

Diagnosis of heart failure in primary care: an assessment of international guidelines

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SUMMARY

An appraisal of published, peer-reviewed guidelines, in terms of their development methodologies and clinical effectiveness, was undertaken using a published and validated appraisal tool. Electronic databases revealed 13 guidelines on heart failure but only seven of these referred to diagnosis. The quality of the published guidelines was variable but there was consensus over the main symptoms and diagnostic tests, although only two symptoms were mentioned in all guidelines. Only two guidelines scored greater than 50% for rigour of development.

Keywords: diagnosis; cardiovascular disease; heart failure; guidelines; left ventricular systolic dysfunction.

Introduction

HEART failure is a malignant condition with high rates of morbidity and mortality even in mild cases.¹ Left ventricular systolic dysfunction is difficult to identify solely on the basis of signs and symptoms and there is evidence that patients with heart failure are often either missed or misdiagnosed and/or inappropriately treated.¹⁻³ Thus, many organisations have chosen to produce guidelines with the objective of improving diagnosis and treatment. This report describes an appraisal of published, peer reviewed guidelines in terms of their development methodologies and clinical effectiveness using an appraisal tool developed by Cluzeau *et al.*⁴ This tool examines rigour of development, context, content, and application. Attributes such as transparency of development process and authorship, mechanisms for peer review and updating, presence of descriptions of costs and benefits of implementation, clarity of presentation, and the authors' intentions and recommendations with respect to dissemination and monitoring of the performance of the guidelines are assessed.

Method

MedLine was searched for guidelines on heart failure published between 1993 and 1999. The abstracts produced by this search were screened for articles either referring to published guidelines or describing new guidelines. Where the search referred to letters to editors these letters were read, seeking additional information. The Cochrane Database and citations in the selected articles were also screened for reference to other published guidelines. In addition, inquiries were made of local experts and the relevant Royal Colleges for anecdotal evidence or knowledge of guidelines due for publication. Only guidelines that made any reference to diagnosis were entered into the second round of appraisal. All included guidelines were assessed for quality by two reviewers. A simple scoring system was used whereby every positive answer was awarded a score of one and all other answers, including 'not sure' and in some cases 'not applicable', were scored as zero.

Results

Literature searches revealed 62 references to guidelines, of which 55 were in English. From these, 13 guidelines on heart failure were identified⁵⁻¹⁷ of which seven made some mention of diagnosis. Table 1 gives the percentage score achieved by each guideline in each dimension. Only two guidelines attained greater than 50% of the possible score for rigour of development. The top five guidelines were independently reviewed before publication but only the Scottish Intercollegiate Guidelines Network (SIGN) and Agency for

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Table 1. Results of appraisal using tool developed by Cluzeau et al. Table showing percentage of possible total score achieved by each guideline in each dimension.

Guideline	Rigour of development (20) ^a	Context and content (12) ^a	Application (5) ^a	Total (%)	Rank
AHA ¹¹	35	58	0	37.8	3
AHCPR ⁷	90	83	20	78.4	1
Canadian ⁸	25	50	20	32.4	4
European ⁹	20	50	0	27.0	6
Irish ¹⁰	5	8.3	0	5.4	7
New Zealand ¹²	10	83	0	32.4	4
SIGN ¹⁹	65	75	80	70.3	2

^a Number of items/questions within each dimension given in brackets.

HOW THIS FITS IN

What do we know?

Many international guidelines are available, aimed at assisting in the management of heart failure.



What does this paper add?

The quality of guidelines is very variable and few included information on diagnosis or mechanisms for updating to include new research evidence.

Health Care Policy and Research (AHCPR) guidelines included plans for revision within the documentation. Generally, scores were better for the dimensions of clarity and content but no guideline estimated the costs likely to be incurred from the recommended management. Most mentioned the cost of the condition but this was not contrasted with the costs of correct diagnosis, even though they all recommended the use of echocardiography to confirm diagnosis — a scarce resource in primary care.

The analysis of diagnostic information given showed consensus on the main symptoms: fatigue, dyspnoea, paroxysmal nocturnal dyspnoea, orthopnoea, and peripheral oedema, although only the first two are mentioned in all guidelines. Three guidelines discuss the reliability of the various signs, and reliability of the physical findings is discussed in some detail by four of the seven. All the guidelines we examined made the comment that the between-physician reliability — and even between experts — is not high for physical findings in heart failure in the elderly. The SIGN guideline offers a useful algorithm for diagnosis.

There is significantly more agreement between guidelines on appropriate tests to be conducted. For example, electrocardiogram (ECG), including exercise and ambulatory ECG, echocardiogram, and radionuclide ventriculography are all discussed but without reference to utility, cost or impact on services. The evidence-based AHCPR guideline assesses the strength of evidence for these tests as grade B. Five out of seven guidelines recommend full blood count, serum electrolytes, liver, thyroid, and renal function tests and the AHCPR guidelines designate strength of evidence for these tests as grade A.

Discussion

The quality of international guidelines on heart failure is variable and half of the published guidelines did not include

information on diagnosis. Few guidelines referred to mechanisms for updating and monitoring of the effectiveness of guideline implementation or to appropriate dissemination. It is this third dimension of the appraisal that is of particular interest in primary care as it concerns the development of protocols and care pathways, and identification of clear standards, targets, and measurable outcomes that in turn can be used locally to audit quality. Prevalence data suggests that the initial treatment of heart failure takes place in primary care, frequently by prescription of loop diuretics without angiotensin converting enzyme (ACE) inhibitors, and that patients are only referred to specialists when it is perceived that severity of disease warrants more aggressive treatment. There is an urgent need for the dissemination of the results of studies conducted in the primary care sector that explore the reliability of signs and symptoms of heart failure.

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