Improving quality of life for patients with angina pectoris: a team approach to disease management.

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Abstract:

The evaluation of outcome of management of angina patients is now inextricably linked with an assessment of quality of life. Angina, as a manifestation of coronary heart disease, is a major cause of morbidity and mortality in many countries. Optimal management of patients with angina is of undeniable national and global significance.

This paper attempts to indicate the importance of a team approach and the implications for patients' quality of life of involving professionals with a variety of different skills. It outlines current guidelines for the management of angina, including aspects of diagnosis, treatment and rehabilitation. Factors of relevance to the management of patients as individuals are discussed. The association of improved quality of life and reduced severity of symptoms with benefit for both the individual and society is considered.

Introduction

The management of patients with angina should aim to improve their quality of life in addition to seeking to reduce the morbidity and mortality associated with cardiac events.[1] The ultimate goal of rehabilitation programmes is to restore patients to their normal function, as existed prior to their development of the disease, and reduce their risk of subsequent cardiac problems.[2] The assessment of quality of life includes measurements of physical, social and emotional functions, though there is little agreement about how these three domains are operationally defined or combined.[3] A plethora of quality of life instruments exist and conclusions made about individuals' quality of life can depend on the instrument chosen.[4]

This paper seeks to outline how different facets of the continuum of management of angina impact on quality of life and to highlight the importance of a multi-professional and multidisciplinary team approach in improving outcomes for these patients. It examines guidelines for appropriate management and discusses principles which should be applied when managing individual patients.

Awareness of current knowledge of outcomes of a range of medical, surgical and psychological interventions should enable health professionals to work together to help patients with angina pectoris to achieve their potential for optimal quality of life. Good management not only benefits the individual by reducing the physical, psychological and social costs of the disease to themselves but it also has both direct and indirect financial benefits for the healthcare system and society at large.

This review has been written following a search of the Medline Database for articles written between 1997 and 2002 with keywords 'angina' and 'quality of life' combined. Further references have been sourced from these articles in an attempt to highlight

information with practical relevance to those involved in the care of these patients both in hospital and the community. It includes work which has been omitted from previous rigorous systematic reviews of particular areas within the wide spectrum of management of this disease.

Background

Coronary heart disease is a major cause of ill health and death in many countries of the world. Angina pectoris is one manifestation of this disease and it has been defined as a symptom complex typically experienced as central chest discomfort or pain and caused by the blood supply to the heart muscle falling short of its requirements. Atypical features of the symptom complex have been described but it is usually transient, provoked by exertion or emotion and relieved by rest.[5] Vivid descriptions of the symptom have been recorded in literature dating back over 200 years and its pathological basis and epidemiological features have been known for almost as long.[6]

Its presence has long been recognised as a significant risk factor for myocardial infarction and death [7] but the significance of angina to patients' quality of life appears to have been recognised only relatively recently.[8] Angina is itself a distressing experience and its management may include tremendous lifestyle change, medication, surgery and psychological intervention. The outcome of management has traditionally been measured using end points such as mortality and morbidity. However, the psychological impact of the disease and its management cannot be measured in these ways. Therefore, a stage has been reached whereby anyone assessing the outcome of any aspect of management must justify not including a measure of quality of life.[9] Valid and specific quality of life measurement tools will include evaluation of the perceived costs and benefits experienced by patients with angina.

Current guidelines for management of angina

Guidelines for the management of angina have recently been reviewed by a multidisciplinary Working Party in Britain:[1] their aims are two fold, aiming to improve both prognosis and quality of life.

Diagnosis

The first aspect of good management of the patient presenting with suspected angina is that their symptoms should be correctly diagnosed. A good history and examination should be undertaken, with attention being paid to relevant risk factors for coronary heart disease.[10] Examination and investigations should seek to identify relevant risk factors and possible correctable causes of angina which are not due to coronary artery disease, such as aortic stenosis, hypertrophic obstructive cardiomyopathy, anaemia or thyrotoxicosis.

Confirmation of the clinical diagnosis should be sought initially by a resting electrocardiograph (ECG): this has a low sensitivity in that it will not confirm the diagnosis in many patients who have coronary artery disease but if it is abnormal it identifies patients with a higher risk of myocardial infarction. Further testing to confirm the diagnosis may be done by exercise treadmill testing with electrocardiography or echocardiography or by myocardial perfusion studies. Coronary angiography is an invasive investigation which is expensive in respect of resources required and carries less than one per cent risk of serious complications: its use is reserved for those who are likely to benefit from its outcome, either in terms of exclusion of the diagnosis of coronary heart disease (eg vocational driving eligibility) or identification of suitability for revascularisation intervention.

Treatment

Having diagnosed the patient as having angina, the next step in management concerns giving advice and treatment in respect of controlling their risk factors for coronary heart disease.

Many risk factors for coronary heart disease have been identified. Some of these are regarded as (1) non-modifiable such as educational status, social mobility, social class, age, gender, family history and race, or (2) modifiable, such as smoking, obesity, sedentary lifestyle and perceived stress.[11]
Secondary prevention is worthwhile.[12] Patients should be advised that the risk of subsequent myocardial infarction and progression of coronary artery disease is reduced by stopping smoking, [13, 14] attending to dietary habit [15] and taking physical exercise.[16, 17] Stress management techniques can reduce angina [18] and the appropriate control of hyperlipidaemia, [19, 20] diabetes [21, 22] and hypertension [23. 24] also improves the prognosis for these patients. Thus, in addition to appropriate lifestyle advice patients with angina should be given appropriate pharmacological measures and the effect of these should be carefully monitored in order to provide optimal opportunity for patients to enjoy an improved quality of life.

Medical management for patients with angina should also include the provision of specific anti-anginal treatment. This includes both background medication which should be taken on a regular basis in order to prevent the occurrence of symptoms and treatment for immediate control of symptoms should they develop. Appropriate drugs which may be prescribed include nitrates, beta blockers, calcium antagonists and potassium channel activators.[10] The choice of medication will depend on the individual patient's other medical history and experience of side effects. Adequate instruction about the correct way of taking these medications must be given to the patient and confirmation of their correct understanding should be sought: a poor level of knowledge of treatment has been associated with poorer quality of life. [25]

The relevance of providing patients with adequate instruction concerning the use of their medication has been illustrated in a randomised controlled trial. Amongst a group of

patients who were given individually tailored advice by a research health visitor, increased frequency of physical activity and reduced frequency of episodes of angina were reported in association with increased use of nitrates on a prophylactic basis (prior to engaging in strenuous physical activity).[26] These patients also reported an improved quality of life in comparison with a control group of similar patients who were given only usual care and did not receive this educational intervention.[27]

For patients for whom balloon angioplasty is appropriate, such as those with single coronary artery lesions, recent guidelines produced by the National Institute for Clinical Excellence (NICE) recommend that these patients should be given a stent. The use of stents is associated with improved short term outcome and with a reduced rate of re-occurrence of angina.[28] Stents have made balloon angioplasty safer, with the avoidance of emergency coronary artery bypass grafting (CABG) which is a high risk procedure.

Surgical management of angina by CABG is recommended for those patients who have left coronary artery stenosis, three vessel disease or proximal two vessel disease with left ventricular dysfunction:[1] for these groups of patients long term survival is improved. Symptoms for other patients may be improved by surgical intervention but the cost effectiveness of this procedure in comparison to medical management has not been proven.[29]

However, waiting lists for treatments are perceived to be inevitable and cardiac surgery is no exception.[30] The evidence exists to show significant improvements in patients' quality of life after cardiac surgery, [31, 32] so concern is focused upon the effect of being on a waiting list on patients' quality of life. The research shows that cardiac patients on long waiting lists may encounter difficulties such as anxiety, depression, unemployment, income reduction and impaired physical and sexual functions.[33, 34, 35] These factors reduce quality of life and contribute to the cost of the disease to the patient. The detrimental effect can be increased if patients remain on the waiting list for longer than six months.[36] Every effort should be made to minimize the time interval between the decision to intervene surgically and the actual surgery in order to ensure maximal benefit for the patient and reduce their need for health service care.

Cardiac rehabilitation

Cardiac rehabilitation is a further aspect of good management of patients with angina. This involves early explanation of the disease, full involvement of the patient and their family in management, an approach to psychological aspects of the disease and long term reinforcement of lifestyle changes.[1]

Cardiac rehabilitation designed for patients with angina has shown beneficial effects,[37] including reduced frequency of angina and improved quality of life. Cardiac rehabilitation programmes have traditionally contained exercise training as a core component. A systematic review on cardiac rehabilitation concluded that exercise as a sole intervention

has impact on physical aspects of recovery, but effects on psychosocial aspects of recovery are unclear.[38] A combined approach of exercise, quality of life and educational interventions appears more beneficial than single modality interventions.[38]There is increasing recognition that psychotherapeutic components have a positive effect on outcome. A meta-analysis of the benefits of exercise based programmes found that the beneficial effects of psychotherapeutic methods on levels of anxiety and depression in patients with angina were greater than those of exercise training.[39]

Principles relating to management provision for individual patients

Specificity of advice

Lewin reports [40] that many patients with angina become increasingly disabled with angina over years. He states that it is important to provide specific advice and guidance about lifestyle changes and encourage them to return to as normal a life as possible. Fears such as that death is imminent, that even brief episodes of angina cause permanent damage to the heart and that risk factors cannot be controlled need to be addressed.

Patients should be encouraged not to abandon enjoyable activities. It is suggested that with better advice and guidance given close to the time of diagnosis fewer patients would lapse into a restricted and fearful lifestyle which leads to a reduced quality of life.

Health education tailored for individuals

Various psychosocial factors such as illness cognitions,[41] educational levels, [42] employment,[43] communality and motivation [44] have been reported as being associated with poor uptake of invitations to attend cardiac rehabilitation. These and other psycho-social factors have been reported as being associated with coronary heart disease [45] but there is little evidence of such factors being considered in routine clinical practice at present. [46] The need for programmes to be designed to take account of individual patient's different needs has been highlighted. [38]

There is evidence to suggest that there is value in providing patients with angina with an individual programme of tailored health education. A randomised controlled trial which compared the outcome of patients who received four monthly visits from a trained health visitor over a two year period with patients who received only the usual National Health Service care showed improvements in symptom frequency, lifestyle habits and quality of life, particularly in respect of physical activity and social isolation. The benefits of this programme, however, were less marked three years after this programme was discontinued and it is suggested that this finding indicates that there is value in health professionals continuing their contact with patients and giving individually tailored advice. [47]

The benefit of providing relevant education for patients with angina has been recognised also in other work.[48] Compliance with prescribed drug therapy and lifestyle advice is strongly related to patients achieving optimal quality of life.[49, 50] Education for their spouses or partners is also crucial in order that planned programmes of rehabilitation may be properly implemented and that misconceptions and fears of others may not adversely affect the patient.[51]

Psychological Factors

One extensively studied predictor of coronary heart disease is stress. It is suggested that potential stressors such as personal control/autonomy, job demands and social support predict coronary heart disease.[52] Type A behaviour is probably the most extenstively studied risk factor for coronary heart disease. The Type A behaviour pattern was described initially as a combination of excessive competitiveness, impatience, hostility, and vigorous speech.[53] Early research on Type A behaviour demonstrated a relationship between this behaviour pattern and coronary heart disease, [54, 55] but later studies did not support these.[56] Recently, research has suggested that more specific emotional components such as anger and hostility [57, 58] are the relevant risk factors.

The association of psychological factors with angina per se has been confirmed by ECG monitoring [59] and the relationship of objective exercise testing to patients' prognosis has been reported.[60]

However, the objective measurement of exercise capacity by treadmill testing is not related to patients' participation in normal activities such as housework, shopping or sexual activity.[61] Patients' perceptions of their cardiac limitations varied for different activities and in some cases were influenced by their doctors' advice.

These observations support the conclusion that cognitive behavioural interventions should be included as core components of cardiac rehabilitation programmes for patients with angina in order that their participation in normal activities of daily living should be encouraged. [62]

Compliance with Management

Psychological factors also influence the non–acceptance by patients of referral from primary care to secondary care for full assessment. Gardner reports qualitative work which outlines how patients' fears of technological testing and fatalistic perceptions of illness or perception of self control may prevent them from attending hospitals. [63] Some patients also described difficulty in communicating with some doctors, experiencing problems in overcoming perceived cultural gaps. These factors can contribute to patients' compliance with treatment [64] and therefore must be considered when the overall picture

is being painted for the management of patients with angina in primary care; they serve to emphasise how guidelines must not be perceived as mandatory protocols.

Social Inequality

The adverse impact of a cardiac event and of symptoms of angina on quality of life has been recognised in people from many different social backgrounds and countries.[8, 65, 66, 67, 68] Despite this recognition, inequality of care is currently received by patients with coronary heart disease in different social classes and different geographical areas.[2]

The gap between rich and poor in respect of levels of heart disease is widening. [69] This has at least two contributory factors: the rich receive more cardiac interventions, [70] both pharmacological and non-pharmacological (surgical) but it is also known that heart disease is more than twice as prevalent in low income areas compared to high income areas. Poor people are more likely to smoke cigarettes, eat diets containing fewer vitamins and more saturated fat and to take less exercise. Attention to social policy which takes account of peoples' living conditions, including their access to fresh fruit and vegetables, facilities for exercise, encouragement for abstinence from smoking and satisfactory working conditions, is a necessary investment for the prevention of heart disease. A recent discussion paper exploring a fiscal food policy stressed the need for interdisciplinary collaboration. [71]

Implications and recommendations for clinical practice

The implications of the development of angina for each individual patient are varied and may be immense. The cost of the disease not only involves adverse effects on quality of life and physical function but may include loss of income and costs of health care. There are associated costs for health services in terms of direct finance and allocation of scarce resources. Good disease management with improved quality of life will reduce patients' demands for these health services. Society at large will consequently benefit from the release of resources for use in other areas of need and from the continued contribution of patients with angina to their social sphere at work and home.

The focus of recommendations for future clinical practice involves rehabilitation programmes with multi-professional and multidisclipinary teams working together to benefit the patient and reduce the cost of this disease to society.

Rehabilitation

Within Britain the National Service Framework for Coronary Heart Disease recommends a quality of care target for inviting all patients with a myocardial infarction to attend a

programme of cardiac rehabilitation.[2] Collection and analysis of quality of life data in relation to those patients should help in the assessment of whether the extension of this invitation to include all patients with angina would be cost effective.

A potentially vast increase in numbers of patients attending rehabilitation classes may make it difficult to accommodate these within hospitals. Community based programmes have been developed in some countries [72] to encourage the principles and practice of rehabilitation in settings outside of hospital. Self help programmes have also been developed, whereby the patient may use a manual to progress their rehabilitation to normal functioning with the help of a trained nurse or health visitor visiting them in their own homes or in community groups. [40, 73] We would suggest that it would be of value to include quality of life measurement in routine monitoring of patients involved in these programmes. Analysis of such data would be important in assessing not only patient outcomes but also the effectiveness of these programmes.

Teamwork in patient management

Indications for patients to be referred to a specialist cardiologist include uncertainty about the diagnosis, objective assessment of the severity of the disease, rapidly increasing severity of symptoms and failure of symptom control on maximal medical therapy. Estimates of the current rate of referral of patients with angina vary [74] but the recently issued National Service Framework for Coronary Heart Disease [2] includes specific targets which aim to reduce inequality in this aspect of health care. It is suggested that these are applicable globally. All patients with symptoms of angina or suspected angina should receive appropriate investigations and treatment to relieve their pain and reduce their risk of coronary events. All patients with established cardiovascular disease should be identified and offered comprehensive advice and treatment to reduce their risks.

The need for primary care and hospital personnel to work together as a team in providing appropriate management for these patients must be emphasised. This current review has illustrated the necessity to consider input from general practitioners, physicians, surgeons, psychologists, nursing staff, pharmacists, rehabilitation therapists and social care professionals in the management of patients with angina in order to optimize their quality of life. The role of each of these professionals in each patient's individual management must follow an integrated and coordinated model of care.

Patient Benefits

The routine collection of quality of life information should allow scarce resources to be directed towards those most in need of extra help. For each patient, an improvement in quality of life in chronic disease is associated with a reduction in other chronic health problems. [75] While it is impossible to place a monetary value on gains in quality of life for the patient, it is obvious that a reduced need for health services will have financial benefits for society at large and the national economy.

Conclusion

This paper has outlined the relationship between quality of life and the development, diagnosis and management of angina pectoris. Improvement of quality of life for patients with angina may be achieved if appropriate attention is paid to the wide variety of psychosocial and other lifestyle factors which influence angina and to the recognised co-morbidities which are modifiable by drug therapy. In the future, by the introduction of publicly stated targets for quality of care, the development of a structured teamwork approach and the recognition by health professionals of the implications of individual patients' needs, achievement of optimal quality of life will be enhanced for patients with angina pectoris. The consequent benefits will include reduced direct and indirect costs of this disease to health services and society at large.

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