Heart Failure with Preserved Ejection Fraction

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**Introduction**

Heart failure with preserved ejection fraction (HFpEF) is a diagnosis that becomes more prevalent as the population ages. HFpEF affects 10% in every 2,500 individuals over 65 years of age, with 870,000 new cases being diagnosed every year (Tawil & Gelzinis, 2017).

HFpEF accounts for 44% of all heart failure diagnoses, and the five-year mortality for patients with HFpEF is 42.3% (Singh & Mehta, 2018). HFpEF is a clinical syndrome that encompasses several cardiovascular disease processes and symptoms that relate to diastolic dysfunction while retaining a left ventricular ejection fraction (LVEF) of > 50% (Hafner, Patel, & Gilroy, 2018).

HFpEF requires careful consideration of the healthcare provider when exploring clinical decisions related to the management of the disease and beyond.

**Topic Importance**

As the population ages, HFpEF is becoming more prevalent. It is the leading cause of hospitalization in patients 65 and older (Tawil & Gelzinis, 2017).

The management of HFpEF creates unique challenges for the anesthesia provider and intraoperative clinical management and decision making, and the disease is associated with increased management and decision making, and provider and intraoperative clinical risk factors.

Health care expenditure related to heart failure doubled between 2001 and 2013 (Gazewood & Turner, 2017).

In the next 20 years the prevalence of heart failure is projected to increase by 50% (Farris et al., 2017).

**Risk Factors**

- Age > 70
- Female sex
- Obesity
- Hypertension
- Tobacco use
- Diabetes mellitus
- Coronary artery disease
- Valvular heart disease

**Disease Process**

HFpEF consists of a combination of cardiovascular disease processes that become prominent in older age. At the population level, myocardial cell function degrades, and the production and utilization of ATP decreases causing the inability of the ventricles to relax as well as stiffness resulting in issues with ventricular compliance and filling (Singh & Mehta, 2018).

As the heart works to maintain the same contractility to deliver oxygen to the tissues, the walls may hypertrophy to elicit a greater blood pressure gradient and overcome the cardiac wall stiffness and impair filling (Farris et al., 2017).

- HFpEF is a syndrome that encompasses several cardiovascular disease processes and symptoms that relate to diastolic dysfunction while retaining a left ventricular ejection fraction (LVEF) of > 50% (Hafner, Patel, & Gilroy, 2018).
- The management of HFpEF requires careful consideration of the healthcare provider when exploring clinical decisions related to the management of the disease and beyond.

**Signs and Symptoms**

- General fatigue and weakness
- Dyspnea, paroxysmal nocturnal dyspnea, or orthopnea
- Edema
- Jugular venous distention
- S3 heart sound
- Displaced apical impulse

**Underlying Pathophysiology**

- In normal physiology, the heart achieves optimal cardiac output through the augmentation of stroke volume and heart rate. Myocardial cell function degrades, and the production and utilization of ATP decreases causing the inability of the ventricles to relax as well as stiffness resulting in issues with ventricular compliance and filling (Singh & Mehta, 2018).
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