BMJ Best Practice

Overview of acute coronary syndrome

Straight to the point of care

Last updated: Oct 25, 2022

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Introduction

Acute coronary syndrome (ACS) refers to a spectrum of acute myocardial ischaemia and/or infarction. Classically ACS has been divided into three clinical categories according to the presence or absence of ST-segment elevation on the initial ECG, together with measurement of myocardial biomarkers, such as high-sensitivity cardiac troponins.[1] [2] In ST-elevation myocardial infarction (STEMI) the ECG shows persistent ST-segment elevation in two or more anatomically contiguous leads. Unstable angina and non-ST-elevation myocardial infarction (NSTEMI) represent a continuum of pathology, differing mainly by the presence of markers of myocardial damage in NSTEMI.[3] Therefore some guidelines have grouped unstable angina and NSTEMI as 'non-ST-elevation acute coronary syndromes'.[3]

Related conditions

◊ Unstable angina

» see our comprehensive coverage of Unstable angina (https://bestpractice.bmj.com/topics/en-gb/3000100)

Unstable angina (UA) is an acute coronary syndrome that is defined by the absence of biochemical evidence of myocardial damage.[4] UA is characterised by specific clinical findings of prolonged (>20 minutes) angina at rest; new onset of severe angina; angina that is increasing in frequency, longer in duration, or lower in threshold; or angina that occurs after a recent episode of myocardial infarction.[4] The ECG may be normal or may show ST-segment depression, transient ST-segment elevation, or T-wave inversion.[4] Cardiac biomarkers (high-sensitivity cardiac troponins) should be measured on presentation to rule out acute myocardial infarction; subsequent/serial measurements may be needed.[4] [5] The early management of patients with suspected UA is focused on initial interventions and triage according to the presumptive diagnosis.

◊ Myocardial infarction, non ST-elevation

» see our comprehensive coverage of Myocardial infarction, non ST-elevation (https://bestpractice.bmj.com/topics/en-gb/3000113)

Non-ST-elevation myocardial infarction (NSTEMI) is an acute ischaemic event causing myocyte necrosis. The initial ECG may show ischaemic changes such as ST depression, T-wave changes, or transient ST elevation; however, ECG may also be normal or show non-specific changes. The distinction from unstable angina (UA) is based on cardiac biomarkers; high-sensitivity cardiac troponins are elevated (>99th percentile of normal) at presentation or after several hours in NSTEMI.[3] Treatment is directed towards relief of ischaemia, prevention of further thrombosis or embolism, and stabilisation of haemodynamic status, followed by early risk stratification for further treatment.

◊ Myocardial infarction, ST-elevation

» see our comprehensive coverage of Myocardial infarction, ST-elevation (https://bestpractice.bmj.com/topics/en-gb/3000103)

ST-elevation myocardial infarction (STEMI) is suspected when a patient presents with persistent ST-segment elevation in two or more anatomically contiguous ECG leads in the context of a consistent clinical history.[1] Cardiac biomarkers (troponins) are elevated. Treatment should, however, be started immediately in patients with a typical history and ECG changes, without waiting for laboratory results. Immediate and prompt reperfusion can prevent or minimise myocardial damage and improve the chances of survival and recovery.[6]

Key articles

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This approach is in line with the guidance of the International Bureau of Weights and Measures Service. https://www.bipm.org/en/about-us/

Figure 1 – BMJ Best Practice Numeral Style

5-digit numerals: 10,000

4-digit numerals: 1000

numerals < 1: 0.25

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