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## **Prevalence of Polypharmacy and associated adverse outcomes in kidney transplant recipients**

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**Objectives:** Polypharmacy (PP) continues to increase, and is associated with numerous adverse clinical outcomes and mortality. Although the burden of medication in kidney transplant recipients (KTRs) is well-known, PP has not been characterized in detail in the KTRs. The aim of this study was to assess the prevalence of PP among KTRs and the association between PP and clinical outcomes in the KTRs.

**Methods:** A total of 1,080 KTRs from multicenter observational cohort study in Korea between 2012 and 2016 (KNOW-KT) were included in the study. PP was defined as the use of more than 10 medications per day.

**Results:** The PP prevalence at 1, 2, 3, 5, and 8 years after transplantation was 37.9%, 37.3%, 36.5%, 37.1% and 25.4%, respectively. The prevalence of diabetes, dyslipidemia and history of cardiovascular disease was significantly higher in PP group than in non-PP group (the use of fewer than 10 medications). The mean follow-up period was 6.9 years, and there were 69 graft failures, 63 new-onset cardiovascular diseases, and 36 deaths. When the effect of PP prescribed at 1-year post-transplant on clinical outcomes was analyzed, there was no difference in glomerular filtration rate between the non-PP and PP groups, and the hazard ratio of graft failure and death in the PP group was 1.07 (0.718 to 1.59) and 1.37 (0.71 to 2.64), respectively, compared to the non-PP group. However, multivariate analysis adjusted for classical risk factors showed that PP independently increased the risk of new cardiovascular disease (adjusted HR 1.78 (1.07-2.96)) after KT.

**Conclusions:** These results showed that PP is common in KTRs, and considering the adverse effects of PP on KT outcomes, physician's attention and efforts are needed to systematically manage and prevent inappropriate PP after KT. Long-term and large-scale research is needed to establish management guidelines for PP in the future.