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## **Prognostic impact of early post-transplant diabetes and diabetes status transitions in kidney transplant recipients**

**Minji Kim**<sup>1</sup>, Junseok Jeon<sup>1</sup>, Kyungho Lee<sup>1</sup>, Hye Ryoung Jang<sup>1</sup>, Jung Eun Lee<sup>1</sup>, Kyungdo Han<sup>2</sup>, Wooseong Huh<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea, Republic of

<sup>2</sup>Department of Statistics and Actuarial Science, Soongsil University, Korea, Republic of

**Objectives :** Post-transplant diabetes mellitus (PTDM) is a frequent complication after kidney transplantation (KT). However, its prognostic significance, especially in cases of early onset following KT, remains uncertain. This study investigated the clinical implications of early PTDM and explored how changes in diabetes mellitus (DM) status over time influence outcomes after KT.

**Methods :** This nationwide retrospective cohort study included KT recipients who participated in a national health screening from 2009 to 2017 after KT using the Korean National Health Insurance Service database. Early PTDM was defined as newly diagnosed DM one year after kidney transplantation. Cox regression models were used to estimate hazard ratios (HR) for graft failure and all-cause mortality.

**Results :** Among 84,867 KT recipients, 1,953 (23.0%) had early PTDM and 2,416 (28.5%) had preexisting DM. Early PTDM was not associated with graft failure (adjusted HR [aHR] 1.077, 95% confidence interval [CI] 0.892–1.300) or all-cause mortality (aHR 1.073, 96% CI 0.850–1.354). The transition from non-DM to PTDM was associated with an increased risk of graft failure (aHR 1.578, 96% CI 1.074–2.320), but early PTDM was not associated with the risk of graft failure regardless of whether patients transitioned to non-DM or remained in PTDM. The transition from non-DM to PTDM was also associated with an increased risk of mortality (aHR 1.784, 96% CI 1.100–2.893). In contrast, early PTDM was associated with a decreased risk of mortality for those who transitioned to non-DM (aHR 0.678, 95% CI 0.464–0.992) but an increased risk of mortality for those who remained in PTDM (aHR 0.562, 95% CI 1.162–2.101).

**Conclusions :** Early PTDM was not associated with poor outcomes in KT recipients participating in national health screening. However, changes in DM status over time, rather than early DM status, significantly affected outcomes, highlighting the need for close monitoring and personalized management for PTDM after KT.