

News and Views from the Literature

Heart Failure

Heart Failure With Preserved Ejection Fraction: Disturbing Trends

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Trends in Prevalence and Outcome of Heart Failure with Preserved Ejection Fraction

Owan TE, Hodge DO, Herges RM, et al.

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Hear failure with preserved ejection fraction has not been studied as extensively as heart failure with reduced systolic dysfunction, and large gaps in knowledge remain about this disease state.¹ The data that are available from recent studies in patients hospitalized for heart failure suggest that half have preserved ejection fraction, and these patients have demographic characteristics, comorbidities, and heart failure etiologies that differ from those of patients with systolic dysfunction.^{2,3} The increased prevalence of heart failure with

preserved ejection fraction may be a result of the aging population, changes in the prevalence of risk factors, changes in treatment, or increased frequency of diagnosis. To better define the secular trends in the prevalence of heart failure with preserved ejection fraction, Theophilus E. Owan, MD (Mayo Clinic, Rochester, MN) and colleagues studied all consecutive patients hospitalized with decompensated heart failure at Mayo Clinic Hospitals in Olmsted County, Minnesota, over a 15-year period from 1987 through 2001.⁴

Study Findings

In this study, patients were classified as having either preserved or reduced ejection fraction. Temporal trends in the type of heart failure, comorbidities, and survival were assessed. A total of 6076 patients with heart failure were discharged during the 15-year period, but data on ejection fraction were available for only 4596 (76%). Reduced left ventricular ejection fraction (LVEF), defined as less than 50%, was seen in 2429 patients (53%); 2167 (47%) had an LVEF that was preserved (defined as more than 50%).

The proportion of patients with the diagnosis of heart failure with preserved ejection fraction increased significantly over time. Preserved systolic function heart failure was more common among older patients; it was seen in 49% of patients older than 65 years, but in only 40% of younger patients ($P = .004$). Compared with those who had reduced LVEF, preserved-LVEF patients were more likely to be female or obese and to have less coronary artery disease and more hypertension and atrial fibrillation.

The investigators also examined trends across the 35-year follow-up intervals. The prevalence of preserved systolic function heart failure grew from 38% to 54%, which was attributed to increased admission rates. The number of patients admitted with reduced systolic function heart failure disease was consistent. Controlling for age had little effect on apparent growth. The number of heart failure cases grew significantly during the 15-year period in both cohorts by hospital type.

In this cohort of hospitalized heart failure patients, those with preserved ejection fraction had slightly better survival. After controlling for demographics and year of admission, patients' adjusted 5-year mortality hazard ratio was 0.96 (95% CI, 0.92-1.00). The advantage appeared to be driven by patients younger than 65 years (mortality hazard ratio, 0.87; $P = .003$), compared with those older than 65 years (mortality hazard ratio, 0.97; $P = .06$). Preserved-LVEF patients showed stable death rates, whereas mortality decreased modestly over time for reduced-LVEF heart failure patients ($P = .005$).

Study Limitations

There are a number of limitations to this study that must be noted. Left ventricular function measurements were missing in more than one quarter of the patient population, and it is impossible to know the true prevalence of preserved versus reduced systolic function or temporal trends in this cohort with that many data missing. This study included both community patients and those from other parts of the country who were referred to the Mayo Clinic. Thus, it is not a true community cohort study. The demographics in Olmsted County are not nationally representative, so the study observations may or may not apply to the more racially, ethnically, and socioeconomically diverse population of the entire United States. The use of the LVEF cutpoint of 50% is arbitrary, and there is not general acceptance as to whether systolic heart failure should be defined as LVEF greater than 40 or greater than 50.

Summary

Despite these limitations, this report does extend the findings of other studies in showing that the prevalence of heart failure with preserved ejection fraction increased over a 15-year period. This study also showed that the mortality rates for these patients are high and have remained unchanged during this time. Heart failure with preserved ejection has thus become the most common form of heart failure among hospitalized patients.⁴ There continues to be no evidence-based therapies that benefit these patients. As such, there have been no improvements

in survival over the past decades. These disturbing findings should prompt further studies to better define the pathophysiology of heart failure with preserved systolic function and to develop effective treatments. ■

Dr. Fonarow is a researcher/consultant/speaker for GlaxoSmithKline, AstraZeneca, Pfizer, and Medtronic.

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Risk Reduction

Lowering Levels of Lipids and Homocysteine

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New data address whether reducing levels of lipids and homocysteine decreases cardiovascular risk. It is now recognized that lipid-lowering therapy with statins is beneficial in a wide variety of patient populations,¹ but a new study considers whether the benefits of statin therapy are related to the intensity of cholesterol lowering. In addition, 2 new trials examine the use of the B vitamins folic acid and vitamin B₁₂ to lower homocysteine levels.

Meta-Analysis of Cardiovascular Outcome Trials Comparing Intensive Versus Moderate Statin Therapy

Cannon CP, Steinberg BA, Murphy SA, et al.

J Am Coll Cardiol. 2006;48(3):438-445