Repeat kidney transplantation is reasonable treatment of choice after allograft loss

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Background: The number of patients relisting on kidney transplantation (KT) wait list due to prior allograft loss is increasing which accounts for 9.2% according to the Korean Network for Organ Sharing (KONOS) data. Therefore, this study is designed to understand the outcomes of second KT compared to first KT as the needs for repeat transplantation are increasing.

Methods: Data were collected retrospectively for 1,429 living donor KT, performed from 1995–2020 at Samsung Medical Center. Demographics of recipients and donors, immunologic factors and outcomes of retransplantation group were compared to first transplant. Primary outcomes are death-censored graft survival and patient survival.

Results: Among 1,429 cases, first KT were 1,355 and second KT were 74. Five- and 10-year graft survival of patients with first KT are 94.26% and 83.54%, those of second KT are 96.12% and 85.95%, showing no statistically significant differences ($P=0.3988$). Five-year patient survival of first KT was 97.7% and that of second KT was 96.27%, and 10-year survival of first KT was 94.22% and that of second KT was 92.57%, which show no statistically significant differences ($P=0.7657$). This study analyzed changes of serum creatinine after transplantation for 10 years to evaluate trends of graft function over time. As time goes, serum creatinine levels of both groups were tended to increased, however, there was no significant differences in rate of changes between two groups. Multivariate analysis confirmed that age of donor (hazard ratio [HR], 1.0289) and number of mismatched human leukocyte antigen (HLA) class II (HR, 1.634) increase risk of graft failure. Age of recipient, diabetes mellitus (recipient), hypertension (donor), and number of HLA class II mismatch are associated with higher risk of mortality. History of previous transplantation was not a risk factor of any outcomes.

Conclusions: This study revealed that repeat renal transplantation with living donor kidney offers comparable graft and patient survival to first transplantation. Therefore, repeat KT with living donor is reasonable treatment of choice.

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