Geriatric Heart Failure: Awareness, Evaluation, and Treatment in Primary Care

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ABSTRACT

Heart failure (HF) is a condition with increasing prevalence, high mortality, and frequent readmission. Over 80% of patients diagnosed with HF are over 65 years. Diagnosing geriatric HF is difficult in primary care because symptoms are often atypical. Advanced practice nurses can be actively involved in caring for HF patients by identifying elderly individuals at risk of developing HF, controlling risk factors, providing education in self-management, and minimizing inappropriate medication use. To fulfill those responsibilities, advanced practice nurses require a better understanding of the unique characteristics of geriatric HF, the most recent diagnostic and treatment guidelines, and the indications for timely referral.

Keywords: advanced practice nurses, assessment, heart failure, management, older adults

Heart failure (HF) is a condition with increasing incidence, high mortality, and frequent hospital readmission.[1] More than 8 million Americans (1 in 33) are expected to have HF by 2030.[1] Incidence approaches 10 per 1,000 in older adults;[2] over 80% diagnosed with HF are older than 65 years.[3] Approximately 50% of HF patients will die within 5 years.[2] HF also places a significant economic responsibility on the US health care system, particularly on Medicare. The estimated total cost for HF is projected to rise from $31 billion in 2012 to $70 billion in 2030.[1]

Diagnosing HF in older adults poses specific challenges for providers in primary care settings, which may be less equipped to diagnosis and manage HF than a specialty clinic. To ensure quality care, primary care providers must sharpen their clinical assessment skills in identifying older adults at risk of developing HF and in monitoring for exacerbation. Becoming familiar with national HF guidelines is critical because HF treatment is strongly focused on evidence-based medicine. Close follow-up after discharge and collaboration with specialists may help lengthen the time between rehospitalization or death; it also decreases the overall health care costs.[4,5]

ETIOLOGY AND PRECIPITATING FACTORS

HF etiology in older individuals is multifactorial and unique because of age-related changes and comorbidities. HF in younger patients typically results from left ventricular systolic dysfunction; however, with increased age, patients tend to present more with preserved or near normal systolic function.[6] HF with a decreased ejection fraction because of ischemic cardiomyopathy is more prevalent in elderly male populations.[7] Elderly women tend to have diastolic HF with preserved left ventricular (LV) function commonly caused by chronic systolic hypertension.[6,7] Normal cardiovascular aging significantly affects cardiac output, LV filling, and older adults' ability to respond to HF onset (Table 1).[8] These alterations lead to a marked reduction in cardiovascular reserve and a shift in the LV pressure-volume relationship; thus, a small increase in LV

Table 1. Effects of Aging on Heart Failure

Age is associated with decreased myocardial relaxation and compliance, which lead to impaired left ventricular filling.
Age-related decline in activity of the autonomic nervous system is responsible for a one-third reduction in maximum achievable heart rate between the ages of 20 and 80 years.
Degenerative changes in the sinoatrial node and diminished β-adrenergic responsiveness impair heart rate response to stress.
Maximal oxygen consumption (VO_2 Max) declines by 50% between the ages of 20 and 80 years.

volume can lead to a greater increase in LV diastolic pressure.[8]

Comorbid conditions are often associated with older adults and are etiologically related to HF or its progression. The 2 most common HF comorbidities are hypertension and ischemic heart disease.[3,9] Although many precipitating factors can be identified in geriatric HF patients, nonadherence to dietary restrictions was the most common causative factor and may contribute to two thirds of HF exacerbations.[10]

DIAGNOSTIC DIFFICULTIES OF GERIATRIC HF

Diagnosing geriatric HF is challenging in primary care; false-positive diagnoses may occur in up to 70% of cases.[11] Elderly patients suspected of having new-onset HF should be evaluated by specialists.[12] Primary care providers can identify HF in older patients through history taking and advanced assessment skills, triggering requests for diagnostic investigations.

History Taking in Geriatric HF Patients

A comprehensive history should be conducted to evaluate the cause and progress of geriatric HF. Typical presenting complaints in both younger and older HF patients include breathlessness, fatigue, sleep difficulty, and peripheral edema. It can be difficult to interpret these symptoms in the elderly, particularly in individuals with common conditions such as chronic obstructive pulmonary disease, obesity, and anemia.[12] Exertional breathlessness in the elderly can have noncardiac etiologies. Fatigue and lethargy, common elderly complaints, can be associated with depression and anemia. Ankle edema in the elderly may also be caused by venous insufficiency, medications, or hypoalbuminemia.[13]

There are important elements that can provide helpful information regarding the cause and diagnosis of HF in the elderly (Table 2). Questions focusing on evaluating HF symptoms should be part of history taking.[14] Health care providers need to be educated to overcome common age-related communication barriers caused by memory decline and sensory deficits to get maximum diagnostic information from the history. When assessing the presence of dyspnea on

Table 2. History Taking in Geriatric Heart Failure Patients

Typical Complaint	Medical History	Social History	Family History
• Exertional breathlessness • Fatigue and lethargy • Ankle edema • Difficulty in sleeping	• Ischemic heart disease • Hypertension • Arrhythmias • Valve disease • Pulmonary embolus • Endocrine abnormalities (eg, diabetes, thyroid disorders) • Sleep-disordered breathing • Concurrent infections • Myopathy • Mediastinal irradiation • Hyperlipidemia • Pheochromocytoma	• Smoking • Diet • Obesity/inactivity • Alcohol consumption • Salt • Exposure to cardiotoxic agents • Nonsteroidal anti-inflammatory drugs	• Cardiomyopathy • Conduction system disease • Myopathy • Predisposition to atherosclerotic disease • Skeletal myopathies • Sudden cardiac death • Tachyarrhythmia