A201.E1896
JACC March 9, 2010
Volume 55, issue 10A

i2 SUMMIT

COMPOSITION OF CORONARY ATHEROSCLEROTIC PLAQUES IN DIABETIC AND NON-DIABETIC PATIENTS DETERMINED BY 64-ROW MULTIDETECTOR COMPUTED TOMOGRAPHIC ANGIOGRAPHY

i2 Poster Contributions
Georgia World Congress Center, Hall B5
Monday, March 15, 2010, 9:30 a.m.-10:30 a.m.

Session Title: Intravascular Diagnostics and Complex Lesions
Abstract Category: CTA/MRI - Interventional Aspects
Presentation Number: 2503-459

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Background: Plaque composition rather than degree of luminal narrowing may be predictive of future coronary events in high risk patients. The purpose of the study was to compare degree of plaque burden and composition with 64-row multidetector computed tomographic (CT) angiography between diabetic and non-diabetic patients.

Methods: A total of 952 consecutive multidetector CT angiographic examinations were performed between July 2008 and June 2009. Of these, 92 (46 in diabetic group, 46 in non-diabetes group) patients underwent invasive coronary angiography (CAG). CT angiography was evaluated for the presence and type of atherosclerotic plaque and severity of luminal narrowing.

Results: Of the 92 patients included in the study, 30 patients (65.2%) in diabetic and 26 patients (56.5%) in non-diabetic group had significant coronary narrowing on CT angiography. Forty-two patients (93.3%) in diabetic group and 39 patients (88.6%) in non-diabetic group had any types of plaques (p=0.485). CT angiography was similar to CAG in its ability to predict significant coronary artery disease: the AUC was 0.88 (95% CI, 0.81 to 0.95). Diabetic patients had more mixed plaque and less calcified plaque compared to non-diabetic patients.

Conclusions: Differences in coronary plaque composition between diabetic and non-diabetic patients can be determined noninvasively by CT angiography. In patients with diabetes, mixed plaques contribute, to a higher degree, to the total plaque burden than in non-diabetic patients.