UA / NSTEMI Guideline Revision 2007

Nanette K. Wenger, MD, MACP, FACC, FAHA
Professor of Medicine (Cardiology)
Emory University School of Medicine
Chief of Cardiology
Grady Memorial Hospital
Consultant, Emory Heart and Vascular Center
Atlanta, Georgia

What's New Since 2002?

Background:

- 1.57 million hospital admissions for ACS annually
- 1.24 million UA/NSTEMI cases
- As previously, risk scores guide serial clinical decision making

Selection of Strategy: Invasive vs. Conservative Strategy (1)

- An early invasive strategy (i.e., diagnostic angiography with intent to perform revascularization) is indicated with refractory angina or hemodynamic or electrical instability (I, B).

Selection of Strategy: Invasive vs. Conservative Strategy (2)

- An early invasive strategy is indicated in initially stabilized patients (without serious comorbidities or contraindications to such procedures) who have an elevated risk for clinical events (I, A). Scores indicating elevated risk include combinations of the following:
  - Recurrent angina/ischemia at rest or low-level activities
  - Elevated cardiac biomarkers
  - New/presumably new ST-segment depression
  - Signs or symptoms of HF or new/worsening mitral regurgitation
  - High-risk findings from noninvasive testing
  - Hemodynamic instability
  - Sustained ventricular tachycardia
  - PCI within 6 months
  - Prior CABG
  - High risk score
  - LVEF $\leq$ 0.40

Selection of Strategy: Invasive vs. Conservative Strategy (3)

- In initially stabilized patients, an initially conservative (i.e., a selectively invasive) strategy may be considered in patients (without serious comorbidities or contraindications to such procedures) who have an elevated risk for clinical events, including those who are troponin-positive (IIb, B). The decision to implement an initial conservative strategy may consider physician and patient preferences (IIb, C).
- A conservative strategy is recommended in women with low-risk features (I, B).

Initial Invasive Strategy: Antiplatelet, Anticoagulant Therapy

- Initiate anticoagulant therapy as soon as possible after presentation (I, A)
  - Enoxaparin or UFH (I, A)
  - Bivalirudin or fondaparinux (I, B)
- Prior to angiography, initiate one (I, A) or both (IIa, B)
  - Clopidogrel
  - IV GP IIb/IIIa inhibitor

  Use both if:
    - Delay to angiography
    - High risk features
    - Early recurrent ischemic symptoms

Initial Conservative Strategy: Early Hospital Care (1)

- ASA; clopidogrel if intolerant (I, A)
- Anticoagulant therapy should be added to antiplatelet therapy as soon as possible after presentation (I, A)
  - Enoxaparin or UFH (I, A)
  - Fondaparinux (I, B)
  - Enoxaparin or fondaparinux preferable (IIa, B)
- Initiate clopidogrel, loading dose + maintenance dose (I, A)
  - Consider IV eptifibatide or tirofiban (IIb, B)

Initial Conservative Strategy: Early Hospital Care (2)

- If LVEF is $\leq$ 0.40, it is reasonable to perform diagnostic angiography (IIa, B)
- A stress test should be performed for assessment of ischemia (I, B)
  - If the patient is classified as not as low risk, diagnostic angiography should be performed (I, A)
- Measurement of BNP or NT-pro-BNP may be considered to supplement assessment of global risk in patients with suspected ACS (IIb, B)

Initial Conservative Strategy: Early Hospital Care (3)

- Beta blocker therapy
  - Initiate oral therapy within first 24 hr unless HF, low-output state, increased risk for cardiogenic shock, or relative contraindications (I, B)
  - IV therapy for high blood pressure without contraindications (IIa, B)
  - IV therapy may be harmful with contraindications to beta blockade, signs of HF or low-output state, or other risk factors for cardiogenic shock (III, A)

Initial Conservative Strategy: Early Hospital Care (4)

- Lipid management
  - Fasting lipid profile within 24 hr (I, C)
  - Statin (in absence of contraindications) should be given regardless of baseline LDL-C pre-discharge (I, A)
- ACE inhibitor (oral)
  - Within 24 hr with pulmonary congestion or LVEF ≤ 40, in absence of hypotension (systolic blood pressure <100 mmHg or <30 mmHg below baseline) or known contraindications (I, A)
  - ARB if ACE intolerant (I, A)
  - Can be useful without pulmonary congestion or LVEF ≤ 0.40 (IIa, B)
  - No IV ACE-I in first 24 hr because of increased risk of hypotension (III, B)

More Aggressive Long-Term Antiplatelet Therapy

- Medical therapy without stenting
  - ASA 75-162 mg/d indefinitely (I, A)
    +
  - clopidogrel 75 mg/d, at least 1 mo (I, A), ideally up to 1 yr (I, B)

- Bare metal stent
  - ASA 162-325 mg/d at least 1 mo, 75-162 mg/d indefinitely (I, A)
    +
  - clopidogrel 75 mg/d, at least 1 mo (I, A), ideally up to 1 yr (I, B)

- Drug-eluting stent
  - ASA 162-325 mg/d at least 3 (sirolimus)-6 (paclitaxel) mo, 75-162 mg/d indefinitely (I, A)
    +
  - clopidogrel 75 mg/d at least 1 yr (I, B)

Discharge Planning: Secondary Prevention (1)

- Clopidogrel, initial conservative strategy
  - Continue at least 1 mo (I, A)
  - Continue ideally up to 1 yr (I, A)
- ACE inhibitor
  - Continue indefinitely with HF, LV dysfunction with LVEF $\leq$ 0.40, hypertension or diabetes (I, A)
  - Reasonable in absence of LV dysfunction, hypertension or diabetes (IIa, A)
  - Reasonable with HF and LVEF >0.40 (IIa, A)
  - Consider ACE/ARB combination with persistent HF and LVEF <0.40 despite conventional therapy including ACE or ARB (IIb, B)
- Angiotensin Receptor Blocker (ARB) should be administered at discharge (I, A) and long-term (IIa, B) with ACE inhibitor intolerance and signs of HF with LVEF $\leq$ 0.40 (I, A).

Discharge Planning: Secondary Prevention (2)

- Aldosterone receptor blockade should be prescribed long term if without significant renal dysfunction or hyperkalemia, already on ACE inhibitor, with LVEF $\leq$ 0.40, and either symptomatic HF or diabetes (I, A).
- Lipid management
  - Statin regardless of baseline LDL-C (I, A) initiated prior to discharge (I, A)
  - Goal LDL-C <100 mg/dl (I, A), with <70 mg/dl reasonable (IIa, A)
  - Treatment of triglycerides and non-HDL-C useful
    - If TG 200-499 mg/dl, non-HDL-C should be <130 mg/dl (I, B)
    - TG ≥500 mg/dl, fibrate or niacin before LDL-C lowering to prevent pancreatitis (I, C)

Discharge Planning: Secondary Prevention (3)

- Blood Pressure Control
  - <140/90 mmHg (I, A)
  - <130/80 mmHg with diabetes mellitus or chronic kidney disease (I, A)
- Smoking cessation and avoidance of exposure to environmental tobacco is recommended (I, B)
  - Education, referral to programs and pharmacotherapy is useful (I, B)

Discharge Planning: Secondary Prevention (4)

- NSAIDS
  - Discontinue at UA/NSTEMI presentation (I, C)
  - No NSAID, nonselective or COX-2 selective (except ASA), during hospitalization for patients re high risk of mortality, reinfarction, ↑ BP, HF, or myocardial rupture (II, C)
  - At discharge, chronic musculoskeletal pain relief with acetaminophen, small dose narcotics, non-acetylated salicylates (I, A)
  - Nonselective NSAID (e.g., naproxen) reasonable if above insufficient (IIa, C)
  - For intolerable discomfort, increasing COX-2 selectivity, lowest dose for shortest time (IIb, C)

Discharge Planning: Secondary Prevention (5)

- Discharge education/referral
  - Medications, diet, exercise, smoking cessation, cardiac rehabilitation (I, C)
  - Return appointment
    - 2-6 wk low risk medically-treated or revascularized patients (I, C)
    - Within 14 days for higher-risk patients (I, C)
- Menopausal hormone therapy (estrogen plus progestin or estrogen alone) should not be given de novo for secondary prevention of coronary events (III, A)
- Antioxidant vitamin supplements (C, E, or beta carotene) and folic acid (with or without B6 and B12) should not be used for secondary prevention (III, A)