Acute Coronary Syndromes: Review and Update
Core Curriculum for the Cardiovascular Clinician
September 14-17, 2016

R. David Anderson, MD, MS, FACC
Professor of Medicine
Director of Interventional Cardiology
Director of the UF Health Cardiac Cath Lab
Program Director: Interventional Cardiology Fellowship
University of Florida Health
Gainesville, Florida
Disclosures

• Biosense Webster (a J&J Co.) consultant
Objectives

• background of acute coronary syndromes

• update on the new 2014 NSTEMI/ACS guidelines

• highlights of the 2013 STEMI and 2015 PCI guidelines

• some clinical trial data

• case examples
Practice Guideline: Executive Summary  | September 2014

2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: Executive Summary

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

[+] Author Information

Ischemic Heart Disease

Percentage of deaths: Both sexes

- Ischaemic heart disease
- Stroke
- Chronic obstructive pulmonary disease
- Lower respiratory infections
- Trachea, bronchus, lung cancers
- HIV/AIDS
- Diarrhoeal diseases
- Diabetes mellitus
- Road injury
- Hypertensive heart disease

World Heath Organization 2012
Hospital Discharges for ACS: UA/NSTEMI vs STEMI

**ACS**
1.67 Million Hospital Discharges

**UA**
700,000 Discharges per Year

**NSTEMI**†
652,000 Discharges per Year

**STEMI****
321,000 Discharges per Year

**UA/NSTEMI**
1.352 Million Discharges per Year

**MI**
973,000 Discharges per Year

† NSTEMI=non–ST-segment elevation myocardial infarction (also known as non–Q-wave MI).
**STEMI=ST-segment elevation MI (also known as Q-wave MI).
Acute Coronary Syndromes

Wright, R. S. et al. J Am Coll Cardiol 2011;57:e215-e367
Identification of ACS Patients in the ED

Patients with the following symptoms and signs require immediate assessment by the triage nurse for the initiation of the ACS protocol:

- Chest pain or severe epigastric pain, nontraumatic in origin, with components typical of myocardial ischemia or MI:
  - Central/substernal compression or crushing chest pain
  - Pressure, tightness, heaviness, cramping, burning, aching sensation
  - Unexplained indigestion, belching, epigastric pain
  - Radiating pain in neck, jaw, shoulders, back, or 1 or both arms
- Associated dyspnea
- Associated nausea/vomiting
- Associated diaphoresis

Causes of UA/NSTEMI or STEMI

- Thrombus or thromboembolism, usually arising on disrupted or eroded plaque
  - Occlusive thrombus (STEMI), usually with collateral vessels (NSTEMI)
  - Subtotally occlusive thrombus on pre-existing plaque (NSTEMI)
  - Distal microvascular thromboembolism from plaque-associated thrombus (NSTEMI)
  - Thromboembolism from plaque erosion (STEMI or NSTEMI)
- Non-plaque-associated coronary thromboembolism
- Dynamic obstruction (coronary spasm‡ or vasoconstriction) of epicardial and/or microvascular vessels
- Progressive mechanical obstruction to coronary flow
- Coronary arterial inflammation
- Coronary artery dissection

Case Presentation #1

- 78-year-old woman
  - presented to the ED with 3 hours of acute onset shortness of breath with associated chest pain
- Hypertension, hyperlipidemia on treatment
- Non smoker
- Stable angina
- Taking aspirin, β-blocker, statin
Case Presentation #1 – cont.
Physical Findings in the ED

Blood pressure: 170/90 mm Hg, wt 128 lbs.
Heart rate: 75 bpm, regular
Lungs clear
Chest auscultation and heart sounds: normal $S_1$, $S_2$; no $S_3$
No peripheral edema
ECG: LVH with lateral ST-segment and T-wave abnormalities unchanged
Other examination findings normal
Case Presentation #1 – cont.

- Chest pain resolved with NTG
- Troponin T positive = 0.14 ng/mL (ULN = 0.1)
- CKMB = 3 (ULN = 5)
- BNP = 180 mg /dL
- Creatinine = 1.6
What is the diagnosis?

a) Unstable angina

b) Non-ST Elevation MI (NSTEMI)

c) ST-Elevation MI (STEMI)
What is the diagnosis?

a) Unstable angina

b) Non-ST Elevation MI (NSTEMI)
   - chest pain
   - positive biomarkers
   - lack of ST-elevation on ECG

a) ST-Elevation MI (STEMI)
## Prognosis: Early Risk Stratification

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>COR</th>
<th>LOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>In patients with chest pain or other symptoms suggestive of ACS, a 12-lead ECG should be performed and evaluated for ischemic changes within 10 minutes of the patient’s arrival at an emergency facility.</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>If the initial ECG is not diagnostic but the patient remains symptomatic and there is a high clinical suspicion for ACS, serial ECGs (e.g., 15- to 30-minute intervals during the first hour) should be performed to detect ischemic changes.</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>Serial cardiac troponin I or T levels (when a contemporary assay is used) should be obtained at presentation and 3 to 6 hours after symptom onset (see Section 3.4, Class I, #3 recommendation if time of symptom onset is unclear) in all patients who present with symptoms consistent with ACS to identify a rising and/or falling pattern of values.</td>
<td>I</td>
<td>A</td>
</tr>
</tbody>
</table>

### Prognosis: Early Risk Stratification (cont’d)

<table>
<thead>
<tr>
<th>Recommendations</th>
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<tbody>
<tr>
<td>It is reasonable to obtain supplemental electrocardiographic leads V₇ to V₉ in patients whose initial ECG is nondiagnostic and who are at intermediate/high risk of ACS.</td>
<td>Ila</td>
<td>B</td>
</tr>
<tr>
<td>Continuous monitoring with 12-lead ECG may be a reasonable alternative in patients whose initial ECG is nondiagnostic and who are at intermediate/high risk of ACS.</td>
<td>Ilb</td>
<td>B</td>
</tr>
<tr>
<td>Measurement of B-type natriuretic peptide or N-terminal pro–B-type natriuretic peptide may be considered to assess risk in patients with suspected ACS.</td>
<td>Ilb</td>
<td>B</td>
</tr>
</tbody>
</table>

What should be done next for this patient?

a) take her directly to the cath lab
b) thrombolytic therapy
c) adenosine stress nuclear imaging
d) further risk stratification
What should be done next for this patient?

a) take her directly to the cath lab

b) thrombolytic therapy

c) adenosine stress nuclear imaging

d) further risk stratification
### Prognosis: Early Risk Stratification (cont’d)

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<tr>
<td>Additional troponin levels should be obtained beyond 6 hours after symptom onset (see Section 3.4, Class I, #3 recommendation if time of symptom onset is unclear) in patients with normal troponin levels on serial examination when changes on ECG and/or clinical presentation confer an intermediate or high index of suspicion for ACS.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>Risk scores should be used to assess prognosis in patients with NSTE-ACS.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>Risk-stratification models can be useful in management.</td>
<td>Ila</td>
<td>B</td>
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</table>

Biomarkers: Diagnosis

<table>
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<tr>
<td>Cardiac-specific troponin (troponin I or T when a contemporary assay is used) levels should be measured at presentation and 3 to 6 hours after symptom onset in all patients who present with symptoms consistent with ACS to identify a rising and/or falling pattern.</td>
<td>I</td>
<td>A</td>
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<tr>
<td>Additional troponin levels should be obtained beyond 6 hours after symptom onset in patients with normal troponins on serial examination when electrocardiographic changes and/or clinical presentation confer an intermediate or high index of suspicion for ACS.</td>
<td>I</td>
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</tr>
<tr>
<td>If the time of symptom onset is ambiguous, the time of presentation should be considered the time of onset for assessing troponin values.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>With contemporary troponin assays, creatine kinase myocardial isoenzyme (CK-MB) and myoglobin are not useful for diagnosis of ACS.</td>
<td>III: No Benefit</td>
<td>A</td>
</tr>
</tbody>
</table>

1. Age $\geq 65$ y
2. $\geq 3$ CAD risk factors (high cholesterol, family history, hypertension, diabetes, smoking)
3. Prior coronary stenosis $\geq 50$
4. Aspirin in last 7 days
5. $\geq 2$ anginal events $\leq 24$ h
6. ST-segment deviation
7. Elevated cardiac markers (CK-MB or troponin)

Our Patient’s GRACE Prediction Score for All-Cause Mortality From Discharge to 6 Months

NSTE MI 6-Month Postdischarge Mortality

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>GRACE Score Range</th>
<th>Probability of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1-88</td>
<td>&lt;3%</td>
</tr>
<tr>
<td>Medium</td>
<td>89-118</td>
<td>3-8%</td>
</tr>
<tr>
<td>High</td>
<td>119-263</td>
<td>&gt;8%</td>
</tr>
</tbody>
</table>


What Treatments Should be Initiated?

a) aspirin

b) clopidogrel

c) ticagrelor

d) anti-thrombotic therapy

e) A, B, and D

f) A, C, and D
What Treatments Should be Initiated?

a) aspirin

b) clopidogrel

c) ticagrelor

d) anti-thrombotic therapy

e) A, B, and D
   A, C, and D
   - no prasugrel given age and body weight
   - prasugrel only given in cath lab unless STEMI
Case Presentation #1 – cont.

• Treatment

• Patient is given
  • ASA 325 mg
  • enoxaparin 1 mg/kg (no bolus)
  • Ticagrelor 180 mg x 1
  • no GP IIb/IIIa in ED

• Admit to CCU
Treated With an Initial Invasive or Ischemia-Guided Strategy

<table>
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<tr>
<td>Non–enteric-coated, chewable aspirin (162 mg to 325 mg) should be given to <em>all</em> patients with NSTE-ACS without contraindications as soon as possible after presentation, and a maintenance dose of aspirin (81 mg/d to 162 mg/d) should be continued indefinitely.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>In patients with NSTE-ACS who are unable to take aspirin because of hypersensitivity or major gastrointestinal intolerance, a loading dose of clopidogrel followed by a daily maintenance dose should be administered.</td>
<td>I</td>
<td>B</td>
</tr>
</tbody>
</table>

A P2Y$_{12}$ inhibitor (either clopidogrel or ticagrelor) in addition to aspirin should be administered for up to 12 months to all patients with NSTE-ACS without contraindications who are treated with either an early invasive or ischemia-guided strategy. Options include:

- Clopidogrel: 300-mg or 600-mg loading dose, then 75 mg daily
- Ticagrelor$\parallel$: 180-mg loading dose, then 90 mg twice daily

$\parallel$The recommended maintenance dose of aspirin to be used with ticagrelor is 81 mg daily.
It is reasonable to use ticagrelor in preference to clopidogrel for P2Y$_{12}$ treatment in patients with NSTE-ACS who undergo an early invasive or ischemia-guided strategy. **IIa** **B**

In patients with NSTE-ACS treated with an early invasive strategy and dual antiplatelet therapy (DAPT) with intermediate/high-risk features (e.g., positive troponin), a GP IIb/IIIa inhibitor may be considered as part of initial antiplatelet therapy. Preferred options are eptifibatide or tirofiban. **IIb** **B**

Treatment of Unstable Angina
Results of a study from the Montreal Heart Institute

Why do we give clopidogrel after ACS?
CURE – risk of MI, stroke or CV death (N=12,562)

The primary outcome occurred in 9.3% of patients in the clopidogrel + ASA group and 11.4% in the placebo + ASA group.

Initial Parenteral Anticoagulant Therapy in Patients With Definite NSTE-ACS

Recommendations

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>In patients with NSTE-ACS, anticoagulation, in addition to antiplatelet therapy, is recommended for all patients irrespective of initial treatment strategy. Treatment options include: • Enoxaparin: 1 mg/kg subcutaneous (SC) every 12 hours (reduce dose to 1 mg/kg SC once daily in patients with creatinine clearance [CrCl] &lt;30 mL/min), continued for the duration of hospitalization or until PCI is performed. An initial intravenous loading dose is 30 mg.</td>
<td>I</td>
<td>A</td>
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Initial Parenteral Anticoagulant Therapy in Patients With Definite NSTE-ACS (cont’d)

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<tr>
<td>(cont’d)</td>
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<tr>
<td>• Bivalirudin: 0.10 mg/kg loading dose followed by 0.25 mg/kg per hour (only in patients managed with an early invasive strategy), continued until diagnostic angiography or PCI, with only provisional use of GP IIb/IIIa inhibitor, provided the patient is also treated with DAPT. • Fondaparinux: 2.5 mg SC daily, continued for the duration of hospitalization or until PCI is performed.</td>
<td>I</td>
<td>B</td>
</tr>
</tbody>
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Initial Parenteral Anticoagulant Therapy in Patients With Definite NSTE-ACS (cont’d)

<table>
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<tr>
<td>(cont’d) • If PCI is performed while the patient is on fondaparinux, an additional anticoagulant with anti-IIa activity (either UFH or bivalirudin) should be administered because of the risk of catheter thrombosis. • UFH IV: initial loading dose of 60 IU/kg (maximum 4,000 IU) with initial infusion of 12 IU/kg per hour (maximum 1,000 IU/h) adjusted per activated partial thromboplastin time to maintain therapeutic anticoagulation according to the specific hospital protocol, continued for 48 hours or until PCI is performed.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>In patients with NSTE-ACS (i.e., without ST elevation, true posterior MI, or left bundle-branch block not known to be old), intravenous fibrinolytic therapy should not be used.</td>
<td>III: Harm</td>
<td>A</td>
</tr>
</tbody>
</table>

2014 ACC/AHA Recommendations for Initial Management and Anti-Ischemic Therapy

- Supplemental O₂ to maintain SaO₂ >90% COR1
- NTG (IV or PO as dictated clinically) COR1
- Avoid nitrates with phosphodiesterase inhibitors COR 3
- IV morphine for persistent chest pain COR 2B
- Avoid NSAIDs other than aspirin COR 3
- High-intensity statin therapy COR 1
## Factors Associated With Appropriate Selection of Early Invasive Strategy or Ischemia-Guided Strategy in Patients With NSTE-ACS

| Immediate invasive (within 2 h) | Refractory angina  
|                               | Signs or symptoms of HF or new or worsening mitral regurgitation  
|                               | Hemodynamic instability  
|                               | Recurrent angina or ischemia at rest or with low-level activities despite intensive medical therapy  
|                               | Sustained VT or VF  
| Ischemia-guided strategy | Low-risk score (e.g., TIMI [0 or 1], GRACE [<109])  
|                           | Low-risk Tn-negative female patients  
|                           | Patient or clinician preference in the absence of high-risk features  
| Early invasive (within 24 h) | None of the above, but GRACE risk score >140  
|                           | Temporal change in Tn (Section 3.4)  
|                           | New or presumably new ST depression  
| Delayed invasive (within 25–72 h) | None of the above but diabetes mellitus  
|                              | Renal insufficiency (GFR <60 mL/min/1.73 m²)  
|                              | Reduced LV systolic function (EF <0.40)  
|                              | Early postinfarction angina  
|                              | PCI within 6 mo  
|                              | Prior CABG  
|                              | GRACE risk score 109–140; TIMI score ≥2  

Early Invasive and Ischemia: Guided Strategies

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>An urgent/immediate invasive strategy (diagnostic angiography with intent to perform revascularization if appropriate based on coronary anatomy) is indicated in patients (men and women) with NSTE-ACS who have refractory angina or hemodynamic or electrical instability (without serious comorbidities or contraindications to such procedures).</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>An early invasive strategy (diagnostic angiography with intent to perform revascularization if appropriate based on coronary anatomy) is indicated in initially stabilized patients with NSTE-ACS (without serious comorbidities or contraindications to such procedures) who have an elevated risk for clinical events.</td>
<td>I</td>
<td>B</td>
</tr>
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</table>

An early invasive strategy (i.e., diagnostic angiography with intent to perform revascularization) is not recommended in patients with:

<table>
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<tbody>
<tr>
<td>a. Extensive comorbidities (e.g., hepatic, renal, pulmonary failure, cancer), in whom the risks of revascularization and comorbid conditions are likely to outweigh the benefits of revascularization. <em>(Level of Evidence: C)</em></td>
<td>III: No Benefit</td>
<td>C</td>
</tr>
<tr>
<td>b. Acute chest pain and a low likelihood of ACS <em>(Level of Evidence: C)</em> who are troponin-negative, especially women. <em>(Level of Evidence: B)</em></td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

What should be the next step in our patient’s care?

a) dobutamine stress echocardiography

b) cardiac catheterization

c) CT Angiography

d) PET Scanning
What should be the next step in our patient’s care?

a)dobutamine stress echocardiography

b)cardiac catheterization

c)CT Angiography

d)PET Scanning
2013 and 2015 STEMI/PCI Guidelines

2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction
A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

2015 ACC/AHA/SCAI Focused Update on Primary Percutaneous Coronary Intervention for Patients With ST-Elevation Myocardial Infarction
An Update of the 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention and the 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction

Helping Cardiovascular Professionals
Case Presentation #2

- 59 F
  - untreated HTN
  - ongoing tobacco use
  - intermittent chest discomfort x 4 days
- day of admission crushing chest pain at 4pm
- presented to AGH hospital – Inferior STEMI
- arrest in ambulance with return of spontaneous circulation but not responsive
- transferred to UF Health for PCI
Case - Presentation ECG
Case Presentation – cont.

- urgent trip to UF cardiac cath lab
- coronary angiography
  - severe disease of the left anterior descending (LAD)
  - moderate disease of the circumflex
  - occluded right coronary artery (RCA)
- percutaneous coronary intervention – PCI
  - balloon angioplasty
  - paclitaxel drug-eluting stent (Taxus) in distal RCA
  - second paclitaxel stent in mid-RCA.
  - resolution of ST-elevation and chest discomfort
Case Presentation

• What to do next?
  a) aspirin
  b) clopidogrel, prasugrel or ticagrelor?
  c) hypothermia
  d) all of the above
Case Presentation

• What to do next?
  a) aspirin

  b) clopidogrel, prasugrel or ticagrelor?

  c) hypothermia

  d) all of the above
Evaluation and Management of Patients With STEMI and Out-of-Hospital Cardiac Arrest

Therapeutic hypothermia should be started as soon as possible in comatose patients with STEMI and out-of-hospital cardiac arrest caused by VF or pulseless VT, including patients who undergo primary PCI.

Immediate angiography and PCI when indicated should be performed in resuscitated out-of-hospital cardiac arrest patients whose initial ECG shows STEMI.
What about the LAD?
### Culprit Artery – Only Versus Multivessel PCI

<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIb</td>
<td>B-R</td>
<td>PCI of a noninfarct artery may be considered in selected patients with STEMI and multivessel disease who are hemodynamically stable, either at the time of primary PCI or as a planned staged procedure.¹</td>
</tr>
</tbody>
</table>

¹ Modified recommendation from 2013 Guideline (changed class from III: Harm to IIb and expanded time frame in which multivessel PCI could be performed).
The usefulness of selective and bailout aspiration thrombectomy in patients undergoing primary PCI is not well established.\(^1\)

**Routine** aspiration thrombectomy before primary PCI is not useful.\(^2\)

---

1. Modified recommendation from 2013 guideline (Class changed from IIa to IIb for selective and bailout aspiration thrombectomy before PCI)
2. New recommendation
Case Presentation – cont.
6-17-11

- now 63
- hypertension, hyperlipidemia
- still smoking
- stopped clopidogrel
- interval history includes CVA
- admitted with same symptoms of chest/jaw pain
- inferior ST-elevation on ECG
How do we treat her now?

- prasugrel now available
- ticagrelor not yet available
- has history of CVA and weighs < 65 kg
- increase the clopidogrel dose?
- genotyping?
- assess platelet function?
- smoking cessation
- try to assure compliance!?!?!?
2012 Focused Guideline Update

Class IIb

1. Platelet function testing to determine platelet inhibitory response in patients with UA/NSTEMI (or, after ACS and PCI) on P2Y₁₂ receptor inhibitor therapy may be considered if results of testing may alter management (115–119).
   (Level of Evidence: B)

2. Genotyping for a CYP2C19 loss of function variant in patients with UA/NSTEMI (or, after ACS and with PCI) on P2Y₁₂ receptor inhibitor therapy might be considered if results of testing may alter management (19–22,25,27,120).
   (Level of Evidence: C)

Adjunctive Antithrombotic Therapy to Support Reperfusion With Primary PCI

### Antiplatelet therapy

**Aspirin**
- 162- to 325-mg load before procedure
- 81- to 325-mg daily maintenance dose (indefinite)*
- 81 mg daily is the preferred maintenance dose*

**$P2Y_{12}$ inhibitors**
- Loading doses
  - Clopidogrel: 600 mg as early as possible or at time of PCI
  - Prasugrel: 60 mg as early as possible or at time of PCI
  - Ticagrelor: 180 mg as early as possible or at time of PCI

*The recommended maintenance dose of aspirin to be used with ticagrelor is 81 mg daily.

Adjunctive Antithrombotic Therapy to Support Reperfusion With Primary PCI (cont.)

*The recommended maintenance dose of aspirin to be used with ticagrelor is 81 mg daily.
†Balloon angioplasty without stent placement may be used in selected patients. It might be reasonable to provide P2Y₁₂ inhibitor therapy to patients with STEMI undergoing balloon angioplasty alone according to the recommendations listed for BMS. (LOE: C).

<table>
<thead>
<tr>
<th>P2Y₁₂ inhibitors</th>
<th>Maintenance doses and duration of therapy</th>
<th>COR</th>
<th>LOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES placed:</td>
<td>Continue therapy for 1 y with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Clopidogrel: 75 mg daily</td>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>- Prasugrel: 10 mg daily</td>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>- Ticagrelor: 90 mg twice a day*</td>
<td>1</td>
<td>B</td>
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<tr>
<td>BMS† placed:</td>
<td>Continue therapy for 1 y with:</td>
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<tr>
<td>DES placed:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Clopidogrel, prasugrel, or ticagrelor* continued beyond 1 y</td>
<td>IIB</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>- Patients with STEMI with prior stroke or TIA: prasugrel</td>
<td>III: Harm</td>
<td>B</td>
</tr>
</tbody>
</table>
Beta Blockers

Oral beta blockers should be initiated in the first 24 hours in patients with STEMI who do not have any of the following: signs of HF, evidence of a low output state, increased risk for cardiogenic shock,* or other contraindications to use of oral beta blockers (PR interval >0.24 seconds, second- or third-degree heart block, active asthma, or reactive airways disease).

Beta blockers should be continued during and after hospitalization for all patients with STEMI and with no contraindications to their use.

*Risk factors for cardiogenic shock (the greater the number of risk factors present, the higher the risk of developing cardiogenic shock) are age >70 years, systolic BP <120 mm Hg, sinus tachycardia >110 bpm or heart rate <60 bpm, and increased time since onset of symptoms of STEMI.
Renin-Angiotensin-Aldosterone System
Inhibitors

An ACE inhibitor should be administered within the first 24 hours to all patients with STEMI with anterior location, HF, or EF less than or equal to 0.40, unless contraindicated.

An ARB should be given to patients with STEMI who have indications for but are intolerant of ACE inhibitors.

Lipid Management

High-intensity statin therapy should be initiated or continued in all patients with STEMI and no contraindications to its use.

It is reasonable to obtain a fasting lipid profile in patients with STEMI, preferably within 24 hours of presentation.

Long-Term Medical Therapy and Secondary Prevention—cont.

- smoking cessation
- weight management
- physical activity
- patient education
- influenza vaccine
- depression (Class 2A)
- hormone replacement therapy (Class 3)
THE NEW YORKER

"Will I still be able to not exercise?"