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BMJ 2003;326:196–200

Barriers to accurate diagnosis and effective management of heart failure in primary care: qualitative study

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Abstract

Objective To ascertain the beliefs, current practices, and decision making of general practitioners in the diagnosis and management of suspected heart failure in primary care, with a view to identifying barriers to good care.

Design A qualitative approach using focus groups with 30 general practitioners from four primary care groups. The sampling strategy was stratified and purposive. The contents of interviews were transcribed and analysed according to the principles of “pragmatic variant” grounded theory.

Setting North east England.

Results Three categories of difficulties contribute to variations in medical practice and to the reasons why general practitioners experience difficulties in diagnosing and managing heart failure. The first is uncertainty about clinical practice, including lack of confidence in establishing an accurate diagnosis and worries about using angiotensin converting enzyme inhibitors, β blockers, and spironolactone in patients who are often elderly and frail, with comorbidity and polypharmacy. The second is a lack of awareness of relevant research evidence in what was perceived to be a complex and rapidly changing therapeutic field. Doubts about the applicability of research findings in primary care, and fear of information overload also emerged. The third category consists of influences of individual preference and local organisational factors. Medical training, negative clinical experiences, and outside agencies influenced the behaviour of general practitioners and professional culture. Local factors included the availability of diagnostic services, resources (such as accessible cardiologists), and interactions between professionals in primary or secondary care, and they seemed to shape the practice and decision making processes in primary care.

Conclusions The national service framework for coronary heart disease stresses that the substandard care of patients with heart failure is unacceptable. This study identified barriers to be overcome across primary and secondary care in implementation strategies that are specific to the locality and multifaceted. Single strategies—for example, the provision of guidelines—are unlikely to have an impact on clinical outcomes, and new, conjoint models of care need to be explored.

Introduction

Heart failure is common, increasing in prevalence, and has high morbidity and mortality akin to common cancers.¹ It is managed largely in primary care, imposing a heavy burden on the NHS, and accounts for 5% of admissions to medical wards, with high readmission rates.^{2–3}

Diagnosis by clinical assessment is difficult and is correct in less than half of cases confirmed by echocardiography.^{4–5} Heart failure is poorly managed in general practice for many reasons: uncertainty about diagnosis^{6–7}; lack of access to diagnostic services⁸; lack of awareness of research evidence and guidelines^{9–10}; worries about adverse effects, cost, and inconvenience of angiotensin converting enzyme inhibitors⁹; and poor communication between professionals in primary and secondary care⁷ lead to variable practice, and the reasons for this variability need to be elucidated further.

Much of the current evidence on how to diagnose and manage heart failure comes from a secondary care perspective, where the difficulties of primary care, including differences in patient populations, are not necessarily appreciated. Studies have usually relied on quantitative methods, with little exploration of the complexity of general practice and its relations with patients and secondary care.^{8–9}

This study aimed to ascertain the beliefs, current practices, and decision making of general practitioners around the diagnosis and management of suspected heart failure in primary care, with a view to identifying barriers to optimal care.

Methods

Focus groups with general practitioners were our chosen format for the study, which was set in north east England, an area with a population of 617 532 and with 316 general practitioners in 88 practices. We used a mixed purposive sampling strategy to select participants.¹¹ Stratification of general practitioners allowed proportionate representation of sex, ethnic group, geographical distribution, employment status (part time or full time), and practice size (group or singlehanded) and avoided selecting general practitioners from the same practice. We organised four focus groups which consisted of six to eight participants.

The 30 participants (25 men, overall age range 33-64 years, years since graduation 10-42) represented a wide range of practice size and length of experience, including three singlehanded practices. Twenty seven doctors worked full time and three part time; 20 (66%) had open access echocardiography.

Analysis

We analysed the contents of the interviews following the principles of "pragmatic variant" grounded theory (see bmj.com for details).^{12 13}

To validate the findings we sent all 30 participants a report summarising the study results and conclusions.¹⁴ Of 28 respondents 27 "strongly agreed" or "agreed" and one "neither agreed, nor disagreed" that the report was an accurate representation of their opinions and the group outcomes.

Results

We identified three themes that contributed to reasons for the variation in medical practice and why general practitioners experienced difficulties in diagnosing and managing heart failure: firstly, uncertainty about clinical practice, including the availability and use of echocardiographic services; secondly, lack of awareness of relevant research evidence; and thirdly, influences of individual preferences and local organisational factors.

Uncertainty about clinical practice

Most participants expressed a lack of confidence in establishing the diagnosis of heart failure. This affected the management of individual patients. Three main categories were identified: the diagnostic process, availability and use of echocardiography services, and treatment issues.

The diagnostic process

Heart failure was perceived to be a difficult diagnosis to make in general practice because of:

- Problems with subtlety of clinical symptoms and signs: "Some of the clinical signs, if you have a raised JVP or third heart sound, hepatomegaly, are often difficult in the obese to detect, and ankle oedema is common anyway."
- Difficulty in differential diagnosis, especially in elderly patients with comorbidity such as chronic obstructive airways disease and obesity: "I think heart failure would be not too difficult a subject if it occurred in young fit people but the biggest problem is that it's always inevitably older people who get it. It's a co-pathology intermingled with other things, and that makes it often quite difficult to disentangle."
- Time constraints and generally increasing clinical and administrative workload for general practitioners: "20 plus patient surgeries, and having to try and stick to close to 10 minutes, it can be quite difficult to do a really full assessment."
- Lack of availability of diagnostic tests, including electrocardiography, chest radiography, and echocardiography, and lack of confidence in interpreting the results of these: "You get a kind of slightly reduced ejection fraction, and you know an iffy tricuspid valve or two, and you know you're not really that much further forward."

- Inertia or fear of initiating action because of anxieties about committing to an intensive course of action, including investigations, initiation, titration, and monitoring of treatment: "I think it's the milder degrees of heart failure ... that is the difficulty. But once you've diagnosed it you're committed to a course of action, and I suppose it seems quite a drastic course of action, you've obviously got the diuretics, ACE inhibitors, and possibly other medication as well, full investigations, and I suppose that could lead to a bit of inertia, couldn't it?"

- Patients' choices, including reluctance to be investigated or treated further: "Some patients obviously don't want to be hospitalised or don't want a second opinion, and sometimes don't want to go to hospital, so you end up treating them yourself."

Availability and use of echocardiography services

Perceived handicaps included the variability of open access echocardiography in the same locality; two thirds of the participants had this facility. Some of the inequity resulted from the continuation of access acquired previously by general practice fundholders. Several of the open access services had been funded through pharmaceutical sponsorship but disappeared as "monies dried up." A further perceived problem was variability in echocardiography reporting, some by technicians and some by clinicians, and a lack of guidance for using the procedure or for standardising request forms.

Difficulties for general practitioners concerning echocardiography

Some general practitioners did not use open access echocardiography even when it was available, chiefly because of not being able to understand it and the inconvenience caused to patients who were often very ill. The reasons given included:

- Uncertainty about the importance of results and interpretation of technical reports.
- Not being able to cope with echocardiography, many preferred to refer the patient to a consultant: "I would rather refer than do an echocardiogram, the interpretation of which I am not confident with."
- Distance to nearest echocardiography clinic may inconvenience patients: "It takes a whole day to go to hospital, and for an elderly person with breathlessness that's a long day, ambulance there and back, sit in a waiting room, and patients do it once and they won't do it again, and they don't all have relatives to take them in."

General practitioners were less likely to use open access echocardiography when reports were technical and lacked a clinical opinion than when a clinician guided report was available. Apprehension was expressed about overloading cardiology services, especially with patients who seemed well.

Treatment issues

Uncertainty about diagnosis cast doubts on the development of strategies for individual treatment of patients. The treatment process was an area that entailed further barriers to evidence based practice.

Doctors had good awareness of non-pharmacological advice and interventions (such as weight reduction, tailored exercise, restriction of salt

intake) for patients with heart failure.¹⁵ Most participants agreed the importance of educating patients, but some expressed concerns at informing patients about the diagnosis as this might lead to anxiety.

Concerns about using ACE inhibitors in general practice

Although attitudes were felt to be changing, worries still surrounded the use of angiotensin converting enzyme (ACE) inhibitors, especially about starting treatment in primary care as opposed to in hospital, partly because of previous teaching and a fear of side effects, mainly hypotension, in the community setting:

- Concerns about the use of angiotensin converting enzyme inhibitors in elderly patients and those with renal impairment and worries about side effects including cough, postural hypotension, and renal failure: "I'm not too sure exactly at what degree of renal impairment one should worry too much."
- Polypharmacy and drug interactions was considered a barrier, especially in elderly patients: "The other thing that raises its head is polypharmacy here, where you have got your people who have been chewing their aspirin for years, that a lot of these will be on statins and antiarthritic drugs. You've got your ACE inhibitors and diuretics. Well that's five or six [drugs], and I think you're going to have rebellion on your hands from people who say they are on far too many tablets..."
- Ageism was flagged up as a consideration in all four groups: "I think there is an ageist agenda with it as well because you know somebody of 60 who has got heart failure you're going to be much more aggressive with than someone who is 78, not just in terms of making the diagnosis but the investigations and treatment."
- A few general practitioners were happy to keep patients taking diuretics and "spare them the ACE inhibitor unless they are getting worse."
- A minority's perception was that diuretics alone are "OK in mild heart failure."

Barriers to achieving optimal doses of angiotensin converting enzyme inhibitors in general practice

Even if treatment with angiotensin converting enzyme inhibitors was initiated in primary care, a further barrier was the inability to attain the recommended doses as in major studies and guidelines¹⁵:

- Worry that the diagnosis of heart failure was incorrect: "But it worries me that if you are pushing the ACE inhibitors up to the maximum dose, which you are recommended to do, that you've got your diagnosis right in the first place."
- Although some awareness of the benefits of high dose existed, a lack of knowledge of target doses used in major trials became apparent.
- Worries were expressed about "huge doses" leading to side effects and intolerance.
- Reluctance to increase dosage if patient was asymptomatic or stable: "If you've got someone who is stable, you're sometimes a bit reluctant to increase the dosage of any medication if the condition is well controlled."
- It was assumed that it may be more difficult to increase dosage "if already been on a low dose for a while."
- Awareness of the use of β blockers in heart failure was widespread, but a unanimous feeling was that it

should be a "hospital initiated thing," because of a fear that patients might collapse in the community setting.¹⁶ Most general practitioners mentioned medical school teaching that emphasised that β blockers were contraindicated in heart failure.

- Most general practitioners indicated that they were unaware of the place for other agents including spironolactone and angiotensin II antagonists in treating heart failure¹⁵; and in spite of its previous use over many centuries digoxin posed a problem: "I'm not (even) up to speed with spironolactone or β blockers yet." A common response was: "Digoxin: I wouldn't use it in sinus rhythm."

Lack of awareness of relevant research evidence

All focus groups discussed their views on the dissemination of research evidence, guidelines, and applicability of evidence in primary care. Overload with information was seen as a common cause of stress. Many worried about the "rapidity of change in all fields" and "keeping up to date with changes" but believed that "[we] owe it to our patients" to be in touch.

Existing guidelines about the diagnosis and management of heart failure and treatment with angiotensin converting enzyme inhibitors were not familiar to most participants. To some extent this was due to "guideline fatigue"; one general practitioner felt "bombarded and bamboozled by guidelines."

Specific to heart failure was the lack of awareness of the importance of confirming left ventricular systolic dysfunction, differences between systolic and diastolic heart failure, and the importance of the NYHA (New York Heart Association) classification—a system of grading the severity of heart failure—in categorising heart failure. A lack of knowledge became obvious as to how this classification could be used to provide a prognosis and guide management.

A feeling predominated in some quarters that heart failure should be managed in secondary care.

Influences of personal preference and local organisational factors

Medical training, anecdotal experiences, and outside agencies (health authorities, primary care trusts, and the pharmaceutical industry) emerged as influences on individual clinicians' behaviour and professional culture. In some instances this was deeply entrenched and perversely affected newer influences. An example of this was a participant from a large teaching practice who justified his reluctance to refer all patients for echocardiography; the factors behind this are likely to be complex and to do with coming to terms with a rapidly changing medical environment: "I got through the whole of hospital training, and we didn't use echocardiograms. In cardiology we managed everyone with heart failure without an echocardiogram."

Local organisational factors around the provision of diagnostic services, such as open access echocardiography, resources, lack of cardiologists, and professional interactions between primary and secondary care shaped practice and decision making processes among general practitioners. A locality based, contextualised approach was found acceptable.

Waiting lists and the local availability of consultants influenced the general practitioner's decision in

relation to the referral to cardiologists of patients with suspected heart failure: "Being pragmatic you look at waiting lists, we've got some very good geriatricians who have excellent clinical skills, and certainly, if the patient has got multiple pathologies, I would have no hesitation in referring to them."

Discussion

This study provides information about the difficulties perceived by general practitioners in achieving accurate diagnosis and instituting modern treatment.¹⁵

The most accurate method of diagnosis entails the use of echocardiography, but this study confirmed a variation in its availability and discovered that practitioners were not confident about interpreting results.¹⁷ At the same time a reluctance to refer to a consultant for a definitive diagnosis prevailed because of a fear of overloading services and a continuing perception that heart failure remains a problem to be dealt with in primary care.

Perceived advantages and disadvantages of modern management

Diagnosis and management of heart failure have evolved dramatically, such that they rely on specialised investigations and drug regimens that often require specialist input. Clinicians who trained in the distant past have essentially not come to terms with the more modern approach. In turn, services to capitalise on modern management have been insufficiently developed.

Paradoxically, the general practitioners appreciated the benefits of modern treatment shown in large scale trials, particularly those of angiotensin converting enzyme inhibitors.¹⁵ Polypharmacy was viewed particularly negatively. Although chronic heart failure is serious and progressive and appropriate drug intervention proved to be beneficial, many clinicians do not find it easy to judge the extent of worthwhile returns in older patients with underlying problems such as ischaemic heart disease. Patients whose heart failure has already been diagnosed, who seem stable having conventional treatment but who might benefit from newer interventions,¹⁶ also posed a dilemma; many clinicians were reluctant to initiate newer treatments that may have been around for decades, such as digoxin and spironolactone.¹⁵

Suboptimal care often results from factors outside the immediate control of the general practitioner.¹⁰ Local circumstances such as resource allocation, priorities, and attitudes of consultants are crucial. This study confirms that general practitioners perceived this to be the case for heart failure. The increasing involvement of primary care in planning local services through primary care trusts may alleviate this problem, providing the trusts can work effectively with secondary care providers.

A dilemma is inherent in the management of heart failure. Advances in science have outstripped the ability and capacity of NHS delivery systems; rapidly changing therapeutic paradigms have confused clinicians, sometimes because drugs previously regarded as dangerous, such as β blockers, are new cornerstones, and others expelled from the arena, such as spironolactone, are back in vogue. Previous

What is already known on this topic

Heart failure is a common condition with a high morbidity and mortality and is largely managed in primary care

Although modern management with accurate diagnosis and treatment improves prognosis considerably, unacceptable variations exist in the clinical application of current guidelines for heart failure

What this study adds

General practitioners lacked confidence in establishing an accurate diagnosis of left ventricular systolic dysfunction, even if open access echocardiography was available

Uncertainty about diagnosis led to poor uptake of evidence based treatment strategies for heart failure patients, and, despite awareness, reluctance to initiate modern treatment

Local organisational factors—NHS provision of diagnostic services, resources, and interaction between primary and secondary care—influence how general practitioners manage heart failure

Implementation strategies for heart failure management across primary and secondary care are needed that are specific to their locality and multifaceted

work has explored general reasons why general practitioners do not always implement best evidence.¹⁸ This study identified specific barriers that need to be overcome if aiming for state of the art management. Particular factors needing attention are better and clearer information, improved availability of tests and a useful translation of results from diagnostic methods, and expedient access to specialist advice in case of doubt. Strategies to achieve these objectives might include the development of heart failure clinics and involving general practitioners and nurses with a specialist interest in an integrated care pathway. The national service framework emphasises that substandard care for heart failure is unacceptable, and such new, conjoint strategies are needed urgently.¹⁹

We thank the general practitioners who participated in the study and Jane Pryzborski for transcribing the tapes. AF thanks his practice colleagues for their tolerance in covering his practice workload.

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Funding: Northern and Yorkshire Regional Health Authority, through a research training fellowship awarded to AF.

Competing interests: APSH and the Centre for Integrated Healthcare Research have received funding from Pfizer for educational meetings. AF has received reimbursement from Novartis, Pfizer, Aventis, Roche, Merck, and Merck Sharpe & Dohme Pharmaceuticals for attending conferences. AF has received speaker fees from Novartis, Servier, Bristol Myers Squibb, and Merck Sharpe & Dohme. JJM has received reimbursement for attending conferences from Roche, Aventis, and MSD.

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(Accepted 4 November 2002)

Identifying depression in primary care: a comparison of different methods in a prospective cohort study

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BMJ 2003;326:200-1

Depressive disorders are a major health problem in primary care, and at least half of these disorders remain undetected.¹ There are two recommended approaches to diagnosing depression in primary care: one is to perform routine screening, and the other is to evaluate patients only when the clinical presentation triggers the suspicion of depression. Our aim was to compare these two approaches, and to compare three different screening tools in order to evaluate which would be most appropriate for use in primary care. From among the many available screening tools, we selected three brief, self rating instruments: one disorder-specific (the depression module of the brief patient health questionnaire (B-PHQ, 9 items)),² one broad based (the general health questionnaire (GHQ-12, 12 items)),³ and one that is less restricted to both issues (WHO-5 wellbeing index (WHO-5, 5 items)).⁴

Methods and results

Eighteen primary care facilities participated in our prospective cohort study. The study protocol was approved by our local ethics committee. On one given day, all patients who presented in one of the practices were asked to complete the three screening questionnaires before seeing a doctor. The doctors who treated the patients remained blind to the questionnaire results until they had completed a brief "physician's encounter form" to indicate their clinical assessment of their patient's current diagnoses.

Within a period not exceeding six days after they had completed the questionnaires, the patients were contacted by telephone for a fully structured, standardised psychiatric interview (composite international diagnostic interview (CIDI)) conducted by a

trained psychologist blind to the screening results. We chose the composite international diagnostic interview as the reference standard because its reliability and validity have been established.⁵ The interviewing psychologists met a high standard of inter-rater reliability.

The main outcome measures were, firstly, the family doctors' performance in detecting depression without any tool to help guide diagnosis decisions and, secondly, the test accuracy of the screening questionnaires. We calculated sensitivity, specificity, and predictive values using two-by-two tables. We used two statistical tests to compare differences of characteristics of test accuracy (table).

For 431 patients, all screening questionnaires, the composite international diagnostic interview, and the physician's encounter form were completed. Of these patients, 17% suffered from any depressive disorder and 83% did not.

Comment

The sensitivity of the family doctors' unaided clinical diagnoses was 65%. With standard cut-off points, the briefest screening questionnaire (and therefore the most practical to use), the WHO-5, produced significantly greater sensitivity (93%) and a better negative predictive value (98%) than the other questionnaires (see table). However, the brief patient health questionnaire and unaided clinical diagnosis produced better specificity. The brief patient health questionnaire also produced the best positive predictive value. However, since screening tools are designed to identify all patients at risk for a disorder, sensitivity and negative predictive value are the most important operating characteristics.