



Clinical Assessment of Chest Pain: A Systematic Review

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Chest pain is a common complaint and encompasses a broad differential diagnosis that includes several life-threatening causes. A workup must focus on ruling out serious pathology before a clinician considers more benign causes. Common descriptors of visceral pain are dull, deep, pressure, and squeezing. Visceral pain also refers to other locations as a result of the nerves coursing through somatic nerve fibers as they reach the spinal cord. Ischemic heart pain, for example, may refer to the left or right shoulder, jaw, or left arm.

Keywords: Visceral pain; diaphragmatic irritation; somatic pain; pulmonary embolism**Introduction**

Chest pain is the most common presenting complaint of acute myocardial infarction. The classic manifestation of ischemia is usually described as a heavy chest pressure or squeezing, a "burning" feeling, or difficulty in breathing. The discomfort or pain often radiates to the left shoulder, neck, or arm. Chest pain may be atypical in few cases. It builds in intensity over a period of few minutes. The pain may begin with exercise or psychological stress, but acute myocardial infarction most commonly occurs without obvious precipitating events.

It is therefore of utmost importance to emphasize the evaluation of chest pain and to discriminate chest pain of acute myocardial infarction from non-cardiac chest pain. By doing this, we can eliminate the chances of mistaken discharge of patients with acute myocardial infarction having initial normal ECG. We can also decrease undue burden on health personnel by avoiding mistaken admission of those patients who do not actually have myocardial infarction or acute coronary syndrome.

Epidemiology

Acute chest pain is one of the most common reasons to attend the ED, accounting for approximately 10% of non-injury-related visits. The incidence of chest pain-related visits to the ED is 8–19 per 1000 person-years, being higher in urban than in rural hospitals, with a mean age of 52–61 years, and with 49–57% of men. In current practice, about half of the patients presenting with chest pain can be discharged without further hospitalisation from the ED.

Clinical assessment of acute chest pain

Emergency physicians face a major challenge to identify rapidly and accurately the small group of patients who require hospitalisation for acute management and the larger group with more benign conditions who can be safely discharged from the ED.

If the patients arrive by way of EMS, it is vital that prehospital presentation, findings from the EMS ECG and any treatments provided are formally communicated in a structured handover to ED clinicians.

The triage of chest pain patients in the ED is based on careful history-taking, physical examination, recording and interpretation of a 12-lead ECG within 10 minutes of arrival and measurement of cardiac biomarkers.

Clinical risk stratification tools may help clinicians to integrate symptoms, ECG findings and biomarkers in the risk stratification of

chest pain patients. These tools have been incorporated in accelerated diagnostic pathways that facilitate fast triage and safe early discharge of low-risk chest pain patients. The diagnostic pathways based on the ADAPT (2-hour Accelerated Diagnostic protocol to Assess Patients with chest pain symptoms using contemporary Troponins as the only biomarker), EDACS (ED Assessment of Chest Pain Score) and HEART scores have the strongest scientific evidence supporting their use. Although these scores perform equally well, this taskforce recommends the use of the HEART score as it most closely follows the clinical reasoning process in the diagnosis of acute chest pain.

Conclusion

There is considerable overlap in chest pain of cardiac as well as non-cardiac causes. However, vigilant evaluation of parameters of chest pain in history taking may help to overcome this dilemma. Severe and prolonged precordial chest pain in a male patient between the age of 41–70 years, with pain radiation to left shoulder, neck and jaw is highly suggestive of AMI.

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