Non-compliance in patients with heart failure: how can we manage it?
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CRD summary
This review investigated the effectiveness of interventions to improve compliance in patients with heart failure. The authors concluded that education and counselling may be beneficial, but existing evidence is scarce and more interventions need to be developed and tested. Limitations of the review included a restricted literature search and no assessment of the validity of the included studies, thereby rendering the results potentially unreliable.

Authors' objectives
To describe the consequences of non-compliance; to summarise the degree of compliance in various aspects of therapeutic regimen; and to review the effectiveness of interventions used to improve treatment compliance in patients with heart failure (HF). Only the effectiveness interventions will be summarised in this abstract.

Searching
MEDLINE and CINAHL were searched from 1988 to June 2003; the keywords used were listed. A manual search of the bibliographies of retrieved articles was also performed. The search was limited to papers published in English or German.

Study selection
Study designs of evaluations included in the review
No specific inclusion criteria for the effectiveness studies were stated. Descriptive and experimental studies were eligible for inclusion. The studies included in the review were randomised and non-randomised studies.

Specific interventions included in the review
No inclusion criteria for the effectiveness studies were stated. The review was limited to compliance with lifestyle recommendations addressed in the European Society of Cardiology and the American Heart Association/American College of Cardiology. The included studies assessed a variety of protocols, most of which involved education and counselling relating to medication and lifestyle; most studies included telephone follow-ups as well as reviews at a HF clinic. The control interventions were not described; some studies were before-and-after studies. The duration of treatment ranged from 30 days to 12 months.

Participants included in the review
Studies with adult HF patients were eligible for inclusion. Studies of health care providers and their adherence to guidelines were excluded. In the included studies, the mean age of the participants ranged from 52 to 85 years and 27 to 73% were female. No information on co-morbidities or medication use was reported.

Outcomes assessed in the review
Studies that included any measure of compliance (medication or lifestyle recommendations) as an outcome were eligible for inclusion. The included studies reported on the following outcomes: medication compliance (method of measurement not defined), daily weighing, fluid restriction, dietary compliance and sodium restriction adherence.

How were decisions on the relevance of primary studies made?
Two authors were involved in selecting and reviewing the papers. There was no information on how disagreements were resolved.

Assessment of study quality
The authors did not state that they assessed validity.
Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Differences between the studies were described in the text.

Results of the review
Twelve studies (n=1,154) were included in the review: 8 randomised studies (896 participants) and 4 (258 participants) non-randomised studies.

Three randomised studies involving nurse-led counselling found better compliance in the intervention group than in the control group for medication use, weighing or dietary change, but not in fluid restriction.

Three other randomised studies involving pharmacist-led counselling found better compliance in the intervention group than in the control group for medication compliance. Two other randomised studies found better medication compliance with interventions based on mailing educational materials, or a daily telephone reminder, compared with the control group.

Among three of the non-randomised studies, nurse- or dietician-led counselling resulted in a decrease in sodium intake or fluid intake, but no change in medication compliance. The fourth non-randomised study did not have compliance (in daily weighing) measured before the intervention but reported it as 75% after the intervention.

Authors' conclusions
Education and counselling may be beneficial in improving compliance in patients with HF, but evidence-based interventions are scarce and more interventions need to be developed and tested.

CRD commentary
The research question addressed in this review was not specific since compliance across several areas (e.g. medication, lifestyle changes) was not adequately defined.

The search strategy only used two databases and was restricted to publications in English or German; this could have resulted in the omission of some relevant studies. There was also no attempt to investigate the possibility of publication bias. There was insufficient description of the study selection process to know whether bias could have occurred, and no mention of whether the authors assessed the quality of the included papers. Insufficient details of the included studies (e.g. control interventions and how medication compliance was measured) were given for a reader to understand the methodology. All these limitations mean that the interpretation of the results from this review is severely limited. The authors noted limitations relating to differences in study populations, measurement of compliance and interventions.

The authors’ conclusions are suitably conservative. The stated implications for practice do not follow entirely from the effectiveness evidence presented in this review.

Implications of the review for practice and research
Practice: The authors listed nine strategies to improve compliance. These included patient-related (targeting patients at risk, increase in knowledge, behavioural strategies, self-management, promotion of social support), regimen-related
(simplification of the regimen, learning to read food labels/attention on multiple diets) and health care provider-related (reinforcement, prevention of confusion) strategies.

Research: The authors stated that further randomised clinical trials are required to understand which interventions are beneficial to which subgroups of patients, and to know the optimal dose of the interventions. Samples that reflect realistic HF populations are needed, especially as compliance is age and gender related. Compliance should be included as an outcome measure in the intervention studies. Valid and reliable measures of compliance should be developed.

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