A specialist nurse intervention reduced hospital readmissions in patients with chronic heart failure


QUESTION: Can a specialist nurse intervention reduce mortality and morbidity in patients admitted to hospital with chronic heart failure?

Design
Randomised (allocation concealed), blinded (outcome assessors and data analysts)*, controlled trial with follow up at 1 year.

Setting
An acute medical admissions unit at a teaching hospital in Glasgow, UK.

Patients
165 patients admitted on an emergency basis with heart failure caused by left ventricular systolic dysfunction. Exclusion criteria were inability to comply with the intervention, acute myocardial infarction, comorbidity likely to lead to death or readmission in the near future, planned discharge to long term residential care, or residence outside of the hospital catchment area. Follow up at 1 year was 95%.

Intervention
84 patients were allocated to usual care plus a specialist nurse intervention, which consisted of planned home visits of decreasing frequency, supplemented by telephone contact as needed. The aim was to educate patients about heart failure and its treatment, optimise treatment, monitor electrolyte concentrations, teach self monitoring and management, encourage treatment adherence, liaise with other healthcare providers, and provide psychological support. Nurses were given training and followed written protocols on the use of specific drugs. Patients were given a pocket sized booklet that included information about heart failure and its treatment; contact information for nurses; a list of their drugs, weights, and blood test results; and details of planned visits. 81 patients were allocated to usual care and managed by the admitting physician and subsequently the general practitioner. They did not see the specialist nurses after discharge.

Main outcome measures
Combined outcome of death or readmission for heart failure (emergency or elective). Secondary outcomes included combined death or readmission for any reason, death, readmission for worsening chronic heart failure, and readmission for any reason.

Main results
At 1 year, fewer patients in the specialist nurse group than in the usual care group had died or were readmitted with heart failure, and fewer were readmitted for heart failure (table). The groups did not differ for combined death or readmission for any reason (62% v 75%, p=0.075), death (50% v 31%, p=0.81), or readmission for any reason (86% v 60%, p=0.27).

Conclusion
A specialist nurse intervention reduced hospital readmissions for heart failure in patients admitted to hospital with chronic heart failure.

*A specialist nurse intervention v usual care for chronic heart failure (HF)*

<table>
<thead>
<tr>
<th>Outcomes at 1 year</th>
<th>Intervention</th>
<th>Usual care</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cause mortality or readmission for HF</td>
<td>37%</td>
<td>53%</td>
<td>30% (3 to 53)</td>
<td>7 (4 to 70)</td>
</tr>
<tr>
<td>Readmission for HF</td>
<td>14%</td>
<td>32%</td>
<td>57% (21 to 78)</td>
<td>6 (5 to 16)</td>
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</tbody>
</table>

*Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.

COMMENTARY

Heart failure carries a poor prognosis for patients and places substantial demands on health services. The study by Blue et al provides evidence that outcomes for patients with severely disabling heart failure can be improved by a nurse led intervention for patients and families, delivered through home visits, telephone contact, and printed material.

The intervention, which focused on patient education, optimising management (drugs, diet, and exercise), treatment adherence, self monitoring, and psychological support, reduced hospital readmissions for heart failure. The use of the term specialist nursing intervention in the title may be slightly misleading. Correspondence with the authors confirmed that staff nurses on a cardiology unit carried out the intervention. They were given a few weeks of training in the management of heart failure and the use of protocols to manage drug regimens.

This study provides food for thought for clinical teams. The low number needed to treat of 6 suggests that individual patients have a good chance of benefiting from such an intervention. The addition of some form of home visiting to review progress and compliance of patients with heart failure has now been shown to be effective in several studies.1 The fact that the intervention was implemented by staff nurses who required comparatively little training suggests the possibility of widespread applicability to general medical wards. Even if home visiting is not possible for ward staff, optimisation of treatment regimens in hospital and home visits by community nursing staff would likely achieve the same objectives.

Mark Newman, RGN, MA
Research Fellow
School of Health, Biological & Environmental Science and School of Lifelong Learning & Education
Middlesex University
London, UK