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VERDICT Study: Coronary CT in NSTEACS

When patients present with NSTEMI and receive initial treatment to reduce chest pain, they are sent to the cardiac catheterisation laboratory to assess the status of the coronary arteries. However, in many of these patients, the degree of coronary artery disease is not severe enough to warrant any surgical intervention. This often leads to additional healthcare costs and wastage or clinician hours and manpower. The question is: how can one determine the severity of coronary artery disease without an angiogram?

A new study shows that early coronary CT angiography (CTA) can accurately predict which patient with Non-ST segment Elevation Acute Coronary Syndrome (NSTEACH) does not have coronary stenosis. The results of the VERDICT study are published in the Journal of the American College of Cardiology.This knowledge can potentially spare patients from having to undergo unnecessary invasive testing and/or hospital admission.

The researchers noted that CTA had a very high negative predictive value (NPV) in patients who had minimal coronary artery artery disease. The NOV was not influenced by the clinical risk profile or patient comorbidity. The few false positives that occurred were reported in patients with single stenosis in the minor side branches which had a luminal diameter of less than 2.5mm. The positive predictive value of CTA was 87.9%, sensitivity was 96.5%, and specificity was 72.4%.

Findings from the VERDICT trial suggest that when patients present with NSTEACS, coronary CTA should be performed within two hours of clinical diagnosis to rapidly identify patients in whom cardiac catheterisation will be completely unnecessary.

The study also revealed that patients with a negative CTA or no significant coronary artery disease may not require immediate transfer to a cardiology center and may have a lower need for prolonged antithrombotic medications. Both these endeavors not only are labour-intensive but also increase the cost of healthcare.

Patients with moderate to severe coronary artery disease can be revascularised either using percutaneous coronary angiography or coronary artery bypass surgery.

In a previous study, investigators showed that early angiography within 12 hours of NSTEACS diagnosis did not improve 5-year clinical outcomes compared to standard angiography performed within 48-72 hours. In this randomised study that included 2147 patients, 1023 randomised cohort underwent coronary CTS prior to angiography. All these patients had ischaemic ECG changes or positive troponin on admission

Current guidelines recommend invasive angiography as the primary diagnostic test for patients with acute coronary syndrome, whereas CT angiography is reserved for those with chest pain who may or may not have coronary artery disease.

In the past, the majority of low-risk patients with ACS were evaluated with 64-row CT, whereas in the VERDICT study, patients at high risk were evaluated using the 320 detector CT

With advanced CTA and ready availability, the scans can be completed within minutes. However, this was a controlled trial with all the personnel available but in real-life patients with chest pain present to the ED at all hours. Further, a radiologist specializing in CTA may not be available to read the scan study. Finally, CT angiography is not available at all hospitals.

Source: Journal of the American College of Cardiology
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