

KSN 2017 Abstract

KSN-17-P154

Estimating Donor Organ Quality with Baseline Histology and Kidney Donor Risk Index for Predicting Graft Outcomes in Deceased Donor Kidney Transplantation

Kyung sun PARK¹, Sang jun PARK², Hojong PARK², Misung KIM³, Jongha PARK¹, Hyun chul CHUNG¹, Hong rae CHO², *Jong soo LEE¹

¹Internal Medicine, Nephrology, Ulsan University Hospital, Korea, South, ²Surgery, Ulsan University Hospital, Korea, South, ³Pathology, Ulsan Universtiy Hospital, Korea, South

Objectives : Donor organ quality is a key determinant of graft outcomes in deceased donor kidney transplantation (DDKT). The effect of baseline histology at the time of transplantation and several donor quality scoring systems on long-term graft outcome has been evaluated but these results were debated.

Methods : To investigate the predictive values of baseline histology and kidney donor risk index (KDRI) for graft outcome, we screened 167 patients who received DDKTs at Ulsan University Hospital from April 2003 to June 2016. Among them, 66 DDKTs who underwent baseline kidney biopsies and whose KDRI were available were included in this analysis. All baseline biopsy was rescored according to the updated Banff classification.

Results : Median follow-up was 22 months. Mean age of recipients and donors are 51.4 and 44.7 years, respectively. Mean kidney donor risk index (KDRI) was 1.40 ± 0.44 . During follow up, delayed graft function (DGF) and biopsy-proven acute rejection (BPAR) developed for 7 and 11 patients, respectively. Graft failure occurred to 2 patient and one of them showed 50% glomerulosclerosis (3/6), severe (>50%) interstitial fibrosis and severe (>50%) tubular atrophy who had failed graft at 8 days after DDKT for acute antibody-mediated rejection. In Cox-regression analysis, interstitial fibrosis/tubular atrophy (IFTA, HR=3.59, P=0.049) was a significant risk factor for BPAR. In multivariate linear regression, age (standardized beta[SB]=-0.282, P=0.002), BPAR (SB=-0.406, P<0.001), KDRI (SB=-0.277, P=0.003) and IFTA (SB=-0.298, P = 0.001) were significant predictors of last-visit estimated glomerular filtration rate (eGFR).

Conclusions : Several clinical and pathologic parameters such as KDRI and IFTA may be helpful for predicting allograft outcomes, including BPAR and last-visit eGFR in DDKTs.

Keywords : Deceased donor, kidney transplantation, baseline histology, kidney donor risk index