

COMPARISON OF NON-HEARTBEATING AND HEARTBEATING DONOR KIDNEY TRANSPLANTS IN THE UK

S Armstrong, RJ Johnson, CJ Rudge, JLR Forsythe

On behalf of the Kidney and Pancreas Advisory Group, UK Transplant, Bristol, BS34 8RR, United Kingdom

Background: The number of kidney transplants from non-heartbeating donors has been increasing rapidly in the UK in recent years. The aim of this study was to compare activity and one, three and five-year outcome of cadaveric non-heartbeating kidney donor (NHBD) and heartbeating kidney donor (HBD) transplants.

Methods: Data were obtained from the National Transplant Database on 450 NHBD and 9165 HBD first adult kidney only transplants performed in the UK between 1995 and 2003. This cohort was analysed to compare differences with respect to recipient age and gender, donor age and gender, HLA match, and one, three and five-year transplant, graft and patient survival rates. Kaplan-Meier survival curves were used to illustrate differences in one-year transplant outcome and associated p-values were derived from a univariate log-rank test. Multivariate analysis was used to investigate differences in outcome after adjusting for other factors. Cold ischaemia times were analysed for a subset of grafts (2000-2003).

Results: In 1995, 2.5% of all cadaveric donor transplants were NHBD transplants, rising to 9% in 2003. NHBD transplant recipients were significantly older ($p<0.001$), NHBD transplants were significantly less well matched ($p<0.001$), a significantly higher proportion of NHBDs were male ($p<0.001$) and NHBD transplants had a significantly shorter median cold ischaemia time ($p<0.02$). In general, one, three and five-year transplant and graft survival rates were poorer for NHBD transplants than for HBD transplants in the years 1995 to 1997. While results were better for NHBD grafts in 1998-1999, outcome in 2000-2001 was again poorer. More encouragingly, one-year transplant and graft survival were comparable for NHBD and HBD transplants for the most recent years analysed (2002-2003). These findings were unaffected by adjustment for known risk factors. There were no significant differences between the two donor groups in terms of patient survival over the post-transplant period analysed.

Conclusion: Despite inferior transplant survival for NHBD transplants in the early years analysed, outcome of transplants in 2002 and 2003 was comparable with that of HBD transplants: 88% (95% CI 82-94) for NHBD transplants and 89% (95% CI 87-91%) for HBD transplants. When adjusting for known risk factors the difference remained non-significant.