



## Imaging

### HIGH-RISK PLAQUE CHARACTERISTICS IN TYPE II DIABETIC PATIENTS: EVALUATION BY CORONARY CT ANGIOGRAPHY

Poster Contributions

Poster Sessions, Expo North

Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

---

Session Title: Imaging: CT/Multimodality II

Abstract Category: 20. Imaging: CT/Multimodality

Presentation Number: 1141-344

---

Authors: *Takeshi Hatani, Shuichiro Kaji, Kitae Kim, Takeshi Kitai, Natsuhiko Ehara, Atsushi Kobori, Makoto Kinoshita, Tomoko Tani, Yutaka Furukawa, Kobe City Medical Center General Hospital, Kobe, Japan*

**Background:** Patients with type 2 diabetes mellitus (DM) are at high risk for coronary artery disease (CAD), but noninvasive measurement of CAD extent and severity has not been well investigated. Low attenuation non-calcified plaque, luminal stenosis and positive remodeling measured by coronary CT angiography (CCTA) are related to adverse outcomes. The purpose of this study was to compare lesion characteristics of CAD assessed by CCTA between diabetic and non-diabetic patients.

**Methods:** A total of 364 consecutive patients with suspected CAD (219 males, 64±12 years) underwent 64-slice CCTA and 4863 coronary segments were analyzed. Of these, 127 (35%) patients had type 2 DM. Enrolled patients had an intermediate to high pre-test probability of obstructive CAD. We evaluated the numbers of coronary segments with coronary atherosclerotic plaques and the plaque characteristics, including significant luminal stenosis (≥70%), positive remodeling, and spotty calcification. Numbers of calcified (≥120HU), non-calcified (<120HU), and low attenuation (<60HU) plaque were also evaluated.

**Results:** There were no significant differences in age, gender, prevalence of hypertension, and LDL-cholesterol level between DM and non-DM patients. HbA1C was significantly higher in DM than in non-DM patients (7.9% vs. 5.8%, p<0.001). CCTA revealed that DM patients had a higher number of coronary segments with significant luminal stenosis (1.02 vs. 0.62 segments per patient, p<0.05), non-calcified plaque (2.42 vs. 1.53 segments per patient, p<0.001), low attenuation plaque (0.33 vs. 0.16 per patient, p=0.03), positive remodeling (1.24 vs. 0.76 segments per patient, p=0.004) as compared to non-DM patients, whereas no such differences were observed for calcified plaque and spotty calcification.

**Conclusions:** High-risk coronary plaques were more frequently detected in DM patients by CCTA than in non-DM patients. CCTA screening may be useful for enhanced risk stratification in DM patients.