

OUTCOME OF LIVING DONOR KIDNEY TRANSPLANTATION IN THE UK

S Armstrong, RJ Johnson, CJ Rudge, SV Fuggle, JLR Forsythe

On behalf of the Kidney and Pancreas Advisory Group, UK Transplant, Fox Den Road, Stoke Gifford, Bristol BS34 8RR

Background: This study investigates transplant and patient outcome after living related donor (LRD) and living unrelated donor (LURD) kidney transplantation in the UK between 1998 and 2004 and compares with outcome after deceased heartbeating donor (DHBD) transplantation. In particular, the potential influence of poor HLA matching in LURD transplants is investigated.

Methods: 1711 LRD, 479 LURD and 7146 DHBD transplants were analysed. Kaplan-Meier survival estimates were calculated and Cox regression models were used to analyse the combined effect of many factors on transplant survival (time from transplant to the earlier of return to regular dialysis or patient death) and patient survival after first living donor transplant.

Results: *Transplant survival* - Three-year transplant survival of LRD transplants (89%) and LURD transplants (91%) was comparable, but superior to that of DHBD grafts (82%), $p < 0.0001$. Cox regression modelling showed donor and recipient age, donor-recipient gender match and HLA-B+DR mismatches (0-3 vs. 4) significantly to influence survival after living donor transplant. Three-year transplant survival was 86% for both poorly matched (4 HLA-B+DR mismatches) LURD transplants and 000 mismatched DHBD transplants.

Patient survival - LRD transplants had significantly better three-year patient survival (97%) than both LURD transplants (94%), $p = 0.003$, and DHBD transplants (92%), $p < 0.0001$. Donor and recipient age influenced patient survival after living donor transplant. In addition, recipients of poorly matched LURD transplants (4 HLA-B+DR mismatches, 29% of LURD transplants) were associated with significantly inferior patient survival (relative risk of death=4.2, 95% CI 1.9-9.1). Three-year patient survival for these poorly matched LURD transplants was 90%, compared with 95% for 000 mismatched DHBD transplants ($p = 0.01$) and 92% for other DHBD grafts ($p = 0.3$). Further analyses are being carried out to investigate these outcomes.

Conclusion: Three-year transplant survival was comparable for LRD and LURD transplants and was superior to survival of DHBD transplants. Influential factors were donor and recipient age, donor-recipient gender match and degree of HLA mismatch. Three-year patient survival was significantly better after LRD transplant than after both LURD and DHBD transplant. Reasons for inferior patient survival after poorly matched LURD transplant are being investigated.