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The comparison of risk factors for coronary artery calcification and abdominal aortic calcification in CKD: from the KNOW-CKD study

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Objectives: Vascular calcification is very prevalent and severe in patients with chronic kidney disease (CKD) and an important risk factor for cardiovascular morbidity and mortality. Previous studies in populations with preserved renal function showed differences in risk factors associated with coronary artery calcification (CAC) and abdominal aortic calcification (AAC). However, the differences between factors associated with CAC and AAC in CKD are not well known.

Methods: This cross-sectional study analyzed 1,570 predialysis CKD patients from the KNOW-CKD cohort. CAC was defined as coronary artery calcium score > 0 and AAC was defined as abdominal aortic calcium score > 0. To verify the factors associated with CAC and AAC, we used multivariate logistic regression analysis adjusted for various cardiovascular risk factors.

Results:

784 (50.0%) patients had CAC and 504 (32.1%) patients had AAC. CAC was associated with age [1.08 (1.06-1.10)], male sex [2.55 (1.9-3.42)], waist-hip ratio [9.67 (1.12-83.28)], systolic blood pressure [1.01 (1.003-1.02)], diabetes [2.75 (2.02-3.75)], previous CVD [1.53 (1.01-2.33)], no statin [0.65 (0.5-0.84)], FGF23 [1.0004 (1.0004-1.01)] and osteoprotegerin [1.08 (1.02-1.15)]. AAC was associated with age [1.05 (1.04-1.07)], diabetes [1.93 (1.46-2.54)], CRP [0.97 (0.95-0.99)], no statin [0.67 (0.52-0.86)] and osteoprotegerin [1.05 (1.001-1.10)].

Conclusions: There were discrepancies between factors associated with CAC and AAC in CKD. Further research is warranted to elucidate the mechanism and clinical significance of these differences.