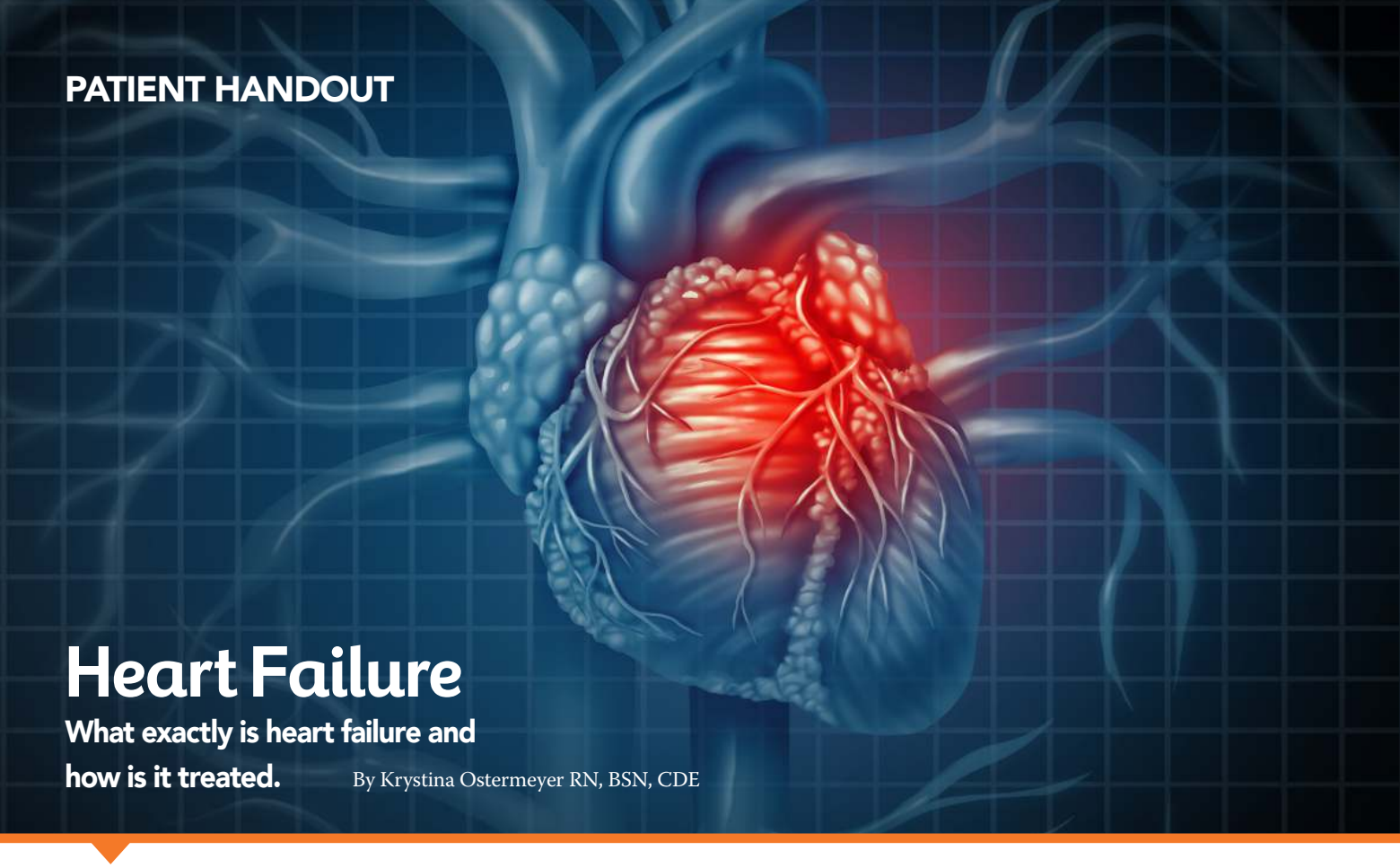
PATIENT HANDOUT



Heart Failure

What exactly is heart failure and how is it treated.

By Krystina Ostermeyer RN, BSN, CDE

Heart failure is a bit of an oxymoron. When we hear the medical term "heart failure" it does not mean that the heart has necessarily stopped beating. Rather, the heart has begun to pump less effectively, meaning that it cannot oxygenate the body.

The Centers for Disease Control and Prevention estimate that about 5.7 million adults in the United States have heart failure. Unfortunately, half of those diagnosed with heart failure die within five years of diagnosis. In addition, heart failure is costly – it costs our nation $30.7 billion annually. This value includes health care, medications, and missed workdays.

What Exactly is Heart Failure?

The heart doesn't randomly weaken to the point of heart failure; other conditions typically precipitate the condition.

When someone has heart failure, the ventricles of the heart, which are the main pumping chambers, stiffen and are unable to fill with blood completely between heartbeats. The heart may become weakened and the ventricles may stretch; when this happens, the ventricles are also unable to pump blood effectively.

The term *ejection fraction* is important when discussing heart failure; ejection fraction measures how well the heart is pumping. It can help to diagnose heart failure and guide treatment decisions. Healthy hearts have an ejection fraction (EF) of 50% or higher, though someone with heart failure can still have a normal EF.

Types of Heart Failure

Heart failure with reduced ejection fraction, also commonly known as systolic heart failure or dilated cardiomyopathy, is the most common type of heart failure. This type of heart failure occurs when the left ventricle becomes weak and is unable to pump properly.

Systolic heart failure occurs most frequently in those who are middle aged and older and occurs most frequently in those who have prior heart damage due to a heart attack. Other causes include excessive alcohol intake, prior use of certain chemotherapy medications, and inflammation of the heart due to infections. This specific type of heart failure also has a familial tendency.

Heart failure with preserved ejection fraction, also commonly known as diastolic heart failure or hypertrophic cardiomyopathy, occurs when the heart can't relax; this means that the heart is less efficient at pumping the blood throughout the body.

Typically, diastolic heart failure occurs in those who are over age 65 and who have underlying comorbidities, such as hypertension and diabetes as they can lead to heart disease. Heart disease leads to thickening of the walls of the heart. When diastolic heart failure is related to genetics, it is then known as hypertrophic cardiomyopathy.

Symptoms of Heart Failure

One of the most common symptoms of heart failure is shortness of breath. Shortness of breath occurs when fluid backs up into the lungs because the heart isn't pumping effectively. As the lungs fill with fluid, shortness of breath occurs.

Fatigue is also common. Because the heart is not circulating an adequate amount of blood, the organs and muscles are not getting enough oxygen, causing fatigue.

Swelling and weight gain are likely to occur. Swelling is common in the lower extremities and

abdomen. The kidneys are not filtering enough blood, so the body attempts to protect itself by holding onto excess fluid. Unfortunately, this causes uncomfortable weight gain and edema.

Other symptoms that may occur include frequent urination, a dry cough, heart palpitations, and dizziness and confusion.

Treatment of Heart Failure

There are various treatment options for heart failure. It is very important that a treatment plan is addressed immediately as occasionally, heart failure can be reversed by treating the underlying cause.

However, it is important that compliance with a treatment regimen is stressed. Proper treatment and adherence can increase quality of life, as well as length of life.

Medications are typically prescribed, and a combination is typically used:

Angiotensin-converting enzyme (ACE) inhibitors: ACE inhibitors act as a vasodilator, thus they reduce blood pressure, improve blood flow, and overall, reduce the workload of the heart. Examples include captopril (Capoten), lisinopril (Zestril), and enalapril (Vasotec).

Angiotensin II receptor blockers (ARBs): ARBs work similarly to ACE inhibitors and are used if ACE inhibitors cannot be tolerated. Examples include losartan (Cozaar) and valsartan (Diovan).

Beta blockers: beta blockers are a powerful medication; they have many functions – they reduce heart rate, reduce blood pressure, and limit damage to the heart for those with systolic heart failure. Examples include metoprolol (Lopressor), bisoprolol (Zebeta), and carvedilol (Coreg).

Diuretics: diuretics are commonly prescribed because they help remove excess fluid from the body.

Potassium-wasting diuretics are diuretics that remove the excess fluids, but they may also remove potassium and magnesium. It is common practice to monitor these electrolytes and supplement with potassium while taking this medication.

Potassium-sparing diuretics are diuretics that do not cause depletion of potassium while removing fluid. Unfortunately, potassium can become too high while taking them.

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Digoxin: digoxin is known to help strengthen the heart contractions. It is often given to those who have heart failure as well as heart rhythm irregularities, such as atrial fibrillation, as it slows the heartbeat.

Implantable devices can treat heart failure as well:

Implantable cardioverter-defibrillator (ICD): an ICD is implanted into the chest and wires are led to the heart. The ICD reads the heart rhythms. If the heart beats irregularly or stops, it shocks the heart until it is back into a normal rhythm. It also acts as a pacemaker.

Biventricular pacemaker: A biventricular pacemaker sends electrical impulses to the left and right ventricles so that they pump more efficiently. Occasionally, an ICD and a biventricular pacemaker are used together so that they heart can pump optimally.

Ventricular assist device (VAD): a VAD is a mechanical circulatory device that assists the lower ventricles pump blood to the rest of the body. It is implanted into the abdomen, then attached to the heart.

Surgery, such as a heart valve replacement or even a heart transplant, may be required in those who have severe heart failure.

Lifestyle modifications are also important:

Smoking cessation can improve quality of life. Smoking damages the anatomy of the heart, increases blood pressure, and reduces the amount of oxygen that is available in the blood.

Monitor weight. Most people with heart failure should monitor weight daily, reporting weight gains to their healthcare provider.

Restrict sodium. Most people should also restrict sodium as excess sodium can cause fluid retention. A healthcare provider or dietitian can recommend the proper amount of sodium. ■

Resources

- Heart failure - diagnosis. (2017, December 23). Retrieved July 5, 2019.
- Heart failure fact sheet. (2019, January 8). Retrieved July 3, 2019, from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_failure.htm
- Heart failure: Understanding heart failure. (n.d.). Retrieved July 5, 2019, from https://my.clevelandclinic.org/health/diseases/17069-heart-failure-understanding-heart-failure
- Types of Cardiomyopathy & Heart failure. (n.d.). Retrieved July 5, 2019, from https://nyulangone.org/conditions/cardiomyopathy-heart-failure-in-adults/types

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