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Quick reference guide

Myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction

1 Guidance

This appraisal covers the use of myocardial perfusion scintigraphy (MPS) using single photon emission computed tomography (SPECT) in the diagnosis and management of angina and myocardial infarction. It does not cover planar MPS or the use of MPS in the management of heart failure or in the assessment of myocardial viability. In this guidance the term coronary artery disease (CAD) is used to refer to angina and myocardial infarction.

1.1 MPS using SPECT is recommended for the diagnosis of suspected coronary artery disease (CAD) in the following circumstances.

- As the initial diagnostic tool for people with suspected CAD for whom stress electrocardiography poses particular problems of poor sensitivity or difficulties in interpretation, including women, patients with cardiac conduction defects (for example, left bundle branch block), and people with diabetes, and for people for whom treadmill exercise is difficult or impossible.
- As part of an investigational strategy for the diagnosis of suspected CAD in people with lower likelihood of CAD and of future cardiac events. The likelihood of CAD will be based on the assessment of a number of risk factors including age, gender, ethnic group, family history, associated comorbidities, clinical presentation, physical examination, and results from other investigations (for example, blood cholesterol levels or resting electrocardiogram).

1.2 MPS using SPECT is recommended as part of the investigational strategy in the management of established CAD in people who remain symptomatic following myocardial infarction or reperfusion interventions.

2 Implementation

2.1 Implications for the NHS

2.1.1 According to the British Nuclear Cardiology Society survey, there were about 1200 SPECT scans per million population in the UK in 2000. The average waiting time for a scan was 20 weeks. The submission prepared jointly by the professional groups estimated the optimal level of SPECT provision to be around 4000 SPECT scans per million population per year, calculated on the basis of current revascularisation and CA rates. Furthermore, it suggested that suitable waiting times would be 6 weeks for routine scans and 1 week for urgent tests.

2.1.2 In order to achieve these levels of both adequacy of provision and speed of accessibility, it is estimated that 73 additional gamma cameras would be needed in England and Wales, at a capital cost of around £18 million. This is based on providing 2000 scans per annum per gamma camera, and a unit cost of £250,000 per camera.

2.1.3 Because of the current lack of trained personnel, these levels of provision could take some years to achieve, so the total cost to the NHS is likely to be phased over several years. Once a steady state is achieved, based on the provision of 4000 SPECT tests per million population per year, the estimated annual revenue cost would be in the order of £27 million.

2.2 Local implementation and audit

2.2.1 NHS hospitals and all clinicians who care for people with CAD should review current diagnostic options available to take account of the guidance set out in Section 1.

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This guidance is written in the following context:

This guidance represents the view of the Institute, which was arrived at after careful consideration of the available evidence. Health professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of health professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

2.2.2 Local guidelines or care pathways for people with CAD should incorporate the guidance.

2.2.3 To measure compliance locally with the guidance, the following criteria could be used.

- MPS using SPECT is carried out for the diagnosis of individuals with suspected CAD in the following circumstances.
 - As the initial diagnostic tool for an individual with suspected CAD for whom sECG poses problems of poor sensitivity or difficulties in interpretation, and for an individual for whom treadmill exercise is difficult or impossible.
 - As part of an investigational strategy for the diagnosis of suspected CAD in an individual who has a lower likelihood of CAD and of future cardiac events.

- MPS using SPECT is carried out as part of an investigational strategy in the management of established CAD in an individual who remains symptomatic following myocardial infarction or reperfusion interventions (CABG or PCI).

2.2.4 Local clinical audits on the care of patients with CAD could also include criteria for the management of CAD based on the national standards, including standards in the National Service Framework.

2.2.5 Further details on criteria for audit are included in the full guidance (see Further information).

Further information

Distribution

The distribution list for this quick reference guide is available on the NICE website at www.nice.org.uk/TA073distributionlist

Full guidance

The full guidance is available from www.nice.org.uk/TA073guidance.

It contains the following sections: 1 Guidance; 2 Clinical need and practice; 3 The technology; 4 Evidence and interpretation; 5 Recommendations for further research; 6 Implications for the NHS; 7 Implementation and audit; 8 Related guidance; 9 Review of guidance.

The full guidance also gives details of the Appraisal Committee, the sources of evidence considered and suggested criteria for audit.

Information for the Public

NICE has produced information describing this guidance for people with angina and myocardial infarction, their families, and the public. This information is available from

www.nice.org.uk/TA073publicinfoenglish (English version) and www.nice.org.uk/TA073publicinfowelsh (English and Welsh version).

Related guidance

The Institute has issued technology appraisal guidance on:

- the use of coronary artery stents in percutaneous coronary interventions (see www.nice.org.uk/cat.asp?c=89877)
- the use of glycoprotein IIb/IIIa inhibitors in the treatment of acute coronary syndromes (www.nice.org.uk/cat.asp?c=36351)
- the use of drugs for early thrombolysis (see www.nice.org.uk/cat.asp?c=38399).

It has also issued clinical guidelines on:

- prophylaxis for patients who have experienced a myocardial infarction (see www.nice.org.uk/cat.asp?c=20053)
- the management of chronic heart failure in adults in primary and secondary care (see www.nice.org.uk/cat.asp?c=79725).

Ordering information

Copies of this quick reference guide can be obtained from the NICE website at www.nice.org.uk/TA073quickrefguide or from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0372. *Information for the Public* can be obtained by quoting reference number N0373 for the English version and N0374 for a version in English and Welsh.

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