Immunologic long-term outcome of living kidney transplantation depending on the donor-recipient relationship

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Background: Only few data is available about long-term immunologic outcomes of living kidney transplantation (KTx) depending on the donor-recipient relationship[1].

Methods: This single center retrospective long-term observational study included related (parent-to-child or siblings) and unrelated adult living donor KTx recipients between 2000 and 2014 (n=335) (table 1). DSA analysis and allograft biopsies were performed for clinically suspected rejections. Data analysis included patient and graft survival, biopsy proven rejection episodes (T-cell mediated (TCMR) or antibody mediated (ABMR)) and development of de-novo DSA. Outcome data were assessed over a period of maximum 14 years.

Results: Graft survival did not differ significantly among the groups (fig 1A). Sibling-to-sibling pares trend to result in a lower incidence of TCMR (fig 1-B). There was no significant difference between the groups in terms of ABMR (fig 1-C). The rates of de novo DSA tended to be higher in parent-to-child pares and non-related KTx (both 26% after 7 years vs. 11% in siblings, p=0.102).

The multivariate analysis adjusted for age, AB0-incompatibility, HLA (A, B, DR)-mismatch and donor-recipient relationship identified the donation by a sibling as an independent protective factor for TCMR (HR 0.347, p=0.018). The number of HLA-mismatches was shown to be the only independent risk factor for de-novo DSA (HR 1.21, p=0.012).

Figure 1

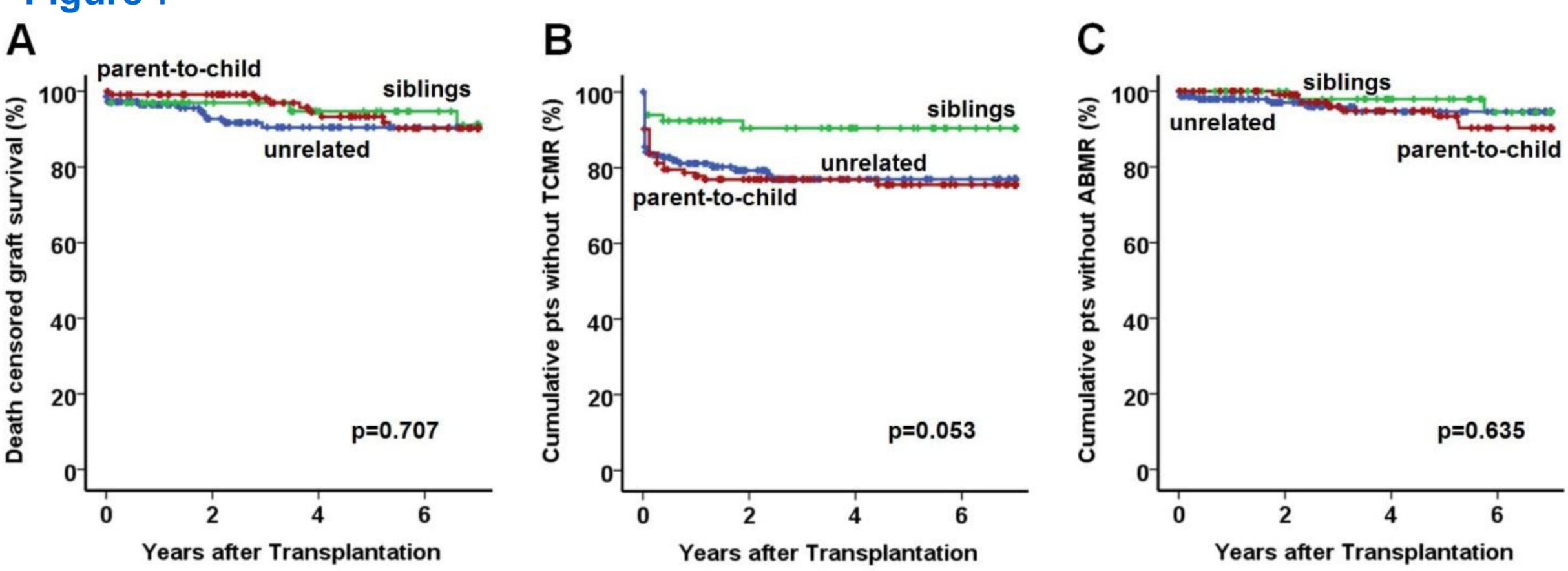

Table 1

Patient characteristic	Not related living KTx, *n=146*	Siblings-to-siblings, *n=66*	Parents-to-child, *n=123*	P-value
Mean recipient age, *years (SD)*	53 (10)	45 (11)	30 (8)	<0.001
Mean donor age, *years (SD)*	51 (10)	43 (12)	54 (8)	<0.001
Recipient male, *n*	103 (71%)	41 (62%)	81 (66%)	0.445
Donor male, *n*	46 (32%)	32 (49%)	41 (33%)	0.052
Prior kidney transplantation, *n*	7 (5%)	7 (11%)	4 (3%)	0.113
AB0 incompatible, *n*	18 (12%)	1 (1.5%)	10 (8%)	0.024
Mean HLA-mismatches, *n (SD)*	4.1 (1.2)	1.9 (1.5)	2.1 (0.9)	<0.001

Conclusions:

Not only HLA-mismatch but also donor-recipient relationship does influence the immunological outcome significantly. Our data suggest donation by a sibling is an independent protective factor for TCMR.

Disclosure:

All authors declare no conflict of interest.

[1] Choi JY et al, Transplant Proc. 2012

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