23. Jahrestagung des Arbeitskreises
Nierentransplantation der DGU
12. – 14. November 2015 in Homburg

Bericht von der DTG 2015

22.-24.Oktober, Dresden

K. Weigand / P. Fornara

Universitätsklinik und Poliklinik für Urologie
(Direktor: Univ. Prof. Dr. P. Fornara)
Universitätsklinikum Halle (Saale)

UKH
Universitätsklinikum
Halle (Saale)

Beteiligung Urologie

Vorträge: n=5

- IBMT TU Dresden / Homburg — neues Perfusionssystem
- Halle — Lebendspende
- Düsseldorf — Tumor nach NTX
- Bremen — Schwangerschaft & NTX
- Halle (inkl. Diskussionsleitung) — Absicherung Nierenspender

Poster: n=9

- Halle: rechtsseitige HALDN – 10 Jahre LDN – akutes ANV beim CD-Donor
- Aachen: TX-Nephrektomie
- Marburg: Ischämie-Reperfusion
- Homburg: robotic LDN – Perfusionssystem
- Dresden: LNTX: Einflussfaktoren outcome – LNTX: periop. Kompl

Themen

- Klinisch:
  - Lebendspende Lap./ robotisch,
  - Donornephrektomie Seitenwahl

- Experimentell:
  - Ischämie/Reperfusionsschaden
  - Organperfusion
  - Urinproteine

- State of the art:
  - Richtlinien/Spenderabsicherung

Kommission Organentnahme

Mindestanforderungen für Entnahmeteams

- n=25 Entnahmen unter Anleitung
- Dokumentationspflicht durch OP Berichte
- Weiterbildung in 3 Modulen:

1. Theoretisch z.B. Walter-Brendel-Kolleg, DTG Kurs
2. Praktischer Kurs (TOP Course)
3. Dokumentation der angeleiteten Explantationen

Beiträge von Interesse

P122

DONOR AGE ≥65 YEARS IS THE MAJOR RISK FACTOR FOR ALLOGRAFT LOSS IN A GERMAN TRANSPLANT POPULATION

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Aim of our study was to analyze the risk factors (RF) for 3-year allograft loss in a typical German transplant population. We retrospectively analyzed 422 adult single kidney transplants between 2007 and 2012, including 192 patients from the ETKAS, 94 patients from the ESP and 136 living donor (LD) kidney transplants. The 3-year patient and graft survival was 96.9% and 90.6% in ETKAS and 88.1% and 73.2% in the ESP. In recipients of a LD kidney the graft survival with younger donors was 95.5%, while it was 65.4% in patients with LD above 65 years.

In a multivariate analysis we identified donor age ≥ 65 years (OR 9.7 [3.4;27.8]; $p < 0.001$)., severe surgical complications (OR 7.6 [2.8;20.3]; $p < 0.001$) and intense immunosuppression (OR 5.2 [1.6;17.5]; $p = 0.008$) as independent RF for immediate graft loss. Donor age above 65 years was the only and highly significant RF for long-term allograft loss (HR 4.1 [2.5;7.0]; $p < 0.001$).

While we achieved an excellent patient and graft survival in our ETKAS patients and recipients of LD younger than 65 years, the graft survival was lower not only in the ESP recipients but also in recipients of living donor grafts older then 65 years.

We conclude that a donor age above 65 years is a significant RF for long-term allograft loss not only in DBD but also in LD.

Beiträge von Interesse

P154

TRANSPLANTING A TRANSPLANTED KIDNEY - A NEW CHALLENGE IN TIMES OF DONOR ORGAN SHORTAGE

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

Beiträge von Interesse

P156

NORMOTHERMIC *EX VIVO* KIDNEY PERFUSION REPRESENTS A NOVEL PRESERVATION METHOD FOR HEART BEATING DONOR KIDNEY GRAFTS

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Background: The ongoing organ shortage has resulted in an increased interest to recover marginal kidney grafts for transplantation. Recently, Normothermic *Ex Vivo* Kidney Perfusion (NEVKP) has been developed as a novel preservation technique for kidney transplantation. We assessed the safety and efficacy of NEVKP in pig kidney transplantation.

Methods: Normothermic *Ex Vivo* Kidney Perfusion (NEVKP) at 37° was compared with cold storage (CS) at 4° in a model of heart beating porcine kidney autotransplantation (male Yorkshire pigs, 30 kg) ($n = 5$ each group). NEVKP and CS were performed for 8 h respectively. Continuous normothermic perfusion circuit characteristics, hourly blood gas samples, and renal real-time injury markers were investigated. Following autotransplantation, serum creatinine and blood urea nitrogen (BUN) were measured as markers of kidney function. After ten days, tissue biopsies were taken and stained (H&E, PAS, TUNEL) to investigate renal injury.

Results: Perfusion circuit characteristics such as temperature, arterial and venous pressure, renal blood flow (RBF), and intrarenal resistance (IRR) were maintained at a physiologic level throughout NEVKP. High rates of oxygen consumption revealed the metabolic activity of the perfused kidney grafts (89.1 ± 10.9 ml/min/g at 6 h). Aspartate aminotransferase, lactate, and lactate dehydrogenase values, as renal real-time injury markers, were below analyzer range throughout perfusion. Following contralateral kidney resection and renal autotransplantation, peak serum creatinine and BUN values on day one after surgery demonstrated a trend towards improved graft function in NEVKP versus CS preserved grafts (creatinine 2.1 ± 0.51 mg/dl vs. 2.8 ± 0.71 mg/dl and BUN: 19.8 ± 3.5 mg/dl vs. 25.3 ± 7.4 mg/dl; $p = 0.16$ and $p = 0.22$). Histological investigation demonstrated slight alterations in tubular morphology and no signs of necrosis in both groups.

Conclusion: This study demonstrates feasibility and safety of NEVKP as a novel preservation method for heart beating donor grafts. It provides a platform to further improve storage, assessment, and repair of marginal kidney grafts.

Beiträge von Interesse

V020

BIRTH WEIGHT AS A MARKER OF NEPHRON NUMBER: PREDICTING LIVING KIDNEY DONOR OUTCOMES

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It has been demonstrated that low birth weights give rise to a reduction in nephron number with increased risks for hypertension and renal disease. Its impact on renal function in kidney donors, however, hasn't been addressed.

To investigate the impact of birth weight, kidney weight, and volume on kidney function, we collected data from 91 living kidney donor/recipient pairs before nephrectomy, at 12, 36, and 60 months after nephrectomy.

Donors remaining kidney function showed a strong positive correlation with birth weight at 12, 36, and 60 months ($P < 0.05$). The strongest link was observed in donors >50 years ($R = 0.535$, $P < 0.001$ at +12 months). Daily proteinuria at +12 months showed a negative correlation with birth weight ($P = 0.009$). Donors with new-onset hypertension showed significantly lower birth weights and higher uric acid levels ($P < 0.05$). Donor birth weight showed a positive correlation with allograft function ($P = 0.031$) and negative correlation with the number of antihypertensive drugs in the recipient ($P < 0.05$).

Low donor birth weight predisposes donors to inferior remaining kidney function, hypertension, and proteinuria. The strong correlation in elderly donors may be attributed to a reduced renal functional reserve due to the decline of renal function with age.

Beiträge von Interesse

P129

FIRST CLINICAL RESULTS OF A SALIVA TESTING ON INFLAMMATION IN TRANSPLANT PATIENTS

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Introduction: Ideal biomarker should be specific, sensitive, non-invasive, mirror the benefit of therapy and offer prognostic potential. We developed a test using a colorimetric assay to detect kynurenine (Kyn) changes in patients. Kynurenine [EC 1.13.11.42] is generated downstream in the tryptophan metabolism and one of the key players concerning inflammatory response and known for immune-modulation not only on T-regulatory and NK cells.

Materials and Methods: Blood samples were measured retrospectively from 442 renal transplant patients (n = 5100) and prospectively from 114 patients (n = 790). 292 healthy blood donors served as normal controls. In a second step we developed a test method in saliva first on basis of the colorimetric assay including the normal controls and prospectively in 66 (n = 290) patients after renal transplantation with 18 rejection episodes.

Results: Test-recovery rate was 97–99.8%, intra-assay variance 1.53% and inter-assay variance 2.77%. Values in normal controls were 2.7 + 0.4 µM for serum and 0.9 + 0.4 µM for saliva. Mean values in patients with rejection (BPAR) was 17.4 + 8.4 µM in serum (s) and 4.6 + 1.6 µM in saliva (sal) compared to uneventful patients 4.3 + 1.6 µM (s) and 1.3 + 0.6 µM (sal). The proportion rate was equal between normal controls, uneventful patients after transplantation and rejection. We found a) a significant correlation of Kyn and rejection episodes (BPAR) early in the beginning, b) a predictive information concerning the long-term run of the transplant (up to 144 mos) and c) excellent tool for monitoring therapeutic interventions especially on individual basis (drug minimization). In serum testing we could differentiate significant between steroid-sensitive, steroid-resistant and antibody mediated rejection and infection. In saliva we found no circadian behavior for kynurenine.

Conclusion: This test fulfills the given prerequisites. It is a safe and reliable method, is easy and quick to perform and not costly. The test enables the individual monitoring of patients under immunsupressive therapy. The test set-up is under evaluation and further development. Further validation is planned in prospective clinical observational and interventional studies.

Vielen Dank

für Ihre Aufmerksamkeit