

INFLUENCE OF HPA-5b IN RENAL TRANSPLANTATION



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Introduction

Despite improved HLA typing, crossmatching techniques and immunosuppressive therapy, ensuring long-term renal graft survival is still a major challenge. Late graft loss is mainly caused by chronic rejection. Although ABO, HLA-A, -B, -DR matching reduces transplant failure, minor histocompatibility (mH) antigens can induce graft rejection.

Acute vascular rejection (AVR) is antibody mediated and the main target of injury is graft vascular endothelium. Vascular endothelial cells in culture express the human platelet antigens HPA-1 and -5. However, the clinical significance of this is unknown - but they could play the role of mH antigens.

HPA incompatibility has been shown to decrease renal graft survival, and has predicted graft versus host disease in bone marrow transplant recipients (Juji *et al.*, 1999). In addition an unexpectedly high frequency of HPA-5b antibodies has been found in renal transplant recipients with AVR (Kekomaki *et al.*, 1997; Kekomaki *et al.*, 2001).

The aim of this study was to investigate the possible influence of HPA-5b mismatching and HPA-5b antibodies in renal transplantation, and to determine whether the HPA-5a/b frequency of renal transplant patients and their cadaveric donors correlated with published data (Sellers *et al.*, 1999).

Methods

102 renal recipients who had lost their first graft and their primary cadaveric donors were typed for HPA-5a/b using our standard PCR-SSP (Sellers *et al.*, 1999).

HPA antibody testing of recipients of an HPA-5b mismatched graft and a control group who did not receive an HPA-5b mismatched graft was performed using the MAIPA (Monoclonal Antibody Immobilisation of Platelet Antigens) assay.

Results

There was no significant difference between the frequency of HPA-5a and -b genotypes in the individual patient or donor groups, or the total group of 204 subjects, compared to random blood donors in Wales (Sellers *et al.*, 1999).

87 (85%) of the pairs were not mis-matched for HPA-5; 13 of the 15 HPA-5 mismatched group were mismatched for HPA-5b.

No HPA-5b antibodies were detected in the sera of the recipients who had received an HPA-5b mismatched graft.

Mean graft survival for the 13 HPA-5b mismatched grafts was 3.62 years (range 0.28 - 7.41 years), compared to a mean graft survival of 5.26 years (range 0.02 - 14.92) for the 73 non-HPA-5b mismatched grafts ($p > 0.05$) (Fig. 1).

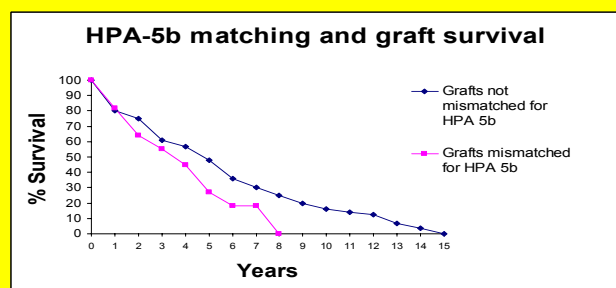


Fig. 1. Percentage graft survival for HPA-5a matched grafts and HPA-5b mismatched grafts ($p > 0.05$).

Comment

These findings do not support the work of others. However our sample size was small and it might be beneficial to continue this investigation using larger sample numbers, possibly through collaboration with other laboratories.

References

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