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Clinical Significance of both de Novo Donor Specific anti-HLA Antibody and Kidney Donor Profile Index on Post-Transplant Clinical Outcomes in Deceased Donor Kidney Transplantation

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Objectives: We investigated the clinical significance of both Kidney Donor Profile Index (KDPI) and de novo donor specific anti-HLA antibody (dnDSA) on post-transplant clinical outcomes in deceased donor kidney transplantation (DDKT).

Methods: Our study enrolled 133 patients who performed DDKT at Keimyung university Dongsan medical center between 2009 and 2017. We divided high KDPI and low KDPI by 65%, which is the median value of KDPI score. We investigated the incidence of delayed graft function (DGF), biopsy-proven acute rejection (BPAR), allograft function within 1 year after KT, allograft survival rate according to KDPI and dnDSA in DDKT.

Results: The study analyzed 68 kidney transplant recipients (KTRs) with high KDPI and 65 KTRs with low KDPI. The proportion of dnDSA tended to be higher in the high KDPI-KT group in comparison with low KDPI-KT group. There were no significant differences in the incidence of DGF between high KDPI-KT and low KDPI-KT groups. The incidence of BPAR in the high KDPI-KT group or dnDSA(+)-KT group tended to be higher in comparison with that in the low KDPI-KT group or dnDSA(-)-KT group, respectively. Allograft function within 1 year after KT was significantly lower in the high KDPI-KT group compared to the low KDPI-KT group, regardless of the presence of dnDSA. There were no significant differences of death-censored graft survival rate between high KDPI-KT and low KDPI-KT groups. However, death-censored graft survival rate was significantly the lowest in the high KDPI-dnDSA(+) KT group in comparison with high KDPI-dnDSA(-) KT, low KDPI-dnDSA(-) KT and low KDPI-dnDSA(+) KT groups (P=0.024).

Conclusions: When KTRs from kidney donor with high KDPI was accompanied by dnDSA, post-transplant clinical outcomes was poor. Therefore, KTRs with low quality kidney should be thoroughly monitored for the prevention of dnDSA.

Figure 1. Death-censored graft survival according to KDPI and dnDSA

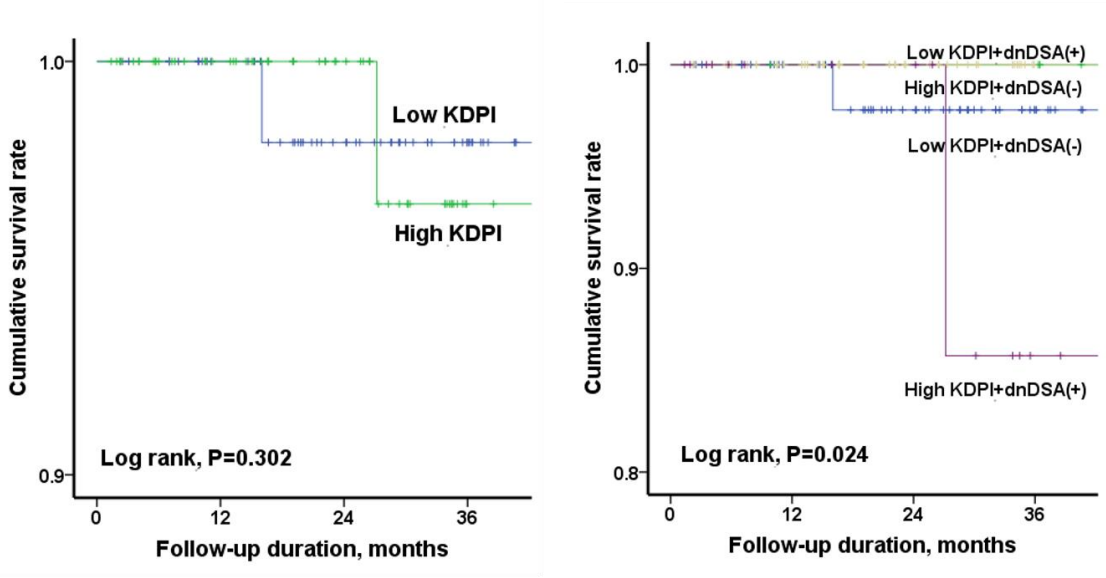

Figure 1. Comparison of the death-censored graft survival rate (A) between high KDPI-KT and low KDPI-KT groups, and (B) among high KDPI-dnDSA(+), high KDPI-dnDSA(-), low KDPI-dnDSA(+), and low KDPI-dnDSA(-)