Differential coronary calcification on electron=beam CT between Syndrome X and coronary artery disease in patients with chronic stable angina pectoris

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摘要

Abstract

Study objectives: The differential diagnosis of syndrome X and coronary artery disease (CAD) in patients with evidence of myocardial ischemia may be difficult. The possible difference in coronary calcium detected by electron-beam CT (EBCT) between syndrome X and CAD is rarely evaluated, especially in aged patients with chronic, stable angina.

Design and settings: Prospective, controlled study at a tertiary referral medical center.

Patients and measurements: Forty patients with syndrome X (85% male) and 53 patients with CAD (89% male) were enrolled. Ten control subjects (90% male) with negative exercise treadmill test results and normal coronary angiographic findings served as control subjects. EBCT determined the coronary calcium scores (CCSs), and standard cardiovascular risk factors of all study subjects were analyzed.

Results: The 93 study patients had CCSs that ranged from 0 to 1,857. Coronary calcification was seen in 2 of the 10 control subjects (20%), 21 of the 40 syndrome X patients (52.5%), and 51 of the 53 CAD patients (96.2%) [$p < 0.01$]. The CCS (median [range]) was significantly lower in syndrome X patients than in CAD patients: 1 (0 to 117) vs 202 (0 to 1,857) [$p < 0.001$]. Receiver operating characteristic curve analyses also demonstrated that coronary calcification differentiated syndrome X from CAD (area under curve, 0.891; 95% confidence interval, 0.806 to 0.947). Of the CAD patients whose CCSs were < 117 and overlapped with CCSs of syndrome X, multivariate analyses determined CCS > 5 (odds ratio, 13.1; 95% confidence interval, 2.86 to 59.7), hypertension (odds ratio, 6.4; 95% confidence interval, 1.5 to 27.4), and hypercholesterolemia (odds ratio, 6.7; 95% confidence interval, 1.5 to 30.5) to be independent discriminators to differentiate CAD from syndrome X. Patients with CAD had more frequent hypertension than patients with syndrome X.

Conclusions: The coronary calcium detected noninvasively by EBCT was different, though with some

overlapping, between patients with syndrome X and CAD. In addition to standard cardiovascular risk factors, CCS determined by EBCT (especially > 117 or = 0) could differentiate between syndrome X and CAD in patients with chronic, stable angina with evidence of myocardial ischemia. Larger trials would be useful to validate CCS on EBCT as a predictor of clinical outcome in these patients.

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