Noakes Notes

Exercise in the Rehabilitation of CHD patients

T. Noakes
M.B. Ch.B. MD (UCT)
Metropolitan Sport Science Centre
Department of Medicine,
University of Cape Town

Preview

The author has received numerous requests to discuss the use of exercise in the rehabilitation of patients with coronary heart disease. The following article is a summary of the experience and philosophy gained in the Cardiac Rehabilitation Programme of the Cape Western Branch of the National Heart Foundation.

Introduction

In the past decade a wealth of information has accumulated showing that following heart attack or coronary artery bypass surgery, cardiac patients derive specific benefits from carefully prescribed programmes of graduated exercise. Such programmes consist ideally of three separate phases:

1) the acute in-hospital phase beginning as soon as the patient is admitted to a hospital Intensive Coronary Care Unit with acute myocardial infarction;
2) a hospital based programme in which mild, graded exercise usually involving circuit training on apparatus is performed in a hospital out-patient department and;
3) participation in a more vigorous, community-based exercise programme commencing some 9-12 weeks after myocardial infarction.

This article will concentrate specifically on the methodology and philosophy of community-based exercise rehabilitation programmes. It is the author's contention that medical ignorance of, and indeed frank disinterest in the value such programmes can play in the psychological and physiological repair of cardiac patients, remains a major reason why the medical care of such patients may be less than optimum.

Why cardiac patients do not exercise, and why they should

The most likely reason why most patients do not exercise after heart attack is that they either receive no advice to exercise or they are specifically advised against exercising by their doctors. The rationale behind either of these approaches has been defined and discussed. In essence, exercise after heart attack is held to be too dangerous, too expensive and of no proven benefit. In addition, it is argued that there are no medical personnel to spare on the survivors of heart attacks, because such personnel are already too busy looking after the acutely ill. Each of these criticisms has been debunked elsewhere and will therefore not be restated. Suffice it to say that such criticisms may reflect a serious malaise of modern medicine, namely its monopolization by so-called "curative medicine" to the total exclusion of preventive and rehabilitative medicine. One important result is that our modern "scientific" approach to the evaluation of a novel therapeutic intervention, such as exercise, is to evaluate that intervention exclusively on the basis of whether or not it plays a curative role in a specific disease process. Thus we demand that there must always be a scientifically-testable endpoint against which any new intervention must be evaluated; in the case of exercise after heart attack, such exercise must be shown to reduce the re-infarction rate and increase longevity. As long as these remain the sole criteria for evaluation, then the role that exercise can play in the rehabilitation of cardiac patients will never be fully appreciated.

For the simple reason that this "scientific" attitude runs quite contrary to what should be an inviolate medical attitude namely that medicine is as much the art of healing as it is the science of curing. With regard to coronary heart disease, there is as yet no proven method by which the primary pathological process in this disease, coronary aththerosclerosis, can be reversed. Nor is there any known method by which the infarcted myocardium can be restored. Thus modern medicine has little science with which to cure this disease and it is therefore illogical to expect that exercise can achieve this.

What exercise rehabilitation achieves for the cardiac patient relates to the threatened medical art of healing. Healing is the treating of the patient's illness, which is simply the mental response to the disease. Healing is the art of decreasing symptoms, of enhancing the patient's sense of physical and psychological well-being, of restoring the whole person. Unfortunately, these changes are not easily, nor frequently, measured. They do not show on blood tests, on chest X-rays, on coronary angiograms, on electrocardiograms, or even on tests of heart function. Yet we would be wrong to assume that these important changes do not occur in exercising cardiac patients. For it may be that the exercise rehabilitation of the cardiac patient achieves two benefits that no doctor and no bottle of pills can.

First, exercise rehabilitation makes the patient an active and aware participant in his own recovery. Coronary disease is believed to be a lifestyle disease and successful rehabilitation must aim to alter the negative aspects of each patient's lifestyle. No physician can legislate an altered lifestyle for his patient. The only person who can successfully achieve that is the patient. But if the patient chooses to remain a pill-popping spectator, who continues to smoke heavily, who continues to eat incorrectly and who continues to work excessively, his prognosis must remain grave.

What the correct exercise rehabilitation programme does then, is to alter the patient's self concept. It teaches him that he must look after his body in the same way that the athlete does. He must consider how his daily habits affect his physical and mental performance. Fortunately, regular exercise provides immediate, daily feedback. If the patient over-indulges in any of the detrimental lifestyle pursuits described above, they will adversely affect his exercise capacity.

Second, exercise training shows the patient that he is not physically crippled. A fundamental component of his disease is that the cardiac patient views his disease as a physical, not a psychological disability. Thus the psychological trauma that the patient experiences after a heart attack relates mostly to his fear that his heart...
whether or not exercise training includes subsequent mortality in coronary patients. First, most rehabilitation studies do not contain adequate control groups — that is, patients are not randomly assigned to an exercising or to a control group. Rather the mortality experience in the exercising group is compared to mortality in a "comparable" group.

Second, those rehabilitation programmes which have had adequate randomized control groups have used either relatively homeopathic exercise doses or have had a poor exercise compliance record. To complicate the issue, the "non-exercising" control cardiac group has frequently become polluted with cardiac patients who take up exercise of their own accord. Despite these limitations, it is possible to state that (i) in virtually every reported study, the mortality rate amongst exercising cardiac patients is less than in the control group, (ii) in no studies is mortality rate in the exercising group greater than in the control group, (ii) studies that have failed to show any benefit for the exercising group have used a low intensity exercise, have been associated with a high drop-out rate and have been of short duration (less than 2 years). Thus the most recent data suggests that differences in mortality rates between exercising and control cardiac patients become more marked after 2 years of fairly intensive training.

However, more recent studies have provided more optimistic results. Thus in a carefully controlled study Kallio et al. showed an almost immediate reduction in the coronary mortality of cardiac patients admitted to an intensive educational/exercise rehabilitation programme after their first heart attack. The recently reported National Exercise and Heart Disease Project found evidence for a "substantial benefit from exercise" after heart attack, and Kavanagh et al. reported that patients who failed to comply with an exercise rehabilitation programme after a first acute myocardial infarction or coronary mortality than did those who continued to exercise. There was no evidence that this remarkable difference could be explained on the basis that the most disabled patients, at high risk of recurrence, were too ill to comply with the programme. The reasons why these patients failed to continue in the exercise programme had nothing to do with progression of their disease.

But despite these considerations, my personal impression is that cardiac patients in an exercise rehabilitation programme are not greatly concerned about questions of longevity. As one cardiac patient said: "I'm not going to live longer. I'm jogging because it's made me fit, and I can now enjoy certain pleasures in life that have always been important to me. I no longer have feelings of isolation when I stay up late at night, and I can play longer and harder than ever before, and for me that's what living is all about." 3-5

In the following issue's column, certain guidelines for the development of exercise rehabilitation programmes for cardiac patients will be presented. (Continued next issue).

References