CAROTID INTIMA-MEDIA THICKNESS IS A USEFUL SCREENING TOOL TO DETECT CORONARY ARTERY PLAQUE IN ASYMPTOMATIC TYPE 2 DIABETIC PATIENTS WITH ZERO CALCIUM SCORE

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Background: Coronary artery disease (CAD) is the leading cause of death for individuals with type 2 diabetes mellitus (DM), and acute coronary syndrome is believed to result from plaque rupture at the site of a noncritical coronary stenosis (<50%). Although the screening for occult CAD using calcium score (CS) is widely used, there is little doubt that some patients even with zero calcium score have CAD. Carotid intima-media thickness (cIMT) is known to be the useful screening tool to detect CAD, but whether cIMT is also beneficial in patients with CS of zero is not clear. The purpose of this study is to clarify the usefulness of cIMT for detecting coronary artery plaque in asymptomatic type 2 DM patients with CS of zero.

Methods: We enrolled consecutive 200 asymptomatic type 2 DM patients without history of CAD. All patients underwent cardiac computed tomography angiography (CCTA) using 320-slice multi-detector computed tomography with enhancement and cIMT was also assessed.

Results: The mean age of the study participants was 64.0±9.7 years; 69.5% were men. Diabetic duration was 10.4±8.0 years and mean HbA1c level was 6.7±1.2%. A total of 71 patients had CS of zero, among whom 26 patients had coronary artery plaque regardless of its severity. Four patients with CS of zero had >or=50% stenosis and revascularization was performed in 2 patients with CS of zero. cIMT values were significantly different between patients with coronary artery plaque and those without (mean cIMT±SD: 1.67±0.62 vs 1.27±0.42 [p=0.003]). Multivariate logistic regression analysis revealed cIMT >or=1.6 (OR 3.44, 95% CI 1.12-10.6; p=0.031) as the independent predictor of coronary artery plaque.

Conclusions: cIMT is a useful screening tool to detect coronary artery plaque in type 2 diabetic patients with CS of zero. The screening using cIMT should be performed for Type 2 DM patients, among whom patients with cIMT >or=1.6 should undergo CCTA with enhancement regardless of CS.