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Validity of Kidney Donor Risk Indecx for Prediction of Graft Outcome in Deceased Donor Kidney Transplantation; a singe center experience

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Background: Donor organ quality is a key determinant of graft outcomes in deceased donor kidney transplantation (DDKT), and several donor quality scoring systems have been proposed.

Methods: To validate the kidney donor risk index (KDRI) for prediction of graft outcome, we screened 134 patients who received DDKTs at Ulsan University Hospital from April 2003 to May 2015. Among them, 91 DDKTs whose KDRIs were available were included this analysis.

Results: Median follow-up was 48 months. Mean age of recipients and donors are 47.3 and 42.5 years, respectively. Mean KDRI was 1.31 ± 0.31 (range from 0.68 to 2.23). During follow up, delayed graft function (DGF) and biopsy-proven acute rejection (BPAR) developed for 6 and 16 patients, respectively. One- and 5-year BPAR-free survival was 88.8% and 79.3%, respectively. BPAR-free survival was tend to be higher for DDKTs from donor with KDRI ≤ 1.0 but not statistically significant (P = 0.073), compared to those with KDRI > 1.0. Graft failure occurred to only 2 patients at 5 and 29 months after DDKT, and their KDRIs were 1.28 and 1.98, respectively. In multivariate liniear regression, DGF (standadized beta = -0.273, P = 0.005), BPAR (standardized beta = -0.261, P = 0.012) and KDRI (standardized beta = -0.521, P < 0.001) were significant predictors of last-vistit estimated glomerular filtration rate.

Conclusion: KDRI is an easily applicable scoring system and is a good prognostic tool for graft outcomes in DDKTs.

Table: Summary of multiple linear regression model for final eGFR of deceased kidney transplantations

	Beta	P
Delayed graft function	-0.273	0.005
Biopsy-proven acute rejection	-0.261	0.012
HLA mismatches, per 1 mismatch	-0.073	0.441
KDRI	-0.521	< 0.001

Keywords: Deceased Donor, Donor Organ Quality, Kidney Donor Risk Index, Kidney Transplantation