THE EFFECTIVE PHYSICIAN

Heart Failure

BY WILLIAM E. GOLDEN, M.D., AND ROBERT H. HOPKINS, M.D.

Background

Despite recent advances in diagnosis and treatment, heart failure continues to cause significant morbidity and mortality in adults. To help address these issues, the Heart Failure Society of America released guidelines in February 2006 on the evaluation and management of heart failure.

Conclusions

Although there are multiple etiologies for heart failure, the most common is coronary artery disease. Risk factor modification for prevention and treatment of heart failure requires appropriate management of blood pressure, lipids, and diabetes, treatment of obesity, reduction of dietary sodium, increased physical activity, smoking cessation, and avoidance of excess alcohol.

Implementation

A complete history and examination, chest radiography, ECG, and assessment of functional limitation are valuable in diagnosing heart failure and stratifying its severity.

Echocardiography is recommended to assess left ventricular size and function in patients who have risk factors and/or signs and symptoms of heart failure.

Measurement of B-type natriuretic peptide (BNP) or N-terminal pro-BNP is recommended only when heart failure is suspected but the diagnosis is uncertain. Volume status assessment, sodium/fluid restriction, and daily weight measurement are important in patients with heart failure. Diuretics should be used to manage volume excess that is not controlled by dietary restrictions.

Patients with symptomatic or asymptomatic reduction in left ventricular function (left ventricular ejection fraction [LVEF] less than 40%) should be treated with ACE inhibitors and β-blockers. Angiotensin receptor blockers (ARBs) should not be added routinely to this combination. However, if ACE inhibitors are not tolerated because of cough or angioedema, angiotensin receptor blocking drugs should be substituted. If ACE inhibitors or ARBs are not tolerated because of hyperkalemia or renal insufficiency, the combination of hydralazine and an oral nitrate should be substituted.

ARBs may be considered initial therapy (substituting for ACE inhibitors) in patients who have heart failure after myocardial infarction or who have chronic heart failure with systolic dysfunction. β-Blockers should be used cautiously in patients with resting bradycardia, recurrent hypoglycemia, obstructive lung disease, and/or resting limb ischemia. After an acute decompensation of heart failure, a β-blocker should be started at a low dose and titrated upward no sooner than at 2-week intervals.

It is recommended that β-blockade be continued in most patients who experience a symptomatic exacerbation while on maintenance treatment; abrupt discontinuation of β-blockers should be avoided. Repeated evaluation of cardiac function should be reserved for patients in whom it is likely to prompt changes in clinical management. Nonsteroidal anti-inflammatory medications and cyclooxygenase-2 inhibitors are not recommended in patients with chronic heart failure.

Aldosterone antagonists should be added routinely to standard therapy in patients with heart failure (an LVEF of 35% or less) and New York Heart Association (NYHA) class III or IV symptoms, and these drugs may be considered in patients with acute MI and symptomatic heart failure (an LVEF less than 40%). Aldosterone antagonists are not recommended in patients with a serum creatinine level of 2.5 mg/dL or higher (a creatinine clearance less than 30 mL/min) or a potassium level above 5.0 mEq/L.

The combination of hydralazine and an oral nitrate is recommended in addition to standard therapies for heart failure in African Americans with NYHA class II or III symptoms and left ventricular systolic dysfunction. This combination may be considered in other patients with systolic heart failure who remain symptomatic despite optimal doses of standard medications and in those who develop renal insufficiency or hyperkalemia with ACE inhibitors.

Antiarrhythmic agents, including amiodarone, are not recommended for the primary prevention of sudden death in patients with heart failure. Prophylactic implantable cardioverter defibrillator (ICD) placement should be considered in patients with systolic heart failure (an LVEF of 30% or less) and NYHA class II or III symptoms.

ICD placement is recommended for survivors of cardiac arrest from ventricular fibrillation or ventricular tachycardia without acute MI and in persons with these arrhythmias more than 48 hours following an acute MI. However, ICD placement is not recommended in patients with chronic, severe heart failure and little reasonable chance for improvement.

Biventricular pacing should be considered in patients with persistent, severe left ventricular systolic dysfunction (an LVEF of 35% or less with left ventricular dilation greater than 5.5 cm), a sinus mechanism on an ECG, a wide QRS complex (greater than 120 milliseconds), and persistent NYHA class III or IV symptoms despite optimal medical management. The routine use of dual-chamber pacemakers in the absence of symptomatic bradycardia or high-grade atrioventricular block is not recommended.

Surgical therapies for severe heart failure, including heart transplantation, are beneficial in selected patients and are best implemented in centers with demonstrated expertise in these procedures.

Reference

Adams, K.F., et al. Executive Summary: HFSA 2006 Comprehensive Heart Failure Practice Guideline. J. Cardiac Failure 2006;12:10-38.

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β-Blocker at Discharge Improves HF Survival

BY BRUCE JANCIN
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ATLANTA — Predischarge initiation of β-blocker therapy in patients with heart failure and left ventricular systolic dysfunction halved mortality during the next 60-90 days among 5,791 patients in a registry, Dr. Gregg C. Fonarow reported at the annual meeting of the American College of Cardiology.

Inpatient initiation of β-blocker therapy should be considered a standard of care in heart failure, said Dr. Fonarow, professor of medicine at the University of California, Los Angeles, and director of the Ahmanson-UCLA Cardiomyopathy Center. The treatment has all the elements of an ideal clinical performance measure, yet it wasn't included among the five inpatient performance measures for adults with chronic heart failure recently issued by an ACC/American Heart Association (AHA) task force (J. Am. Coll. Cardiol. 2005;46:1144-78). The issue deserves to be revisited, he said.

He reported on 5,791 heart failure patients in 91 U.S. hospitals enrolled in the Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients with Heart Failure (OPTIMIZE-HF) registry. Of the 53% with left ventricular systolic dysfunction, 90% were eligible for β-blocker therapy at discharge. Of those, 84% were actually discharged on a β-blocker, and 93% of those remained on the drug at 60- to 90-day follow-up.

Postdischarge 60- to 90-day all-cause mortality was 11.1% in patients eligible for β-blocker therapy who weren't discharged on it, with a combined rate of death or rehospitalization of 42%. Multivariate analysis showed that discharge on a β-blocker was associated with a highly significant 49% reduction in all-cause mortality and a 28% reduction in death or rehospitalization, compared with rates in the eligible-but-untreated group.

Dr. Fonarow stressed that when he and his coinvestigators applied the five ACC/AHA performance measures to the nearly 6,000-patient OPTIMIZE-HF cohort, none predicted 60- to 90-day mortality. Only one—discharge on an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker (ARB)—was associated with a significant reduction in the combined death or rehospitalization end point. (The other indicators are evaluation of left ventricular systolic function, issuance of discharge instructions, smoking cessation advice/counseling, and discharge anticoagulation for heart failure patients with atrial fibrillation.)

The OPTIMIZE-HF experience undercuts the ACC/AHA task force's assumptions that few stable HF patients would qualify for β-blockade, Dr. Fonarow said in an interview. "Here in OPTIMIZE-HF are the actual prospective data showing that a large number of patients qualify for β-blocker therapy, the tolerability is phenomenal, and it's the most important measure with respect to outcome prediction in terms of death and rehospitalization. So if you were to ask in terms of actual data what would be the most important performance measure for heart failure at the time of discharge, it would be β-blocker therapy, followed by ACE inhibitor/ARBs," he said. The other measures don't address the highest-priority issues, he added.

Task force member Dr. Kim A. Eagle, clinical director of the University of Michigan Cardiovascular Center, Ann Arbor, said in an interview that it's unclear whether the group will reconsider adding inpatient β-blocker therapy as a heart failure performance indicator. There is a concern that starting the therapy before a patient is stabilized can have adverse consequences, he explained.

OPTIMIZE-HF is funded by GlaxoSmithKline. Last year the registry was incorporated into AHA's ongoing Get With The Guidelines–Heart Failure project. ■

VERBATIM

'It's been important to me on maybe one occasion in 1,000 patients.'

Dr. Erwin W. Gelfand, on the limited value of exploring family history when evaluating a patient with recurrent infections for possible primary immunodeficiency, p. 59