Pharmacists' role in the post-discharge management of patients with heart failure: a literature review
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CRD summary
This review evaluated the role of pharmacists in the management of patients with cardiac failure after discharge. It concluded that pharmacist interventions reduce post-discharge mortality and morbidity. The conclusions should be regarded with caution because of various limitations in the reporting and the review process.

Authors' objectives
To evaluate the role of pharmacists in the provision of post-discharge services for patients with heart failure.

Searching
MEDLINE, International Pharmaceutical Abstracts, Academic Search Elite, Blackwell Synergy and Science Direct were searched for studies published in English between 1990 and 2006; the search terms were reported. The reference lists of retrieved articles were also checked for additional studies.

Study selection
Study designs of evaluations included in the review
No inclusion criteria were specified for the study designs. Both randomised controlled trials (RCTs) and non-RCTs were included.

Specific interventions included in the review
Studies focusing on the role of pharmacists, and that included a home-based intervention or a medication review service by pharmacists, were eligible for inclusion. Studies in which the role of pharmacists amongst health professionals could not be isolated were excluded. The included studies investigated monitoring and optimising medication management, identifying early deterioration and early referral, recommendations for physicians, and the provision of pre- and post-discharge education about the disease and its management, amongst others. The intervention was either by home visits, counselling in out patient clinics, or via telephone advice.

Participants included in the review
Studies of patients with heart failure were eligible for inclusion. Only a few and unsystematic details about the included patients were provided.

Outcomes assessed in the review
No inclusion criteria were specified for the outcomes. The included studies investigated a variety of outcomes such as hospitalisations, unplanned readmissions, compliance with drug therapy, death rates, exercise capacity, clinical events, beta-blocker use, knowledge of medication and quality of life.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors used the Jadad scoring method to assess study quality. The authors did not state how the validity assessment was performed.

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 individual studies were presented in the text.

How were differences between studies investigated?
The narrative addressed some differences between the studies.

**Results of the review**
Seven studies were included in the review: 5 RCTs and 2 non-RCTs.

All the trials had a Jadad score of 2 or less.

All except one study reported a beneficial effect of the intervention on the various outcomes measured.

In one RCT (n=97), the intervention group had fewer unplanned readmissions (36 versus 63) and less out-of-hospital deaths at 6 months after discharge. The 1-year follow-up also showed fewer unplanned readmissions, out-of-hospital deaths and days of hospitalisation.

In a second RCT, the patients in the intervention group had better compliance with their medication than the control group (93% versus 51%), and showed improvements in medication knowledge (p<0.001), oedema signs and exercise capacity.

In a third RCT, the intervention group had fewer hospital readmissions, better compliance, improved exercise capacity and enhanced knowledge of the drug therapy; there was no statistically significant effect on quality of life.

In a fourth RCT (number of participants unclear), the intervention group had fewer all-cause mortality and nonfatal heart failure events than the controls (4 versus 16).

In a fifth RCT, there was a significant reduction in hospital readmissions for heart failure in the intervention group compared with the control group over the first 12-month period (24% versus 59%), and a significantly longer time to readmission.

In a before-and-after study, patients had significantly lower hospitalisation rates, but beta-blocker usage and doses increased and the number of clinic visits significantly increased compared with the pre-enrolment period.

One study found no difference in the number of hospitalisations between the intervention and control groups at 3 and 6 months after discharge.

**Cost information**
One RCT showed significantly lower hospital-based costs for the pharmacist intervention group.

**Authors’ conclusions**
Pharmacist interventions are effective in reducing the post-discharge mortality and morbidity associated with heart failure.

**CRD commentary**
Inclusion criteria for the review were broadly defined. Many relevant databases were searched but only studies reported in English were included, which might have introduced language bias. No explicit attempt to identify unpublished studies was described, which raises the possibility of publication bias. It was not stated whether the literature search, study selection, quality assessment and data extraction processes were performed in duplicate, hence reviewer error and bias might have been introduced at these stages. Study quality was assessed but not further described for individual studies. Some details of the individual studies were reported, but not participant characteristics and numerical results for outcomes. The authors’ conclusions need to be viewed with caution because of the various limitations in the reporting and the review process.
Implications of the review for practice and research
Practice: The authors stated the need to develop pharmacy services for patients with heart failure.

Research: The authors stated the need to define and evaluate post-discharge pharmacy services for patients with heart failure.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.