

What's New in the 2011 ACCF/AHA Guidelines?

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Each year, the American College of Cardiology Foundation (ACCF) introduces new and/or updated Clinical Practice Guidelines that represent the most current evidence-based medicine. Selected recommendations from two Practice Guidelines follow.

Jonathan L. Halperin, MD, Mt. Sinai Medical Center, New York, New York, USA, and Thomas Brott, MD, Mayo Clinic, Jacksonville, Florida, USA, jointly presented some of the key guidelines from the 2011 Guideline on the Management of Patients with Extracranial Carotid and Vertebral Artery Disease (ECVD).

New Guideline:

Asymptomatic Patients with Known/Suspected Carotid Stenosis

- Duplex ultrasonography is recommended as the initial diagnostic test to detect hemodynamically significant carotid stenosis in patients with known or suspected carotid stenosis but not for routine screening of asymptomatic patients with no clinical manifestations of or risk factors for atherosclerosis.

Patients with Symptoms or Signs of ECVD

- The initial evaluation should include noninvasive imaging for the detection of ECVD. However, in patients with symptoms of a territorial stroke or transient ischemic attack (TIA), in which sonography either can not be obtained or yields equivocal or otherwise nondiagnostic results, magnetic resonance or computed tomography angiography should be performed.

Antithrombotic Therapy

- In patients who have had ischemic stroke or TIA, aspirin, clopidogrel, or aspirin+extended-release dipyridamole is recommended and preferred over clopidogrel+aspirin due to the risk of bleeding, unless there is another indication for dual antiplatelet therapy (eg, recent ACS or coronary stenting).
- In patients with carotid disease, with or without ischemic symptoms, antiplatelet agents are recommended rather than oral anticoagulation for prevention of stroke.
- The use of a vitamin K antagonist can be beneficial in patients with atrial fibrillation (AF), a mechanical prosthetic heart valve, or specific indications for anticoagulant therapy.

Selection of Patients for Carotid Revascularization

- For patients with TIA or stroke, intervention within 2 weeks of the index event is reasonable.
- Symptomatic patients at average/low surgical risk should undergo carotid endarterectomy (CEA) if the diameter of the lumen of the ipsilateral internal carotid artery is reduced by >70% (or >50% on catheter angiography).
- CEA is reasonable in asymptomatic patients with >70% stenosis.
- It is reasonable to choose CEA over carotid artery stenting (CAS) in older patients, particularly when the arterial pathoanatomy is unfavorable for endovascular intervention.
- CAS is indicated as an alternative to CEA for symptomatic patients at average/low risk of complications that are associated with endovascular intervention.
- It is reasonable to choose CAS over CEA in patients with unfavorable neck anatomy (eg, arterial stenosis distal to the second cervical vertebra or proximal arterial stenosis).
- CAS might be considered in highly selected patients with asymptomatic carotid stenosis, but its effectiveness compared with medical therapy alone in this situation is not well established.
- In symptomatic or asymptomatic patients at high risk, the effectiveness of revascularization versus medical therapy alone is not well established.

Management of Patients Undergoing Endovascular CAS

- Before CAS, and for a minimum of 30 days after, dual antiplatelet therapy with aspirin+clopidogrel is recommended.
- Embolic protection device deployment during CAS can be beneficial in reducing the risk of stroke.

Management of Patients Experiencing Restenosis After CEA or CAS

- In patients with symptomatic cerebral ischemia and recurrent carotid stenosis due to intimal hyperplasia or atherosclerosis, it is reasonable to repeat CEA or perform CAS.
- In asymptomatic patients, reoperative CEA or CAS may be considered.

Carotid Artery Evaluation and Revascularization Before Cardiac Surgery

- CEA or CAS before or concurrent with myocardial revascularization surgery is reasonable in patients with >80% carotid stenosis who have experienced symptoms within 6 months.
- In asymptomatic patients with carotid stenosis, even if severe, the safety and efficacy of carotid revascularization before or concurrent with myocardial revascularization is not well established.

R. Scott Wright, MD, Mayo Clinic, Rochester, Minnesota, USA, and Jeffrey L. Anderson, MD, Intermountain Medical Center, Murray, Utah, USA, presented key changes in the 2011 ACCF/AHA Focused Update of the Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction (UA/NSTEMI):

Antiplatelet Therapy (NEW)

- A loading dose of thienopyridine is recommended in patients for whom PCI is planned. Regimens should be either clopidogrel 300 to 600 mg, given as early as possible before or at the time of PCI, or prasugrel 60 mg, given promptly and no later than 1 hour after PCI once coronary anatomy is defined and a decision is made to proceed with PCI.
- The maintenance dose and duration of thienopyridine therapy should be clopidogrel 75 mg daily or prasugrel 10 mg daily for at least 12 months in patients undergoing PCI; however, if the risk of morbidity due to bleeding outweighs the anticipated benefits afforded by thienopyridine therapy, earlier discontinuation should be considered.
- In patients at low risk for ischemic events (eg, TIMI risk score ≤ 2) or at high risk of bleeding, and who are already receiving aspirin + clopidogrel, upstream GP IIb/IIIa inhibitors are not recommended.
- In patients with a prior history of stroke and/or TIA for whom PCI is planned, prasugrel is potentially harmful as part of a dual antiplatelet therapy regimen.
- Continuation of clopidogrel or prasugrel beyond 15 months may be considered following placement of a drug-eluting stent.
- Prasugrel 60 mg may be considered for administration promptly upon presentation in patients with UA/NSTEMI for whom PCI is planned, before definition of coronary anatomy, if both the risk for bleeding is low and the need for CABG is considered unlikely.
- The use of upstream GP IIb/IIIa inhibitors may be considered in high-risk UA/NSTEMI patients already

receiving acetylsalicylic acid (ASA) and a thienopyridine who are selected for an invasive strategy; this includes patients with elevated troponin levels, diabetes, or significant ST segment depression and those who are not otherwise at high risk for bleeding.

- In patients with definite UA/NSTEMI undergoing PCI as part of an early invasive strategy, the use of a loading dose of clopidogrel 600 mg, followed by a higher maintenance dose of 150 mg daily for 6 days, then 75 mg daily, may be reasonable in patients not considered at high risk for bleeding.

Additional Management of Antiplatelet and Anticoagulant Therapy (NEW)

- Platelet function testing to determine platelet inhibitory response in patients with UA/NSTEMI (or ACS with PCI) on thienopyridine therapy may be considered if results of testing may alter management.
- Genotyping for a CYP2C19 loss-of-function variant in patients with UA/NSTEMI (or ACS with PCI) on clopidogrel therapy might be considered if results of testing may alter management.

Patients with Chronic Kidney Disease (NEW)

- Patients undergoing cardiac catheterization with receipt of contrast media should receive adequate preparatory hydration.
- Calculation of the contrast volume:creatinine clearance ratio is useful in predicting the maximum volume of contrast media that can be given without significantly increasing the risk of contrast-associated nephropathy.

Patients with Diabetes Mellitus (MODIFIED)

- For patients hospitalized with UA/STEMI (either complicated or uncomplicated course), it is reasonable to use an insulin-based regimen to achieve and maintain glucose levels <180 mg/dL while avoiding hypoglycemia.

Initial Invasive vs Initial Conservative Strategies (NEW)

- It is reasonable to choose an early invasive strategy (within 12 to 24 hours of admission) over a delayed invasive strategy for initially stabilized high-risk patients with UA/NSTEMI. For patients not at high risk, a delayed invasive strategy approach is also reasonable.

The complete ACCF/AHA Clinical Practice Guidelines are available online at:

<http://content.onlinejacc.org/misc/guidelines.dtl>

Are There Differences Between ACC/AHA and ESC STEMI Guidelines?

Robert P. Giugliano, MD, Brigham & Women’s Hospital, Boston, Massachusetts, USA, discussed the similarities and differences between the ACC/American Heart Association (ACC/AHA) and European Society of Cardiology (ESC) Guidelines.

“Overall,” said Dr. Giugliano, “the guidelines for patients with STEMI published by the ACC/AHA and the ESC are similar in terms of approach (ie, structure, rigor, and classification and level of evidence), the types of guidelines (eg, both full and focused updates), and the versions that are offered (eg, pocket, web, etc). The differences lie primarily in the areas of style, scope/timing, attitude, and belief.”

In a 2009 publication, Dr. Giugliano and Dr. Deepak Thomas compared the then-current guidelines for management of STEMI, as issued by the ACC/AHA [2007: Antman EM et al. *J Am Col Cardiol* 2008] and ESC [2008: Van de Werf F et al. *Eur Heart J* 2008; Thomas D & Giugliano RP. *Am Heart J* 2009]. Both guidelines contain key changes, and among them there was vigorous agreement in 4 areas:

- greater detail on the selection of a reperfusion strategy
- new data and recommendations on adjunctive anticoagulants
- caution regarding IV β -blockers
- more aggressive secondary risk management

In this comparison, the authors found only very few differences in belief or attitude. Most of the differences were in style or possibly associated with the scope or timing of the review/release (Table 1).

Dr. Giugliano also summarized key changes from two newer AHA/ACC focused updates that introduced both new indications and changes to existing Class I recommendations:

1. The 2009 Focused Updates: ACC/AHA Guidelines for the Management of Patients With STEMI; ACC/AHA/SCAI Guidelines on Percutaneous Coronary Intervention (PCI) [Kushner FG et al. *J Am Col Cardiol* 2009] introduced 5 new Class I indications:
 - Prasugrel ASAP as an alternative to clopidogrel in STEMI
 - Dual antiplatelet therapy can now incorporate either clopidogrel or prasugrel along with aspirin in non-ST-elevation myocardial infarction (NSTEMI)

- Community-based STEMI systems
- Thienopyridine for ≥ 12 months after placement of a bare metal stent

There are now specific contrast agents that are preferred for patients with chronic kidney disease who are not on dialysis

2. The 2011 ACC/AHA Focused Update of the Guidelines for the Management of Patients With Unstable Angina/NSTEMI [Wright RS et al. *J Am Col Cardiol* 2011] instituted five changes to the Class I recommendations:

- Added prasugrel as an alternative to clopidogrel
- Loading dose of clopidogrel now up to 600 mg
- Extension of thienopyridine therapy to at least 12 months whether patients are managed medically or invasively
- Deleted the prior recommendation for “aggressive” glycemic management
- New recommendations for avoiding contrast-induced nephropathy

“Given the rapid pace of change, it is even more important to keep abreast of the guidelines,” said Dr. Giugliano.

Table 1. Selected Comparison Between the 2007 AHA/ACC and 2008 ESC Guidelines for STEMI.

	ACC/AHA	ESC
Stylistic	More comprehensive/detailed: full guideline in 2004 ¹ + focused updates in 2007 & 2009 ² together total 278 pages and 1651 references	Much more concise/focused: 2008 full guideline has a total of 46 pages and 257 references
Scope/Timing	<ul style="list-style-type: none"> • Detailed approach to management of musculoskeletal symptoms (eg, what are the best therapies, where to start, etc) • Specifies a target INR of 2.0–2.5 for patients on triple anticoagulant therapy • Therapies to prevent/treat microvascular obstruction not discussed in the 2007 guidelines. The subject was covered in a subsequent focused update. • Less prescriptive and somewhat more aggressive position on glucose management 	<ul style="list-style-type: none"> • Less detailed approach to management of musculoskeletal symptoms • Silent on the topic of a target INR in this population of patients • Detailed discussion/recommendations (mostly Class II) on therapies to prevent/treat microvascular obstruction • Strong statement in 2008 to target blood glucose control in diabetics to between 90–140 mg/dL
Attitude	Reflected by different levels of recommendations and/or classes of evidence (eg, for anticoagulants in STEMI)	
Belief	<ul style="list-style-type: none"> • No routine use of angiography after successful lysis.³ Assess risk and transfer high-risk patients to PCI capable-hospital • LDL goal for high-risk patients = <70 mg/dL • 2nd line Rx = niacin 	<ul style="list-style-type: none"> • Routine use of angiography 3 to 34 hours after lytic therapy • LDL goal for high-risk patients = <80 mg/dL • 2nd line Rx = fibrates, omega-3 fatty acids

¹ Antman EM et al. *J Am Col Cardiol* 2004; ² Kushner FG et al. *J Am Col Cardiol* 2009; ³ Baron SJ et al. *Am J Cardiol* 2011.