key points

SELECTED BY

Dr Peter Savill
GPwSI Cardiology, Hampshire

Acute coronary syndrome (ACS) includes both ST (STEMI) and non ST elevation (NSTEMI) MI, and unstable angina. The common pathological process underlying MI involves thrombus formation on top of a complex atheromatous plaque, resulting in partial or complete occlusion of the coronary artery and myocyte necrosis. Unstable angina is defined as ischaemia at rest or on minimal exertion in the absence of myocyte necrosis.

Patients with ACS typically present with chest pain; classically central chest pain that radiates to the left arm. Additional symptoms include dyspnoea, nausea, sweating and syncope. Patients can present atypically with gastric symptoms. These are often more common in patients with diabetes, women and the elderly. Clinical risk factors should also be considered when diagnosing ACS as this increases the likelihood of a positive diagnosis. Risk factors include: being older, male, a current or former smoker, known coronary artery disease (CAD), peripheral vascular disease, diabetes, hypercholesterolaemia, renal failure and a family history of CAD.

A 12-lead ECG should be performed if possible within 10 minutes of presentation or ideally at first contact with the emergency services. Troponin should be measured on admission and at 12 hours. Ideally high sensitivity troponin should be measured as this has higher negative predictive values for MI and enables earlier detection of acute MI. A chest x-ray should also be carried out to assess for thoracic pathologies. An echocardiogram should be performed during admission in all patients with NSTEMI and STEMI.

Aspirin was shown to lower MI and death rates in patients with unstable angina and to reduce mortality by a third in acute MI. All patients should be given a 300 mg loading dose of aspirin with a daily maintenance dose of 75 mg thereafter. Patients with NSTEMI or STEMI should be given a combination of aspirin and ticagrelor/prasugrel if there are no contraindications. Prasugrel is recommended in patients who are proceeding to PCI if no contraindications are present and clopidogrel is given where the patient cannot be given ticagrelor or prasugrel because of the bleeding risk or they require oral anticoagulation. All patients should receive anticoagulation.

In patients presenting with STEMI primary percutaneous intervention has been shown to be superior to thrombolysis and this benefit was greatest within 12 hours. Intervention should ideally occur within 90 minutes. Very high risk NSTEMIs should have coronary angiography within 2 hours, high risk within 24 hours and intermediate risk within 72 hours. In patients who do not meet the criteria for intermediate risk or above, inpatient or early outpatient stress testing (stress echocardiogram, stress cardiac magnetic resonance imaging or myocardial perfusion scan) should be performed. These modalities have a much higher sensitivity than treadmill testing.