

Management of angina pectoris in general practice: a questionnaire survey of general practitioners

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SUMMARY

Background. Little is known about the current management of angina pectoris in general practice.

Aim. This survey set out to assess general practitioners' perceptions of current investigation and treatment for angina pectoris.

Method. A postal questionnaire was sent to all 217 general practitioners listed with the Hampshire Family Health Services Authority who have access to a regional cardiac centre in Southampton.

Results. The response rate was 79% (171 of 217). The majority (80%) of general practitioners reported referring 10% or fewer of their patients with angina to a cardiologist at the regional centre, and 72% reported referring a quarter or fewer of their patients to a hospital physician. Most (77%) considered an exercise test useful for diagnosis of angina, but almost half (47%) were uncertain about its prognostic value. Most respondents (79%) were not confident of interpreting the results of an exercise test. The majority (79%) believed that there was scientific evidence to show that coronary angioplasty relieves symptoms and 21% were of the opinion that it prolongs survival. Ninety six per cent believed coronary artery bypass grafting relieves symptoms and 62% that it prolongs survival.

Conclusion. General practitioners do not appear to refer the majority of patients with angina pectoris for hospital investigation, and express divergent and contradictory opinions about exercise testing and the scientific evidence for the benefits of coronary angioplasty and coronary artery bypass surgery. Easier access to cardiological investigation and population based data about the value of exercise testing and survival benefits from coronary intervention are required to optimize selection of patients in the community who are most likely to benefit from coronary revascularization.

Keywords: angina; diagnosis; management of disease.

Introduction

ANGINA pectoris affects about two million men and women under the age of 65 years in the United Kingdom and is

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associated with significant morbidity and mortality.¹⁻³ A patient with angina consults a general practitioner two to three times a year,⁴ and has a threefold increased risk of developing unstable angina, myocardial infarction or cardiac death within two years of first presentation.⁵ Almost half of these deaths are sudden.⁶

The management of angina has altered radically over the past two decades. In the past a prescription of sublingual nitrates sufficed,⁷ but with the advent of revascularization and its benefits in relieving symptoms,⁸ improving quality of life⁹ and prolonging survival¹⁰ in selected patients, the onus is now on general practitioners to refer patients with angina for cardiological evaluation with a view to coronary angioplasty or bypass surgery.

There is little information about the management of angina in general practice in the 1990s. The aim of this questionnaire survey was to assess general practitioners' current opinions about the investigation and treatment of angina. Specifically, the aim was to assess general practitioners' perceptions of the value of exercise testing, coronary angioplasty and coronary artery bypass grafting and to estimate the proportion of patients who are reportedly referred for a consultant opinion. The responses provide an incentive for research in developing a population-based strategy for the management of new patients with angina pectoris.

Method

Between April and August 1992 all 217 general practitioners on the list of the Hampshire Family Health Services Authority in the Southampton area were invited to complete a postal questionnaire about clinical aspects of angina pectoris. The questionnaire was accompanied by a letter from D W. All the doctors practised within 15 miles of a regional cardiac centre. To maximize response rates, a follow-up questionnaire was posted after three weeks if no reply had been received. Confidentiality was maintained by number-coding the questionnaires.

Questions were posed about the value of symptom frequency and duration as a guide to disease severity, about the usefulness of exercise testing for various indications, about the ability of general practitioners to correctly interpret a resting and exercise electrocardiogram, about the existence of scientific evidence for the benefits of revascularization, and about the proportion of patients with angina referred for cardiological assessment.

Results

A total of 171 general practitioners returned the questionnaire (response rate 78.8%).

The importance attached to the frequency and duration of angina symptoms as a guide to severity of underlying coronary artery disease was variable. About half of the general practitioners considered frequency (83/171, 48.5%) and duration (78/170, 45.8%) of angina symptoms to be a reliable guide to disease severity, but an equal number did not.

Resting and exercise electrocardiogram

The reported confidence of 169 respondents at correctly interpreting a resting electrocardiogram for signs of ischaemia and

infarction varied with three quarters stating they were usually (67.5%) or almost always confident (7.7%), but a quarter stating that they were only sometimes (18.9%) or almost never (5.9%) confident. By contrast the majority of 165 respondents were almost never (55.8%) or only sometimes (23.6%) confident at correctly interpreting an exercise electrocardiogram, with 20.6% stating that they were usually or almost always confident.

The majority of 171 respondents thought an exercise test was frequently (40.9%) or always (35.7%) useful in making a diagnosis (the remaining 23.4% stating sometimes useful). However, only half of 168 respondents considered it frequently (32.1%) or always (20.8%) useful for assessing prognosis in patients with angina (28.6% stated sometimes useful, 6.5% never useful and the remainder did not know). In assessing other indications for exercise testing, the percentage of general practitioners who gave ratings of frequently or always useful varied from 7.6% (13/170) for screening asymptomatic patients, through 45.3% (77/170) for reassurance, to 78.4% (134/171) for selecting patients for coronary angiography.

Revascularization

The majority of 169 general practitioners believed there was scientific evidence to show that coronary angioplasty relieves symptoms (79.3%), and of these, 70.9% (95/134) thought this applied to all age groups. In addition, of 168 respondents, 20.8% were of the opinion that coronary angioplasty prolongs survival. However 40.5% of 168 general practitioners were unaware of what the current evidence was in relation to angioplasty and survival, and 38.7% did not believe angioplasty prolongs survival.

There was a consensus among 168 respondents that coronary artery bypass surgery relieves symptoms (95.8%), and the majority (70.2%) considered this to be the case for all age groups. But there was uncertainty about improved survival with bypass surgery and 38.3% (64/167) either did not know or thought there was no evidence for this. Among the 103 respondents who thought bypass surgery prolongs survival, 45.6% considered this to be the case for all age groups but about a third (32.0%) thought the evidence applied only to the under 65 years age group (the remainder did not know).

Hospital investigation

In deciding whether or not to refer patients presenting with angina for cardiological assessment, frequency and duration of symptoms were considered important by 92.9% and 78.0% of 168 respondents, respectively. While age was considered very important by 67.6% (115/170), sex was of little or no importance to 71.6% (121/169) of general practitioners when deciding to refer a patient to a cardiologist.

Table 1 shows estimates of the proportion of patients with stable angina referred for investigation. Seventy two per cent of the general practitioners reported referring a quarter or fewer of all their patients with stable angina to a hospital physician. Fewer patients were reportedly referred directly to a cardiologist at the regional centre, with 80.4% reportedly referring a maximum of 10% of patients. When patients with angina were referred to an outpatient clinic for an exercise test, 46.4% of 140 general practitioners reported a period of three months or longer before the results and management plan became available.

Discussion

This survey reveals striking differences in opinion among general practitioners about the significance of symptom character-

Table 1. Reported proportion of patients with stable angina referred to a general hospital physician or to a cardiologist at the regional centre.

Reported percentage of patients referred	% of GPs	
	Referral to physicians (n = 164)	Referral to cardiologist (n = 163)
None	8.5	30.7
10%	26.8	49.7
25%	36.6	12.9
50%	17.7	6.1
75%	7.9	0.6
All	2.4	0

n = number of respondents.

istics, the value of exercise testing, and the benefits of revascularization in patients with angina pectoris.

While there was a high response rate to this survey, just over a fifth of general practitioners did not participate and the management policies of these non-respondents are not known. Among the respondents no distinction was made by year of graduation, possession of postgraduate diplomas or degrees, or whether the practice was fundholding or not, although these factors could influence the reported responses. If the respondents differ from a national sample of general practitioners they are likely to be less heterogeneous, and therefore the variation in management of angina among other practitioners is likely to be at least as great as that found here.

The majority of general practitioners reported referring only one quarter or fewer of their patients with stable angina to a hospital physician, and one 10th or fewer to a cardiologist at the regional centre. These findings of self-reported referral practices are consistent with those of a cross-sectional survey which showed that of patients receiving medical treatment for angina from their general practitioner, only 19% had attended a hospital medical clinic, 7% had had an exercise test, and 4% a coronary angiogram during a six month study period.¹¹ The low referral rates are surprising because most general practitioners were in agreement about the usefulness of an exercise test for establishing a diagnosis, and about the effectiveness of coronary angioplasty and coronary bypass surgery for relieving symptoms.

While most general practitioners considered symptom frequency and duration important in deciding whether or not to refer a patient for further cardiological investigations, about half did not consider these characteristics to be a reliable guide to underlying coronary artery disease severity. Subjective assessment of symptoms is variable and, in general, symptoms are a poor guide to disease severity and long term prognosis.¹²

Functional capacity of patients presenting with suspected angina can be objectively evaluated with a treadmill exercise test. An exercise test is also useful for risk stratification in such patients.¹³ This survey revealed that only half of general practitioners thought an exercise test was useful for assessing prognosis in patients with angina. This contrasts with a questionnaire survey of family physicians in the United States of America (response rate only 34%) in which 215 of 265 physicians (81%) felt that a non-invasive stress test should be performed as part of the initial management of a patient with angina.¹⁴ In that survey, however, fewer than 40% of primary care physicians accepted any given strategy for using the test result to make a decision about secondary or tertiary referral, that is, they seemed to know when to order the test but were uncertain as to why they were ordering it and disagreed on how the test results should be used.

In patients in whom the diagnosis of angina is clear, good exercise performance usually means a good prognosis but poor performance is associated with increased risk of subsequent coronary events.¹⁵ The exercise test thus helps to determine which patients should be referred for coronary angiography with a view to angioplasty or bypass surgery. Angioplasty relieves symptoms but is associated with a restenosis rate of 25–30% within six months of the procedure, and has not been proven to prolong life. On the other hand, coronary artery bypass grafting relieves symptoms and improves survival in selected patients depending on coronary anatomy.¹⁶ General practitioners in this survey seemed uncertain about the scientific evidence in relation to coronary intervention. While a fifth were not sure whether or not coronary angioplasty relieves symptoms, a similar proportion erroneously believed that angioplasty was proven to improve survival. Differences in perception of results from clinical trials inevitably lead to variation between general practitioners in the management of angina in the community, and are further compounded by disagreement among specialists about the appropriateness of coronary intervention.¹⁷ A major drawback in setting up guidelines for angina management in primary care is the notable lack of data regarding the prognostic value of exercise testing and survival benefits of coronary intervention procedures for community based angina patients. Results from small series of selected 'survivors' who reach the tertiary cardiac centres cannot be applied to the generality of angina patients in the population.

What is clear however, is that the prognosis of new patients presenting with angina in the community is not benign,³ and that both men and women have a three-fold increased risk of developing unstable angina, myocardial infarction or death within two years of first presentation.⁵ A joint committee of the British Cardiac Society and Royal College of Physicians has therefore recommended that all newly diagnosed patients with angina under the age of 70 years should have access to cardiological referral with a view to exercise testing, and that the target time for secondary referral of patients with stable angina which is well controlled by medication should be less than three months.¹⁸ In addition, the committee recommends specialist referral for all patients with severe or progressive symptoms and for patients whose symptoms are inadequately controlled by medical therapy.

With the incidence of stable angina alone estimated at 22 600 new cases per year in the United Kingdom,³ it is clear that cardiology outpatient clinics will be swamped if general practitioners refer all patients with stable coronary heart disease for evaluation. Access to cardiological investigation could be improved by open access exercise testing facilities provided such services were supervised by clinicians trained to interpret the test. This survey shows that most general practitioners are not confident of interpreting an exercise electrocardiogram, therefore a service managed solely by cardiac technicians would be inappropriate.¹⁹

Instead of relying solely on a subjective assessment of the patient's symptoms, an open access service can provide objective data based on an exercise electrocardiogram which allows the general practitioner to retain his or her important role of rationing secondary referral. Thus, for example, patients with angina who attain a low workload on a treadmill exercise test could be prioritized for referral to a cardiologist to consider coronary revascularization.²⁰

Open access cardiological services such as chest pain clinics and exercise electrocardiogram facilities already exist in many parts of the country. Formal evaluation of such facilities through randomized clinical trials is now urgently required as a first step directed at optimizing the selection of patients with angina pectoris in the community so that coronary intervention can be offered to those who need it most.

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