



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Abstract Topic : Non-dialysis CKD

Impact of Chronic Kidney Disease on Contrast-Induced Nephropathy, Bleeding, and Long-Term Outcomes After Rotational Atherectomy : A Multicenter Retrospective Study

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Objectives : Chronic kidney disease (CKD) is associated with severe coronary calcification and increased procedural risks. Rotational atherectomy (RA) is an established strategy for severely calcified, high complexity coronary lesions; however, it is used in a relatively small proportion of PCI procedures. We aimed to evaluate the impact of CKD on contrast-induced nephropathy (CIN), bleeding, and long-term clinical outcomes in patients undergoing RA.

Methods : This study retrospectively analyzed 652 patients who underwent RA for calcified coronary lesions from the multicenter ROCK registry and a single-center extension between 2010 and 2025. Patients were classified into CKD (eGFR < 60 mL/min/1.73 m², n = 66) and non-CKD (n = 586) groups, excluding those on dialysis. The primary endpoint was a composite of CIN and in-hospital bleeding. Secondary endpoints included 3-year target vessel failure (TVF), myocardial infarction (MI), and total bleeding.

Results : The primary outcome occurred more frequently in the CKD group (16.7% vs. 5.1%, p = 0.001). Specifically, CIN was significantly higher in CKD patients (15.2% vs. 1.7%, p < 0.001), while in-hospital bleeding did not differ significantly. In multivariate analysis, CKD was an independent predictor of the primary outcome (adjusted OR 3.02; 95% CI 1.36–6.69; p = 0.006). At 3-year follow-up, total bleeding (10.6% vs. 3.9%, p = 0.008) and MI (6.1% vs. 2.1%, p = 0.024) were higher in the CKD group, whereas TVF and cardiac death showed no significant difference.

Conclusions : In patients undergoing RA for severely calcified coronary lesions, CKD independently increases the risk of CIN and long-term bleeding, as well as ischemic events such as MI. However, considering comparable revascularization outcomes, RA could still be one of the treatment strategies in CKD patients when early complications are carefully managed.

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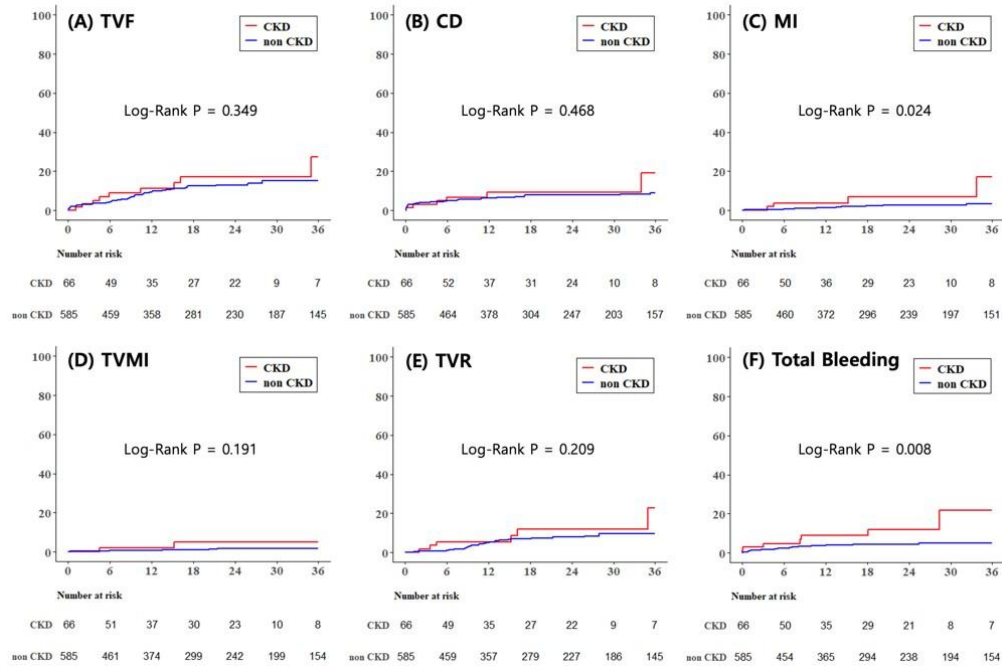


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	non CKD		CKD		univariate			Multivariate*		
Primary outcome	n = 586	n = 66	p-value	OR	95%CI (lower – upper)		p-value	OR	95%CI (lower – upper)	
Composite ^a	30(5.1)	11(16.7)	0.001	3.700	1.758	7.789	<0.001	3.019	1.363	6.685
CIN	10(1.7)	10(15.2)	<0.001	10.269	4.099	25.727	<0.001	7.184	2.324	22.210
In-hospital bleeding	21(3.6)	2(3.0)	>0.999	0.839	0.192	3.662	0.816	0.779	0.170	3.565