

Pitfalls to Avoid in the Evaluation of Chest Pain in the ED

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The correct identification of patients with ACS (acute coronary syndrome) in the emergency department is a challenging task. Missing the diagnosis of unstable angina or acute myocardial infarction occurs in at least 2% of patients presenting to the emergency department with the complaint of chest pain. These missed diagnoses account for 25% of malpractice awards in emergency department cases.

Why is the correct diagnosis so difficult? One, the presenting complaint is frequently atypical for ACS. Two, the initial EKG and serum markers (CK-MB & Troponin) may be normal. Three, the physician in the emergency department is a multitask individual who is frequently distracted by multiple simultaneous problems preventing total concentration and time for detailed histories and physicals.

The patient with ACS can present with a variety of symptoms other than chest pain this is especially true of women. Weakness, fatigue, dizziness, syncope, abdominal pain, nausea and vomiting and chest wall pain are a few of the atypical presentations. In the presence of a normal EKG and serum markers, it is easy to understand why the correct diagnosis of ACS is missed.

Therefore, it is imperative that each emergency department develop a chest pain protocol to triage patients with possible ACS. This protocol is similar to the landing check list that a pilot uses to be sure he/she does not overlook an important item for safe landing.

The basic elements of a chest pain protocol are as follows:

1. Initial evaluation and risk stratification based on history, physical examination, EKG and serum markers.
2. If the EKG and serum markers are abnormal, the patient is processed according to the ACC/AHA guidelines for ST Elevation Myocardial Infarction (STEMI) and Non-ST Elevation Myocardial Infarction (Non-STEMI).
3. If the EKG and serum markers are normal, there should be a period of observation on a cardiac monitor.
4. During this period of observation, the EKG and serum markers should be repeated within a predetermined time frame. This may vary according to the emergency department protocol usually in a two to six hour time frame. Recent research indicates a two hour interval may be appropriate. However, each institution should establish its own protocol time interval.

5. Prior to discharge from the emergency department, if the EKG and serum markers remain normal, consider doing a stress imaging study especially in the patient with risk factors.
6. Appropriate follow up recommendations are then given. These may include ASA, beta-blockers, and nitrates until the patient is seen by his primary physician.

In summary, the correct diagnosis of ACS is frequently quite difficult because of atypical presentation and the normal EKG and serum markers initially. The development of a chest pain protocol for your emergency department should lower your missed diagnosis rate and your malpractice exposure when evaluating patients with possible ACS.

Common Pitfalls in Evaluation of Chest Pain

- Chest wall tenderness does not exclude ACS.
- Epigastric tenderness does not exclude ACS.
- Typical GI symptomatology such as reflux does not exclude ACS.
- The absence of chest pain does not exclude ACS.
- Relying on a single EKG and a single set of serum cardiac markers to exclude ACS.
- The presence of risk factors such as family history, hypertension, diabetes, smoking, and history of coronary disease does make ACS more likely.

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