Version 2011

ESSENTIAL MESSAGES FROM ESC GUIDELINES

Committee for Practice Guidelines
To improve the quality of clinical practice and patient care in Europe

NSTE - ACS

GUIDELINES FOR THE MANAGEMENT OF ACUTE CORONARY SYNDROMES IN PATIENTS PRESENTING WITHOUT PERSISTENT ST-SEGMENT ELEVATION

EUROPEAN SOCIETY OF CARDIOLOGY®

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ESC ESSENTIAL MESSAGES

GUIDELINES FOR THE MANAGEMENT OF ACUTE CORONARY SYNDROMES IN PATIENTS PRESENTING WITHOUT PERSISTENT ST-SEGMENT ELEVATION*

The Task Force for the management of Acute Coronary Syndromes (ACS) in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC)

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*Adapted from the ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation (European Heart Journal (2011) 32: 2999–3054 - doi:10.1093/eurheartj/ehr236)

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Table of contents

European Heart Journal (2011) 32: 2999–3054 - doi:10.1093/eurheartj/ehr236

Take home messages

1. **NSTE-ACS compared to STEMI:**
   - More frequent.
   - Patients are older and with more comorbidities.
   - Initial mortality lower, 6 months mortality equal and long term mortality higher.

2. **Initial strategy for patients with NSTE-ACS:**
   - Admit to specialized chest pain or coronary care units.
   - Alleviate: ischaemia and symptoms.
   - Monitor: ECGs and troponins.

3. **Clinical presentation**
   - Prolonged (> 20min) chest pain at rest.
   - New onset (de novo) angina.
   - Recent destabilization of previous stable angina.
   - Post MI angina.

4. **Electrocardiogram**
   - Should be obtained within 10min of first medical contact.
   - Consider additional leads, if normal.
   - Check for: ST-segment depression and/or T wave inversion.
   - Comparison with previous ECG - if obtainable - useful.
   - Always serial ECGs or continuous monitoring.
   - A normal ECG does not exclude the diagnosis (hidden ischaemia in CX and right ventricular involvement).

5. **Biomarkers**
   - Troponin I or T are gold standard.
   - Troponins rise within 2 to 4 hours.
   - Minor elevations usually resolve within 2-3 days, but with larger necrosis elevations may remain for up to 2 weeks.
   - Cut of for MI diagnosis > 99 percentile of normal population using an assay with an imprecision of ≤10% at the upper reference limit.
   - High sensitivity assays yield a negative predictive value of 95% as a single test on admission and nearly 100% by a repeat sample after 3 hours.
   - Use bedside tests if results from a central laboratory are not possible within 1 hour.

Take home messages

6. There are many causes on troponin elevations besides ST-ACS and NSTE-ACS: among them are:

- Severe tachy- or bradyarrhythmias.
- Myocarditis.
- Dissecting aneurysm.
- Pulmonary embolism.
- Chronic or acute renal dysfunction.
- Stroke or subarachnoid haemorrhage.
- Any critically ill patient, especially with sepsis.

7. Non-invasive tests

- Echocardiography should be routinely available in emergency rooms or chest pain units, and used early in all patients.
  - Evaluation of global LV function.
  - Diagnose regional hypokinesia by wall motion analysis.
  - Rule out some differential diagnosis.
- Stress testing (e.g. exercise ECG) to rule out obstructive CAD in pain free patients with normal ECG and negative biomarkers.
- Multislice Cardiac CT (MSCT) useful and recommended to rule out CAD as cause of pain in patients with low to intermediate likelihood of CAD and when troponin and ECG are inconclusive.
- MRI can integrate imaging of function, perfusion and necrosis.

8. Coronary angiography

- Should be performed urgently for diagnostic purpose in patients at high risk.

9. Assess individual risk

- Ischaemic risk (GRACE score).
- Bleeding risk (CRUSADE score).

10. Markers of increased risk

- Clinical
  - Continuous or frequent episodes of pain.
  - Tachycardia.
  - Hypotension.
  - Heart failure.
- Electrocardiogram
  - ST-segment depression or T-wave inversion on admission.
  - Deep T- wave inversion in anterior leads.
  - ST-segment depression ≥ 0.1mV or ≥0.05 mV in two or more contiguous leads.
  - ST-segment elevation (≥0.1 mV) in lead aVR.

Take home messages

11. Antischaemic Therapy

- Nitrates (oral or intravenous) to relieve angina.
- ß adrenergic blocker (BB) in patients with tachycardia and/or hypertension.
- BB indicated in all patients with LV dysfunction.
- Continue BB in patients on chronic treatment unless Kilip class ≥ III with heart failure.
- Non-dihydropyridine calcium channel blocker considered in patients without heart failure with continued symptoms already on BB or with contraindication to BB.

12. Antiplatelet treatment

- Aspirin lifelong for all.
- A $P2Y_{12}$ inhibitor should be added and kept for 12 months unless there are contraindications such as excessive bleeding risk.
- Ticagrelor indicated in all-comers, prasugrel only prior PCI in clopidogrel naïve patients without prior stroke/TIA whose anatomy is known, clopidogrel if ticagrelor and prasugrel are not an option.
- Glycoprotein IIb/IIIa in high risk PCI patients, but not routinely upstream.
- A proton pump inhibitor in combination with DAPT is recommended in patients at risk with a previous history of gastrointestinal haemorrhage or peptic ulcer.

13. Anticoagulation

- Fondaparinux best benefit/ risk profile.
- Add UFH on top of fondaparinux in patients undergoing PCI.
- Enoxaparin in low bleeding risk patients.
- Other low molecular weight heparins or unfractionated heparin are less recommended options as they were not compared to fondaparinux.
- Bivalirudin in high risk bleeding as alternative to GP IIb/IIIa + UFH in patients undergoing PCI.

14. Invasive management

- Timing of revascularization customized according to risk.
- Within 72 hours all patients at risk, but
  - Within 2 hours for very high risk patients (life-threatening symptoms)
  - Within 24 hours for patients with high risk criteria (GRACE score > 140, troponin release, ST-T changes)
- Prefer DES stents for PCI.
- Non invasive evaluation for low risk patients.

15. Special populations and situations

- Special attention to diabetes, elderly, women, chronic kidney disease, anaemia.
- Adjust medication doses according to renal function.

Take home messages

16. Long term management, secondary prevention

- Statins for all initiated early with aim of LDL < 1,8 mmol/L (70 mg/dL).
- Beta adrenergic blockers to all with LVEF < 40%.
- ACE inhibitors to all with LVEF < 40%, patients with symptomatic heart failure, hypertension, diabetes or kidney disease.
- Consider ACE inhibitors for all other as a general preventive medication.
- ARB with proven efficiency to ACE intolerant patients.
- Aldosterone antagonists to patients already on BB/ACEI with LVEF < 35%.
- Enrollment in secondary prevention program with intervention on diet, exercise and lifestyle.

Major gaps in evidence

1. Optimal strategy for octogenarians
2. Optimal use of hs troponins
3. Prasugrel in non-invasive management
4. Long term treatment with $P2Y_{12}$ inhibitors

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