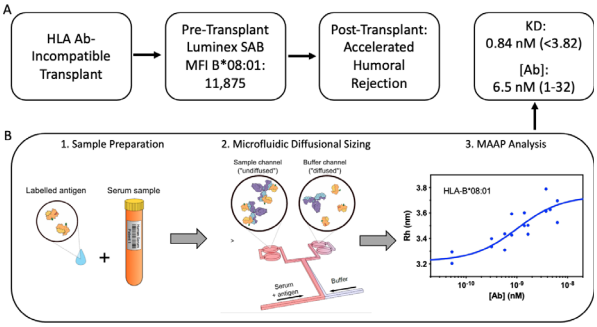

Figure 1. Microfluidic Antibody Affinity Profiling to determine both antibody concentration and affinity in human patient serum. A) An example of a patient that underwent HLA antibody incompatible transplantation. Pre-transplant serum showed donor-specific antibody with a Luminex SAB MFI of 11,875 against HLA-B*08:01. The transplant proceeded following desensitisation but the patient went on to suffer accelerated humoral rejection. B) Retrospective MAAP analysis of this pre-transplant serum sample showed the presence of donor specific antibody with high affinity to HLA-B*08:01.

POS102 HIGH CHOLESTEROL AND AGING NEGATIVELY INFLUENCE RENAL CAPILLARY DENSITY AND TUBULE VILLIN EXPRESSION BY DECREASING CAPILLARY VEGF AND NITRIC OXIDE

Binnaz Handan Ozdemir[1], Eda Akcay[1], Alev Ok Atilgan[1], Mehmet Haberal[2]
[1]Baskent University, Department of Pathology, Ankara, Turkey; [2]Baskent University, Division of Transplantation, Department of General Surgery, Ankara, Turkey

Background: The role of aging and high cholesterol (HC) on endothelial cells (ECs) is not well defined. Aged ECs might produce less nitric oxide (NO) and VEGF, resulting in reduced glomerular capillaries (GCs) and peritubular capillaries (PTCs). To understand whether the capillary loss was due to changes in angiogenic factors affected by age and cholesterol, we investigated the impact of age and HC on the density of GCs and PTCs.
Methods: Among 150 patients, 63 (42%) had HC. HLA-DR and CD31 stained to determine the mean number of GCs and PTCs. PCNA, VEGF, and NO expression of GCs and PTCs examined. EC proliferation index (PI) of GCs and PTCs assessed by PCNA. Villin expression and PI of tubules examined.
Results: The mean capillary numbers were 38.4 ± 15.2 and 27.6 ± 14.4 for GCs and PTCs, respectively. VEGF and NO expression of both GCs and PTCs and the PI of all capillaries decreased with increasing donor age and cholesterol (p <.001). The PI index of ECs showed a negative correlation with VEGF and NO expression of both GCs and PTCs (p <.001). The number of PTCs correlated with PTCitis (r = -0.73, p <.001), PTC-VEGF expression (r = 0.73, p <.001), PTC-NO expression (r = 0.86, p <.001), tubular villin (r = -0.83, p <.001), proteinuria (r = -0.5, p <.001), hypertension (r = -0.48, p <.001), IF (r = -0.74, p <.001), graft loss (r = -0.57, p <.001). GC loss was significantly associated with GC inflammation (r = -0.68, p <.001), GC-VEGF expression (r = 0.76, p <.001), GC-NO expression (r = 0.86, p <.001), tubular villin (r = -0.76, p <.001), proteinuria (r = -0.64, p <.001), hypertension (r = -0.43, p <.001), GS (r = -0.53, p <.001), graft loss (r = -0.46, p <.001).
Conclusion: Loss of capillary VEGF and NO associated with aging and HC resulted in a significant loss of GCs and PTCs. Loss of PTCs and GCs correlated with the severity of the tubular injury, proteinuria, hypertension, IF, and GS. We suggested that donor age and HC influenced graft survival negatively by impairing the microvasculature and tubular integrity.

POS103 CLINICAL IMPLICATION OF C1Q DEPOSITION IN KIDNEY TRANSPLANTATION

EunAh Jo[1], Hyo Kee Kim[1], Sang-Il Min[1,2], Ahram Han[1], Sanghyun Ahn[1,2], Chris Tae Young Chung[1], Hyunmin Ko[1], Kwang Woo Choi[1], Seung-Kee Min[1,2], Jongwon Ha[1]
[1]Seoul National University Hospital, Surgery, Seoul, South Korea; [2]Seoul National University College of Medicine, Surgery, Seoul, South Korea

Background and Aims: C1q nephropathy is an uncommon type of glomerulonephritis and is characterized by an extensive and dominant C1q mesangial deposition in the absence of systemic lupus erythematosus. However, there are limited studies about C1q deposition in renal allograft.
Methods: Between January 2005 and December 2018, a total of 1742 kidney transplantations were performed in Seoul National University Hospital. C1q deposition was detected in 104 of these cases. 28 cases had intense (≥2+) C1q-dominance and were reviewed in this study.
Results: Among the 28 cases, 10 cases were detected in the post-reperfusion biopsy and 18 cases were detected in the post-operative periods, which includes both indication and protocol biopsy. In the post-reperfusion biopsy group, C1q depositions either disappeared (n = 9, 90%) or diminished (n = 1, 10%) in the follow-up biopsy. 3-year graft survival rate was 89.5% and 3-year mean eGFR was 57.4 ± 22.35. There were 9 cases (32.1%) of borderline acute T-cell mediated rejection (ATMR) and 3 cases (10.7%) of ATMR. Also, 3 cases (16.7%) of BK nephropathy and 5 cases (26.8%) of IgA nephropathy co-existed with C1q depositions in the post-operative biopsy group. In the follow-up biopsies (n = 5) of the post-operative group, C1q depositions disappeared in 80% (n = 4) and diminished in 10% (n = 1).
Conclusions: Nearly half of the C1q deposition cases detected in the post-operative periods were accompanied by t-cell mediated rejection or IgA nephropathy. Conversely, C1q depositions in the post-reperfusion group disappeared and graft survival were relatively good. Further studies to identify the natural history and the clinical significance of C1q deposition in renal allograft outcome are needed.

POS104 SINGLE KIDNEY TRANSPLANT USING ORGANS WITH KARPINSKI/REMUZZI SCORE 6 OR HIGHER: A TABOO TO DISPEL?

Fabio Vistoli[1,2], Vittorio Grazio Perrone[2], Concetta Cacace[1,2], Emanuele Federico Kauffmann[1,2], Niccolò Napoli[1,2], Michael Ginesini[1,2], Cesare Gianfaldoni[1,2], Fabio Asta[1,2], Ugo Boggi[1,2]
[1]University of Pisa, Department of Translational Research and New Technologies in Medicine and Surgery, Pisa, Italy; [2]Azienda Ospedaliera Universitaria Pisana, Division of General Surgery and Transplantation, Pisa, Italy

Background: The weight to attribute to the morphological biopsy of the pre-transplant kidneys, compared to the functional parameters and clinical data, for choosing if performing single or dual kidney transplantation, in the case of an elderly or marginal donor, is debatable.
In the original Karpinski/Remuzzi (K/R) score, the limit for performing a single transplant was fixed at 3 and kidneys with score 4 to 6 were indicated for dual grafting. Currently, the majority of transplant centres who take into consideration the K/R score, accept score 4 (some of them also score 5) kidneys for single transplantation. We present a series of single kidney transplants performed with kidneys classified K/R score 6 or 7, at the pre-transplant biopsy.
Methods: In the period 2011–2019, 6 transplants were performed with organs from 4 donors (3 male and 1 female) with a mean age of 71.5 ± 5.2 years, mean BMI of 26.9 ± 0.91 kg/m2, mean serum creatinine of 0.59 ± 0.05 mg/dl with an estimated GFR of 118.5 ± 8.61 ml/min. Three donors were hypertensive, one was type 2 diabetic, one died from a stroke and three from head trauma. Pre-transplant kidney biopsy was K/R score 6 in 4 kidneys and 7 in 2 kidneys. The survival of the graft, the number of rejections and the last creatinine value were evaluated.
Results: Recipients were on dialysis and had an average age of 61.8 ± 4.1 and a BMI of 24.3 ± 1.4 kg/m2. The postoperative course was regular and the renal function recovery was immediate for all of them. After a median follow-up of 107.2 ± 38.6 months, all grafts are functional with a median creatinine of 1.3 ± 0.24 mg/dL. No episodes of rejection were recorded.
Conclusions: In selected donors and recipients, single kidney transplantation with an K/R biopsy score of 6/7 appears feasible. A good balance of biopsy morphology, functional and clinical parameters is mandatory. A careful selection and matching of donor/recipient characteristics, in term of age, gender, BMI and immunological parameters make it feasible to dispel the score 6/7 taboo.

POS105 RESEARCH BIOPSIES IN KIDNEYS FOR TRANSPLANT: AUDIT TO COMPARE CLINICAL SAFETY WITH TISSUE QUALITY

James Hunter, Sadr Shaheed, Corinna Snashall, Hannah Mcgivern, Simon Knight, Hussain Abbas, Jonathan Milton, Marta Oliveira, Sarah Cross, Rutger Ploeg
Nuffield Department of Surgical Sciences, University of Oxford, Oxford, United Kingdom

Background: Tissue biopsies obtained from organs pre-transplant provide valuable information about donor kidneys and can be used for research. The Quality in Organ Donation (QUOD) biobank has collected > 6000