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Association between early post-transplant hypertension or related antihypertensive use and prognosis of kidney transplant recipients: a nationwide observational study

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Objectives: Additional research is warranted for the clinical significance of post-transplant hypertension and related antihypertensive medication usage in kidney transplant (KT) recipients.

Methods: This observational study included nationwide KT recipients who maintained functioning graft for at least 1 year after KT in South Korea during 2008 to 2017. The usage of antihypertensive medications between 6 months to 1 year was the main exposure, and those who had inconsistent/transient usage of antihypertensive drugs were excluded. The prognostic outcome included death-censored graft failure (DCGF), death-with functioning graft (DWGF), and major adverse cerebrocardiovascular events (MACCEs).

Results: We included 8014 patients without post-transplant hypertension and 6114 recipients who received treatments for hypertension in the post-transplant period. Those with post-transplant hypertension had significantly worse risk of DCGF than those without [adjusted hazard ratio (HR) 1.27 (1.09-1.48)]. Post-transplant hypertension patients who required multiple drugs showed significantly higher risk of DWGF [HR 1.57 (1.17-2.10)] and MACCE [HR 1.35 (1.01-1.81)] than the controls. Among the single-agent users, those who received beta-blockers showed a significantly higher risk of DCGF, although the risks of DWGF or MACCE were similar between the types of antihypertensive agents. Among the multiple agent users, the prognosis was similar regardless of the prescribed types of antihypertensive agents.

Conclusions: Post-transplant hypertension was associated with poor post-transplant prognosis, particularly when multiple types of medications were required for treatment. During initial prescription of antihypertensive medication, clinicians may consider that beta-blockers were associated with a higher risk of DCGF in the single-agent users.

Figure 1. KM figure according to usage of antihypertensive medications.

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Single agent users