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## CT Angiography Better at Predicting Future Risk for Patients with Chest Pain



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Analysis of results from the Prospective Multicenter Imaging Study for Evaluation of Chest Pain (PROMISE) trial showed that the presence and extent of coronary artery disease detected by CT angiography better predicts the risk for future cardiac events as compared to other measures such as exercise tolerance or restricted blood flow to the heart muscle. The report is published in *Circulation*.

The analysis was led by Udo Hoffmann, MD, MPH, of the Massachusetts General Hospital and his team and demonstrated the superiority of CT angiography due to its ability to reveal nonobstructive coronary artery disease.

Dr Hoffman explains that this is the first time that through such a comparison, it is revealed that CT angiography (CTA) has greater ability to identify a large group of at-risk patients who would have been missed by functional stress testing. Not only can this be important for physicians who are in the process of determining which diagnostic tests would work best but it also highlights the importance of implementing lifestyle changes and using statin drugs to lower risk of clinical events for patients with nonobstructive disease.

The PROMISE trial was conducted at 193 centres across North America. The objective was to determine whether coronary CTA or stress testing or ECG provided better guidance for clinical decisions regarding patients who have chest pain. The researchers analysed associations between the results of all diagnostic tests and the risk of future cardiac events in more than 10,000 patients in the PROMISE trial.

Findings showed that coronary CTA was able to identify nonobstructive coronary artery disease in at-risk group of patients who would not have been identified with functional testing. Most cardiovascular events during the study's two year follow up period occurred in patients who were not diagnosed with coronary artery obstruction. The researchers also point out that while coronary CTA was clearly superior to functional testing, combining the two could significantly improve prognostic value.

"While these observational data cannot prove that treating patients based on the results of CTA testing will automatically result in better health outcomes, they do provide new information enabling a more informed choice of testing for patients with stable chest pain, especially for predicting future cardiovascular risk," says Hoffmann, who is a professor of Radiology at Harvard Medical School. "Future studies also need to determine whether more detailed analysis of exercise parameters in functional testing could improve its prognostic ability; but it's reassuring that both strategies can provide important prognostic information for patients and their physicians."

Source: [Massachusetts General Hospital](#)

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