

2007 focused update of the ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction

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"2007 focused update of the American College of Cardiology and the American Heart Association (ACC/AHA) 2004 guidelines for the management of patients with ST-elevation myocardial infarction (STEMI)" is a new effort by the Writing Committee to revise existing guidelines that are affected by evolving data or opinion [1]. It is complimentary to the full-text guideline [2], which remains current until the next full revision. Nine major areas were selected for updated recommendations.

1. Analgesia. Use of morphine remains a class I recommendation. However, cyclooxygenase-2 inhibitors and other nonsteroidal anti-inflammatory drugs should be discontinued immediately at the time of STEMI because of the known increased risk of mortality, reinfarction, hypertension, heart failure, and myocardial rupture associated with their use.

2. β -blockers. It is reasonable to administer an intravenous β -blocker at the time of presentation to STEMI patients who are hypertensive and who do not have any of the following: 1) signs of heart failure, 2) evidence of a low output state, 3) increased risk for cardiogenic shock, or 4) other relative contraindications to β -blockade (PR interval >0.24 s, 2nd- or 3rd-degree heart block, active asthma, or reactive airway disease). Oral β -blocker therapy should be initiated in the first 24 hours for patients who do not have any of those contraindications.

3. Logistics of care. There are two types of hospital systems providing reperfusion therapy. ST-elevation myocardial infarction patients presenting to a hospital with percutaneous coronary intervention (PCI) capability should be treated with primary PCI within 90 min of first medical contact as a systems goal. ST-elevation myocardial infarction patients presenting to a hospital without PCI capability, and who cannot be transferred to a PCI center and undergo PCI within 90 min

of first medical contact, should be treated with fibrinolytic therapy within 30 min of hospital presentation as a systems goal, unless fibrinolytic therapy is contraindicated.

4. Facilitated PCI. Clinical trials of facilitated PCI have not demonstrated any benefit in reducing infarct size or improving outcomes. Nevertheless, selective use of the facilitated strategy with regimens other than full-dose fibrinolytic therapy in subgroups of patients at high risk (large myocardial infarction or hemodynamic or electrical instability) with low risk of bleeding (younger age, absence of poorly controlled hypertension, normal body weight) who present to hospitals without PCI capability might be performed when transfer delays for primary PCI are anticipated.

5. Emergency invasive strategy. In unstable patients, such as those with cardiogenic shock (especially those less than 75 years of age), severe congestive heart failure/pulmonary edema, or hemodynamically compromising ventricular arrhythmias (regardless of age), a strategy of coronary angiography with intent to perform PCI is a useful approach regardless of the time since initiation of fibrinolytic therapy, provided further invasive management is not considered futile or unsuitable given the clinical circumstances.

In stable patients, rescue PCI may be reasonable if there is clinical suspicion of failure of fibrinolytic therapy. The clinical diagnosis of failed fibrinolysis is difficult, but is best made when there is less than 50% ST-segment resolution 90 minutes following initiation of therapy in the lead showing the greatest degree of ST-segment elevation at presentation. Given the association between bleeding events and subsequent ischemic events, it might be reasonable to select moderate- and high-risk patients for rescue PCI and to treat low-risk patients with medical therapy.

6. Elective invasive strategy. Percutaneous coronary intervention of a hemodynamically significant stenosis in a patient infarct artery performed 24 hours or more after STEMI, may be considered as part of an invasive strategy. Percutaneous coronary intervention of a totally occluded infarct artery >24 hours after STEMI is not recommended in asymptomatic patients with 1- or 2-vessel disease if they are hemodynamically and electrically stable and do not have evidence of severe ischemia.

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7. Anticoagulants. Patients treated with fibrinolytics including streptokinase and patients who do not receive reperfusion therapy should receive anticoagulant therapy for a minimum of 48 hours and preferably for the duration of the index hospitalization, up to 8 days. Regimens other than unfractionated heparin (UFH) are recommended if anticoagulant therapy is given for more than 48 hours because of the risk of heparin-induced thrombocytopenia with prolonged UFH treatment. Anticoagulant regimens with established efficacy include UFH, enoxaparin, and fondaparinux.

For patients undergoing PCI after having received an anticoagulant regimen, the following dosing recommendations should be followed. For prior treatment with UFH, administer additional boluses of UFH as needed to support the procedure taking into account whether GP IIb/IIIa receptor antagonists have been administered. Bivalirudin may also be used in patients treated previously with UFH. For prior treatment with enoxaparin, if the last dose was administered within the prior 8 hours, no additional enoxaparin should be given. If the last dose was administered at least 8–12 hours earlier, a 4th dose of 0.3 mg/kg of enoxaparin should be given. For prior treatment with fondaparinux, administer additional intravenous treatment with an anticoagulant possessing anti-IIa activity taking into account whether GP IIb/IIIa receptor antagonists have been administered. Because of the risk of catheter thrombosis, fondaparinux should not be used as the sole anticoagulant to support PCI.

8. Thienopyridines. Clopidogrel 75 mg/24h orally should be added to aspirin in patients with STEMI regardless of whether they undergo reperfusion with fibrinolytic therapy or do not receive reperfusion therapy. Treatment with clopidogrel should continue for at least 14 days. In patients less than 75 years who receive fibrinolytic therapy or who do not receive reperfusion therapy, it is reasonable to administer an oral clopidogrel loading dose of 300 mg. No data are available to guide decision making regarding an oral loading dose in older patients. Long-term maintenance therapy (e.g., 1 year) with clopidogrel (75 mg/24h orally) can be useful in STEMI patients regardless of whether they undergo reperfusion with fibrinolytic therapy or do not receive reperfusion therapy. Recommendations for continuing clopidogrel after PCI or stopping it before surgery remain unchanged.

9. Secondary prevention. Revised recommendations adapted from “2006 AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease” are incorporated in the “2007 focused update”. New recommendations for antiplatelet therapy, daily physical activity, lowered low-density lipoprotein cholesterol, and an annual influenza vaccination have been added.

Task Force on Practice Guidelines (Writing Group to Review New Evidence and Update the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction). *J Am Coll Cardiol.* 2008; 51: 210-247.

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