In patients who have been admitted with heart failure, is a peridischarge multidisciplinary treatment programme more effective than usual care for reducing rates of readmission and all cause mortality?

METHODS

**Data sources:** Medline (1966–2000), HealthSTAR (1975 to October 2000), EMBASE/Excerpta Medica, Cochrane Library, content experts, bibliographies of relevant articles, abstracts from relevant cardiology meetings, J Gen Intern Med, and Arch Intern Med.

**Study selection and assessment:** randomised controlled trials (RCTs) that compared a multidisciplinary intervention involving patient education directed at increasing patients’ knowledge about heart failure diagnosis, symptoms, and/or treatment with usual care in patients >18 years of age who had been admitted for heart failure and enrolled in the trial during admission or immediately before or after discharge. Studies were also required to have recorded relevant outcomes. Study quality was assessed using the 5 point Jadad scale.

**Outcomes:** unplanned hospital readmission during a follow up period of >3 months after discharge and all cause mortality.

**MAIN RESULTS**

8 RCTs (n = 1246) (mean age 75 y, 52% women) met the selection criteria. Before discharge, the multidisciplinary intervention comprised visits by registered nurses, dietitians, geriatric cardiologists, or research pharmacists who educated patients about heart failure diagnosis, symptoms, medications, treatment, diet (eg, sodium fluid restrictions), and research in progress. Education was also provided in form of booklets and oral/video sessions. After discharge, patients were visited by home care nurses or cardiology nurses, were invited to attend nurse directed outpatient clinics, or were interviewed by nurses over the phone during a follow up period of 24 hours to 9 months. During these contacts, patients received repeat education about heart failure diagnosis, symptoms, and treatment approaches, and/or more efficient application of previously proven strategies are important.

Several small RCTs have shown that physician and/or nurse management programmes are effective in reducing hospital admission for heart failure, mainly by ensuring optimum usage and dosing of proven pharmacological strategies. The meta-analysis by Gwadry-Sridhar et al of 8 RCTs involving approximately 1250 patients confirms the effectiveness of heart failure management programmes for reducing hospital readmission rates (table). Although the meta-analysis did not show an effect of these programmes on all cause mortality, it could be anticipated that appropriate use of proven pharmacological strategies and optimal dosing should result in a reduction in total mortality.

However, the effectiveness of these programmes is likely to diminish in the future with increased use of data automation and quality assurance techniques designed to improve and streamline the overall quality of care. A major reduction in hospital admission for heart failure will come over the long term from a better understanding of the pathophysiology of heart failure and the development of new pharmacological and/or electrical/mechanical strategies. The ultimate solution to the epidemic of heart failure and its increasing health care burden is prevention. Better control of hypertension and other cardiovascular risk factors will in the long run have the greatest effect on the economic burden associated with heart failure. Until such time, efforts to broaden the applicability and cost effectiveness of heart failure management programmes should be encouraged.

**CONCLUSIONS**

In patients who have been admitted with heart failure, a peridischarge multidisciplinary treatment programme is more effective than usual care for reducing rates of readmission. However, the groups did not differ for all cause mortality.

**Commentary**

Heart failure is recognised as the most frequent and expensive cause of hospital admission in patients ~65 years of age. Thus efforts to reduce hospital admission for heart failure either by developing new pharmacological or mechanical/electrical treatment approaches and/or more efficient application of previously proven strategies are important.

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**A peridischarge multidisciplinary intervention v usual care in inpatients with heart failure at 3–12 months**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Weighted event rates</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Hospital readmission</td>
<td>38.2%</td>
<td>49.2%</td>
<td>21% (9 to 32)</td>
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<tr>
<td>All cause mortality</td>
<td>18.4%</td>
<td>19.4%</td>
<td>2% (–34 to 28)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; weighted event rates and CI calculated from data in article using a random effects model.