

Testing of Low-Risk Patients Presenting to the ER – Coronary CT Angiography

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From the more than eight million emergency room (ER) visits each year for chest pain, almost 80% of those patients are admitted to the hospital and go through extensive testing for what often turns out to be non-cardiac related. The term “low-risk chest pain” is placed with patients that are considered to be at low-risk for Acute Coronary Syndrome (ACS). The management of low-risk patients presenting to the ED is a common and challenging problem. Although a majority of these patients do not have a life-threatening condition, the clinician must decide between those who need urgent treatment of a serious problem and those who do not require admission. The current standard of care workup of

low-risk patients with chest pain in an ER involves patient's history and physical exam, a cardiac stress test, serial EKGs, and labs; taking 12-36 hours and is expensive. Coronary CT Angiography (Coronary CTA) shows promise in this setting allowing a safe, accurate, and cost effective approach for the low-risk patients presenting to the ER with chest pain.



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A Coronary CTA is an imaging test that looks at the arteries that supply your heart with blood. Coronary CTA relies on a powerful X-ray machine to produce images of your heart and its blood vessels. This is primarily used to check for narrowing of the heart arteries or ACS. Coronary CTAs are noninvasive and don't require any recovery time. These are usually performed in the radiology department of a hospital or an outpatient imaging facility. A new standard of care for these low-risk chest pain patients is that a negative Coronary CTA, combined with negative EKG and negative cardiac labs, can safely rule out ACS. Studies have shown that using Coronary CTA earlier in the triage of ER

chest pain patients is beneficial because 1.) It is fast and relatively simple 2.) It's non-invasive 3.) Earlier discharge of nearly half the chest pain patients by ruling out ACS. Given the results, there are a growing number of hospitals that have incorporated Coronary CTA in their practice. There are a number of major research efforts underway to compliment the use of Coronary CTA in low-risk chest pain patients presenting to the ER. We hope that these efforts will be able to process early workup of these patients and may enable shorter length of stay and reduce hospital charges.



Jackson-Madison County General Hospital (JMCGH) has been performing Coronary CTA in the Department of Radiology for outpatients and inpatients for many years. Secondary to a new and faster CT technology, ER physicians are now able to offer this service in an expedited manner for ER patients considered at low to moderate risk for ACS. Additionally this test is able to evaluate the blood vessels to the heart at a considerable lower radiation dose compared to a nuclear medicine stress test. Radiologist and Cardiologist specially trained to interpret Coronary CTA exams are collaborating to offer this service seven days per week.

References:

- AHA Circulation: Testing of Low Risk Patients presenting to ED with Chest Pain
- AHA Circulation: Is CTCA the most Accurate and Effective Noninvasive Imaging Tool to Evaluate Pts with Acute CP in the ED.



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