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## Chest Pain in ED: Initial Diagnostic Testing Not Tied to Future Risk of MI



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Patients sent to hospital emergency departments for chest pain, but who did not have a heart attack, appeared to have a low risk of experiencing any heart attacks during subsequent short-term and long-term follow-up periods, according to a study published in *JAMA Internal Medicine*. The risk was not affected by the initial diagnostic testing strategy.

About six million patients are seen annually in hospitals for chest pain and other symptoms suggestive of myocardial ischaemia (decreased blood flow to the heart). Patients without evidence of ischaemia were shown to have low risk for any major cardiovascular event, and most patients do not display a cardiac cause for their symptoms.

Dr. Andrew J. Foy and other coauthors at the Penn State Milton S. Hershey Medical Center in Hershey, Pennsylvania, compared chest pain evaluation with noninvasive testing and outcomes for patients in hospital emergency departments. The study analysed data from health insurance claims from a national sample of privately insured patients in 2011.

Patients who had chest pain diagnoses were placed into five different testing strategies: no noninvasive testing, exercise electrocardiography (known as EE, which evaluates the heart's electrical activity), stress echocardiography (SE, conducted with ultrasound), myocardial perfusion scintigraphy (MPS, which scans the heart) and coronary computed tomography angiography (CCTA, comprised of CT imaging).

The researchers measured the proportion of patients who received cardiac catheterisation, coronary revascularisation procedures and future non-invasive tests, in addition to patients hospitalised for heart attacks.

In 2011, 693,212 people visited an emergency department with a chest pain diagnosis, accounting for 9.2 percent of all ED encounters. The study analysed 421,774 of those patients. Of that number, 293,788 did not receive an initial noninvasive test while 127,986 did undergo testing. MPS was the most frequently used test among those who received initial noninvasive testing.

The study demonstrated that when compared with no testing whatsoever, patients who underwent EE, MPS and CCTA had higher odds of undergoing cardiac catheterisation and revascularisation procedures without an additional risk of having a heart attack.

The study concluded that concerns regarding rising health care costs, especially the portion attributable to non-invasive cardiac imaging, and patient safety issues related to radiation exposure as well as overdiagnosis, should be priorities of future research. More research is required to clarify the best strategy for low-risk patients being evaluated for chest pain in emergency departments.

JAMA Internal Medicine Editor-in-Chief Rita F. Redberg wrote an editorial addendum to the study, saying that the current practice of performing a stress test on low-risk patients in the ED is largely unnecessary, prolonging emergency department visit time in addition to unnecessary medical procedures and health risks with nuclear imaging tests. Patients are advised to undertake a close follow-up appointment with a primary care physician and determine tests as necessary.

Source: [JAMA](#)

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