

# CTA Sees Plaque in Patients With Low Clinical Risk

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BOSTON — Direct screening for atherosclerosis using CT coronary angiography may provide a more accurate cardiovascular risk picture than do routine clinical predictors, including the Framingham risk score.

However, the value of the imaging method in asymptomatic patients must be demonstrated in clinical trials before it can be used to modify therapy, said Dr. Benjamin Chow at the annual meeting of the American Society of Nuclear Cardiology.

Dr. Chow and associates conducted an imaging study that was designed to determine the prevalence of coronary atherosclerosis in patients with varying clinical predictors, as well as to identify the limitations of traditional cardiac risk factors for predicting individual atherosclerotic burden using computed tomographic angiography (CTA).

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Dr. Chow and associates conducted an imaging study that was designed to determine the prevalence of coronary atherosclerosis in patients with varying clinical predictors, as well as to identify the limitations of traditional cardiac risk factors for predicting individual atherosclerotic burden using computed tomographic angiography (CTA).

The study revealed evidence of calcific and noncalcific coronary atherosclerosis in a cohort of consecutive patients with low to intermediate Framingham risk scores (FRS).

This finding, together with the absence of atherosclerotic plaques in some patients with high FRS, suggests that the use of routine clinical predictors may be insufficient for identifying patients who might benefit from aggressive risk factor modification, Dr. Chow reported.

Of 1,247 consecutive patients who underwent CTA at the University of Ottawa (Ont.) Heart Institute between February 2006 and March 2008, Dr. Chow and his coinvestigators identified 554 patients (mean age, 55 years) who did not have a history of myocardial infarction, revascularization, or diabetes mellitus, and who were not on current statin therapy. Approximately half of the patients were men, and the mean body mass index was 28.5 kg/m<sup>2</sup>. The mean pretest probability for obstructive coronary artery disease was 24.4%, he said.

Using a 17-segment model of the coronary arteries to assess for the presence of calcific or noncalcific plaque, the investigators calculated a total plaque score by summing the number of coronary segments with visible atherosclerotic plaque. They calculated the FRS using age, sex, total cholesterol, high-density lipoprotein cholesterol, smoking history, and blood pressure.

Based on the FRS, 408 of the patients were considered to have a very low (5% or less) or low (10% or less) 10-year risk for cardiac events, whereas 93 patients had an intermediate risk (11%-19%) and 53 were considered high risk (20% or

greater), said Dr. Chow. Of the patients in the very-low- and low-risk groups, more than half had visible evidence of atherosclerotic plaque on CTA, he said. Additionally, about 9% of patients in the high-risk category had no evidence of calcific or noncalcific plaques.

"Although the mean atherosclerotic plaque burden did increase with the 10-year Framingham risk, the correlation between [the FRS] and plaque was fair," Dr. Chow reported. The findings suggest that,

although the FRS is moderately predictive of plaque burden in this patient population, "it may underestimate total plaque burden," he said.

The value of identifying subclinical coronary atherosclerosis through CTA has yet to be established in clinical trials, said Dr. Chow of the institute. "Although many would argue that more aggressive risk-factor modification is warranted for patients with evidence of coronary atherosclerosis, prospective studies are need-

ed to determine whether modifying therapy [based on imaging evidence] is appropriate."

Currently, the main suggested indication for CTA is for symptomatic patients or those with equivocal stress tests, Dr. Chow noted. CTA "is not currently indicated to screen for coronary atherosclerosis because the benefit of doing so has yet to be [proved]."

Dr. Chow reported no conflicts of interest with respect to his presentation. ■

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