

FACTORS ASSOCIATED WITH ACUTE REJECTIONS IN KIDNEY TRANSPLANT RECIPIENTS: TIME FOR HLA-DR MATCHING IN ELDERLY RECIPIENTS?

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Background: Within the Eurotransplant Senior Allocation Program (ESP) HLA-matching is neglected, potentially causing inferior outcomes. There is a lack of data analysing the long-term immunologic outcomes in elderly kidney transplant recipients (KTR).

Methods: This retrospective study included 972 KTR between 2004 and 2014. Data analysis included patient and graft survival, biopsy proven rejections (T-cell mediated rejections (TCMR) and antibody mediated rejection (ABMR)) and the development of de-novo DSA. KTR were further categorized according to age in 728 younger (<65) and 244 elderly (≥65 years) KTR and furthermore according to HLA-DR matches.

Results: Elderly KTR showed significantly shorter time on dialysis (44 vs. 61 months), shorter cold ischemia time (CIT) (9 vs 12 hours), more HLA mismatches (4 vs. 2) and a higher proportion of DGF (46% vs. 29%). In the subgroup of elderly KTR there was a higher incidence of de novo DSA (33% vs. 25%, $p=0.034$) and TCMR (39% vs. 27%, $p<0.001$) at 7 years post-transplant.

A multivariate analysis adjusted for all relevant factors revealed donor age (HR 1.01; $p=0.044$), CIT (HR 1.02; $p=0.064$), delayed graft function (HR 2.88; $p<0.001$) and HLA-DR mismatches (HR 2.19; $p<0.001$) as independent predictors for TCMR. Older recipient age however was protective (HR of 0.99 per year, $p=0.002$).

Within the group of elderly KTR, an increasing number of HLA-DR mismatches was associated with a significant higher risk for TCMR ($p=0.027$) and development of de novo DSA ($p=0.036$), while there was no significant difference regarding ABMR (Fig 1a-d). Occurrence of TCMR or de-novo DSA in elderly KTR resulted in significantly poorer graft survival ($p=0.010$ and $p=0.022$ respectively) (Fig 1e-f).

Conclusions: HLA-DR mismatches are a strong independent risk factor for TCMR and the development of de-novo DSA in elderly KTR, both significantly worsening graft survival. Introduction of HLA-DR matching in ESP might significantly improve immunologic outcomes.

Figure 1. Outcome in elderly kidney transplant recipients

