Low-Risk Chest Pain

What Is the Evidence?

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KEYWORDS

- Low-risk chest pain • HEART score • Risk stratification • Diagnostics
- Acute coronary syndrome

KEY POINTS

- The term low-risk chest pain is broadly defined as chest pain with a low short-term risk of a major adverse cardiac event.
- The history, physical examination, risk factors, electrocardiogram, laboratory tests, and sometimes objective cardiac imaging all play a role when determining a patient's risk of acute coronary syndrome.
- The History, Electrocardiogram, Age, Risk Factors, Troponin (HEART) pathway is a scoring system designed specifically for emergency department patients that may be used to determine which patients are at low risk for major adverse cardiac events.

INTRODUCTION

The optimal management of acute chest pain in the emergency department (ED) is a dilemma faced by many clinicians, accounting for more than 8 million annual visits in the United States.[1] Patients present with a spectrum of signs and symptoms reflecting the many potential causes of chest pain, including traumatic and nontraumatic. In order to appropriately narrow the differential, it is useful to evaluate each presentation of chest pain in a stepwise fashion (**Fig. 1**). The history and physical examination remain the front line of evaluation because they help distinguish among the potential causes of chest pain and lead to appropriate and potentially life-preserving therapy.[2] This, in combination with risk factors and diagnostics, can help disposition patients accordingly. Although most low risk patients do not have a life-threatening condition, clinicians must rapidly identify those who require admission for urgent management and those with a benign cause who can be discharged directly from the ED.[3–5]

This article focuses primarily on nontraumatic, cardiac causes of chest pain with a general overview of acute coronary syndrome (ACS). It also includes discussion of the current, evidence-based recommendations on the evaluation of patients with low-risk chest pain, including the use of novel scoring systems.

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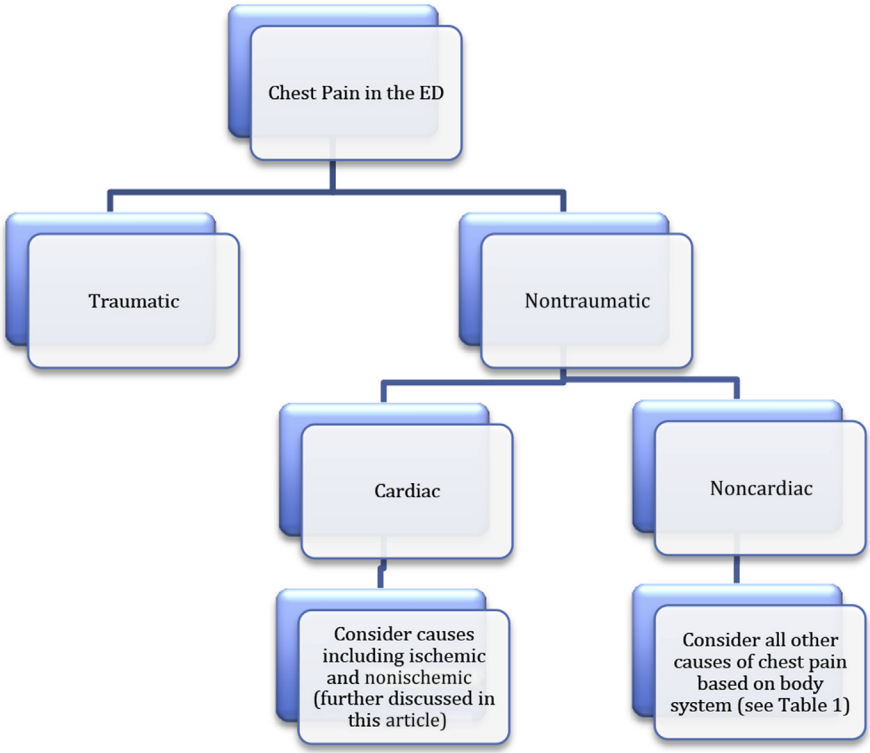

Fig. 1. Stepwise evaluation of chest pain in the ED.

CAUSES OF CHEST PAIN

The differential diagnosis for chest pain is extremely broad; chest pain can be caused by a wide variety of mechanisms, and can originate from almost all body systems (**Table 1**).[6,7] Cardiac disease accounts for only 8% to 18% of all cases of chest pain, and gastroesophageal reflux disease is the most common cause of noncardiac chest pain.[8,9]

Table 1
Differential diagnosis of chest pain

Cardiac	Noncardiac	
Ischemic	Pulmonary	Psychiatric
• ACS[a]	• Pulmonary embolism[a]	• Anxiety
• Coronary vasospasm[a]	• Tension pneumothorax[a]	• Panic disorder
• Unstable angina[a]	• Pneumonia	• Depression
• Chronic stable angina	• Pleuritis	• Somatoform disorders
• Aortic stenosis		
• Hypertrophic cardiomyopathy		

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