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Comparable Graft Survival of Re-transplantation in Elderly Kidney Recipients in Regard to Rejection

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Objectives : Older adults comprise an increasing proportion of patients on the waiting list for and receiving kidney transplants (KTs) worldwide. Despite the survival benefits compared to dialysis, older patients experience lower patient and graft survival. However, the age-related modifications in the immune system contribute to a decrease in rejections. We hypothesized that immunological challenges in re-transplantation might be overcome in elderly recipients due to immunosenescence.

Methods : Between January 2010 and December 2022, a total of 1,971 KT were performed at Seoul St. Mary's Hospital. Of these, we included 219 patients who underwent a second or third KT. These patients were divided into two groups based on the donor type (living donor (LD) or deceased donor (DD)). The allograft outcomes and complications were compared according to the recipient's age at the time of KT (≥ 60 or < 60 years) in both groups: LDKT-elderly ($n=24$) vs. young ($n=131$), and DDKT-elderly ($n=15$) vs. young ($n=49$).

Results : Elderly recipients demonstrated a lower frequency of biopsy-proven allograft rejection in both groups. This was attributed to a decreased rate of antibody-mediated rejection in LDKT. Death-censored graft survival is decreased in elderly recipients in LDKT. However, the cause is not rejection, in contrast to young recipients, and graft function is comparable for a 10-year follow-up period. Elderly recipients in DDKT had increased risk of mortality compared with young recipients. Infection-related hospitalization and mortality was higher in elderly recipients of DDKT, and cardiovascular disease incidence was higher in elderly recipients of LDKT. Univariable cox regression analysis demonstrated that being elderly (≥ 60 years) was an independent protective factor against the development of graft rejection (hazard ratio 0.227, 95% confidence interval 0.055-0.963).

Conclusions : Despite the higher risk of infection-associated and cardiovascular complications, repeat KT in elderly recipients is a reasonable choice when done with caution to avoid over-immunosuppression, in regard to low rejection.