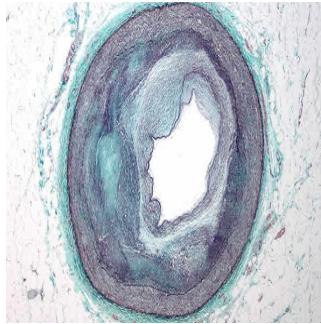

Imaging Tests Can Help Detect Coronary Artery Disease



According to a study led by Icahn School of Medicine at Mount Sinai, adding two non-invasive imaging tests to traditional cardiovascular disease risk factor assessment can predict a patient's future risk of heart attack, stroke or premature death more precisely. The study has been published in the *Journal of the American College of Cardiology*.

"Using imaging tests to detect disease in carotid or coronary arteries before it causes symptoms can better identify healthy individuals at increased risk than our current, traditional risk assessment methods," says the study's principal investigator Valentin Fuster, MD, PhD, Director of Mount Sinai Heart and Physician-in-Chief of The Mount Sinai Hospital.

During the study, patients were assessed using traditional cardiovascular disease risk factor assessments for high blood pressure, cholesterol, diabetes, sedentary lifestyle, obesity and smoking. They also received two imaging tests which included a novel 3D vascular ultrasound and coronary artery calcium score via a low dose CT scan. The study showed that adding the two imaging tests resulted in the identification of subclinical atherosclerosis in 60 percent of the seemingly healthy study participants presenting with no clinical manifestations.

The 3D vascular ultrasound imaging technology enabled researchers to quantify the amount of carotid artery plaque burden that lined the patient's carotid arteries in the neck. The coronary calcium score CT scan helped identify any narrowing or hardening of the carotid arteries. Both carotid plaque burden and coronary artery calcium are signs of atherosclerosis or diseased arteries. This information was revealed in healthy study participants only through the use of the imaging procedures.

The study revealed that healthy individuals identified as having increased carotid plaque burden and coronary artery calcium were two to three times more likely to have an adverse cardiac event such as an artery blockage, a heart attack or a stroke. Follow-up at 2.5 to 3.1 years showed that a total of 216 adverse events were reported among the study patients that resulted in 108 deaths. 27 of these were cardiovascular. In addition, there were 34 heart attacks, 30 strokes, 18 hospitalisations due to unstable angina and 79 revascularisation procedures. The incidence of adverse events was greatest among the ones with carotid and coronary atherosclerosis at 4.2 percent.

According to Roxana Mehran, MD, the study's co-lead author and Director of Interventional Cardiovascular Research and Clinical Trials at the Zena and Michael A. Weiner Cardiovascular Institute at Mount Sinai Heart at Icahn School of Medicine at Mount Sinai, this study shows the impact of adding carotid plaque measurement using vascular ultrasound and CT scan to conventional assessment. Co-lead author Usman Baber, MD, Assistant Professor of Medicine, Cardiology, at Icahn School of Medicine at Mount Sinai says, "Assessing a patient's risk of atherosclerosis with carotid vascular ultrasound and cardiac calcium CT imaging yields incremental gains over classical risk factors in cardiovascular risk prediction."

Source: Mount Sinai Medical Centre

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