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Comparison of the impact of Kidney Donor Profile Index on the Post-Transplant Clinical Outcomes between Elderly and Young Kidney Transplant Recipients; Multicenter Cohort Study

Woo Yeong Park[1], Jong Hoon Lee[2], Young Soo Kim[3], Bum Soon Choi[2], Cheol Whee Park[2], Chul Woo Yang[2], Yong-Soo Kim[2], Kyubok Jin[1], Seungyeup Han[1], Byung Ha Chung[2]
[1]Department of Department of Internal Medicine, Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea, Republic of
[2]Department of Division of Nephrology, Department of Internal Medicine, Transplant research center, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea, Republic of
[3]Department of Division of Nephrology, Department of Internal Medicine, Uijeongbu St. Mary's hospital, College of Medicine, The Catholic University of Korea, Korea, Republic of

Objectives: We investigated the clinical significance of Kidney Donor Profile Index (KDPI) system for the prediction of the clinical outcomes of elderly- or young kidney transplant recipients (KTRs) in deceased donor kidney transplantation (DDKT).

Methods: Four hundred sixty-nine KTRs receiving kidneys from 356 deceased donors (DDs) were included from three transplant centers in this study. We divided high KDPI and low KDPI by 67%, which is the median value of KDPI score, and divided into elderly KTRs and young KTRs at 60 years of age. We investigated the incidence of delayed graft function (DGF), biopsy-proven acute rejection (BPAR), allograft survival and patient survival rates between elderly KTRs and young KTRs donated from DDs with high KDPI- or low KDPI score.

Results: The study analyzed 62 (13.2%) elderly KT cases and 407 (86.8%) young KT cases. In the elderly KT and young KT groups, 39 (62.9%) and 191 (46.9%) KTs involved a donor with high KDPI score, respectively. There were no significant differences in the incidence of DGF and BPAR between elderly KT and young KT groups donated from DDs with high KDPI- or low KDPI score. In the elderly KT group, there was no significant difference of death-censored graft survival and patient survival rates between high KDPI-KT and low KDPI-KT. However, in the young KT group, high KDPI-KT group was significantly lower in death-censored graft survival and patient survival rates compared with low KDPI-KT group (P=0.001, P=0.015). Among high KDPI-elderly KT group, high KDPI-young KT group, low KDPI-elderly KT group, and low KDPI-young KT group, high KDPI-young KT group had the lowest death-censored graft survival rate (P=0.001), but there was no significant difference in patient survival rate among them.

Conclusions: High KDPI in DDs showed significant adverse impact on the allograft survival in young KTRs, but it was not prognostic factor in elderly KTRs.