

A multidisciplinary, home-based intervention reduced deaths and readmissions in patients with chronic congestive heart failure

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 Sep 25;354:1077-83.

QUESTION

In patients with chronic congestive heart failure (CHF) who are discharged to their homes after acute hospital admission, can a multidisciplinary, home-based intervention reduce out-of-hospital deaths and unplanned readmissions?

DESIGN

Randomized (allocation concealed*), blinded (outcome assessor)* controlled trial with 6-month follow-up.

SETTING

A tertiary referral hospital in Adelaide, South Australia, Australia.

PATIENTS

200 patients ≥ 55 years of age (mean age 76 y, 62% men) who were to be discharged to their homes, had CHF, and had ≥ 1 previous hospital admission for acute CHF. Exclusion criteria were extensive reversible ischemia that precipitated heart failure, valvular heart disease amenable to surgery, intended heart transplantation, terminal illness, or residence outside of the catchment area. Follow-up was complete.

INTERVENTION

100 patients were allocated to usual care only (appointment with primary care physician or outpatient clinic within 2 wk of discharge and contact with a cardiac rehabilitation nurse, dietitian, social worker, pharmacist, and community nurse, as needed). 100 patients were allocated to usual care and a home-based intervention, which included a structured home visit by a cardiac nurse 7 to 14 days after discharge. The nurse sent a report of her findings to the primary care physician and cardiologist. On the basis of the nurse's assessment, patients received remedial counseling and strategies to address areas that needed attention. Home visits were repeated if patients had ≥ 2 unplanned admissions within 6 months. Patients were contacted by telephone at 3 and 6 months.

MAIN OUTCOME MEASURE

The primary event was the combined end point of unplanned readmissions and out-of-hospital deaths.

MAIN RESULTS

88 of 100 patients assigned to the home-based intervention received a home visit;

median duration was 2 hours. At 6 months, the home-based intervention group had fewer primary events (unplanned readmissions and out-of-hospital deaths [77 vs 129, $P = 0.02$]), fewer unplanned readmissions (68 vs 118, $P = 0.03$), and fewer associated days in the hospital (460 vs 1174 d, $P = 0.01$) than did the usual-care group. The groups did not differ for out-of-hospital deaths (9 vs 11, $\{P = 0.64\}^\dagger$).

CONCLUSION

In patients with congestive heart failure who were discharged to their homes, the addition of a multidisciplinary, home-based intervention to usual care reduced the rate of unplanned readmissions and the number of days spent in the hospital.

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*See Glossary.

$\dagger P$ value calculated from data in article.

COMMENTARY

Despite the advent of more effective therapy for CHF, the prognosis remains poor. A multidisciplinary approach to CHF that involves therapy, monitoring, education, and counseling may be most efficacious. Stewart and colleagues showed that a multidisciplinary approach that included ≥ 1 home visit by a qualified cardiac nurse was better than usual care that did not include a home visit. These findings are similar to other studies that show a multidisciplinary clinic is more efficacious than usual care (1).

At the first visit, 40% of patients had early clinical deterioration, 25% were not compliant with medical therapy, and 90% were unaware of the importance of restricting sodium intake. These findings suggest that in-hospital management inadequately prepares the patient and that ongoing comprehensive outpatient management is necessary to maintain long-term stability. These hypotheses are further supported by the finding that patients in the intervention group better understood their medications after the home visit. Because approximately 10% of intervention-group patients died or were readmitted before a home visit was done, studies are required to

determine a reliable way of timing the first visit after discharge. The availability of several pharmacologic therapies increases the complexity of CHF management, further justifying the role of a multidisciplinary program.

The findings of Stewart and colleagues and others (1) would support this home-based intervention as a cost-effective management strategy. Further studies are needed to determine whether this approach is generalizable to smaller, more community-based centers; to compare different models of multidisciplinary management; to evaluate the approach over a longer period; and to assess the effects on clinical events in larger, less-selected groups of patients.

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Reference

1. Rich MW. Heart failure disease management: a critical review. *J Card Fail*. 1999;5:64-75.