

Managed Care Clinical Corner: A Case of Congestive Heart Failure—The Managed Care Perspective

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CASE

History: A 76-year-old woman presented to the emergency department with a complaint of increasing shortness of breath. She had been in her usual state of health until 5 days previously, when she had noticed the onset of increased swelling of the legs and dyspnea. She denied having other symptoms. Her medications included 5 mg of enalapril twice daily, 180 mg of long-acting diltiazem daily, and 40 mg of furosemide daily. The patient's medical history was significant for heart failure and long-standing hypertension.

Physical Examination and Laboratory Studies: The physical examination indicated mild respiratory distress, blood pressure of 160/100, heart rate of 106 bpm, jugular venous distention, rales in the lower two thirds of the bilateral lung fields, S₃, and pretibial 2+ pitting edema bilaterally. A radiograph of the chest showed pulmonary congestion; no acute changes were observed on the electrocardiogram. The patient's complete blood cell count and levels of electrolytes, creatinine, uric acid, thyroxine, thyrotropin, and arterial gases were unremarkable. Pulse oximetry on room air indicated arterial oxygen saturation of 89%.

Treatment: The patient was given oxygen, treated with intravenous furosemide, and admitted. The hospital case manager for heart failure was consulted on the day of admission.

The patient's cardiac enzyme levels were found to be normal. Echocardiography revealed left ventricular hypertrophy and an estimated ejection fraction of 30%. After questioning the patient in greater detail, it was discovered that she had used all her medications but had felt too ill to go to the pharmacy. Living alone in a dangerous neighborhood, without transportation, were factors contributing to her noncompliance. Furthermore, the patient had been consuming cold cuts to avoid having to cook food in the summer heat.

The hospital course was otherwise unremarkable. After losing 8 lb, the patient was discharged to her home on the fourth day.

A Word from the Editor

Case management and disease management have a great deal to offer in optimizing the treatment of many complex cases. Managed care has helped to put these tools into practice.

This column illustrates the benefits of case management in congestive heart failure. Dr. Loh contributes clinically focused commentary on the case and Dr. Bischof presents a managed care perspective. I offer final commentary.

Clinician's Observations and Issues

Congestive heart failure (CHF) is the most common admission diagnosis related group for individuals in their eighth decade of life. During 1997, hypertension and coronary disease will comprise more than 80% of the etiologies of patients who present with symptomatic CHF.¹ The etiology for this woman's left ventricular systolic dysfunction appears to have been hypertension.

The case represents a common scenario for emergency department presentations for CHF. An elderly woman ran out of medications, did not have the personal resources necessary to obtain a renewal for the prescriptions, and, because of a lack of social supports, consumed dietary sodium in an amount that led to her progressive volume-overloaded state. The event occurred in the absence of any clear precipitant, such as an intercurrent myocardial infarction or uncontrolled supraventricular tachyarrhythmias.

This case also represents two major clinical issues—case management and disease management—that are being addressed daily during the country's transition to an outpatient approach to such common diagnoses as CHF. First, many studies currently are under way to investigate the roles in outpatient care of aggressive case managers and employees of home nursing services, who can visit elderly individuals living alone. The goals of these studies are to conduct daily physical or telephone assessments of high-risk patients who have the predisposition to develop volume overload symptoms that require evaluation in an emergency department or admission to a hospital.

Second, if the patient in this case had received the supplemental education that would have influenced her to call her primary care physician after she started gaining weight at home, a dosage increase of oral diuretics could have been prescribed during the period preceding her presentation to the emergency department that may have obviated the need for hospitalization. In addition, if she had had access to patient education materials explaining that cold cuts contain excessive amounts of dietary sodium, she might have chosen to consume other types of food in order to avoid an epi-isode of CHF that required admission to the hospital.

In the setting of chronic volume overload presentations without acute precipitants, such as in this case, the option of discharging a patient from the emergency department to the home always should be considered. A staff member from a visiting nursing/ infusion service could have seen the patient in this case daily in order to administer intravenous diuretics at home, monitor her electrolyte levels as needed, and communicate effectively with the primary care physician or cardiologist.

The last issue relates to medications. In light of the patient's depressed left ventricular ejection fraction and clinical volume overload syndrome, replacing diltiazem as her antihypertensive agent of choice before she was discharged should have been given consideration.² Results from the recent Prospective Randomized Amlodipine Survival Evaluation (PRAISE) trial³ suggest that amlodipine is a safe adjuvant therapy in individuals with CHF and other concomitant comorbidities, such as angina or hypertension.

With well-functioning healthcare systems and attention to details, suitable care can be delivered to the right patient at the appropriate time and in an appropriate setting. In the future, under a properly

organized managed care structure, the type of admission described here may well be avoidable.

Managed Care Perspective

Heart failure is a common cause of morbidity and mortality. Affecting 3 million patients in the United States each year, of whom 1 million require hospitalization, heart failure is the single most costly healthcare problem in this country.

This patient presented with CHF secondary to noncompliance. With better functioning of healthcare systems, many such admissions easily can be prevented. Social and economic conditions often play a role in noncompliance, as they did in this case. Although some of these factors are difficult to control, others can be dealt with effectively. Despite good intentions, however, these issues are often ignored.

Case management, which recently has received much attention, offers one avenue to preventing unnecessary hospital admissions. Case managers can educate patients on behavior modification (eg, by explaining why high-sodium foods, such as cold cuts, should be avoided). They can telephone patients periodically to assess status and can intervene before mild symptoms become florid CHF. Case managers also can provide reminders about the importance of compliance and can assist in the delivery of medication, if necessary. As a means of early intervention to avoid hospitalization and reduce morbidity, patients could be given scales, accompanied by instruction on daily weight monitoring.

In addition, case managers can facilitate the appropriate timing and flow of events that occur during the course of an admission. For example, preparation for home healthcare should be initiated early in the admission to ensure its availability at the time of discharge. A critical pathway may help to clarify the timing and flow of events in the hospital for all who are involved in the care of the patient. These pathways and other clinical practice guidelines have been developed as one tool to help to reduce unexplained variation in clinical practice, control costs, and produce better patient outcomes.

This patient underwent echocardiography during her admission. However, because she failed to recall that the procedure had been performed 6 months previously, no one consulted her primary care physician. The second procedure was unnecessary and should have been avoided. A complete history is imperative, as well as the documentation of previous

evaluation of ejection fraction in the chart. Similarly, 2 months before the admission, thyroid studies had been performed while the woman was an outpatient and need not have been repeated.

Patients with systolic dysfunction should be treated with angiotensin converting enzyme (ACE) inhibitors, as this patient was. These agents have been shown to reduce morbidity and mortality in the treatment of heart failure.^{4,5} The dose should be titrated, as tolerated, to the recommended target dose for heart failure. In this case, the patient was receiving 10 mg per day enalapril; the dosage should be titrated as tolerated to the target dose for enalapril of 20 to 40 mg per day. Patients who cannot tolerate ACE inhibitors should be treated with a combination of nitrates and hydralazine. Digoxin may also have beneficial effects to patients on ACE inhibitors and diuretics.

Calcium channel blockers are now thought to be relatively strongly contraindicated in the treatment of heart failure.⁶ Although they often are used for other related cardiovascular conditions, they may worsen heart failure. Interestingly, beta blockers, which were thought to be contraindicated in patients with heart failure only several years ago, now are considered to be beneficial in selected patients.⁷

Afterword

As clearly stated by both Dr. Loh and Dr. Bischof, congestive heart failure is a common disease in the United States, significantly affecting morbidity and mortality, as well as healthcare costs. Both physicians have emphasized the benefits of case management in preventing exacerbations of CHF. Through case management, patients can receive effective outpatient treatment for many diseases that previously required long hospitalizations and frequent emergency department visits. Proactive monitoring of drug compliance and the social aspects of chronic disease are as important as pharmacologic interventions. In addition, authors raise the issues of the appropriate use of ACE inhibitors and diuretics for optimal treatment of CHF and the potentially deleterious effects of calcium channel blockers. The use of clinical practice guidelines helps to ensure that variations in practice are minimized, and that patients receive the best known form of therapy for such chronic diseases as CHF.

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To Our Readers

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