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Outcomes of simultaneous pancreas-kidney transplants from donation after circulatory death donors in the UK: a national registry analysis

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Introduction: The UK is a world leader in the use of pancreases from donation after circulatory death (DCD) donors. However, there is a perception that pancreases from DCD donors are sub-optimal when compared to similar grafts from donation after brain death (DBD) donors. We compared outcomes of pancreases transplanted from controlled DCD donors to those from DBD donors in the largest reported study to date.

Methods: Data were obtained from the UK Transplant Registry on deceased donor adult SPK transplants between 2005 – 2018. Kaplan-Meier estimates were used to compare pancreas, kidney, and patient survivals between those receiving organs from DCD or DBD donors, and multivariable analyses were used to identify factors associated with pancreas graft loss.

Results: 2,228 SPK transplants were implanted (1825 DBD; 403 DCD donors). Kidneys from DCD donors had equivalent graft survivals to those from DBD donors (Figure 1. $p=0.99$), and there were no differences in longer-term renal allograft function, or in five-year patient survivals when stratifying by donor type. On univariate analysis, there were no significant differences in five-year death-censored pancreas graft survival between the two donor types (Figure 2. 79.5% versus 80.4%; $p=0.86$). Multivariable analysis showed no significant differences in five-year pancreas graft loss between transplants from DCD ($n=343$) and DBD ($n=1492$) donors (hazard ratio 1.26, 95% CI 0.76-1.23; $p=0.12$). A Cox proportional hazards regression model for pancreas graft loss from DCD donors showed that increasing donor age or pancreas cold ischaemic time (CIT) were not associated with worse outcomes.

Discussion: This large national study supports the increased utilisation of organs from DCD donors in SPK transplantation within the UK and globally. Data on the effect of donor age and CIT on DCD donor graft outcomes suggest that a re-examination of UK donor age criteria and the national pancreas offering scheme are warranted.

Figure 1. Death-censored kidney graft survival for SPK transplant recipients 2005-2018, by donor type (DBD / DCD).

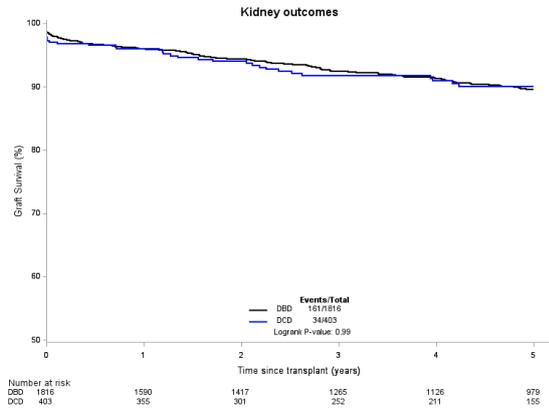


Figure 2. Death-censored pancreas graft survival for SPK transplant recipients 2005-2018, by donor type (DBD / DCD).

