

Working group on heart failure initiatives

Increasing awareness and improving the management of heart failure in Europe: the IMPROVEMENT of HF initiative

The Study Group on Diagnosis of the Working Group on Heart Failure of The European Society of Cardiology*

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Abstract

Background: Previous reports suggest that patients with suspected heart failure are inadequately investigated and that patients who do have heart failure are sub-optimally treated. Guidelines on the diagnosis and treatment of heart failure have been published by the European Society of Cardiology and provide a framework for the management of heart failure against which to judge current medical practice. Both primary care and hospital physicians are responsible for ensuring appropriate management of patients with heart failure. This programme concentrates on management of heart failure in primary care and is complementary to a similar exercise that will be conducted in 50 European regions (EUROHEART-CHF). **Aims:** The IMPROVEMENT of HF initiative investigates, in Europe, how primary care physicians perceive heart failure should be diagnosed and treated and whether they perceive that they are provided with adequate support to implement best medical practice. Subsequently, their perceptions are compared to their actual practice by reviewing relevant case notes. The results will be used to recommend changes in practice. A future study is planned to analyse the impact of the initiative. **Methods:** The initiative comprises a research phase and an educational phase. For the research phase, 10 regional centres (to include both urban and rural areas) from each of 14 participating countries have been identified and each region has randomly selected 10 primary healthcare physicians. The primary healthcare physicians are participating in two surveys: a 'perception' survey and an 'actual practice' survey. For the 'actual practice' survey, the physicians are supplying case notes of nine patients who have or are at high risk of having heart failure. The results of these surveys will be used to organise an educational programme. **Conclusion:** This study is expected to provide valuable data on the perceptions of primary care physicians about heart failure, possible deficiencies in the current provision of care and how any deficiencies may be corrected. © 1999 Published by European Society of Cardiology. All rights reserved.

Keywords: Heart failure; Guidelines; Primary care; European Society

1. Introduction

The management of heart failure has undergone major changes over the past decade. Current treat-

ment is not only directed towards relieving symptoms, but also towards preventing the onset or delaying the progression of heart failure [1]. However, heart failure continues to be a major clinical problem. Estimates of the prevalence of heart failure in the general population range from 0.4 to 2% [2] and a similar proportion of patients may have major left ventricular systolic dysfunction without symptoms. Prevalence appears to be rising, partly because the proportion of

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the population that is elderly is increasing and partly because improved treatment of coronary heart disease and acute myocardial infarction means that more patients survive to develop heart failure or to have chronic left ventricular dysfunction. Other possible reasons for the reported increase in prevalence are increased awareness of the problem and more reliable methods of diagnosis. There may be > 10 million patients with heart failure in Europe [3].

Heart failure imposes a heavy burden of symptoms and it impairs quality of life more than most other chronic conditions [4]. Mortality remains high; 25% of patients with new-onset heart failure will die within 1 year [5]. The economic impact of the syndrome is also large, accounting for 1–2% of healthcare expenditure in developed countries [1]. The major part of this expenditure is due to the cost of hospital admission [6]. Studies show that hospitalisations for heart failure are increasing due, in part at least, to a rising prevalence of the condition [7].

The Working Group on Heart Failure of the European Society of Cardiology has published guidelines on the diagnosis, assessment and treatment of heart failure [3,8], with the aim of providing practical guidelines to address the *basic minimum* requirements for diagnosing and managing heart failure.

The lack of a generally agreed definition of heart failure makes diagnosis difficult. A reliable diagnosis is based on a combination of signs and symptoms, objective evidence of cardiac dysfunction and response to treatment. Diagnosis by clinical criteria alone may result in a false positive diagnosis in up to 50% of cases [9,10]. Severe but asymptomatic left ventricular systolic dysfunction is at least as common as heart failure but it is uncertain how frequently it is diagnosed in clinical practice [11].

There is a wealth of evidence that angiotensin-converting enzyme (ACE) inhibitors improve symptoms and reduce progressive worsening of heart failure, recurrent hospitalisation and mortality [12]. Despite this evidence, many studies suggest that ACE inhibitors are prescribed to as few as one-third of the patients who might expect to benefit from them [13]. Where ACE inhibitors are prescribed, the dose is often below the range of doses shown to confer a mortality benefit [1,14], although cardiologists are more likely to prescribe an ACE inhibitor at an adequate dose than are general physicians or primary care practitioners [15]. Possible reasons for under-use of ACE inhibitors include: failure to recognise heart failure as an important problem; failure to appreciate the benefits of ACE inhibitors in heart failure; concern about costs; concern about adverse effects; and a belief that the benefits seen in clinical trials cannot be achieved in ordinary clinical practice [13].

Until recently, the role of beta-blocking agents in the management of heart failure was more controversial than that of ACE inhibitors. However, data are accumulating to indicate that these agents should be used widely in the treatment of heart failure. Several trials have indicated a beneficial effect on morbidity and/or mortality in patients with chronic heart failure [16–18]. Given the positive effects of beta-blocking agents after myocardial infarction, their main role may be in secondary prevention of the development and progression of heart failure. The European Secondary Prevention Study (EUROASPIRE) [19] found a wide variation in the level of prescribing of beta-blocking agents after acute myocardial infarction among European countries. These data suggest that, like ACE inhibitors, beta-blocking agents are less widely prescribed than they should be.

Most patients with heart failure in Europe are managed most of the time in the community by primary healthcare physicians (general practitioners). Accordingly, primary care physicians play a key role in early identification and treatment for heart failure but there are few studies that provide information on what primary care physicians perceive to be optimal management of heart failure, no data on whether they feel they are being adequately supported by specialist colleagues and little information on how their views are translated into clinical practice. The purpose of the clinical study part of the IMPROVEMENT of Heart Failure programme is to address these issues.

2. The IMPROVEMENT of HF initiative

The IMPROVEMENT of HF (Improvement Programme on Evaluation and Management of Heart Failure) initiative has been developed by an international advisory board of primary and secondary care physicians to increase awareness of heart failure among primary healthcare physicians in Europe and to improve the management of patients with heart failure. The programme focuses on both diagnosis and treatment, because high diagnostic standards are likely to result in better overall clinical management.

3. Participants and methods

The IMPROVEMENT of HF initiative is a 2–3-year programme, beginning in the last quarter of 1998, and comprises two phases (Fig. 1): Phase 1 is a research initiative in the form of an international survey of the primary care physicians views on the management of heart failure and how these translate into clinical practice. The survey should identify whether or not

European Guidelines are being applied and, if not, the reasons why. Consequently, this should help identify targets for intervention and education should change be required. Phase 2 will be an educational programme based on the results of the survey.

3.1. Phase 1: Research phase

In each of the 14 participating countries (see Appendix A for steering group and countries) in Europe, 10 regional centre have been chosen (to include both built-up and rural areas), and each centre has selected 10 primary healthcare physicians. Each physician is supplying case notes of nine of their patients. Thus for each participating country, 10 regional cardiologists, 100 primary healthcare physicians and approximately 900 patients will be enrolled into the study. Other countries are invited to participate if additional funding to support local activity can be identified; the study group will provide the protocol, provide analysis of their data and incorporate it into the pan-European data set.

The selection of primary healthcare physicians is random but stratified according to age, gender and whether the office is in an urban or rural area. Local co-ordinators have invited randomly selected primary healthcare physicians to take part in the survey. Primary healthcare physicians are being asked to register all patients who they see over a 6-week period who have one of the following:

1. patients with a diagnosis of heart failure;

2. patients with a history of myocardial infarction within the last 5 years.

In this way patients with suspected (but not necessarily confirmed) heart failure, ‘undiagnosed’ heart failure and patients at a high risk of left ventricular dysfunction and therefore at future risk of heart failure are identified. Three patients from each category, nine patients in all, are being randomly selected from the above register for case note review. Questionnaires for both the ‘perception survey’ and the ‘actual practice survey’ have been compiled from the published European guidelines on the diagnosis and management of heart failure [3,8].

3.1.1. ‘Perception survey’

For the ‘perception survey’, primary healthcare physicians are interviewed to assess the physicians’ current knowledge and management of heart failure together with their perceptions of how it should be managed. The physicians are being asked questions about:

- what makes them suspect a diagnosis of heart failure and which tests they would use to confirm it;
- what advice they would give a patient on lifestyle, diet, vaccination and related subjects;
- which treatments they believe have been shown to improve prognosis and/or symptoms;
- which agents they would expect to be prescribed for heart failure;

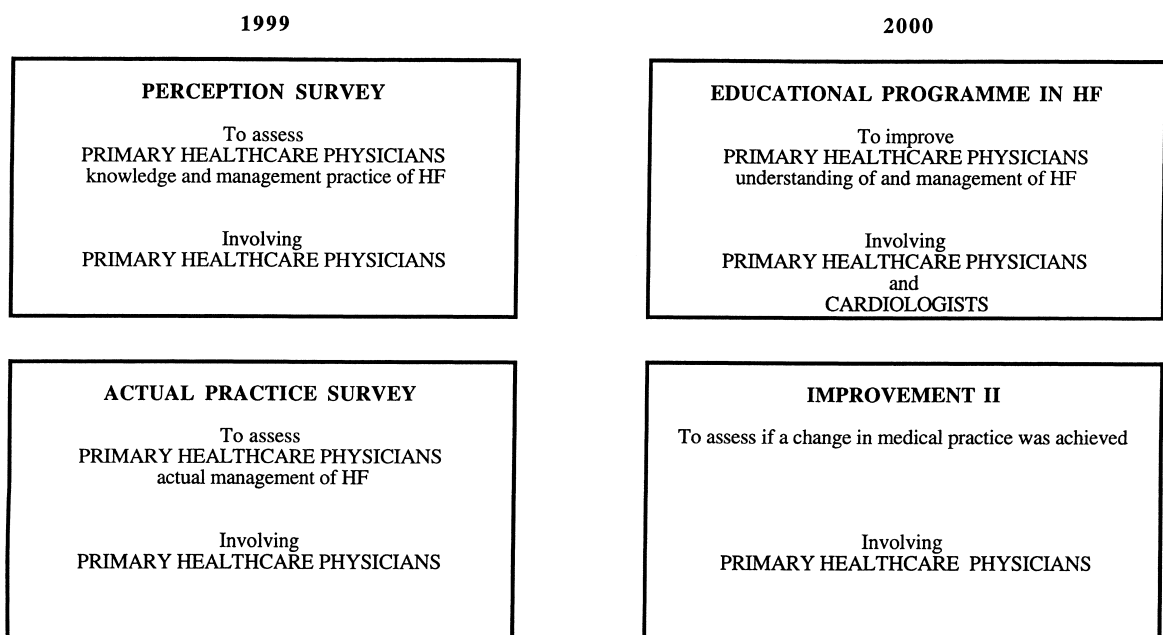


Fig. 1. The IMPROVEMENT of HF initiative: summary.

- who they would expect to initiate therapy for heart failure; and
- who they would expect to monitor continuing therapy.

Finally, the primary healthcare physicians are asked about their perception of the availability of the resources required to treat patients with heart failure according to the ESC guidelines. Criteria for referral to a specialist and the ease with which patients can be admitted to hospital are also dealt with.

3.1.2. 'Actual practice survey'

Primary healthcare physicians who have completed the 'perception survey' are interviewed by independent researchers using questionnaires designed to assess actual practice. Each questionnaire consists of a core international section completed by all primary healthcare physicians and a national section designed to elicit information on attitudes to and treatments of heart failure specific to that country. Information provided by participating physicians from patients' case notes include:

- past history, aetiology and symptoms of heart failure;
- presence of concomitant disease;
- proportion of patients who have had an echocardiogram (and reasons for this);
- patterns of referral;
- primary healthcare physicians' treatment objectives;
- advice given to patients on lifestyle, drug compliance and vaccination; and
- treatment regimens and adverse effects of each class of drug.

Information from the case notes is supplemented by information remembered by, but not recorded by, the primary care physician. A record of whether the information is written or from recollection by the physician is made. On completion of the 'actual practice survey', the information gathered will be compared with the assessments of perception compiled from the prior interview. The results of both parts of the survey will be analysed at individual, local, national and international level, and feedback from the analyses will be used to develop the educational programme. The information obtained from each physician is held in confidence. No individual patient or physician data will be divulged although each physician will be able to compare his own data with the larger data set and current guidelines.

3.2. Phase 2: Educational programme

Phase 2 of the IMPROVEMENT of HF initiative aims, through education, to optimise clinical practice in the light of the need for change, if any, identified from the results of the international survey. These needs will be communicated through a chain of co-operation between international and national opinion leaders, local cardiologists, primary healthcare physicians and patients: the 'awareness pyramid' of participants (Fig. 2). Any recommendations for changes in clinical practice will initially be presented at an international cardiology meeting. In addition to international meetings, national and regional meetings will be organised as part of the programme, together with articles for submission to peer-reviewed publications and supplementary educational materials including slide lecture kits and patient materials.

3.3. IMPROVEMENT of HF II

In order to assess whether the IMPROVEMENT of HF initiative has influenced the management of patients with heart failure by primary healthcare physicians, a further study is planned. The IMPROVEMENT of HF II study is expected to begin in the third quarter of 2000. The programme will be organised in the same way as Phase 1 of the IMPROVEMENT of HF initiative.

4. Discussion

This is the first large survey to address the perceptions and practice of the clinical management of heart failure in Europe. The same protocol will be applied in a large number of countries to identify similarities and differences in practice within Europe. This study will determine whether heart failure is being managed well in a very large sample representing many different systems for the delivery of care in the community.

Most research into the patterns of management of heart failure is based on either the perception of the physician involved [15], on records of actual practice or on an assessment of the adherence to guidelines [20]. Studies of patterns of clinical management rarely compare 'perception' with 'actual practice'. Thus, the IMPROVEMENT of HF initiative is novel in that it examines, and compares, both physicians' perceptions of how they manage patients with heart failure and their actual practice. In this respect it is a very powerful tool with which to bring about change because it

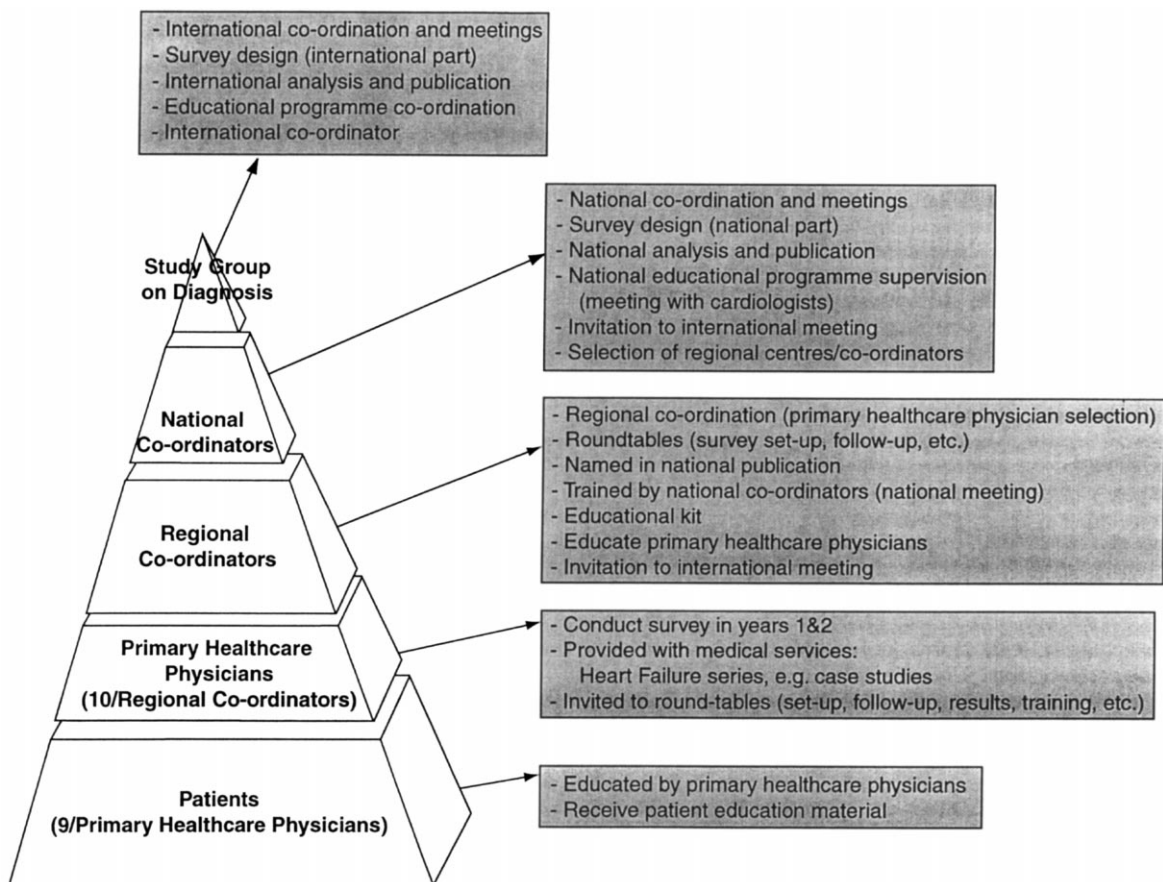


Fig. 2. The IMPROVEMENT of HF initiative: 'awareness pyramid' of participants.

should not only identify the nature of any deficiency in current practice but also the reason for it. This allows educational programmes to doctors, health care providers and purchasers to target more precisely any defects in the current provision in care. For instance if the major barrier to better care is an inadequate access to echocardiography, rather than lack of physician knowledge, then no amount of physician education will improve care. However, better funding of echocardiography could be the solution.

Physicians appear to be cautious about changing their prescribing practices; most changes occur gradually as a result of an accumulation of small effects from educational interventions and attention from the non-medical media [21,22]. Publication of clinical trial results does influence physicians' behaviour [23], but the mechanisms by which this happens are not clear. Feedback and audit, which form an integral part of the IMPROVEMENT study, are sometimes effective in changing practice, particularly for prescribing and for diagnostic tests. However, these effects are small to moderate in most studies [24]. There is clearly scope for the development of novel strategies for continuing education and this will be considered as part of the IMPROVEMENT of HF initiative.

The prospective gains from even small improvements in practice are considerable. For instance, the use of an ACE inhibitor in all patients with heart failure could reduce the risk of hospitalisation from worsening heart failure by about 1000, hospitalisations for any reason by 1500 and deaths by 500 per million of the general population [1]. The use of high instead of low doses of ACE inhibitors could almost double this benefit while the addition of beta-blockers may triple these benefits [1,18]. The benefits of treating heart failure well are great; probably greater and better proven than for any other intervention in cardiovascular medicine. Every effort should be made to ensure that these benefits are applied.

Acknowledgements

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Appendix A. Members of the Study Group on Diagnosis

Chairman: Cleland J.G.F. (UK); Members: Cohen-Solal A. (France), Cosin Aguilar J. (Spain), Dietz R. (Germany), Follath F. (Switzerland), Gavazzi A. (Italy), Hobbs F.D.R. (UK), Korewicki J. (Poland), Madeira H.C. (Portugal), Preda I. (Hungary), Swedberg K. (Sweden), van Gilst W.H. (The Netherlands), Widimsky J. (Czech Republic). Belgium, Russia and Turkey are also participating.

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