



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

KSN SEOUL, KOREA
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Abstract Topic : Hypertensive Kidney Disease + Vascular Biology in CKD

Impact of Hypertensive Kidney Disease on Vascular Complications in Chronic Kidney Disease: A Multicentric Nationwide Cohort Study

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Objectives : The objective of this study is to compare the vascular outcomes and mortality pattern in the patients of CKD with or without hypertension using TriNetX Database.

Methods : A nationwide cohort study was conducted using TriNetX database involving 113 healthcare organizations. CKD patients aged greater or equal 18 years were divided into 2 groups based on absence or presence of hypertension. Outcomes included atherosclerosis, peripheral vascular disease, myocardial infarction, cerebral infarction, retinopathy, polyneuropathy, and all-cause mortality.

Results : Following propensity matching, patients with hypertension along with CKD have significantly higher rates of vascular complications . Atherosclerosis was more common in patients with hypertensive kidney disease (13.3% vs 6.1%), with a more than twofold increased risk [RR 2.20; 95% CI 2.18–2.21; HR 2.42; 95% CI 2.41–2.44]. Peripheral vascular disease was also more common (12.0% vs 6.5%) [RR 1.84; 95% CI 1.83–1.85; HR 2.00; 95% CI 1.98–2.01]. The risk of myocardial infarction was higher among patients with hypertensive kidney disease (12.3% vs 4.0%) [RR 3.10; 95% CI 3.07–3.13; HR 3.38; 95% CI 3.35–3.41]. Cerebral infarction occurred in 9.6% of patients with hypertensive kidney disease compared with 5.1% without [RR 1.89; 95% CI 1.87–1.90; HR 2.01; 95% CI 2.00–2.03]. Microvascular complications were also more frequent in the hypertensive group, such as retinopathy (4.9% vs 3.8%) [RR 1.27; 95% CI 1.26–1.28; HR 1.35; 95% CI 1.33–1.36] and polyneuropathy (0.5% vs 0.3%) [RR 1.34; 95% CI 1.30–1.39; HR 1.41; 95% CI 1.36–1.46]. All-cause mortality was significantly higher among patients with hypertensive kidney disease (23.6% vs 17.0%) [RR 1.39; 95% CI 1.38–1.40; HR 1.47; 95% CI 1.46–1.48], with shorter median survival (3,603 vs 5,829 days).

Conclusions : Hypertension in patients with CKD is associated with significantly higher risks of vascular complications and mortality compared to normotensive patients with CKD.

Figure 1 (1)_page-0001.jpg



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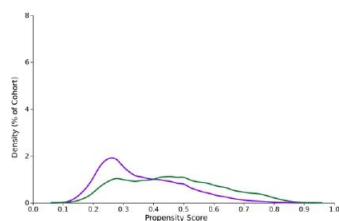
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Purple: CKD with Hypertension

Green: CKD without hypertension

Figure 1: Propensity Score density function before matching.



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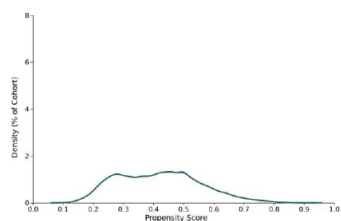
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Figure 2: Propensity Score density function after matching.