

HLA MATCHING AND OUTCOME OF LIVING DONOR KIDNEY TRANSPLANTS IN THE UK

Johnson RJ, Hodge RA, Fuggle SV, Rudge CJ, Forsythe JLR

On behalf of the UK Transplant Kidney and Pancreas Advisory Group

Background: The number of kidney transplants from living unrelated donors has been increasing rapidly in the UK. These transplants are usually less well matched than those from cadaveric heartbeating donors (HBD) or living related donors (LRD). This study investigates the degree of HLA match in transplants from different donor types and the influence of HLA match and other factors on outcome of all living donor transplants in the UK.

Methods: HLA mismatches of 2075 living related and unrelated kidney donor transplants and 10786 cadaveric HBD transplants in 1995-2002 were compared. For a subset of 1267 LRD and 302 living unrelated donor transplants from 1998-2002, the transplant survival time (time from transplant to graft failure or patient death) was analysed.

Results: As expected, transplants from living unrelated donors were significantly less well matched. There were two HLA-DR mismatches in 41% of living unrelated donor transplants but less than 5% in both LRD and cadaveric HBD transplants. There were no significant differences in one-year transplant survival between the two living donor transplant groups. For all living donor transplants one-year transplant survival was 93% (95% confidence interval (CI) 92-94%), while transplant survival of cadaveric HBD grafts (87%, 95% CI 87-88%) was inferior ($p < 0.0001$). There was no difference in one-year transplant survival between two HLA-DR mismatched living unrelated donor transplants (90%, 95% CI 85-95%) and 000 mismatched cadaveric HBD transplants (89%, 95% CI 87-91%). Cox regression modelling showed older donors ($p < 0.01$) and female recipients ($p < 0.03$) to adversely affect one-year transplant survival of living donor transplants. There was evidence of an adverse effect of two HLA-DR mismatches in the living unrelated donor transplants in the early half of the cohort that was not apparent in the later transplants.

Conclusion: Living unrelated donor transplants were significantly less well HLA matched than other donor transplants. One-year transplant survival was comparable for LRD and unrelated donor transplants and superior to survival of cadaveric HBD transplants. Analysis of one-year outcome of living donor transplants showed significant effects of donor age and recipient gender. An adverse effect of two HLA-DR mismatches in living unrelated donor transplants was apparent only in the earlier years analysed.