

Adjusted Donor Age - a Simple Score Summarising Deceased Donor Risk in Transplantation

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Background:

Although a number of donor factors are known to affect outcome following deceased donor kidney transplantation, many units have no clear criteria for acceptance. Donor quality scoring systems such as KDRI are based on historic data sets, performing less well in the modern comorbid donor pool, and are difficult for patients to understand.

Methods:

All deceased-donor kidney offers at a single centre were analysed over a 12 month period, in order to develop a patient-friendly scoring system in which donor age is modified according to the presence or absence of a number of risk factors, to generate an "adjusted donor age", which would predict post-transplant outcome.

Results:

Out of 388 offers, from 301 donors, aged 6 - 84, 109 (28%) were accepted and transplanted. At 3 months post-transplantation, recipient GFR over 30 was seen in 80%. Organs were declined due to recipient factors in 26% and donor quality concerns in 46%.

Adjusted Donor Age (ADA) was derived incorporating 12 evidence-based risk factors: donor cardiac death, hypertension, diabetes, vascular disease, baseline kidney function, creatinine rise, oliguria, proteinuria, HLA match, cardiac arrest, use of adrenaline, and duration of hospitalisation before donation.

Quintiles of donor risk for all offers were identified using ADA cutoffs: 50, 60, 70, and 80. Increasing ADA quintile was associated with poorer post-transplant outcome, with good 3 month GFR (above 30ml/min) in 97, 85, 73, 81 and 38% of patients respectively ($p < 0.001$). In those with functioning grafts ($N=105$) GFR at 3 months was strongly correlated with DKA ($R=0.430$, $p < 0.001$) and was seen to reduce across increasing ADA quintiles (61, 52, 42, 41, and 29ml/min).

Conclusion:

ADA is a simple score based on donor age, adjusted for 12 donor-related risk factors, which strongly predicts post-transplant outcome, and is conceptually easy for patients to understand. Preliminary study of validity and influence on acceptance decisions has been undertaken.