NHS
National Institute for Health and Clinical Excellence

Quick reference guide

Issue date: March 2010

Unstable angina and NSTEMI

The early management of unstable angina and non-ST-segment-elevation myocardial infarction

This guideline updates and replaces recommendations for the early management of unstable angina and NSTEMI from NICE technology appraisal guidance 47 and 80.

NICE clinical guideline 94
Developed by the National Clinical Guideline Centre for Acute and Chronic Conditions

Patient-centred care

Treatment and care should take into account patients' individual needs and preferences. Good communication is essential, supported by evidence-based information, to allow patients to reach informed decisions about their care. Follow advice on seeking consent from the Department of Health or Welsh Assembly Government if needed. If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

About this booklet

This is the quick reference guide that summarises the recommendations NICE has made to the NHS in 'Unstable angina and NSTEMI: the early management of unstable angina and non-ST-segment-elevation myocardial infarction' (NICE clinical guideline 94). The recommendations on glycoprotein IIb/IIIa inhibitors (GPIs) and clopidogrel update and replace recommendations for the early management of unstable angina and NSTEMI from NICE technology appraisal guidance 47 and 80.

National Institute for Health and Clinical Excellence
MidCity Place
71 High Holborn
London
WC1V 6NA

www.nice.org.uk

ISBN 978-1-84936-185-9

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Introduction

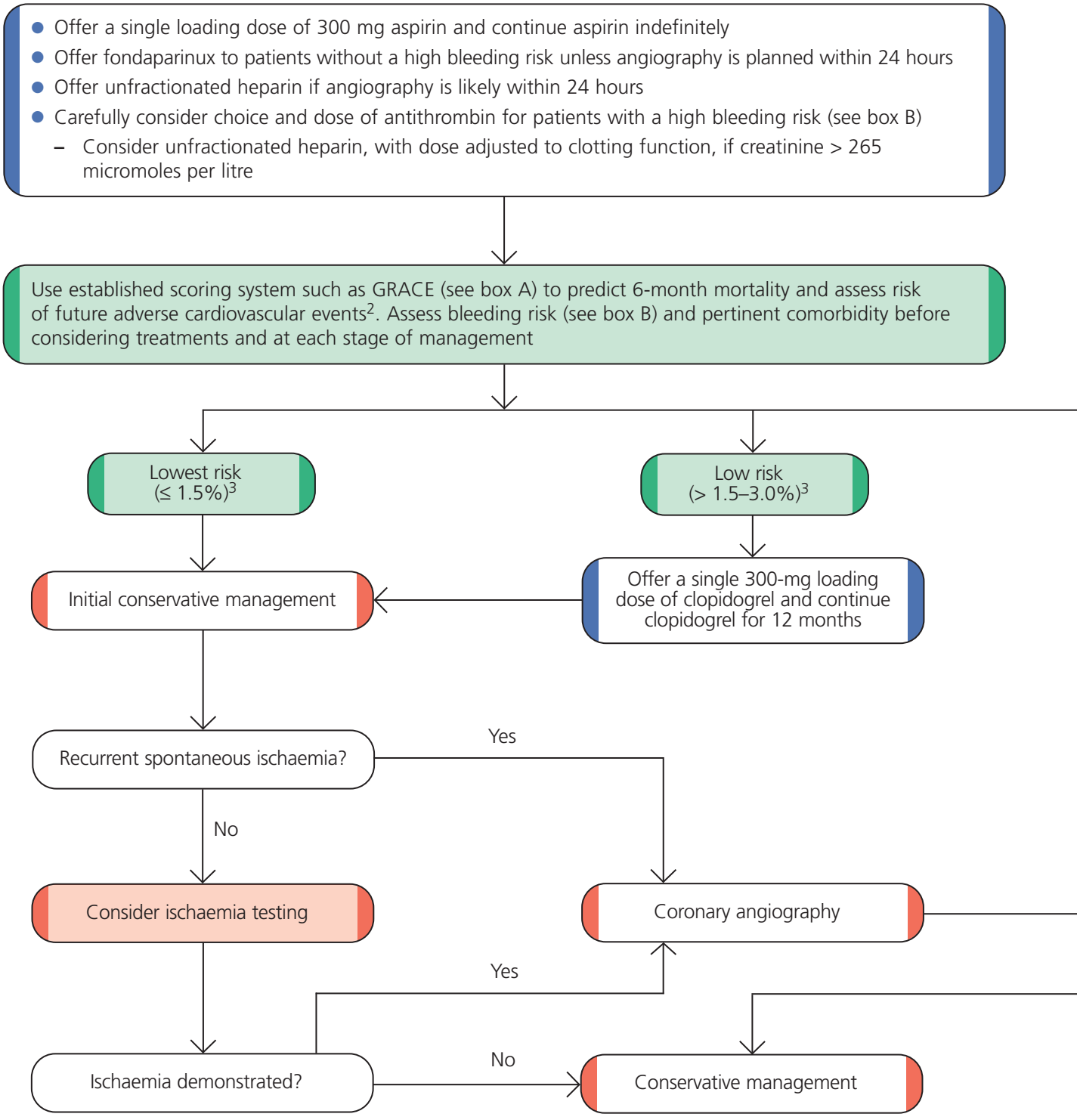
This guideline addresses the early management of unstable angina and non-ST-segment-elevation myocardial infarction (NSTEMI) once a firm diagnosis has been made and before discharge from hospital. If untreated, the prognosis is poor and mortality high, particularly in people who have had myocardial damage. Appropriate triage, risk assessment and timely use of acute pharmacological or invasive interventions are critical for the prevention of future adverse cardiovascular events (myocardial infarction, stroke, repeat revascularisation or death).

Key priorities for implementation

- As soon as the diagnosis of unstable angina or NSTEMI is made, and aspirin and antithrombin therapy have been offered, formally assess individual risk of future adverse cardiovascular events using an established risk scoring system that predicts 6-month mortality (for example, Global Registry of Acute Cardiac Events [GRACE]).
- Consider intravenous eptifibatide or tirofiban[1] as part of the early management for patients who have an intermediate or higher risk of adverse cardiovascular events (predicted 6-month mortality above 3.0%), and who are scheduled to undergo angiography within 96 hours of hospital admission.
- Offer coronary angiography (with follow-on PCI if indicated) within 96 hours of first admission to hospital to patients who have an intermediate or higher risk of adverse cardiovascular events (predicted 6-month mortality above 3.0%) if they have no contraindications to angiography (such as active bleeding or comorbidity). Perform angiography as soon as possible for patients who are clinically unstable or at high ischaemic risk.
- When the role of revascularisation or the revascularisation strategy is unclear, resolve this by discussion involving an interventional cardiologist, cardiac surgeon and other healthcare professionals relevant to the needs of the patient. Discuss the choice of the revascularisation strategy with the patient.
- To detect and quantify inducible ischaemia, consider ischaemia testing before discharge for patients whose condition has been managed conservatively and who have not had coronary angiography.
- Before discharge offer patients advice and information about:
  - their diagnosis and arrangements for follow-up (in line with 'MI: secondary prevention', NICE clinical guideline 48)
  - cardiac rehabilitation (in line with 'MI: secondary prevention', NICE clinical guideline 48)
  - management of cardiovascular risk factors and drug therapy for secondary prevention (in line with 'MI: secondary prevention', NICE clinical guideline 48 and 'Lipid modification', NICE clinical guideline 67)
  - lifestyle changes (in line with 'MI: secondary prevention', NICE clinical guideline 48).

[1] Eptifibatide and tirofiban are licensed for use with aspirin and unfractionated heparin. They do not have UK marketing authorisation for use with clopidogrel. This recommendation is therefore for an off-label use of these drugs. Informed consent should be obtained and documented before they are used in combination with clopidogrel.

The early management of unstable angina and NSTEMI



[2] Categories of risk are derived from the Myocardial Ischaemia National Audit Process (MINAP) database. More details are in the full guideline which is available at www.nice.org.uk/guidance/CG94/Guidance
[3] Predicted 6-month mortality.

Box A – Factors to include when assessing risk with an established scoring system

- Full clinical history (including age, previous MI, previous PCI or CABG)
- Physical examination (including blood pressure and heart rate)
- Twelve-lead resting ECG
- Blood tests (such as troponin I or T, creatinine, glucose and haemoglobin)

Box B – Factors associated with high bleeding risk

- Advancing age
- Known bleeding complications
- Renal impairment
- Low body weight

Intermediate risk (> 3.0–6.0%)[3]

High risk (> 6.0–9.0%)[3]

Highest risk (> 9.0%)[3]

- Offer a single 300-mg loading dose of clopidogrel[4] and continue clopidogrel for 12 months
- Balance potential reduction in ischaemic risk with risk of bleeding and consider:
  - adding a GPI (eptifibatide or tirofiban), or
  - bivalirudin as an alternative to the combination of a heparin plus a GPI if the patient is not on fondaparinux or a GPI and angiography is scheduled within 24 hours of admission

Offer coronary angiography (with follow-on PCI if indicated) within 96 hours of first admission unless contraindicated. Perform as soon as possible if patient is clinically unstable or at high ischaemic risk

Discuss management strategy with interventional cardiologist and cardiac surgeon. Consider angiographic findings, comorbidities and risks and benefits when discussing the choice of revascularisation strategy with the patient

Percutaneous coronary intervention (PCI)

- Consider abciximab for patients not on a GPI (eptifibatide, tirofiban)
- Offer systemic unfractionated heparin (50–100 units/kg) to patients on fondaparinux
- Consider bivalirudin as an alternative to the combination of a heparin plus a GPI for patients not on a GPI or fondaparinux

Coronary artery bypass grafting (CABG)

- Consider stopping clopidogrel 5 days before CABG in patients with low risk of adverse cardiovascular events
- Discuss with surgeon whether to continue clopidogrel before CABG in patients with intermediate or higher risk of adverse cardiovascular events

[4] There is emerging evidence about the use of a 600-mg loading dose of clopidogrel for patients undergoing PCI within 24 hours of admission. Clopidogrel does not have UK marketing authorisation for use at doses above 300 mg. The Guideline Development Group was not able to formally review all the evidence for a 600-mg loading dose and was therefore not able to recommend this at the time of publication (March 2010).

Assessing risk of future adverse cardiovascular events

- Assess risk with an established risk scoring system that predicts 6-month mortality (for example, Global Registry of Acute Cardiac Events [GRACE])
- Use risk assessment to guide clinical management and balance the benefit of a treatment against any possible adverse events

Management strategies

- Offer coronary angiography (with follow-on PCI if indicated) within 96 hours of first admission to patients with intermediate or higher risk and no contraindications (such as active bleeding or comorbidity). Perform as soon as possible for patients who are clinically unstable or at high ischaemic risk
- Offer conservative management without early coronary angiography to patients with low risk
- Offer coronary angiography (with follow-on PCI if indicated) to patients initially assessed to be at low risk if ischaemia develops or is demonstrated

Antiplatelet therapy

Aspirin

- Offer to all patients unless contraindicated and continue indefinitely
- Offer a single 300-mg loading dose
- Consider clopidogrel monotherapy for patients with aspirin hypersensitivity

Clopidogrel[5]

- Offer a 300-mg loading dose to patients with a predicted 6-month mortality of more than 1.5% and no contraindications (such as excessive bleeding risk)
- Offer a 300-mg loading dose[6] to all patients with no contraindications who may undergo PCI within 24 hours of admission
- Continue standard dose for 12 months
- Consider stopping clopidogrel 5 days before CABG in patients with low risk
- For patients at intermediate or higher risk, discuss continuing clopidogrel before CABG with the cardiac surgeon. Base the decision on the balance of ischaemic and bleeding risk

Glycoprotein IIb/IIIa inhibitors

- Consider eptifibatide or tirofiban[7] for patients at intermediate or higher risk if angiography is scheduled within 96 hours of admission
- Consider abciximab as an adjunct to PCI for patients at intermediate or higher risk who are not already receiving a GPI

[5] In this guideline, clopidogrel refers to clopidogrel hydrogen sulphate.

[6] There is emerging evidence about the use of a 600-mg loading dose of clopidogrel for patients undergoing PCI within 24 hours of admission. Clopidogrel does not have UK marketing authorisation for use at doses above 300 mg. The Guideline Development Group was not able to formally review all the evidence for a 600-mg loading dose and was therefore not able to recommend this at the time of publication (March 2010).

[7] Eptifibatide and tirofiban are licensed for use with aspirin and unfractionated heparin. They do not have UK marketing authorisation for use with clopidogrel. This recommendation is therefore for an off-label use of these drugs. Informed consent should be obtained and documented before they are used in combination with clopidogrel.

Antithrombin therapy

- Offer fondaparinux to patients without a high bleeding risk unless angiography is planned within 24 hours of admission
- Offer unfractionated heparin as an alternative to fondaparinux if angiography is likely within 24 hours of admission
- Carefully consider the choice and dose of antithrombin in patients with a high bleeding risk
- Consider unfractionated heparin, with dose adjusted to clotting function, for patients with creatinine > 265 micromoles per litre
- Offer systemic unfractionated heparin (50–100 units/kg) in the cardiac catheter laboratory to patients on fondaparinux who are undergoing PCI[8]
- As an alternative to the combination of a heparin plus a GPI, consider bivalirudin for patients who:
  - are at intermediate or higher risk, and
  - are not already receiving a GPI or fondaparinux, and
  - are scheduled for angiography within 24 hours of admission
- As an alternative to the combination of a heparin plus a GPI, consider bivalirudin for patients undergoing PCI who are at intermediate or higher risk and are not already on a GPI or fondaparinux

Assessing left ventricular function

- Assess left ventricular function in all patients who have had an MI
- Consider assessing left ventricular function in all patients with unstable angina
- Record results in patient's care record and correspondence with primary healthcare team and patient

Rehabilitation and discharge planning

- Before discharge offer patients information and advice about:
  - their diagnosis and arrangements for follow-up
  - cardiac rehabilitation
  - management of cardiovascular risk factors and drug therapy for secondary prevention
  - lifestyle changes
- Follow guidance in 'MI: secondary prevention' (NICE clinical guideline 48), 'Lipid modification' (NICE clinical guideline 67) and 'Brief interventions and referral for smoking cessation in primary care and other settings' (NICE public health guidance 1)

[8] Unfractionated heparin is not licensed for use during angiography and PCI. Such use is an off-label use. Informed consent should be obtained and documented before it is used during angiography and PCI.

Further information

Ordering information

You can download the following documents from www.nice.org.uk/guidance/CG94

- The NICE guideline – all the recommendations.
- A quick reference guide (this document) – a summary of the recommendations for healthcare professionals.
- 'Understanding NICE guidance' – a summary for patients and carers.
- The full guideline – all the recommendations, details of how they were developed, and reviews of the evidence they were based on.

For printed copies of the quick reference guide or 'Understanding NICE guidance', phone NICE publications on 0845 003 7783 or email publications@nice.org.uk and quote:

- N2111 (quick reference guide)
- N2112 ('Understanding NICE guidance').

Implementation tools

NICE has developed tools to help organisations implement this guidance (see www.nice.org.uk/guidance/CG94).

Related NICE guidance

For information about NICE guidance that has been issued or is in development, see www.nice.org.uk

Updating the guideline

This guideline will be updated as needed, and information about the progress of any update will be available at www.nice.org.uk/guidance/CG94

National Institute for Health and Clinical Excellence
MidCity Place
71 High Holborn
London
WC1V 6NA

www.nice.org.uk

N2111 1P 14k Mar 10

ISBN 978-1-84936-185-9