

Care of Heart Failure Patients: Does Physician Specialty Matter?

Auerbach AD, Hamel MB, Davis RB, Connors AF Jr, Regueiro C, Desbiens N, et al. Resource use and survival of patients hospitalized with congestive heart failure: differences in care by specialty of the attending physician. SUPPORT Investigators. Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments. *Ann Intern Med* 2000;132:191-200.

Study Overview

Objective. To determine whether patients with an acute exacerbation of congestive heart failure who were cared for by cardiologists experienced differences in patterns and intensity of care, associated costs, and survival compared with patients of generalists.

Design. Prospective cohort study

Setting and participants. 1298 patients who were hospitalized with an acute exacerbation of congestive heart failure in 5 major U.S. teaching hospitals between 1989 and 1994 and who were enrolled in the Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT) [1].

Main outcome measures. Hospital costs were calculated by adjusting hospital billing charges using Medicare cost-to-charge ratios and the Medical Consumer Price Index. Intensity of care was measured using the Therapeutic Intervention Scoring System (TISS), an additive measure of resource utilization that assigns 1 point for minor interventions (eg, chest physical therapy or peripheral intravenous therapy) and 2 to 4 points for more substantial interventions (eg, cardiac catheterization) [2]. Survival was documented at 30, 180, and 365 days after admission and on 31 December 1994.

Main results. Patient baseline characteristics differed significantly between the 2 groups. Compared with patients of generalists, patients of cardiologists were younger (mean age, 63.3 versus 71.4 years; $P < 0.001$) and had lower Acute Physiology Scores at the time of admission (35.1 versus 36.7; $P < 0.001$) but were more likely to have a history of ventricular arrhythmias (21.0% versus 10.2%; $P < 0.001$).

Adjusted survival did not differ significantly between groups at 30 days; however, there was a trend toward improved survival among patients of cardiologists at 1 year

(adjusted relative hazard, 0.82; 95% confidence interval [CI], 0.65 to 1.04) and at maximum follow-up (adjusted relative hazard, 0.80; 95% CI, 0.66 to 0.96). Although the differences in survival rates were statistically significant only at 180 days and at maximum follow-up, they correspond to absolute improvements in survival of 2% at 180 days, 5% at 365 days, and 12% at maximum follow-up.

After adjustment for sociodemographic characteristics and severity of illness, patients of cardiologists incurred costs that were 42.9% (95% CI, 27.8% to 59.8%) higher than those of patients of generalists and had average daily TISS scores that were 2.83 points (95% CI, 1.96 to 3.68 points) higher. The cost increment attributed to cardiologist care was \$2100 (95% CI, \$1400 to \$3000). Patients of cardiologists were more likely to undergo right-heart catheterization (adjusted odds ratio [OR], 2.9; 95% CI, 1.7 to 4.9), cardiac catheterization (adjusted OR, 3.9; 95% CI, 2.4 to 6.2), and electrocardiographic monitoring (adjusted OR, 4.9; 95% CI, 3.2 to 7.4) or to be transferred to an intensive care unit (adjusted OR, 2.8; 95% CI, 1.6 to 4.9).

Conclusion

Care provided by a cardiologist was associated with greater resource use and concomitant costs. There was a trend toward improved survival at longer periods of follow-up among patients of cardiologists.

Commentary

In this era of cost consciousness, many health plans have adopted policies designed to increase the use of primary care physicians and limit referrals to specialists [3]. A number of studies have explored the likely impact of such policies by examining the effect of physician training, beliefs, and practices on clinical, economic, and quality-of-life outcomes. The current study adds to this literature.

It is important to note that the lack of survival advantage in the short term (30 days) among cardiologist patients may reflect substantial differences in patient's baseline clinical characteristics, both measured and unmeasured. Also, the

similarities in overall care provided at the study's 5 teaching hospitals may have reduced the apparent differences in care between generalist physicians and specialists.

Applications for Clinical Practice

The question of how best to involve primary care physicians and specialists in the care of patients with acute exacerbations of congestive heart failure deserves further study. In particular, the care provided to heart failure patients hospitalized in health care facilities other than major teaching hospitals should be evaluated.

References

1. A controlled trial to improve care for seriously ill hospitalized patients. The study to understand prognoses and preferences for outcomes and risks of treatments (SUPPORT). The SUPPORT Principal Investigators [published erratum appears in JAMA 1996;275:1232]. JAMA 1995;274:1591-8.
2. Keene AR, Cullen DJ. Therapeutic Intervention Scoring System: update 1983. Crit Care Med 1983;11:1-3.
3. Cohen JJ. Transforming the size and composition of the physician work force to meet the demands of health care reform. N Engl J Med 1993;329:1810-2.

Copyright 2000 by Turner White Communications Inc., Wayne, PA. All rights reserved.