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Impact of Acute Kidney Injury in Deceased Donors with High Kidney Donor Profile Index on Post-Transplant Clinical Outcomes: Multicenter Cohort Study

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Objectives: This study aimed to evaluate the impact of acute kidney injury (AKI) on post-transplant clinical outcomes for deceased donor kidney transplantation (DDKT) using Kidney Donor Profile Index (KDPI) system.

Methods: Six hundred fifty-seven kidney transplant recipients (KTRs) receiving kidneys from 526 deceased donors (DDs) were included from four transplant centers. We divided high KDPI and low KDPI by 65%, which is the median value of KDPI score, and both groups were divided into AKI-KT or non-AKI-KT subgroups according to AKI in DDs.

Results: There was no significant difference in the incidence of delayed graft function (DGF) between high KDPI-KT and low KDPI-KT groups, but AKI-KT subgroup showed significantly higher incidence of DGF compared to non-AKI subgroup in the two groups ($P=0.001$, $P<0.001$). There was no significant difference in the incidence of biopsy-proven acute rejection between high KDPI-KT and low KDPI-KT groups regardless of DDs with AKI. Death-censored graft survival rate was significantly lower in the high KDPI-KT group compared to the low KDPI-KT group ($P=0.005$), but there was no significant difference in the patient survival rate between the two groups. There were no significant differences in death-censored graft survival and patient survival rates between AKI-KT and non-AKI-KT subgroups in the two groups. Only in the high KDPI-KT group, the KT group from DDs with AKI stage 3 tended to be lower in death-censored graft survival rate compared to that from DDs with non-AKI, AKI stage 1 or 2. The interaction between AKI stage 3 in DDs and high KDPI on the allograft outcome was significant ($P=0.002$).

Conclusions: KTs from DDs with AKI stage 3 showed an adverse impact on the allograft outcome in the high KDPI-KT group. Therefore, careful monitoring and strategies to protect against severe AKI will be required, especially for KTs from DDs with high KDPI.

Figure 1. Death-censored graft survival according to AKI stage in high KDPI group

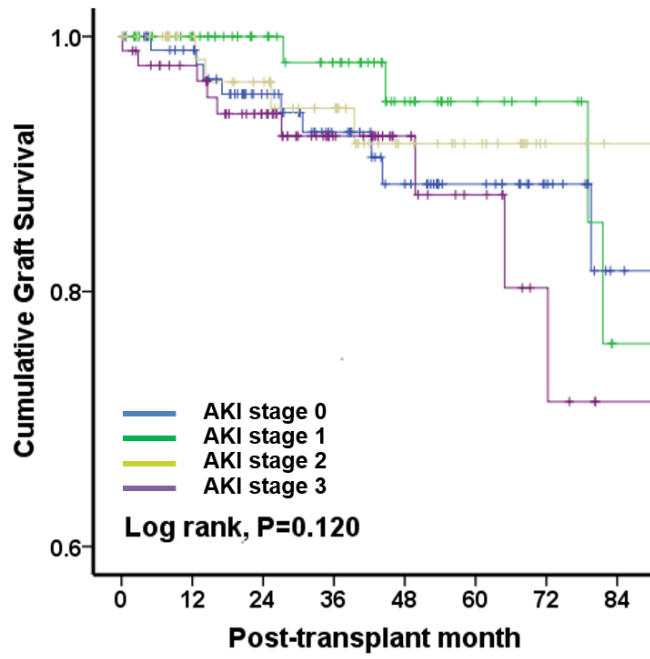


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