Data Drive Revisions in PCI, STEMI Guidelines

BY ROBERT FINN
San Francisco Bureau

The pace of research in cardiology is proceeding so rapidly that important changes have been issued to two guidelines initially promulgated in the not-so-distant past.

The "focused updates" involve the treatment of ST-elevation myocardial infarction (STEMI) and the technique of percutaneous coronary intervention (PCI). While the updates maintained many of the recommendations in the full guidelines, issued in 2004 for STEMI and 2005 for PCI, they each included significant recommendations for practice changes. (See boxes.)

The STEMI updates, for example, reiterate that the overarching goal of treatment remains rapid reperfusion. But they state that, with the exception of aspirin, NSAIDs and cyclooxygenase-2 inhibitors should be discontinued immediately. And β-blockers should not be administered to patients in certain high-risk groups.

The PCI updates emphasized the importance of ensuring that patients will be able to comply with dual antiplatelet therapy for a full year after receiving a drug-eluting stent. Bare-metal stents should be substituted when that compliance can't be ensured. This dual antiplatelet therapy is so important that physicians should take into account the possibility that the patient may later need medical procedures that would require that antiplatelet therapy be discontinued. Bare-metal stents or balloon angioplasty with provisional stent implantation should be considered for those patients.

The STEMI update was a joint effort of the American College of Cardiology and the American Heart Association and appeared in Circulation and the Journal of the American College of Cardiology. The PCI update was a joint effort of the ACC, the AHA, and the Society for Cardiovascular Angiography and Interventions (SCAI) and appeared in Circulation, the Journal of the American College of Cardiology, and Catheterization and Cardiovascular Interventions. The updates are available online at www.americanheart.org and www.acc.org.

The focused update strategy was developed by the ACC/AHA Task Force on Practice Guidelines as a way to speed up the often years-long process of developing comprehensive new guidelines on the basis of full literature reviews. Twice a year or more experts are polled, and if there is a consensus that data from late-breaking clinical trials warrant an update, one can be prepared relatively quickly.

According to Dr. Elliott M. Antman, cochair of the STEMI update committee and chair of the 2004 writing committee, new research suggests several important changes in the management of this most critical type of heart attack. Among at least 15 guideline modifications or additions, he highlighted several in an interview.

"We indicate that physicians should not routinely administer intravenous β-blockers acutely to patients with heart failure or shock, or who are at risk for heart failure

Continued on following page

Highlights of the Percutaneous Coronary Intervention Updates

1. After implantation of a drug-eluting stent (DES), dual antiplatelet therapy comprising clopidogrel and aspirin is required for at least 1 year or longer.
2. If the patient is likely to face additional surgery requiring interruption of dual antiplatelet therapy, a bare-metal stent (BMS) or balloon angioplasty with provisional stent implantation should be considered instead of a DES.
3. Between 24 hours and 28 days after a heart attack, PCI is not recommended in patients with one- or two-vessel disease and a totally occluded coronary artery if they are not hemodynamically and electrically stable and have no ongoing or easily provoked chest pain.
4. On the other hand, physicians might consider PCI for those patients or patients who respond favorably to initial fibrinolysis treatment if they don't continue to do well on drug therapy alone.
5. The balance of the evidence supports an early invasive strategy for PCI in patients with unstable angina or non-STEMI who are at moderate and higher risk.
6. In patients with STEMI, facilitated PCI with regimens other than full-dose fibrinolytic therapy may be considered in high-risk patients if PCI is not immediately available within 90 minutes and if the risk of bleeding is low.
7. In patients with STEMI, a planned reperfusion strategy using full-dose fibrinolytic therapy followed by immediate PCI may be harmful.
8. A strategy of coronary angiography with the intent to perform rescue PCI is reasonable for those patients in whom fibrinolytic therapy has failed.
9. The update includes specific guidelines for ancillary therapy in patients undergoing PCI for STEMI who received prior treatment with unfractionated heparin, enoxaparin, or fondaparinux.
10. Serum LDL cholesterol should be maintained below 100 mg/dL after PCI, and further reduction to less than 70 mg/dL is reasonable.

Source: J. Am. Coll. Cardiol. 2008;51:172-209.

Highlights of the ST-Elevation Myocardial Infarction Updates

1. As in the 2004 guidelines, the overarching goal for treatment of ST elevation myocardial infarction is that reperfusion therapy should begin within 2 hours, and ideally within 1 hour of the event.
2. The emphasis on percutaneous coronary intervention should not obscure the importance of fibrinolytic therapy.
3. With the exception of aspirin, all NSAIDs and cyclooxygenase-2 inhibitors should be discontinued immediately at the time of STEMI.
4. Early intravenous β-blocker therapy should not be given to STEMI patients who have signs of heart failure or other relative contraindications to β-blockade.
5. Long-term oral β-blockers should be used for secondary prevention in patients at high risk once they have stabilized.
6. The strategy of facilitated PCI (planned PCI immediately after administration of therapy to improve coronary patency) may be considered in subgroups of patients with a large MI or hemodynamic or electrical instability who are at low risk of bleeding.
7. Rescue PCI is suitable for patients who have received fibrinolytic therapy and who have cardiogenic shock, ventricular arrhythmia, or severe heart failure and/or pulmonary edema.
8. Patients undergoing reperfusion with fibrinolytics should receive anticoagulant therapy for at least 48 hours and preferably for the duration of the initial hospital stay up to 8 days.
9. Clopidogrel should be added to aspirin in patients with STEMI whether or not they receive reperfusion therapy, and the clopidogrel should be continued for at least 14 days.
10. Emergency medical systems that provide advanced life support should increase the use of prehospital 12-lead electrocardiography.

Sources: J. Am. Coll. Cardiol. 2008;51:210-47

Continued from previous page

or shock," said Dr. Antman of Harvard Medical School, Boston. "There is information about facilitated PCI indicating that a strategy of a full-dose fibrinolytic followed by immediate routine PCI is not recommended anymore."

On the other hand, "It's not unreasonable to use a strategy of preparatory pharmacological regimen other than a full-dose fibrinolytic and routine immediate PCI in certain situations where the patient is at risk, PCI cannot be performed within 90 minutes, and bleeding risk is low."

Dr. Antman said that he has not heard any significant criticisms of the new STEMI guidelines, and that most will not be difficult to implement. "Physicians understand the importance of responding to evidence," he said. "These are strategies that are a matter of just organizing systems of care for patients with STEMI. We would hope that physicians would meet as a team in their local hospitals and local systems and consider how they are going to approach the STEMI patients in the future with this new information in mind."

The recommendation for prehospital 12-lead ECG may be one of the most challenging to implement, since many emergency medical technicians are not trained in interpreting ECGs, and many ambulance systems don't have prehospital ECG capability, he added.

In the PCI update, "We are reaching a point where we really have to look across time and also understand the impact of adjunctive therapies, and how we combine all of this I think is a real challenge," said Dr. Sidney C. Smith Jr., cochair of the focused update writing committee, in an interview posted on the ACC's Cardiosource Web site (www.cardiosource.com/guidelinefocus).

"My personal opinion is that comprehensive therapy really has a place in the management of patients," continued Dr. Smith of the University of North Carolina, Chapel Hill. "I still think that the high-risk patients, the patients that are symptomatic, benefit from revascularization, but we definitely are getting to a point where I personally will be urging and being certain that my patients not only have revascularization when they need it, but that they adhere to the comprehensive medical therapies that are so important in terms of reducing future events."

Each of the focused updates includes detailed information about potential conflicts of interest among members of the writing committees. Individual members who appeared to have a conflict recused themselves from voting on certain sections. ■