Commentary on NICE guidance for secondary prevention for patients following a myocardial infarction

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Commentary on NICE guidance for secondary prevention for patients following a myocardial infarction

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The recently published NICE guideline *MI: secondary prevention in primary and secondary care for patients following a myocardial infarction*[1] updates the previous guideline published in 2001[2] and the relevant sections of the *National Service Framework for coronary heart disease*.[3] The guideline is important to clinicians in both primary and secondary care, and to those who plan services. There have been significant improvements in recent years and the majority of eligible patients leaving hospital after an acute myocardial infarction are now treated with aspirin and statins. However, other important interventions such as advice about lifestyle and cardiac rehabilitation are less consistently provided and there is inconsistent practice with regards to some drug therapies. This guideline makes recommendations for lifestyle and cardiac rehabilitation in far greater detail than in the previous one, as well as updating and expanding the recommendations for drug treatment.

Patients who have just had an acute myocardial infarction are readily identifiable, and this guideline addresses secondary prevention after the very early acute phase. It also makes recommendations for the management of patients with a proven myocardial infarction in the past. These patients will generally no longer be under hospital follow-up and it will be the responsibility of primary care to review patients on their disease registers to ensure that management has been optimised.

DRUG TREATMENT

The recommendations that aspirin, beta blockers, statin and ACE inhibitors be considered in all patients after acute myocardial infarction are maintained in this guideline and further supplemented to include appropriate treatment with a combination of aspirin and clopidogrel, and early treatment with an aldosterone antagonist in patients with heart failure. Other drugs such as vitamin K antagonists are also now included.

Recommendations for treatment with the combination of aspirin and clopidogrel in non-ST elevation myocardial infarction restate those of the NICE technology appraisal number 80, *Clopidogrel in the treatment of non-ST-segment-elevation acute coronary syndrome*,[4] to continue treatment for a year. After an ST elevation myocardial infarction patients who have been thrombolysed and treated with clopidogrel and aspirin on initial presentation should continue with both agents for at least four weeks. However, evidence is lacking as to the optimal duration of treatment with both agents in patients after an ST elevation myocardial infarction and, in practice, clinicians in secondary care should make explicit recommendations for the duration of dual antiplatelet therapy as part of the patient management plan. Further research to examine the optimal duration of dual antiplatelet therapy in this group is recommended in the guideline.

Treatment with both aspirin and clopidogrel is not routinely recommended for longer than a year. Treatment plans can be made in secondary care, but most patients who have had a myocardial infarction will no longer be under hospital follow-up one year later. Primary care will need to make sure that patients have an individual review before stopping clopidogrel to ensure that other indications to continue both agents have not developed.

Patients with heart failure after myocardial infarction are at high risk for further events and early treatment (within 3–14 days) with an aldosterone antagonist licensed for this indication is recommended in patients who have had symptoms and signs of heart failure and a left ventricular ejection fraction of 40% or less, preferably after an ACE inhibitor. This means that all patients with heart failure after acute myocardial infarction will require an early assessment of left ventricular function, generally before discharge, so that appropriate treatment can be initiated in those fulfilling the criteria. This may prove a challenge for some units and services should

consider how they will implement this recommendation. It is unknown if treatment with a non-selective aldosterone antagonist will be as efficacious as a selective aldosterone receptor antagonist licensed for this indication; this has been identified as a recommendation for further research.

All patients treated with ACE inhibitors require monitoring of serum potassium and renal function, and those also treated with an aldosterone antagonist require particularly careful monitoring. Secondary prevention measures after acute myocardial infarction will generally be initiated in hospital, but it will not be possible to up-titrate treatment in all patients to optimum doses before discharge. Effective and explicit early communication of a treatment plan between secondary care and primary care, which is shared with the patient, will help ensure that patients have their treatment optimised and monitored in a safe and timely manner. Patients need consistent and accurate information and to have their treatment explained. This should include their need for monitoring and dose titration of drug treatment.

After myocardial infarction, some patients have other indications for anticoagulation and are treated with warfarin. This guideline addresses whether antiplatelet agents should also be considered in such patients. The addition of aspirin should be considered in those treated with moderate intensity warfarin who have a low risk of bleeding complications. In practice the management of patients treated with warfarin will require a careful assessment of the indications for warfarin and the importance of continuing it, the level of individual patient cardiovascular risk and bleeding risk and their own wishes, as well as taking into account other indications for antiplatelet agents such as recent coronary stenting.

This guideline recommends that after myocardial infarction all patients are treated with a statin as soon as possible. However, clinicians may be disappointed that recommendations about the intensity of statin treatment and cholesterol lowering have not been made. This was considered by the guideline group, but it was agreed that separate recommendations on these important issues in isolation from recommendations for management of patients with other expressions of coronary heart disease and other vascular diseases should be avoided. Recommendations for the intensity of statin treatment and cholesterol lowering in patients with vascular disease, including those after myocardial infarction, are being addressed by the ongoing NICE lipid modification guideline *Cardiovascular risk assessment: the modification of blood lipids for the primary and secondary prevention of cardiovascular disease*, due to be published in January 2008.[5]

Secondary prevention is for life. The guideline makes it clear whether or not any drug treatments should be routinely discontinued. However, some patients may wish to review the benefits of long-term treatment—particularly those who, following a comprehensive cardiological assessment, are at low risk of further events. In one study[6] of patients with stable coronary disease with preserved left ventricular function, including 55% with a history of myocardial infarction, the annualised rate of death from all causes was only 1.6%, similar to that of an age- and sex-matched general population, and the addition of ACE inhibitors conferred no additional risk reduction in cardiovascular mortality, myocardial infarction or coronary revascularisation. There was insufficient evidence for this guideline to recommend a subgroup of patients who routinely should not continue all long-term drug treatment. However, patients may wish to review the long-term benefit of selected drugs, requiring a careful assessment and discussion of each patient's wishes and how well the drugs are tolerated, balanced against the size of benefit with regards to risk reduction. Such decisions should be clearly documented and communicated between secondary and primary care. It is unclear if there is a time interval following which any such decisions should routinely be revisited in case of disease progression, but it is intuitive that at a minimum this should occur promptly if any new cardiac symptoms develop or if new indications for treatment occur. The importance of these issues is recognised as an area requiring further research.

CARDIAC REHABILITATION AND LIFESTYLE

Drug therapy has a key role for secondary prevention after myocardial infarction, but equally important are the recommendations for lifestyle and cardiac rehabilitation. Published evidence for cardiac rehabilitation has been supplemented by additional analyses of its cost effectiveness and methods used to increase uptake to meet the recommendations. Details of these are readily available in the full version of the guideline.[7] Cardiac rehabilitation is a clinical and cost effective intervention after acute myocardial infarction. All patients should be offered a comprehensive cardiac rehabilitation programme which includes an exercise component tailored to individual needs, and those with left ventricular dysfunction should not routinely be excluded. Programmes should also include educational and stress management components, but complex psychological interventions such as cognitive behavioural therapy are not routinely recommended. Information should be accurate and consistent, and include advice about returning to work and everyday activities. The need to address issues regarding sexual activity is emphasised. Further recommendations address the importance of providing services which are accessible and acceptable, and which meet the needs of all patients, including those least likely to access rehabilitation. Cardiac rehabilitation starts before discharge from hospital, but is largely provided after discharge and services provided in secondary care and the community must be integrated. Some patients may prefer a home-based programme and services may offer such a programme validated for patients after myocardial infarction.

All health professionals should encourage patients to join a cardiac rehabilitation programme and senior medical staff should include cardiac rehabilitation when they are discussing and planning secondary prevention measures with patients. A survey in 2000 estimated that between 14% and 23% of patients were enrolled into cardiac rehabilitation programmes after myocardial infarction.[8] Services have developed since this survey, but there is still wide disparity between geographical areas in access and uptake to cardiac rehabilitation, and it is recognised that access may be particularly poor by patients in selected groups. Clinicians and commissioners will need to work together to make sure the recommendations are implemented. The NICE costing tool can be used to help estimate additional costs.[9]

Gaps in the evidence for cardiac rehabilitation emerged during development of the guideline and recommendations are made for these to be addressed. Further research is needed to examine the most effective strategies to promote uptake and adherence to comprehensive cardiac rehabilitation, the efficacy of the non-exercise components of the rehabilitation programmes, and which are the most effective strategies for maintaining exercise and dietary changes.

This guideline has made clear recommendations for lifestyle changes and supports healthcare professionals in providing consistent and coherent messages. Advice about both diet and physical activity is enhanced by discussion of patients' past and current habits before discussing and advising any changes. For patients who have had an acute MI, this should be integrated with cardiac rehabilitation. Primary care services have a key role to review and discuss lifestyle factors as part of the ongoing long-term education and support of patients.

Patients should be advised to have a Mediterranean-style diet and to consume 7 g of omega-3 fatty acids per week from 2–4 portions of oily fish. Those within three months of an acute

myocardial infarction who are not achieving 7 g of omega-3 fatty acids per week should be considered for 1 g daily of omega-3 acid ethyl esters treatment licensed for secondary prevention post myocardial infarction for up to four years. However, there is uncertainty about the efficacy of omega-3 acid ethyl esters supplements initiated later after myocardial infarction and further research is required. The guideline makes important recommendations about other supplements which some patients may consider taking, and will help ensure that patients receive accurate information. There is no evidence that antioxidant supplements and folic acid will reduce cardiovascular risk in patients after myocardial infarction, and beta carotene supplements should be avoided as they may be harmful.

The importance of undertaking regular physical activity to increase exercise capacity is emphasised. Heart rate monitoring is not recommended, as many patients are treated with beta blockers. However, patients should aim to build up their exercise and aim for 20–30 min of physical activity per day to the point that they are slightly breathless. For those after acute myocardial infarction, exercise will be part of the cardiac rehabilitation programme, but all clinicians should emphasise the importance of continuing this long term.

It will be no surprise that patients who smoke should be advised to quit and offered the assistance of a smoking cessation service. Reference is made to other published NICE guidance for this[10 11] and also for weight management.[12]

CARDIOLOGICAL ASSESSMENT

Patients who have not been considered for coronary revascularisation during the acute phase require further cardiological assessment to identify those who will benefit from revascularisation for secondary prevention, taking into account comorbidity. It was beyond the scope of the guideline to recommend how best that assessment be made, but will include looking for evidence of reversible myocardial ischaemia, the extent of coronary artery disease and left ventricular function. Patients who have left ventricular systolic dysfunction should also be considered for an implantable cardioverter defibrillator in line with the recommendations in the NICE technology appraisal number 95, *Implantable cardioverter defibrillators (ICDs) for the treatment of arrhythmias*.[13]

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