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Order Set: Acute Myocardial Infarction/STEMI - Admission to ICU

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General

- Consider a clinical assessment to estimate the risk of mortality
- GRACE ACS Risk Model Calculator
- Patient condition
- Vital signs
- Respiratory

Activity

Acute MI/STEMI > General Information > Definition

In an expert consensus document on a universal definition of myocardial infarction (MI), the European Society of Cardiology/American College of Cardiology/American Heart Association/World Heart Federation (ESC/ACC/AHA/WHF, 2007) provides the following criteria for the definition of acute MI:

- In a clinical setting that is consistent with myocardial ischemia, the term MI should be used when there is evidence of myocardial necrosis. In such situations, any of the following meet the criteria for the diagnosis of MI:
 - Detection of a rise and/or fall of cardiac biomarkers (preferably a cardiac troponin) with ≥ 1 value being $>$ the 99th percentile of the upper reference limit of normal for that biomarker, together with evidence of myocardial ischemia as noted by the presence of ≥ 1 of the following:
 - Changes on ECG indicating new ischemia (eg, new left bundle-branch block or new ST-segment changes)
 - Development of pathological Q waves on the ECG
 - Evidence from imaging of new regional wall motion abnormality or new loss of viable myocardium
 - Ischemic symptoms

The ESC/ACC/AHA/WHF states that ≥ 1 of the following meets the criteria for the diagnosis of a prior MI:

- Development of new pathological Q waves, with or without symptoms
- In the absence of a nonischemic cause, evidence from imaging of a region of loss of viable myocardium that is thinned and

ST-elevation myocardial infarction (STEMI) Expand All Collapse All

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ST-elevation myocardial infarction (STEMI)

Updated 2009 Nov 08 06:23 PM: Arch Intern Med 2009 Sep 28 commentary (Prognosis)
insufficient evidence to support intra-aortic balloon counterpulsation for STEMI complicated by cardiogenic shock (Crit Care Med 2009 Sep 16 early online) [update](#)
10 degree ambient temperature decrease over 5 days may be associated with small increased risk of MI (Circulation 2009 Sep 1) [update](#)

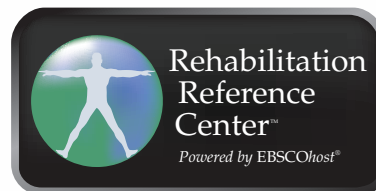
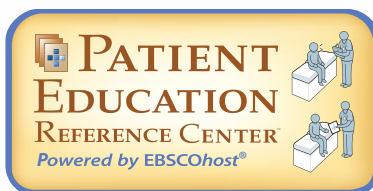
Treatment overview:

- initial therapy⁽¹⁾
 - [oxygen](#) to all patients for first 6 hours and as needed to maintain O_2 saturation $> 90\%$ afterwards
 - [nitroglycerin](#)
 - 0.4 mg, sublingually, every 5 minutes (up to 3 doses) as needed for relief of discomfort due to ischemia
 - intravenous nitroglycerin for relief of persistent discomfort due to ischemia, control of high blood pressure, or treatment of pulmonary edema
 - do not use in patients who have taken phosphodiesterase inhibitor (for example, sildenafil [Viagra]) in past 24-48 hours
 - do not use if possible right ventricular infarction, pulse < 50 or > 100 , or BP < 90 (or ≥ 30 mm Hg below baseline)
 - [morphine](#)
 - 2-4 mg intravenously every 5-15 minutes for pain relief
 - increase by 2-8 mg per dose as needed to achieve relief
 - [aspirin](#) 162-325 mg (chewable form preferred)

Integrated access to evidence-based content for every user in the clinical workflow



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Plan Of Care: Acute Myocardial Infarction/STEMI - Discharge

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- D Weight-lifting restriction
- D Work
- ☒ Education, acute myocardial infarction signs and symptoms Z
- D Appetite, loss of
- D Chest discomfort
- D Chest pain
- D Depression
- D Dizziness
- D Epigastric discomfort
- D Fainting

An abbreviations list appears below.

Rationale

A randomized controlled trial by Buckley et al (2006) finds that in patients with a history of coronary heart disease, an individualized education and counseling intervention describing acute MI symptoms improves patient knowledge of coronary heart disease and acute MI symptoms, and appropriate response to symptoms at 12 months as compared with usual care. The study also finds no significant between-group difference in patients' beliefs or attitudes following the intervention.

Abbreviations: ACS, acute coronary syndrome(s). ECG, electrocardiogram/ electrocardiograph/ electrocardiography. ED, emergency department/emergency room. MI, myocardial infarction.

References Sort by: Year then by: Class Go Reset

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Related Information

Acute Myocardial Infarction

quickLESSON about...

Acute Myocardial Infarction

Description/Etiology

Acute myocardial infarction (AMI; also called heart attack) occurs when an area of heart muscle (i.e., myocardium) dies or is permanently damaged due to an inadequate supply of oxygen. AMI is most commonly caused by a thrombus that blocks a coronary artery previously narrowed from the buildup of fatty plaque. Additional causes include coronary artery spasm, embolic infarction, arteritis, and cocaine-induced vasospasm. The coronary arteries most often occluded include the middle or proximal left anterior descending (LAD) artery, the left or right circumflex (CFX) artery, the right coronary artery (RCA), and the posterior descending artery (PDA). Lateral wall AMI is associated with occlusion of the left circumflex branch of the left coronary artery (LCA), anterior wall AMI with occlusion of the anterior descending branch of the LCA, and true posterior, inferior wall, and right ventricular AMI with occlusion of the RCA or its branches. Blood flow to an ischemic cardiac area must remain above 40% of pre-occlusion levels for that area to survive; after total occlusion of coronary vessels, myocardial necrosis in an ischemic cardiac area is usually complete within 4-6 hours.

AMI should be differentiated from acute coronary syndrome with or without stable or unstable angina pectoris, anxiety, aortic stenosis or dissection, gastroesophageal reflux disease (GERD), esophageal spasm or biliary colic, musculoskeletal or neurologic chest wall pain, chronic obstructive pulmonary disease (COPD), pulmonary embolism, spontaneous pneumothorax, and pericarditis.

Treatment involves emergency department evaluation, admission to and stabilization in the coronary care unit (CCU) or intensive care unit (ICU), oxygen supplementation, medications, restriction of activities,

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