Emergency department visits for heart failure and subsequent hospitalization or observation unit admission

Saul Blecker, MD, MHS, a,b Joseph A. Ladapo, MD, PhD, a,b Kelly M. Doran, MD, MHS, a,c Keith S. Goldfeld, DrPH, MS, MPA, a and Stuart Katz, MD, MS b New York, NY

Background  Treatment of acute heart failure in the emergency department (ED) or observation unit is an alternative to hospitalization. Both ED management and observation unit management have been associated with reduced costs and may be used to avoid penalties related to rehospitalizations. The purpose of this study was to examine trends in ED visits for heart failure and disposition following such visits.

Methods  We used the National Hospital Ambulatory Medical Care Survey, a representative sample of ED visits in the United States, to estimate rates and characteristics of ED visits for heart failure between 2002 and 2010. The primary outcome was the discharge disposition from the ED. Regression models were fit to estimate trends and predictors of hospitalization and admission to an observation unit.

Results  The number of ED visits for heart failure remained stable over the period, from 914,739 in 2002 to 848,634 in 2010 (annual change −0.7%, 95% CI −3.7% to +2.5%). Of these visits, 74.2% led to hospitalization, whereas 3.1% led to observation unit admission. The likelihood of hospitalization did not change during the period (adjusted prevalence ratio 1.00, 95% CI 0.99-1.01 for each additional year), whereas admission to the observation unit increased annually (adjusted prevalence ratio 1.12, 95% CI 1.01-1.25). We observed significant regional differences in likelihood of hospitalization and observation admission.

Conclusions  The number of ED visits for heart failure and the high proportion of ED visits with subsequent inpatient hospitalization have not changed in the last decade. Opportunities may exist to reduce hospitalizations by increasing short-term management of heart failure in the ED or observation unit. (Am Heart J 2014;168:901-908.e1.)

Acute heart failure accounts for more than 1 million hospitalizations annually and is one of the most common causes of 30-day rehospitalization in the United States.1,2 To reduce the morbidity and costs associated with these hospitalizations, policy makers and hospitals have implemented various strategies to improve quality of care and reduce rehospitalizations in heart failure.3,4 The Centers for Medicare and Medicaid Services began publicly reporting heart failure rehospitalization rates in 2009 and subsequently established financial penalties for hospitals with high rates of rehospitalization within 30 days of the index hospitalization.4

One potential hospital strategy to reduce heart failure hospitalizations and rehospitalizations is to reduce the percentage of patients who are admitted to the hospital after an emergency department (ED) visit for heart failure. Although the majority of hospitalizations for heart failure begin in the ED,5 some patients with acute heart failure may be adequately treated and discharged from the ED.6 Accordingly, short-term treatment of heart failure patients in the ED, with close outpatient follow-up management, has been proposed as a viable strategy to reduce hospitalizations.6,7

The observation unit has been used as an alternative to hospitalization for short-term monitoring and management of heart failure.8,10 Observation unit stays are considered outpatient encounters and, therefore, avoid penalties for rehospitalizations.11 Observation units are also associated with significant cost saving to hospitals and payers when compared to hospitalizations.8 As a result, admissions to observation units may be increasingly serving as substitutes for hospitalizations.