Association between non-alcoholic fatty liver disease and coronary calcification in non-obese chronic kidney disease

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Objectives: Non-alcoholic fatty liver disease (NAFLD) was found to be the hepatic manifestation of the metabolic syndrome. And also, NAFLD has been reported to associate with chronic kidney disease (CKD). This study aimed to investigate whether the NAFLD is associated with coronary artery calcification (CAC) in the non-obese patients with CKD.

Methods: Data from a total of 1,054 participants were provided from 2005 through 2017. CAC score was measured with computed tomography. Estimated glomerular filtration rate (eGFR) of less than 60 ml/min/1.73 m² or urinary abnormality was defined as CKD. Body mass index (BMI) was considered to be normal if it was less than 25 kg/m². To assess the central obesity, waist-to-hip ratio (WHR) was also obtained. NAFLD was diagnosed in patients with evidence of liver steatosis at ultrasonography.

Results: The CAC was significantly higher in the non-obese CKD patients with NAFLD than the participants without NAFLD. After adjusting for age, gender, systolic blood pressure, WHR, eGFR, fasting plasma glucose, total cholesterol, NAFLD was significantly associated with increased risk of CAC in non-obese CKD patients (OR=1.630, P=0.001).

Conclusions: Our study suggested that NAFLD was significantly associated with CAC in the non-obese patients with CKD.