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Serum uric acid showed significant association with coronary artery calcification in only early chronic kidney disease: Results from the KoreaN Cohort Study for Outcomes in Patients With Chronic Kidney Disease (KNOW-CKD)

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Objectives : Coronary artery calcification (CAC) is associated with major adverse cardiovascular events. People with chronic kidney disease are a well-known susceptible group for CAC. Coronary computed tomography is the main noninvasive tool to detect calcified lesions. We evaluated the prevalence and risk factors for CAC in Korean chronic kidney disease patients.

Methods : Analysis of 2,112 subjects who underwent coronary calcium scanning as part of the KoreaN Cohort Study for Outcome in Patients With Chronic Kidney Disease (KNOW-CKD) was performed. We conducted logistic regression to evaluate the association between serum uric acid and CAC. Age, gender, diabetes, hypertension, estimated glomerular filtration rate, waist hip ratio were included as covariates.

Results : Mean age was 53.6±12.2 years and 1297 (61.4%) were men. 1012 (47.9%) belonged to CAC score 0. 572(27.1%) to CACS 1-100, 257(12.2%) to 101-400, 271(12.8%) to CACS ≥ 400. Serum uric acid level was significantly associated with CACS (adjusted odds ratio [OR] 1.219, 95% confidence interval 1.053-1.412, P=0.008) in CKD stage I and II group. Age, male gender, diabetes, waist hip ratio were also significant associated factors with CACS in early CKD. However, in the subjects with CKD III, IV and V, serum uric acid showed no association with CAC.

Conclusions : In early CKD population, serum uric acid exhibited a significant independent association with CACS, while the association diminished in the advanced CKD.

Keywords :