTOR-INHIBITION

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Introduction: Kidney transplantation (KTx) is the therapy of choice for patients with end stage renal failure. However, immunosuppression after KTx can lead to profound side effects, such as infections. Some of these are so rare and unusual, that they are difficult to diagnose. Different viral infections may improve after conversion of immunosuppression to an mTOR-inhibitor (mTORi).
Methods: Light microscopy of skin biopsies. PCR for trichodysplasia spinulosa polyomavirus (TSPyV) from skin biopsies and blood. Immunohistochemistry for SV40. Photographic documentation.
Results: We report two patients, one female 53 years old and one male 25 years old, who developed disfiguring facial features, particularly involving the midcentral face and the ears, within the first year after KTx. The immunosuppression was standard with calcineurin inhibitors, mycofenolate mofetil and steroids, both having had induction therapy with basiliximab. Skin biopsies were performed showing enlarged hair follicles with dysmorphic horny layer of the inner root sheath and a perifollicular mucinosis, typical for viral-associated trichodysplasia. Immunohistochemistry for SV40 showed a distinct nuclear staining pattern of singular inner root sheath cells. The presence of TSPyV in the lesional skin and in the peripheral blood was confirmed by polymerase chain reaction. In both patients the immunosuppression was converted to an mTORi-containing regimen combined with either mycophenolate mofetil or tacrolimus and prednisolone. Both patients showed a marked improvement of the facial appearance within two years, accompanied by a profound decrease of viremia. KTx function in both patients remains stable.
Conclusion: To our knowledge these are the first reported cases of KTx patients suffering from viral-associated trichodysplasia with promising results after conversion of immunosuppression to a calcineurin-inhibitor/ mTORi based regimen.

P032B HOW MUCH IS ENOUGH? EN-BLOC TRANSPLANTATION OF INFANT KIDNEYS IN A 46-YEAR-OLD RECIPIENT. A CASE REPORT ON CRITICAL NEPHRON MASS

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Introduction: While kidney transplantation has become a standard procedure, transplantation of kidneys from infant donors into adult recipients remains a rare event. For very young donor kidneys there is concern regarding critical nephron mass. In addition, these cases require specialized interdisciplinary treatment algorithms based on increased rates of surgical complications as well as higher frequencies of graft loss, especially in *en-bloc* kidney transplantation. We report the case of a 46-year-old recipient with end-stage renal disease secondary to focal segmental glomerulosclerosis who underwent successful postmortal *en-bloc* kidney transplantation from an eight week old donor.
Methods: The patient (83 kg, 170 cm, BMI 28.7) with blood group AB was on dialysis since five years before the blood-group identical kidneys from an eight weeks old donor (4 kg, 55 cm, BMI 13.2) had been allocated. Kidneys were allocated as rescue allocation, after non-acceptance in all other German transplant centers. The kidney seize was 3.5 × 2.3 cm for the right and 3.3 × 2.5 cm for the left kidney. Both kidneys were implanted *en-bloc* (using aortic and cava conduits) into the right fossa iliaca. Cold ischemia time was 10 h and 54 min and warm ischemia time was 30 min. Initial immunosuppression consisted of corticosteroids and high dose tacrolimus to counteract critical glomerular hyperfiltration by inducing vasoconstriction of the vasa afferentia.
Results: After eight days with dialysis (four times) within the first postoperative days, the renal function improved to sufficient levels. During follow-up the kidneys were growing-up to common volumes. Hospital stay lasted 21 days and the postoperative course was without complications. Seven months after transplantation the patient has a good renal function (eGFR 53 ml/min, creatinine 1.56 mg/dl).
Conclusion: *En-bloc* transplantation of infant kidneys into an adult recipient is an interdisciplinary task offering the opportunity to utilise young and high quality donor organs.

P033B ISOLATED THROMBOTIC MICROANGIOPATHY OF THE SMALL INTESTINE IN A PATIENT WITH ATYPICAL HEMOLYTIC UREMIC SYNDROME – A CASE REPORT

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Introduction: Here we report a patient with thrombotic microangiopathy with predominant manifestation in a single organ, the small intestine, due to atypical hemolytic uremic syndrome (aHUS) with complete absence of systemic signs and symptoms. The aHUS is a rare genetic disease characterized by systemic thrombotic microangiopathy (TMA) reflected by hemolysis, anaemia, thrombocytopenia and systemic organ injury. The optimal management of aHUS-patients when undergoing kidney transplantion to prevent recurrence in the allograft is Eculizumab, an approved recombinant antibody targeting human complement component C5.
Methods: Our patient, a 39 year-old woman, presented with severe abdominal pain, diarrhea and emesis for three days. She had in the past experienced an episode of aHUS leading to end stage renal disease in 2007 and a genetic workup revealed a disease-causing heterozygous mutation in the membrane cofactor protein gene. In 2014 she underwent kidney transplantation. Four years later she had to go back on hemodialysis due to allograft failure. At presentation she was still on calcineurin-inhibitor therapy and reported subfebrile temperatures and pain projecting over the transplant prior to the current symptoms.
Results: A CT-scan revealed inflammatory wall thickening of the small intestine. Diagnostic endoscopy discovered fresh blood in the small intestine without a clear source of bleeding. Histopathology of the small intestine biopsies showed severe thrombotic microangiopathy. Of note, the patient constantly had no signs of systemic hemolysis. Since the TMA of the small intestine was most likely due to aHUS, eculizumab treatment was initiated which abolished the symptoms.
Conclusion: Patients with a complement risk factor usually require a secondary trigger for aHUS to manifest. In this case, the second trigger may be attributed to the dysfunctional renal transplant, which was subsequently explanted. Histology of the explanted kidney showed severe inflammation due to purulent nephritis and signs of cellular rejection. No signs of TMA recurred after discontinuation of eculizumab, further supporting the concept of the renal transplant as the main trigger of TMA of the small intestine in our patient.

P035B THROMBOCYTOPENIA, HAEMOLYTIC ANAEMIA, NEW ONSET HYPERTENSION AND PROTEINURIA IN A 29 WEEKS PREGNANT WOMAN WITH KIDNEY GRAFT AND ATYPICAL HAEMOLYTIC URAEMIC SYNDROME (aHUS) – CAN IT GET MORE COMPLICATED?

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Introduction: We present the case of a 34-year-old caucasian woman, 29 weeks pregnant, who had received a living kidney donation five years ago due to end stage renal disease because of aHUS.
Methods: The patient presented with thrombocytopenia (82 000/dl), non-immune haemolytic anaemia (raised lactate dehydrogenase, low haptoglobin) and a rise in creatinine to 1.6 mg/dl. She was found to have hypertension (160 mmHg systolic and 110 mmHg diastolic) and new onset proteinuria of 1.6 g /g creatinine.
Results: The fetal assessment status was normal, there was no fetal growth restriction and the Doppler ultrasound of the uterine and umbilical arteries showed no increased impedance. We measured antiangiogenic factors such as soluble fms-like tyrosine kinase-1 (sFlt-1), placental growth factor (PlGF) and their ratios, with a value of 430, significantly over the cutoff of 38, thus indicating preeclampsia. We treated the patient supportively by lowering blood pressure with alpha-methyldopa and dihydralazine. Because of the signs of thrombotic microangiopathy and the history of aHUS we also admininistered Eculizumab (900 mg weekly, thereafter 1200 mg every other week).By this dual treatment approach of both the aHUS and the preeclampsia, creatinine, proteinuria and thrombocytes as well as blood pressure normalized.
Conclusion: We were faced with a diagnosis dilemma because of a significant overlap in the clinical and laboratory presentations of preeclampsia and other thrombotic microangiopathies, in this case aHUS as well as the fact that both conditions can be present at the same time and can be aggravated by each other, thus a dual treatment approach was initiated.

P036B UNEXPECTED FINDING IN A RENAL ALLOGRAFT BIOPSY

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Introduction: A 63-year old man was admitted two months after deceased-donor kidney transplantation with an acute rise of his creatinine from a baseline of 1.9 mg/dl to 3.7 mg/dl. The patient had received basiliximab induction, followed by maintenance with belatacept, mycophenolic acid and steroids. Physical examination and an ultrasound of the kidney transplant were unremarkable. Kidney biopsy revealed BANFF acute cellular rejection grade IIB. Belatacept was switched to tacrolimus and steroid pulse as well as rabbit antithymocyte globulin were administered. Initially, serum creatinine improved to 2.3 mg/dl but after two weeks kidney function rapidly worsened again (creatinine rise to 6.4 mg/dl) and a second allograft biopsy was performed.
Methods: The patient was treated according to routine clinical practice. Kidney biopsy was stained for acid-fast bacili with Ziehl-Neelsen- and auramine-staining.
Results: Allograft biopsy showed necrotizing granulomatous interstitial nephritis. Granulomatous interstitial nephritis can result from sarcoidosis, medication-induced nephritis or fungal as well as mycobacterial infections. Ziehl-Neelsen staining could not detect any acid-fast bacilli, but auramine-staining, which is more sensitive, was positive and finally mycobacterium tuberculosis was cultured in the urine, blood and sputum. The patient was diagnosed with disseminated tuberculosis (TB). An antitubercular regimen consisting of ethambutol, rifampicin, isoniazid and pyrazinamide was initiated. Concomitantly, immunosuppressive therapy was reduced, with discontinuation of mycophenolic acid, and target tacrolimus levels of 3–5 ng/ml. After three months of quadruple anti-TB therapy rifampicin and isoniazid regimen were given for another six months. Kidney function improved to a creatinine of 2.65 mg/l and remained at this level five years later.
Conclusion: Tuberculous nephritis may occur from reactivation of latent tuberculosis, new onset infection or donor-derived. Risk factors for reactivation of tuberculosis include prior rejection with an increase in immunosuppression and the use of T-cell depleting drugs such as antithymocyte globulin.

P037B PERICARDECTOMY AFTER PERICARDITIS CONSTRICTIVA LED TO ONSET OF TRANSPLANT KIDNEY FUNCTION AFTER 13 WEEKS OF ANURIC KIDNEY GRAFT – A CASE REPORT

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Introduction: A 43-year-old female caucasian patient received a living kidney donation from her mother. She had developed end-stage renal disease 2 years prior due to membranous glomerulonephritis linked to graft-versus-host disease after allogenic stem-cell transplantation for aplastic anemia.

Methods: The graft showed insufficient function in the beginning and the patient developed hypervolemia with ascites and edema in the lower extremities when dialysis was paused. Doppler ultrasonography showed scarce perfusion, with intrarenal arterial waveforms without end-diastolic flow. The venous perfusion profiles showed pulsatile retrograde flow. There was no identifiable reason for a primary vascular perfusion problem on ultrasonography or transplant kidney angiography. Kidney transplant biopsy revealed no rejection but extensive acute tubular necrosis. Two weeks after transplantation, the patient developed an acute anuric graft failure caused by severe cardiac decompensation. Echocardiography revealed a previously unnoticed constrictive pericarditis which was then confirmed in a cardio-CT scan. This can either be attributed to a previous episode of GvHD after stem cell transplantation or could be the result of the previous chemotherapy. The constrictive pericarditis had not been apparent on previous x-rays, CT scans, or echocardiographies, including those for transplantation evaluation.
Results: Conservative management of the constrictive pericarditis was not successful and the graft remained anuric. Eventually, the patient underwent pericardectomy 15 weeks after kidney transplantation. After surgery, the graft immediately started urine production again; which significantly increased within days. The clearance improved and 2 weeks later, the patient was free from dialysis.
Conclusion: This case illustrates that special attention should be given to the pericardium during transplant evaluation, especially for patients who have previously received stem-cell transplantations, chemotherapy or radiation.

P038B AUTOLOGOUS RENAL TRANSPLANTATION FOR RETROPERITONEAL FIBROSIS: RETHINKING ORMOND'S DISEASE – A CASE REPORT

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Introduction: Retroperitoneal fibrosis (RPF, Ormond's disease) is a rare, chronic inflammatory disease characterized by retroperitoneal proliferation of fibrous tissue. The disease frequently results in ureteral obstruction, multiple surgeries and finally renal failure. We herein report case managed successfully by autologous renal transplantation.
Methods: A 62-year-old woman, with a complex surgical history was referred to our department. She had undergone left-side nephrectomy several years ago due to kidney atrophy and presented with a progressive kidney dysfunction of the remaining right kidney. Furthermore, the patient had previously undergone a partial right-sided ureteral resection with bladder elevation and "definite" percutaneous nephrostomy was performed, concommitted by recurrent septicemias due to renal infections. Following the strong wish of the patient to preserve the remaining kidney, an autologous renal transplantation was planned.
Results: The right kidney was removed and perfused with 300 ml HTK. Two arteries were conjoined and the graft was transplanted into the left iliac fossa using the standard technique for living donor kidney transplantation (warm ischemia time 2 min, cold ischemia time 2 h 31 min, anastomosis time 25 min). Postoperatively, after a maximum creatinine increase up to 2.7 mg/dl the kidney recovered within a few days. Currently, creatinine (0.85–0.89 mg/dl) is lower than before autologous transplantation (1.09–1.39 mg/dl). A superficial wound infection was managed conservatively. The patient was discharged on the 18th postoperative day in excellent clinical condition.
Conclusion: Autologous renal transplantation should be considered as a treatment option for patients with persistent ureteral obstruction caused by RPF, even in complex cases.

LIVER

P039A HBe-SEROCONVERSION 4 YEARS AFTER LIVER TRANSPLANTATION

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Introduction: Recurrent Hepatitis B Virus (HBV) infection after liver transplantation (LT) is a common problem in transplant medicine. 45% of LT-recipients show a positive HBV-DNA PCR 10 years post-LT. Even though antiviral therapy and active immunization reduce recurrence rates and increase patients' and grafts' survival, immunosuppression may provoke HBV-recurrence. Up to 10% of patients have HBV recurrence with antiviral therapy post-LT.
Methods: A 70-year-old male received a LT in 2015 due to a HBeAg-negative HBV-associated Child B cirrhosis (FD 09/14) causing a hepatocellular carcinoma (FD 10/14). Initial HBV-load was 10 000 U/ml. Antiviral therapy was started with Tenofovir 245 mg in 2014, changed to Entecavir and anti-HBsAg infusions post-LT. Induction therapy was performed with Basiliximab and high-dose Prednisolone. It was continued with low-dose Tacrolimus (1 mg; trough level 2–4 ng/ml) and Everolimus (Ev) (2 mg; trough level 3–5 ng/ml). Ev was stopped in 02/18 due to an acute Hepatitis E infection. Dual antiviral therapy was continued until 02/19 and then reduced to Entecavir (0.5 mg) monotherapy (Anti-HBs75.9 U/ml in 02/19). In 11/18 we observed seroconversion of anti-HBe from negative to positive. HBsAg was always negative, HBV-DNA was never detectable in PCR postLT. The patient presents currently in an excellent condition with a good graft function and no evidence of HCC recurrence.
Results: HBV recurrence post-LT occurs due to virus persistence in extrahepatic reservoirs like peripheral blood mononuclear cells or the spleen. Without antiviral therapy persisting HBV reinfect the graft in up to 100% and lead to a mortality rate of 50% after 2 years. Essential immunosuppression post-LT provokes recurrence by suppressing the virus-specific immune response, increasing the viral mutation rate and thereby viral load causing reinfections and even graft losses.
Conclusion: Successful treatment of chronic HBV-infection with HBe-Ag seroconversion is possible under immunosuppressive therapy post-LT. Low dosed immunosuppressive regimens in combination with antiviral therapy and active immunization are to be favoured. In the case presented the potential trigger for seroconversion was the HEV-infection.

P040A TUMOR RESPONSE AFTER TRANSARTERIAL CHEMOEMBOLIZATION WITH OR WITHOUT STEREOTACTIC BODY RADIATION IN LIVER EXPLANTS FROM PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction: Hepatocellular carcinoma (HCC) is one of the most frequent malignant diseases, occurring mostly in patients with liver cirrhosis. In patients where surgery ist not possible, liver transplantation is an established treatment option. Due to organ shortage there are long waiting periods for transplant candidates. Tumor progression during this time proposed a significant risk for waiting list withdrawal. Therefore, locoregional treatment options are used as bridging therapies. We performed a retrospective analysis in patients receiving either transarterial chemoembolization (TACE) alone or in combination with stereotactic body radiation therapy (SBRT)
Methods: We performed a retrospective analysis of all patients of university hospital rechts der Isar, Munich, with liver cirrhosis and HCC within the Milan criteria who underwent liver transplantation from 2007 to 2018. Histopathology of liver explants of patients who received at least one transarterial chemoembolization with or without stereotactic body radiation were analyzed for the presence of residual tumor in order to identify differences in tumor response. Statistic was performed using Chi-squared and Fisher's test
Results: In total, 14 patients with confirmed HCC received either TACE alone ($n = 10$) or a combination of TACE and SBRT ($n = 4$). In both groups mean patient age was 62 ys (TACE alone 61 ys; TACE and SBRT 63 ys), mean number of lesions was 1. There were no statistically significant differences within both groups regarding gender ($p = 0.714$) and genesis of cirrhosis ($p = 0.615$). In contrast to the TACE-only group, where 9/10 (90%) patients showed vital HCC lesions by histopathology, almost all patients that received a combination of both TACE and SBRT (3/4, 75%) had no detectable tumor burden in liver explants ($p = 0.041$)
Conclusion: In times of organ shortage and long times on the waiting list for liver transplantation, an improvement of established bridging methods for early HCC is urgently needed. Our data suggest that a combination of TACE and SBRT could be superior to TACE alone. If improved response by histopathology could translate into reduced risk for tumor recurrence after transplantation will require investigation in a larger cohort

P041A RECONSTRUCTION OF HEPATIC ARTERY BRANCHES AND COMMON HEPATIC ARTERY BY THE USE OF VENA SAPHENA AUTOGRAFT AND ILIAC ARTERY ALLOGRAFT FOR LIVER TRANSPLANTATION

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Introduction: Harvest related grade 4 (Eurotransplant) injury of the donors' central hepatic artery is potentially life threatening to the recipient.
Methods: A liver from a 13-year-old female deceased donor was accepted for a 20-year-old male patient suffering from primary biliary cirrhosis. Backtable preparation prior to liver transplantation (LTx) revealed that both branches of the hepatic artery had been cut during organ retrieval. Microsurgical arterial reconstruction with running Prolene 8-0 suture was performed.

Portal venous reperfusion was uneventful during LTx. However, the initially weak arterial flow (less than 50 ml/min measured by Doppler-Flowmeter) ceased within 10 min after arterial reperfusion. Thrombectomy with a size-2 fogarty catheter was not successful. Thus, complex arterial reconstruction was indicated. An autologous vena saphena graft was taken from the patient's left thigh and anastomosed (running suture, Prolene 7-0) with both arterial branches of the donor liver. Venous grafts were anastomosed with an iliac artery allograft in order to have enough length for a side-to-end aorto-iliac artery anastomosis (running suture, prolene 5-0).
Results: Arterial flow after reconstruction was normal with 200 ml/min and LTx could be completed without further challenge. The postoperative course was uneventful and the patient could be discharged at postoperative day 18.
Conclusion: High surgical expertise is a prerequisite for a low complication rate during organ retrieval. Early diagnosis of harvest related injury of the graft is crucial for effective intraoperative management. Autologous vena saphena graft and heterologous arterial graft are suitable for hepatic artery reconstruction.

P042A *DE NOVO* TUMORS OF THE LIVER AFTER LIVER TRANSPLANTATION: ARE WE NOT STRICT ENOUGH? – A CASE SERIES FROM A HIGH VOLUME LIVER TRANSPLANT CENTER

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Introduction: Today, liver transplantation is performed with a high level of routine in patients with end-stage liver disease. However, occurrence of different types of malignancies threatens their long-term survival. The elevated risk of tumorigenesis can manifest in the liver graft itself by development of hepatic *de novo* tumors. Because this is a rare event occurring years after transplantation, little is known about this entity. We set out to investigate the frequency, etiology, and associated risk factors.
Methods: With a volume of over 3000 liver transplants performed between 1988 and 2019 at our institution, we queried the results of our prospectively collected institutional database. All cases with a *de novo* intrahepatic tumor in the follow-up period were identified, excluding those patients with a hepatobiliary malignancy prior to transplantation.
Results: Nine patients presented with an intrahepatic *de novo* tumor in the follow-up period after transplantation (accounting for 0.3%), arising between two and 24 years after surgery. The majority of those cases (eight) manifested as hepatocellular carcinoma, and one patient presented with an epithelioid hemangioendothelioma. Eight patients had a recurrence of the initial disease that had caused their end-stage liver disease prior to transplantation. This was predominantly associated with viral reinfection with either HCV or HBV. Three patients were treated surgically receiving a total tumor resection (R0). However, only two patients were alive at data abstraction.
Conclusion: *De novo* tumors of the liver have to be considered in the follow-up of liver recipients. While surgical resection is a promising treatment option, the general outcome is poor. Therefore, robust follow-up programs have to be established and maintained, especially in patients with disease recurrence.

P044A DYNAMICS OF GLUCOSE METABOLISM AFTER LIVER TRANSPLANTATION

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Introduction: 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.

ORGAN DONATION

P045B ABDOMINAL WALL CLOSURE IN MULTIVISCERAL AND INTESTINAL TRANSPLANT PATIENTS USING ISOLATED DONOR RECTUS SHEATH FASCIA AS AN INLAY-GRAFT

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Introduction: Intestinal and/or multivisceral transplantation has been a success in selected cases of critically ill patients. These procedures are often accompanied by a practical problem of fitting the graft into the recipient's abdominal cavity. Due to scarring and abdominal shrinking the available volume decreases over time and can potentially cause failure in primary wound closure and necessitate a staged closure. Various surgical options for the abdominal wall reconstruction exist with acellular dermal allografts, non-biological mesh and others.
Methods: At the time of organ procurement the rectus sheath containing parts of the transverse abdominal, external- internal oblique and rectus abdominis muscle were simultaneously recovered, taking an additional time of 15–20 minutes during explantation. During back table preparation the rectus fascia was dissected and freed of muscle and fatty tissue, taking an average of 2–3 hours.

Fascia samples were collected in 2 recipients after 2 days. The samples were fixated in formaldehyde and prepared for histopathological analysis.
Results: 4 consecutive recipients received donor fascia resulting in tension free primary wound closure in all 4 recipients. Without the fascia an inlay of non biological mesh or other material would have been necessary for primary wound closure. A 7 month follow-up of a recipient showed good functional outcome and no evidence of herniation.
Conclusion: Donor fascia can be prepared and utilized as a biological alloinlay-graft in selected patients undergoing intestinal or multivisceral transplantation. There are no cosmetical disadvantages for the abdominal closure in the donor. The preparation of the fascia can be conducted back table during the implantation of the organs and customized to the necessary measurements. The fascia carries the identical HLA epitopes as the graft, thus the reaction towards the additional antigen load is limited. It is an easy to use method to achieve primary wound closure during intestinal or multivisceral transplantation.

P047B COMPARISON OF SURVIVAL IN RECIPIENTS OF DECEASED DONOR LIVER GRAFTS WITH RECIPIENTS OF LIVING DONOR LIVER GRAFTS

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Introduction: Facing a shortage of deceased donor organs in Germany, the current outcomes of living donor liver donation need to be evaluated. We present a comparison of living donor liver transplantation (LDLT) and deceased donor liver transplantation (DDLT).
Methods: Patients undergoing LDLT between 2004 and 2017 were matched to DDLT patients of the same age and underlying liver disease (cirrhosis or hepatocellular carcinoma). For survival statistics we excluded in-hospital mortality.

Median follow-up time was 52 (4–151) months. Statistical evaluation was performed by chi-square test, Mann-Whitney test or log rank test, as appropriate.
Results: We identified 69 pairs. Median age of donors and recipients was 48 (16–80) years and 58 (18–72) years, respectively. 78% of recipients were men. Living donors were younger than deceased donors ($p < 0.001$). Moreover, we found no statistically significant difference in donors' body mass index (BMI), in-hospital mortality or rate of re-transplantation between DDLT and LDLT.

There was no statistically significant difference in 5- or 10-year survival between DDLT and LDLT. MELD-score or donors' BMI was not associated with

a difference in long term survival. For DDLT donor-risk-index (DRI), extended criteria donor (ECD), cause of death, cold ischemia time, warm ischemia time, site of allocation, stay in the intensive care unit (ICU) were not associated with differences in long term survival. Better survival was observed in donors aged 50 or below. A statistically significant difference in long term survival was associated with recipients' underlying liver disease.
Conclusion: In this study, recipients' underlying liver disease was the only parameter identified as having a significant impact on survival (LDLT: $p = 0.001$; DDLT: $p = 0.005$).

P049B RENAL ARTERY ANASTOMOSIS TO A REMNANT RENAL GRAFT ARTERY FOR RETRANSPLANTATION WITH LIFE DONOR KIDNEY IN A PATIENT WITH SEVERE CALCIFICATION OF THE AORTO-ILIAC AXIS

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Introduction: Arterial sclerosis is common in patients on dialysis for end-stage renal disease. Arterial anastomosis is challenging or not even feasible in these patients.
Methods:
Case Report: A 68 year old male patient underwent simultaneous renal-pancreas transplantation 17 years ago. Due to kidney graft failure, he was on dialysis for 7 months, until a life donor was available. Unfortunately, the patient presented with severe arterial calcification of the aorto-iliac axis without secure possibility of a new arterial anastomosis. However, preoperative ultrasound showed a patent renal artery of the 1st kidney graft. Thus, he underwent exploration before life organ retrieval. The arterial flow of his 1st kidney graft was confirmed intraoperatively before its removal maintaining the graft's artery in situ. The remnant of the renal graft's artery was assessed for anastomosis and endarterectomy was performed to optimize its patency prior to completion of the end-to-end anastomosis with the artery of the new life donated graft.
Results: The final intraoperative arterial flow in the renal graft artery was 360 ml/min. An immediate postoperative standard duplex confirmed excellent perfusion of the kidney graft. There was no need of postoperative dialysis. The whole hospital stay was uneventful and the patient was discharged at day 16 after transplantation with a serum creatinine of 1.35 mg/dL and an eGFR of 53.5 mL/min. By now, one and a half year after transplantation, the kidney graft function has remained stable with a creatinine of 1.38 mg/dL.
Conclusion: In recipients with severe calcification of the aorto-iliac axis, exploration can be an option to ensure the feasibility of transplantation before nephrectomy of a life donor. Remnant renal vessels of a failed graft can be suitable for anastomosis during retransplantation. This case clearly shows the importance of an extensive preoperative evaluation.

P051B A NEW TOOL FOR SAFE TEAM COMMUNICATION IN MEDICAL PRACTICE: REAL-LIFE EXPERIENCE

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Introduction: Miscommunication is the major cause of malpractice. Complex interdisciplinary treatment and organizational procedures require increasing efforts for written plans and consent. We already reported our initial experience with a tool for fast, secure and legal medical data transmission, minimizing time-consuming repetitive communications. Aim of this study was to report on the extended use of this tool after 2 years of daily use.
Methods: Communication and data traffic was analyzed from prospectively collected data in a retrospective study. Medical, legal and financial issues, as well as hardware and software requirements, were further developed. New features for extended intra- and extra-department as well as intra- and extra hospital communication were included. GPS-tracking during organ procurement, automated cloud sharing of X-ray, CTs and MRI-Scans and customization of groups based on therapy concepts.
Results: The number of communications increased to a high level between all members included in the treatment process. Different groups were created, allowing involvement of specific members necessary for individual processes: lung and heart transplant, heart failure including extracorporeal life support and ICU teams, etc. Messages were noticed simultaneously by all team members up to 20 thus reducing information time and miscommunication.
Conclusion: Our app allows for legally safe, fast, transparent and binding medical data transmission simultaneously for treatment teams allowing accelerated diagnosis and treatment compared to person-to-person telephone communication. After a short learning curve, the use of the App was uncomplicated. Further expansion to treatment teams separated by long distances is feasible i.e. when sharing donor/recipient specific logistic information. A solution for physician-patient communication is under development.
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P053B ABO-INCOMPATIBLE LIVING DONOR KIDNEY TRANSPLANTATION IN AN HIV POSITIVE RECIPIENT FROM AN HIV POSITIVE DONOR

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Introduction: An HIV Infection is no longer a contraindication for organ transplantation, yet the setting is still challenging and unexplored due to general reservation. This is the first report of an ABO-incompatible kidney transplantation from an HIV-positive donor to an HIV-positive recipient in Europe.
Methods: We describe a 51 year old Caucasian male with end-stage renal failure due to polycystic kidney disease who underwent an ABO-incompatible (A + to B+) kidney transplantation from his 49 years old male partner. Both donor and recipients are HIV positive and had an undetectable viral load pre-transplantation. A hand-assisted retroperitoneoscopic nephrectomy of the donor's right kidney with two arterial braches was performed to harvest the graft.
Results: Immunosuppression consisted of simulect, tacrolimus, mycophenolate mofetil and prednisone. Prior to transplantation, rituximab was given and two plasmaphereses followed by IVIG application were performed. A left-sided native nephrectomy was performed simultaneously to transplantation. During early postoperative course, a suspected episode of acute rejection on day three was successfully managed with corticosteroid. Anti-A titer remained low throughout the course. Both donor and recipient continued to have an undetectable viral load after adjusting the antiretroviral medication for renal function. Donor was discharged on POD 3 (eGFR: 59 ml/min), whereas recipient had a stabile graft function (eGFR: 51 ml/min) at discharge on POD 13 and at two months follow-up (eGDR: 54 ml/min).
Conclusion: To our knowledge, this is the first report of a successful ABO-incompatible living donor kidney transplantation from an HIV positive donor in an HIV positive recipient in Europe, a valuable approach with good intermediate-term results.