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Cardioprotective effect of SGLT2 inhibitor in diabetic kidney transplant recipients

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Introduction: Kidney transplantation (KT) improves cardiovascular outcomes in patients with end-stage kidney disease. However, cardiovascular disease remains the leading cause of premature patient death and graft loss in diabetic kidney transplant recipients (KTRs). We evaluated the cardioprotective effect of sodium-glucose cotransporter 2 inhibitors (SGLT2i) in diabetic KTRs.

Methods: A total of 750 KTRs with diabetes were enrolled from four tertiary hospitals in South Korea. Among them, 129 (17.2%) patients were prescribed SGLT2i over 90 days. The primary outcome was a composite of death from cardiovascular causes, myocardial infarction, heart failure, or stroke. Multivariable Cox regression model was used to investigate the effect of SGLT2i on clinical outcomes.

Results: The mean age was 53.7 years and 69.6% were men. During a median of 56.3 months, the primary outcome occurred in 6 of 129 (4.7%) and 78 of 621 (12.6%) in the SGLT2i and non-SGLT2i groups, respectively (P = 0.015) (Figure 1). Incidences of death from cardiovascular causes and myocardial infarction were significantly lower in the SGLT2i group than in the non-SGLT2i group (0% vs. 3.2%, P = 0.034; 1.6% vs. 8.9%, P = 0.008, respectively). The multivariate analysis showed that the SGLT2i group had a lower risk of primary composite outcome than the non-SGLT2i group (adjusted hazard ratio [aHR], 0.40; 95% confidence interval [CI], 0.17-0.92; P = 0.031). The risk of myocardial infarction was also lower in the SGLT2i group (aHR, 0.18; 95% CI, 0.04-0.73; P = 0.016).

Conclusion: SGLT2i significantly decreased the risk of cardiovascular events in diabetic KTRs, particularly lowering incidences of death from cardiovascular causes and myocardial infarction. SGLT2i can be used to reduce the burden of cardiovascular disease in diabetic KTRs.