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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.

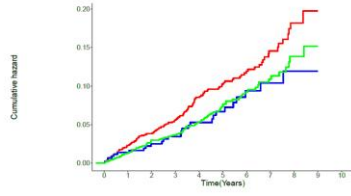
Conclusions: Post-transplant hypertension was associated with poor post-transplant prognosis, particularly when multiple types of medications were required for treatment. During initial prescription of antihypertensive medication, clinicians may consider that beta-blockers were associated with a higher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

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


KSN 2021
FULLY VIRTUAL MEETING
 September 02 (Thu) - 05 (Sun)

Single agent users

Death-censored graft failure

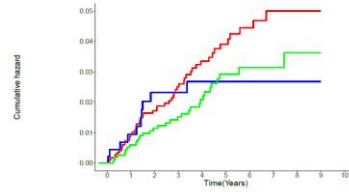


Number at risk by time

BB	1749	1463	1242	1024	781	578	405	247	113	0	0
RAASB	456	386	337	297	244	183	119	83	40	0	0
DHP-CCB	1660	1393	1161	964	767	564	367	236	119	0	0

Time (Years)

Death with functioning graft

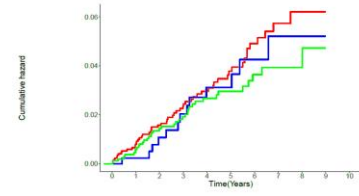


Number at risk by time

BB	1749	1486	1270	1054	828	615	437	272	130	0	0
RAASB	456	386	336	297	248	190	129	89	44	0	0
DHP-CCB	1660	1404	1177	964	792	590	385	252	127	0	0

Time (Years)

Major adverse cerebrocardiovascular events



Number at risk by time

BB	1749	1488	1275	1059	834	624	444	279	136	0	0
RAASB	456	389	341	299	248	187	124	86	43	0	0
DHP-CCB	1660	1405	1173	981	789	593	388	254	130	0	0

Time (Years)

— BB
 — DHP-CCB
 — RAASB