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**Major adverse cardiac events and the severity of coronary atherosclerosis assessed by computed tomography coronary angiography in an outpatient population with suspected or known coronary artery disease.**

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**Source**

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**Abstract**

**PURPOSE:**

To investigate the predictive value of 64-slice computed tomography coronary angiography (CTCA) for major adverse cardiac events (MACEs) in patients with suspected or known coronary artery disease (CAD).

**MATERIALS AND METHODS:**

Seven hundred and sixty-seven consecutive patients (496 men, age 62±11 y) with suspected or known heart disease referred to an outpatient clinic underwent 64-slice CTCA. The patients were followed for the occurrence of MACE (ie, cardiac death, nonfatal myocardial infarction, unstable angina).

**RESULTS:**

Eleven thousand five hundred and sixty-four coronary segments were assessed. Of these, 178 (1.5%) were not assessable because of insufficient image quality. Overall, CTCA revealed the absence of CAD in 219 (28.5%) patients, nonobstructive CAD (coronary plaque ≤50%) in 282 (36.8%) patients, and obstructive CAD in 266 (34.7%) patients. A total of 21 major cardiac events (4 cardiac deaths, 12 myocardial infarctions, and 5 unstable angina) occurred during a mean follow-up of 20 months. One noncardiac death occurred. Seventeen events occurred in the group of patients with obstructive CAD, and 4 events occurred in the group with nonobstructive CAD. The event rate was 0% among patients with normal coronary arteries at CTCA. In multivariate analysis, the presence of obstructive CAD and diabetes were the only independent predictors of MACE.

**CONCLUSIONS:**

Coronary plaque evaluation by CTCA provides an independent prognostic value for the prediction of MACE. Patients with normal CTCA findings have an excellent prognosis at follow-up.