

Post myocardial infarction care by the GP

Bennett JM, MBChB, MMed(Int), FACC, FSCAI
Wilgers Hospital, Pretoria

Correspondence to: mike.bennett1@absamail.co.za

Abstract

Most patients suffering from an acute myocardial infarction (AMI) are currently managed by cardiologists or specialist physicians during the acute phase and are then referred back to a family/general practitioner. By the time the FP/GP sees the patient, the patient should be stable and on the necessary medication. Good communication between specialist and FP/GP is critical to avoid any confusion regarding the patient's condition, risk and further management. This article deals with general aspects of post-myocardial infarction care.

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Introduction

High risk patients (table I) need special care and follow-up. The most important post-MI risk factor remains left ventricular dysfunction and these patients have the highest incidence of long-term complications.

Certain symptoms should alert the GP. After an AMI, a patient may feel weaker than before the AMI. This may be because of deconditioning, but it could also be due to left ventricular dysfunction. Patients should have no chest pain; any new chest pain should be regarded as significant. Ectopic beats may occur and are usually particularly troublesome at night. They frequently cause a lot of anxiety for the patient and his or her spouse. Families are usually very concerned about the patient and are often unsure of what he or she is allowed to do and what symptoms should be regarded as serious. Most cardiac units have a rehabilitation section which should discuss with the patient his or her exercise programme, lifestyle adjustments, and dietary advice and medications. Although many queries are

handled at discharge from hospital, the GP will be approached in many instances for advice by the patient or the spouse.

Rehabilitation

By the time patients are discharged from hospital, most are usually able to manage their personal hygiene and perform simple chores. Further activity will depend on the patient's condition. Patients with left ventricular dysfunction should not be allowed to participate in any exercise programme until an exercise test (sub maximal or symptom-limited) has been done to assess the patient's capabilities and the presence of exercise induced arrhythmias or myocardial ischaemia. Patients should then be enrolled in a comprehensive lifestyle program that is not only focused on exercise sessions, but also include dietary changes, smoking cessation, weight loss and risk factor management.

The main components of a rehabilitation programme should include: Lifestyle and cardiovascular risk assessment

Educational. Patients and their families should be informed about CAD, its causes and how these can be modified, the use of prescribed medicines and cardiopulmonary resuscitation. Health promotion. Promotion of a healthy lifestyle like avoiding tobacco, making healthy food choices and starting with an exercise program. Family-based intervention. It is easier to achieve and sustain lifestyle changes if the spouse and other members of the same household are also involved in helping and motivating the patient to maintain his or her new lifestyle.

Important lifestyle and therapeutic goals

a. Cessation of smoking.

The best prevention of reinfarction in patients who smoke tobacco is smoking cessation. Since smoking is strongly addictive (both pharmacologically and psychologically), many people struggle to quit the habit. The doctor's explicit advice to quit smoking permanently and a reiteration of the cardiovascular and other health hazards of smoking is extremely important. Smokers are at higher risk for death and nonfatal reinfarction than are non-smokers (55% versus 39% respectively). Smokers who stop smoking reduce their risk for death significantly, from 31% to 17%.¹ Primary pipe or cigar smokers may be

Table I: Patients at risk after AMI

- Patients with heart failure or significant left ventricular dysfunction
- Older patients
- Patients with diabetes mellitus
- Patients with arrhythmias – particularly ventricular
- Anterior myocardial infarction
- Recurrent ischaemia

at a somewhat smaller risk (many usually do not inhale), but it is advisable to convince all patients with atherosclerotic disease to also stop these forms of smoking.

Nicotine chewing gum and transdermal nicotine patches have been useful in helping quitters through the initial difficult weeks of smoking cessation and double the cessation rates compared with placebo.² Although caution is still advised, nicotine patches have been successfully tested in patients with CAD without any adverse effects. Physicians and nurses should be exemplary role models and refrain from any form of smoking.

b. Make healthy food choices.

Reduce intake of fat to $\leq 30\%$ of total energy, with saturated fats $< 1/3$ of total fat intake. Increase the intake of monounsaturated and polyunsaturated fats from vegetable and marine sources. The hypertensive patient should reduce salt and alcohol use, while the obese should reduce total calorie intake. Assistance from a dietitian is of considerable value since most physicians do not have adequate training to manage this part of lifestyle management. Overweight patients (BMI > 25) should reduce weight through appropriate diet and physical activity. A weight loss of 0.5–1 kg/week is sustainable and a suitable rate until the weight goal is achieved.

c. Blood pressure control.

The presence of clinically established cardiovascular disease (myocardial infarction, angina pectoris, transient ischaemic attacks, and stroke) makes hypertension severe, regardless of the blood pressure value. Hypertension is often part of the metabolic syndrome and special attention should be paid to lipid abnormalities, glucose intolerance and obesity. Interestingly, patients who had hypertension prior to their AMI may have lower blood pressure levels for many years and might even become normotensive after the AMI.³

Antihypertensive drug treatment is required in most post-AMI patients despite lifestyle changes (weight loss,

physical exercise, dietary modifications). When considering an antihypertensive agent, the following guidelines are useful:

- In uncomplicated patients, β -blockers, angiotensin-converting enzyme inhibitors (ACE-I) and low-dose thiazides are usually effective
- Angiotensin receptor blockers are useful when ACE-I are not tolerated but have not been shown to be superior to ACE-I
- ACE-I and diuretics are the drugs of choice in patients with overt heart failure
- ACE-I are indicated in patients with asymptomatic left ventricular dysfunction
- Beta-blockers and long-acting calcium antagonists are useful in patients with angina pectoris
- ACE-I, calcium antagonists and alpha-blockers should be prescribed for patients with a high-risk profile due to dyslipidaemia and/or insulin resistance

Hypertension therapy should be continued indefinitely to maintain systolic levels of < 140 mm Hg and diastolic values of < 90 mm Hg (even lower in diabetics and patients with systolic heart failure). Two to three different drugs are often required to maintain blood pressure at goal values.

d. Serum Lipids.

There are abundant data from randomised trials that the rate of angiographic progression of atherosclerosis is related to the LDL level. Aggressive LDL lowering halts atherosclerosis, whereas moderate LDL lowering may allow continued progression. Several studies have shown that reducing LDL-C also reduces major coronary events in high risk patients.^{4,5} Furthermore, more intensive LDL-C lowering reduces major cardiovascular events in patients with acute coronary syndrome compared with less intensive therapy over 2 years. Patients with coronary artery disease (CAD) should not only be treated, but treated to their target cholesterol levels. This is rarely achieved with diet and lifestyle only, and the majority of patients will require a statin. The target presently is a total

cholesterol of ≤ 4.6 mmol/l and an LDL-C of ≤ 2.6 mmol/l. Statins are currently the most effective LDL-C lowering drugs. Markers of abnormal vascular biology, inflammation and endothelial dysfunction have improved with LDL-C lowering. Statin therapy has been associated with reductions in the incidence of symptomatic peripheral vascular disease, stroke, dementia and even aortic stenosis.

e. Diabetes mellitus.

Patients with DM are prone to aggressive and progressive atherosclerosis and tight control in patients post-myocardial infarction is important. The goal is to get HbA1c $< 7\%$ with a combination of antidiabetic agents, weight and diet control as well as physical activity. Tight blood pressure control ($< 130/80$ mmHg) is advisable.

Drug treatment post-AMI.

Many drugs could be prescribed post-AMI, but some are more often used.

- **Aspirin.** All post-AMI patients must remain on aspirin at the recommended dose of 75–150 mg/d. Note that the odds for major bleeding are 1.7 times higher with high-dose (≥ 200 mg/d) versus low-dose (≤ 100 mg/d) aspirin.⁶ Other antiplatelet agents like dipyridamole or clopidogrel may be substituted if true aspirin allergy is present or if the patient is unresponsive to aspirin. Long-term warfarin therapy is indicated for secondary prevention of post-AMI patients unable to take aspirin, post-MI patients in persistent atrial fibrillation or patients with LV thrombus.
- **Beta-Blockers.** These drugs have anti-ischaemic, antiarrhythmic and antihypertensive properties that have a protective effect in post-AMI patients. They are particularly useful in high-risk patients and must be continued indefinitely. Patients with heart failure were previously denied β -blockers but are now one of the subgroups that benefit most from β -blockers. High-risk patients treated with the beta-blocker carvedilol had a 23% re-

duction in mortality.⁷ The question remains whether a patient with normal ejection fraction and single-vessel disease who undergoes a successful angioplasty (low-risk patient) receives any benefit from either short- or long-term beta-blocker therapy. With all the evidence supporting the use of beta-blocking therapy, it is disappointing that many post-AMI patients still fail to receive these agents.

- **ACE-Inhibitors.** ACE-I not only prevent the development of heart failure but also slow the process of LV dilation and remodelling. The finding of an unexpected reduction in recurrence of myocardial infarction in post-AMI patients came as a surprise and suggested that these drugs possess an anti-atherosclerotic effect. ACE-inhibition has subsequently been shown to improve endothelial function and to retard the progression of atherosclerosis. The HOPE⁸ and EUROPA⁹ studies showed significant benefit in high risk patients independent of their antihypertensive effects. Although many people regard this as a class action, it must be noted those results were not obtained with the usual antihypertensive doses and the prescribed dose of other ACE-I to obtain the same result is unknown. These studies support the use of ACE-I in patients with coronary artery disease for their cardiovascular protective effect and not for their antihypertensive properties only.

- **Anti-arrhythmic drugs.** Sudden and unexpected death remains a common concern for patients, their families and their doctors. Coronary artery disease accounts for 60-90 % of cases and in post-AMI patients, palpitations may cause unnecessary anxiety. **Atrial arrhythmias** occur mostly in patients with large anterior infarcts and early or overt heart failure. It is important to attempt to identify and treat underlying or aggravating conditions (hypoxia, congestive heart failure, or an electrolyte abnormality). If haemody-

namic compromise or ischemia is present, electrical cardioversion is indicated. If not, the heart rate could be slowed down to improve LV function using intravenous digoxin or amiodarone, and heparin therapy should be started. **Ventricular ectopic beats (VEB)** are quite common after an AMI. Although they are a marker of a worse long-term prognosis, they do not identify the patient who will have the more serious complications and are hardly ever treated simply because they were diagnosed. Patients with more serious ventricular arrhythmias should be referred to a cardiologist as soon as possible, especially in the presence of depressed LV function (ejection fraction <30%).

Conclusion

Every attempt should be made to identify the post-AMI patient who is at risk for serious haemodynamic, arrhythmic or ischaemic complications and to treat them adequately. Support and motivation of the patient and his family by their family doctor is frequently more important than the annual visit to the specialist. ☺

See CPD Questionnaire p.53

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