NICE has published guidance on the management of unstable angina and non-ST-segment-elevation myocardial infarction. This article summarises the key recommendations from the guidance.

What NICE advises for managing unstable angina or an NSTEMI

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Chest pain of cardiac origin caused by angina or an acute coronary syndrome (ACS) has a potentially poor prognosis, highlighting the importance of prompt and accurate diagnosis and treatment to improve symptoms and prolong life. Pharmacological therapies are potent with complex regimens requiring significant input from specialist cardiac pharmacists working within a multidisciplinary team to ensure their appropriate, safe and timely use.

New guidance issued in March 2010 by the National Institute for Health and Clinical Excellence sets out areas of priority for the development of best practice for managing patients with an ACS.

NICE has confirmed the definition of ACS as a range of conditions from unstable angina to ST-segment-elevation myocardial infarction (STEMI), arising from thrombus formation on an atheromatous plaque. Its new guideline, however, covers early management strategies for unstable angina and non-ST-segment-elevation myocardial infarction (NSTEMI) only, which are the focus of this article.

The guideline encompasses information on the timely assessment and classification of patients presenting with acute chest pain of cardiac origin, management strategies, including treatment with antiplatelet and parenteral anticoagulant (antithrombin) medicines, and the need for availability of information to empower patients and their carers to make informed decisions on their care.

Risk assessment

It is recommended that as soon as a diagnosis of cardiac ischaemia, and potential myocardial damage, is made a formal assessment process should be initiated to identify the likelihood of future cardiovascular events. An established scoring system such as the “Global registry of acute cardiac events” (GRACE; available online at www.outcomes-umassmed.org), designed to predict six-month mortality (see Box 1), has been cited as a suitable assessment tool.

Assessment should include full clinical history, physical examination, electrocardiogram (ECG) and blood tests, including troponin (T or I) measurements. This formal risk assessment, NICE suggests, is to be used for identifying the best intervention (eg, revascularisation) or pharmacological therapy.

Box 1: Assigning risk*

<table>
<thead>
<tr>
<th>PREDICTED SIX-MONTH MORTALITY</th>
<th>RISK OF FUTURE ADVERSE CARDIOVASCULAR EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1.5%</td>
<td>Lowest</td>
</tr>
<tr>
<td>1.5% to 3%</td>
<td>Low</td>
</tr>
<tr>
<td>3% to 6%</td>
<td>Intermediate</td>
</tr>
<tr>
<td>6% to 9%</td>
<td>High</td>
</tr>
<tr>
<td>&gt;9%</td>
<td>Highest</td>
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</tbody>
</table>

*From the Myocardial Ischaemia National Audit Process database

Revascularisation

The high value of early invasive revascularisation (within 96 hours of...
admission) for intermediate- and higher-risk patients has been highlighted by NICE. The choice of an invasive revascularisation procedure — ie, percutaneous coronary intervention (PCI; eg, angioplasty) versus coronary artery bypass graft (CABG) — should take into account the results of a coronary angiography. A cardiologist and cardiac surgeon should involve the patient in this decision, particularly if the choice is unclear.

For lower-risk patients, the institute suggests that more conservative management (without invasive revascularisation) can be offered. Nonetheless, if subsequent ischaemia is experienced these patients should be offered an angiography investigation.

**Aspirin and clopidogrel**

Aspirin continues to be an essential part of therapy and should be continued indefinitely unless contraindicated by risk of bleeding or hypersensitivity (in which case clopidogrel is recommended as an alternative monotherapy). NICE recommends a loading dose of 300mg aspirin for patients who are not already taking regular low-dose aspirin.

The institute advises that clopidogrel should be offered, in addition to aspirin, to all patients who have experienced these patients should be offered an angiography investigation.

**If a CABG is required as part of a patient's management and the patient is assessed as low risk (predicted six-month mortality ≤3%), the clinician should consider withholding clopidogrel for five days running up to the procedure. For higher-risk patients, the option of not withholding clopidogrel should be discussed with the cardiac surgeon, taking into account the risk of ischaemia and bleeding.**

**Glycoprotein IIb/IIIa inhibitors**

According to NICE, patients with an intermediate or higher risk of future adverse cardiovascular events who are scheduled to undergo early angiography (within 96 hours of admission) should be considered for treatment with intravenous epitifibatide or tirofiban. This is in addition to aspirin, clopidogrel and an anticoagulant (see below). The other glycoprotein IIb/IIIa inhibitor abciximab should only be considered as an adjunct to revascularisation for patients undergoing a PCI who are not already receiving epitifibatide or tirofiban.

**Anticoagulant therapy**

Parenteral anticoagulant therapy should also be offered to all patients diagnosed with unstable angina or an NSTEMI. The choice and dose of parenteral anticoagulant for patients who have a high risk of bleeding (older patients, those with known bleeding complications, renal impairment, low body weight) should be carefully considered. Options include unfractionated heparin, low molecular weight heparin and fondaparinux.

For patients who are not at high risk of bleeding, fondaparinux should be administered routinely unless they are due to undergo an angiography within 24 hours of admission. NICE says that unfractionated heparin is a suitable alternative for such patients. It is also suitable for those with significant renal impairment (serum creatinine ≥265µmol/L) and those undergoing PCI.

Bivalirudin is not recommended for the routine management of unstable angina and NSTEMI. However, it may be considered for patients undergoing a PCI or an angiography who are not already receiving fondaparinux or a glycoprotein IIb/IIIa inhibitor.

**Discharge process**

Patients should be offered ischaemia testing (eg, using stress ECG, echocardiography or magnetic resonance imaging) before discharge if their condition has been managed conservatively and they have not been investigated using coronary angiography. NICE says that information and advice should be given to patients about their diagnosis. Follow-up arrangements, such as plans for secondary prevention, should be made, which can include drug therapy, lifestyle changes and health education.

NICE does not make specific recommendations for pharmacy. Nevertheless, clinical pharmacists in both primary and secondary care can help to ensure the appropriateness of complex therapies in hospital and post-discharge for patients with unstable angina or NSTEMI. Pharmacists should ensure patients have ample information on the medicines they are prescribed and stress the importance of adherence to help minimise the risk of future cardiovascular events and death.

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**Priorities for implementation**

Priorities for implementation of the NICE guideline include:

- Use of a formal risk assessment tool to assess patients’ six-month mortality risk and appropriate documentation of the score in the clinical notes
- Investigation with coronary angiography within 96 hours of admission (if no contraindications) for intermediate- to high-risk patients to determine the most appropriate early revascularisation procedure (PCI or CABG)
- Discussion with patient, cardiologist, surgeon and other relevant healthcare professional about choice of procedure if the most appropriate choice is unclear
- Early management with intravenous epitifibatide or tirofiban (in addition to aspirin, clopidogrel and a parenteral anticoagulant) for patients with intermediate or high risk of future CV events and undergoing early angiography (within 96 hours of admission)
- Ischaemia testing before discharge if patients have been managed conservatively with no coronary angiography
- Empowerment of patients by giving full information and advice on secondary prevention, lifestyle management and health education