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Congestive Heart Failure (CHF)

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Introduction

- Results from the heart failing to pump blood appropriately and cannot meet oxygen requirements for the rest of the body
- Affects almost six million Americans
- Leading cause of hospitalizations for patients older than 65 years
- Requires more hospitalization than any type of cancer
- Affects roughly two percent of the American population, and continues to be the most rapidly growing cardiac disease in the country (Parikh & Kadowitz, 2013)

The New York Heart Association (NYHA) and the American College of Cardiology (ACC/AHA) have provided classifications for the stages and levels of heart failure (see Table 1).

Table 1. Heart Failure Classes

| Class 1 | Participates in activity without limitation |
| Class 2 | Participates in activity with slight limitation |
| Class 3 | Participates in activity with marked limitation |
| Class 4 | Experience symptoms at rest, unable to take part in activity |

| Stage A | Patients at risk for heart failure who have not yet developed structural heart changes |
| Stage B | Patients with structural heart disease who have not yet developed symptoms of heart failure |
| Stage C | Patients who have developed clinical heart failure |
| Stage D | Patients with refractory heart failure requiring advanced intervention |

Signs and Symptoms

Signs could include:
- Elevated jugular venous pressure
- Third heart sound
- Laterally displaced apex beat
- Tachycardia
- Irregular pulse
- Murmur
- Tachypnea
- Weight gain or loss
- Cold extremities
- Peripheral edema

Symptoms could include:
- Breathlessness
- Orthopnea
- Paroxysmal nocturnal dyspnea
- Fatigue
- Reduced exercise tolerance
- Nocturnal cough
- Pulitations
- Blunted splitting
- Wheezing

Overall General Symptoms:
- Gout
- Depression
- Fatigue
- Loss of appetite

Notation of all symptoms and description of variations from normal routine essential to note to healthcare provider to ensure the correct diagnosis

Management of symptoms relies largely on management of symptoms paired with patient co-morbidities.

Co-morbidity examples could include:
- Hypertension
- Diabetes
- Lung diseases

60% of elderly heart failure patients have at least three major co-morbidities (Long, Yeh, & Presler, 2012).

Our Aging Population and the Rising Numbers of Congestive Heart Failure Diagnoses

Since this topic is of growing concern, and as our population ages, healthcare will continue to experience more patients experiencing heart failure as a condition. As clinicians manage patients with this condition, they will also have to consider the numerous other health factors and comorbidities that can affect the way in which each patient is provided care.

Especially important for use of current standards of practice with evidence-based practice approaches.

Underlying Pathophysiology and Significance

- Heart failure to pump blood appropriately, unable to meet oxygen needs for body
- Body attempts to compensate for impending failure by attempting to increase blood volume, increase cardiac filling pressure, and increasing heart rate
- Eventually the heart loses the ability to adequately contract and relax, resulting in heart failure
- Dysfunction can easily lead to impaired arterial stiffness
- May experience the inability to sustain adequate ventilation during exertion or physical activity
- Shallow breathing limits alveolar ventilation and diminishes gas exchange, and sympathetic activation causes cardiac arrhythmias and tissue vasocostriction

In conclusion, as noted in the above breakdown, heart failure is a complex condition requiring interventions. Physiologic strategies, and may include the use of invasive therapies

Pharmacologic therapy could include:
- angiotensin-converting enzyme inhibitor (ACE)
- beta-blockers
- aldosterone antagonist

Other interventions could include:
- sodium and fluid restriction
- patient focused physical activity

References


Implications for Nursing Care

- Multi-disciplinary and multidimensional treatment
- Individualized plan of care, use of medication, diet changes, smoking cessation, pharmacologic therapy, weight loss, and behavior changes
- Main goal is to improve quality of life, increase longevity, and reduce morbidity and mortality and respiratory complications
- Treatment varies between non-pharmacologic methods, pharmacologic strategies, and may include the use of invasive therapies

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Other interventions could include:
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Underlying Pathophysiology and Significance

- CHF can disrupt the balance of cytokines and angiotensin II, cell signals, reactive oxygen species, and proteolytic pathways
- The renin-angiotensin system is hyporesponsive
- Symptomatic neurohumoral stimulation causes release of norepinephrine, which then results in smooth muscle activation and vasocostriction. The heart rate is then increased and peripheral vascular resistance is noted
- The noted changes in the renin-angiotensin-aldosterone system is what effects the blood pressure and the maintenance of electrolyte balance
- The stimulation of angiotensin II stimulates release of aldosterone, which then increases fluid retention and blood pressure (Brake & Jones, 2017)

The care of a heart failure patient can be complicated and diverse. Not every patient will react to the exact course of treatment each time. Nursing care would initially attempt to educate the patient on non-pharmacologic treatment to reduce symptoms and improve lifestyle choices. This would require diet education, education toward appropriate physical activity, and limitation, and the importance of weight monitoring.

In conclusion, as noted in the above breakdown, heart failure is a complex condition often requiring changes to lifestyle and frequent monitoring. It is often associated with high rate of mortality, and morbidity. Mental health issues may arise as physical symptoms change or worsen. The provider role helps to ensure patients are provided with quality information and adequate support directed toward their condition. The provider also plays a key role in recognizing mental health needs in conjunction with physical symptoms. Understanding the underlying symptoms, pathophysiology, and treatment options helps to ensure the promotion of evidenced-based informative practice and excellent care.

New York Heart Association (NYHA)

American College of Cardiology/American Heart Association (ACC/AHA)