# Acute coronary syndromes treatment algorithm Updated September 2011

Symptoms consistent with ACS Immediate 12-lead ECG Doctor to see patient within 10 minutes of arrival Poes patient meet indications for reperfusion therapy mental oxygen is is indicated to on < 93%) and wh Symptom onset 3–12 hours ago 1–3 hours ago < 1 hour ago NO Fibrinolysis Fibrinolysis Fibrinolysis PCI PCI PCI inless contraindica nless contraindicate less contraindicated Patients in whom fibrinolysis is contraindicated, or with ongoing symptoms or instability after fibrinolysis, should be transferred for PCI.

#### Note

Reperfusion not routinely recommended after 12 hours from symptom onset if the patient is asymptomatic and haemodynamically stable.

### \* Contraindications for fibrinolysis

#### Absolute

• Active bleeding or bleeding diathesis (excluding menses)

Reperfusion therapy for ST segment elevation myocardial infarction (STEMI)

- Significant closed head or facial trauma within 3 months Suspected aortic dissection
- Any prior intracranial haemorrhage
- Ischaemic stroke within 3 months
- Known structural cerebral vascular lesion
- Known malignant intracranial neoplasm

## Relative

- Current use of anticoagulants
- Noncompressible vascular punctures
- Recent major surgery (< 3 weeks) • Traumatic or prolonged (> 10 min) CPR
- Recent internal bleeding (within 4 weeks)
- Active peptic ulcer
- History of chronic, severe, poorly controlled hypertension

• Severe uncontrolled hypertension on presentation (systolic  $\geq 180$ mmHg or diastolic  $\geq$  110 mmHg) Ischaemic stroke > 3 months ago. dementia or known intracranial abnormality (not covered in 'absolute contraindications') Pregnancy



- <sup>+</sup> Substantial early elevations in troponin may indicate evolving MI or other diagnoses associated with increased risk immediate evaluation is required. Management decisions should not be delayed for repeat troponin testing at six hours.
- \* Significant change: the Universal Definition of MI has recommended a change of 20% (3 SD) from baseline be considered significant with contemporary assays.
- \* Due to the increased sensitivity, a change of 50% or more may be required to make the diagnosis of evolving MI using the newer assays, but the clinical significance of changes from very low baseline levels is uncertain. Research, currently ongoing, will clarify this recommendation.

Note: This algorithm is based upon high-sensitivity troponin tests.<sup>1</sup> If high-sensitivity troponin testing is unavailable, assessment should be based on 4- and 8-hour time point

#### 1. Based on expert opinion

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# Evolving risk stratification: clinical assessment, troponin assessment and time

# **High-risk NSTEACS**

- Presentation with clinical features consistent with ACS and anv of:
- repetitive or prolonged (> 10 minutes) ongoing chest pain/ discomfort
- elevation of at least 1 cardiac biomarker (troponin or CK-MB) • persistent or dynamic ST depression  $\ge 0.5$  mm or new T
- wave inversion  $\geq 2 \text{ mm}$ • transient ST segment elevation ( $\geq 0.5$  mm) in more than 2 contiguous leads
- haemodynamic compromise: systolic blood pressure < 90 mmHg, cool peripheries, diaphoresis, Killip class > 1 and/or new onset mitral regurgitation
- sustained ventricular tachycardia
- syncope
- LV systolic dysfunction (LVEF < 40%)
- prior PCI within 6 months or prior CABG surgery
- presence of known diabetes (with typical symptoms of ACS) • chronic kidney disease – estimated GFR < 60 mL/min (with typical symptoms of ACS).



Presentation with clinical features consistent with ACS and any of:

- chest pain or discomfort within past 48 hours that occurred at rest, or was repetitive or prolonged (but currently resolved) • age > 65 years
- known CHD: prior MI with LVEF  $\geq$  40% or known coronary lesion > 50% stenosed
- no high-risk ECG changes (see above)
- two or more of: known hypertension, family history, active smoking or hyperlipidaemia
- presence of known diabetes (with atypical symptoms of ACS) • chronic kidney disease – estimated GFR < 60 mL/min (with atypical symptoms of ACS)
- prior aspirin use. And not meeting the criteria for high-risk NSTEACS.

#### Low-risk NSTEACS

Presentation with clinical features consistent with ACS without intermediate- or high-risk features, for example one of the following:

- onset of anginal symptoms within the last month
- worsening in severity or frequency of angina
- lowering in anginal threshold.



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#### Note

All patients with ACS should be given a written chest pain action plan and referred to comprehensive ongoing prevention and cardiac rehabilitation services.



