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

Blue L, Lang E, McMurray JJ, et al. *Randomised controlled trial of specialist nurse intervention in heart failure*. *BMJ* 2001 Sep 29;323:715-8.

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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 (30% v 31%, $p=0.81$), or readmission for any reason (56% 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.

*Information provided by author.

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

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

*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 2} 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.

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- 1 Stewart S, Marley JE, Horowitz JD. Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet* 1999;354:1077-83.
- 2 McMurray JJ, Stewart S. Nurse led, multidisciplinary intervention in chronic heart failure. *Heart* 1998;80:430-1.