Nurse-Led Counseling Had No Effect on Heart Failure Outcomes

Jaarsma T, van der Wal MH, Lesman-Leegte I, et al. Effect of moderate or intensive disease management program on outcome in patients with heart failure: Coordinating Study Evaluating Outcomes of Advising and Counseling in Heart Failure (COACH). Arch Intern Med 2008;168:316–24.

Study Overview

Objective. To determine whether disease management interventions can reduce readmission or mortality rates in patients with heart failure (HF).

Design. Multicenter, randomized, controlled trial.

Setting and participants. 1023 patients hospitalized for HF in the Netherlands were randomly assigned to receive standard care (follow-up with a cardiologist; control group) or 1 of 2 disease management interventions: basic support or intensive support by a nurse specializing in HF.

Main outcome measures. Incidence of the composite endpoint of all-cause mortality or hospital readmission for HF at 18 months and per-patient number of days "lost" due to the composite endpoint.

Main results. Mean age was 71 years, 38% of patients were women, 50% of patients had mild HF, and 50% had moderate to severe HF. 339 patients received control therapy, 340 received basic support, and 344 received intensive support. Among the study groups, there were no significant differences in the combined incidence of HF rehospitalization and death, with 42% of control patients compared with 41% and 38% for patients in the basic and intensive support groups (hazard ratio [HR], 0.96 and 0.93, respectively; $P = 0.73$ and $P = 0.52$, respectively). There were no significant differences in per-patient days lost to the combined endpoint (median, 12 days in the control group [interquartile range, 0–173 days], 9 days in the basic support group [interquartile range, 0–88 days; $P = 0.81$ vs. control], and 7.5 days in the intensive support group [interquartile range, 0–86.5 days; $P = 0.49$ vs. control]). There were no significant differences in separate secondary endpoints of all-cause mortality and readmission for HF, but there was a nonsignificant trend towards lower all-cause mortality (HR, 0.85 [95% confidence interval, 0.66–1.08]) and higher rates of hospitalization for HF in the combined intervention groups.

Conclusion. For patients previously hospitalized for HF, neither basic nor intensive nurse-led disease management interventions reduced all-cause mortality or readmission for HF. Although there was a nonsignificant trend toward lower mortality with disease management support, there was also a nonsignificant trend towards increased hospitalizations among these patients.

Commentary

Disease management programs for HF have become increasingly common, and most studies and meta-analyses have suggested that disease management for HF patients reduces rates of mortality and hospital admission [1,2]. However, the components of HF disease management programs can vary, and some studies have shown little benefit of certain components of these programs (eg, intensive primary care intervention) [3,4]. Identification of disease management components that are most beneficial to patients with HF—and

the optimal intensity of each—is an important research priority.

The current investigation by Jaarsma and colleagues tests the effect of a nurse-led disease management program conducted at 2 different intensities: basic support and intensive support. In addition to routine follow-up by a cardiologist, patients receiving basic support had visits by a nurse specialized in HF during the index hospitalization as well as at an outpatient clinic for education and adherence improvement. Patients in the intensive support group had home visits and telephone contact by HF nurses and received advice from a multidisciplinary team (ie, physiotherapist, dietician, social worker) [5]. Compared with usual care, neither the basic nor the intensive disease management programs resulted in improved mortality or hospital readmission rates at 18 months. These null findings conflict with those of several previous studies but are not the result of low power; this study had greater than 90% power to detect an event reduction of 25% (a rate reduction commonly seen in other studies) [2]. Possible explanations for this discrepancy include inefficacy of the type of disease management intervention used in the current study versus prior studies as well as the possibility that the control group received better than usual care at baseline. Publication bias in previous studies, which were often small and single-center, may also explain the discrepancy with this large, multicenter study.

Despite the importance of the current study's findings to designers of HF disease management programs, there are some important limitations. First, there were more cardiology visits per patient than expected in the control group (1144 visits vs. an expected 858 visits). This apparent increase in physicians' outreach to patients in the control group may have contaminated the comparison groups. Second, the number of nurse contacts varied considerably between patients within the intervention groups, and this lack of uniformity in the intervention may have also reduced the study's power to demonstrate an effect on patient outcomes. Finally, health systems in Europe differ significantly from those in the United States, and this may limit this study's applicability to U.S. patients with HF.

Applications for Clinical Practice

Although disease management programs are commonly used for patients with HF, this study suggests that nurse-led interventions should be carefully monitored for clinical effectiveness.

—Review by Mark W. Friedberg, MD, MPP

References

1. Gonseth J, Guallar-Castillón P, Banegas JR, Rodríguez-Artalejo F. The effectiveness of disease management programmes in reducing hospital re-admission in older patients with heart failure: a systematic review and meta-analysis of published reports. Eur Heart J 2004;25:1570–95.
2. McAlister FA, Stewart S, Ferrua S, McMurray JJ. Multidisciplinary strategies for the management of heart failure patients at high risk for admission: a systematic review of randomized trials. J Am Coll Cardiol 2004;44:810–9.
3. Weinberger M, Oddone EZ, Henderson WG. Does increased access to primary care reduce hospital readmissions? Veterans Affairs Cooperative Study Group on Primary Care and Hospital Readmission. N Engl J Med 1996;334:1441–7.
4. Doughty RN, Wright SP, Pearl A, et al. Randomized, controlled trial of integrated heart failure management: The Auckland Heart Failure Management Study. Eur Heart J 2002;23:139–46.
5. Jaarsma T, Van Der Wal MH, Hogenhuis J, et al. Design and methodology of the COACH study: a multicenter randomised Coordinating study evaluating Outcomes of Advising and Counselling in Heart failure. Eur J Heart Fail 2004;6:227–33.