

NR 507 Week 3 Discussion 2

Jesse is a 57-year-old male who presents with gradual onset of dyspnea on exertion and fatigue. He also complains of frequent dyspepsia with nausea and occasional epigastric pain. He states that at night he has trouble breathing especially while lying on his back. This is relieved by him sitting up. His vitals are 180/110, P = 88, T = 98.0 F, R = 20. After a thorough work-up, he is diagnosed with congestive heart failure.

- What is the etiology of congestive heart failure?
- Describe in detail the pathophysiological process of congestive heart failure.
- Identify hallmark signs identified from the physical exam, diagnostic lab work and symptoms.
- Describe the pathophysiology of complications of congestive heart failure
- What teaching would you provide this patient to avoid heart failure symptoms?
- In addition to the textbook, utilize at least one peer-reviewed, evidence-based resource to develop your post.

Hello Professor and Class!

1. What is the etiology of congestive heart failure?

Heart failure is “a condition in which the heart can't pump enough blood to meet the body's needs” (NHLBI, 2017). Congestive heart failure specifically deals with the left-hand side of the heart and can include such issues as “heart failure with reduced ejection fraction (systolic heart failure) or heart failure with preserved ejection fraction (diastolic heart failure)” (McCance, Huether, Brashers, & Rote, 2013, p. 1175). A patient could suffer from both kinds of congestive heart failure. Left-side heart failure is basically when “the heart can't pump enough oxygen-rich blood to the rest of the body” (NHBLI, 2017). The term heart failure can make one think that the heart has stopped working altogether, but that is not true! In this context, it just means that the heart is not working at its full capacity or is about to stop working. It is a very serious and possibly fatal condition that requires medical care. There is no cure except for a full heart transplant, but the disease can be managed with medications and lifestyle changes. Some risk factors for developing congestive heart failure includes heart disease, high blood pressure, diabetes, and obesity (CDC, 2016). All of these risk factors put stress on the heart, so it is no surprise that they could be the cause of heart failure. About 5 million Americans are currently

suffering from congestive heart failure with around 550,000 new cases being diagnosed each year (CDC, 2016).

2. Describe in detail the pathophysiological process of congestive heart failure.

Congestive heart failure occurs in patients who have a damaged heart from things like diabetes, obesity, or other issues. It most often occurs in patients over the age of 65 with comorbid conditions like angina, hypertension, or lung disease. These issues cause the heart to have an inability to effectively pump blood. This can cause issues in all of the organs, but especially the lungs, and it also causes a build-up of fluid in many different tissues, known as edema. This inefficiency also affects how my oxygen is being transported around the body. When those levels are decreased, it can cause many different problems for the organs of the body. However, congestive heart failure is “not only an inability of the heart to maintain adequate oxygen delivery; it is also a systemic response attempting to compensate for the inadequacy” (Mirkin, Enomoto, Caputo, & Hollenbeak, 2017). This means that the heart can try to overwork itself to try and make up for it’s insufficiencies. This can cause even more fluid or blood build-up. Lifestyle changes are some of the most important treatments, but medical wise, different medications like ACE inhibitors, angiotensin receptor blockers, or beta blockers can help take some of the workload off of the heart (NHLBI, 2017).

3. Identify hallmark signs identified from the physical exam, diagnostic lab work and symptoms.

The signs and symptoms of congestive heart failure line up quite perfectly with the symptoms of our patients. The first is shortness of breath during daily activities, even those that should not cause you to be out of breath. The next symptom is having trouble when you lay down, exactly like Jesse. A general feeling of fatigue and weakness is a common symptom. Swelling of the feet, legs, and ankles commonly occur, as well. The majority of these symptoms occur due to the build up of fluid throughout the body because of the diminished heart functions (NHLBI, 2017). While there is no one specific test for congestive heart failure, a diagnosis can be given based on family history, symptoms, a physical exam, and a few different tests. The first test is an EKG that will test the hearts electrical activity and it could find that the heart is having trouble pumping blood (NHLBI, 2017). A chest x-ray could show if the heart or lungs have any fluid build-up or a heart echo, or echocardiography, that could tell the medical professional how the chambers and the valves are working (NHLBI, 2017). There are a few other tests, but it is up

to the medical professional on how many tests should be run in association with the current symptoms of the patient and their medical history.

4. Describe the pathophysiology of complications of congestive heart failure

- **Pulmonary Edema:** Pulmonary edema is a build-up of fluid in the lungs. When the heart is damaged and not pumping blood effectively, this causes the blood to back up in the veins that take the blood to the lungs. As the pressure increases, fluid is pushed into the alveoli, or the air sacs, in the lungs. This means that oxygen cannot move as freely through the lungs. This causes shortness of breath and fatigue (NHBLI, 2017).
- **Kidney Damage:** The kidneys filter waste and extra fluid out of the blood, but they need a steady supply of blood from the heart to function correctly. Without the blood that they need, they are not able to filter as they need to. When a patient has congestive heart failure, they do not pump blood very efficiently, so this can cause the kidneys to suffer. Damaged kidneys cannot remove the excess water from the body, so it will begin to hold on to water causing swelling and a rise in the patient's blood pressure (CDC, 2016).
- **Anemia:** Anemia is a lack of red blood cells, or hemoglobin, in the body. Without enough healthy red blood cells, your body might not be getting the oxygen it needs leading to weakness and fatigue. When the heart is not pumping as much as it should, the rest of the body is not getting the blood, or the oxygen, that it needs (CDC, 2016).

5. What teaching would you provide this patient to avoid heart failure symptoms?

The teaching that I would provide for my patient would revolve around the activities and daily life changes that he would need to make to keep his heart as healthy as possible. We would, of course, go over any medications and procedures that he would need, but I would stress the importance to him that medication will not be enough to keep himself healthy. Even with medication, symptoms can get worse. I would encourage him to quit smoking if he is a smoker and to avoid second hand smoke as much as possible. I would want to talk to him about getting some light exercise in every day as regular physical activity could keep his blood pressure regular, help him lose weight as obesity is a big factor in congestive heart failure, and give him more energy meaning he won't lose his breath so easily. Finally, we would discuss a change in his diet to lower his fat, cholesterol, and sodium levels. These changes could drastically prolong the patient's outlook. I would make sure to let him know that readmission is very common with congestive heart failure patients, especially male ones (Mirkin, Enomoto, Caputo, & Hollenbeak,

2017). I would stress the importance of his staying on the treatment plan that we put together for him so that we could avoid readmission.

References

Centers for Disease Control and Prevention (CDC). (2016). Heart failure fact sheet. *Centers for Disease Control and Prevention*. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_failure.htm

McCance, K. L., Huether, S. E., Brashers, V. L., & Rote, N. S. (2013). *Pathophysiology: The biologic basis for disease in adults and children* (7th ed.). St. Louis, MO: Mosby.

Mirkin, K., Enomoto, L., Caputo, G., & Hollenbeak, C. (2017). Risk factors for 30-day readmission in patients with congestive heart failure. *Heart & Lung: The Journal of Acute and Critical Care*, 46(5), 357-362. doi: 10.1016/j.hrtlng.2017.06.005

National Heart, Lung, and Blood Institute (NHLBI). (2017). Heart failure. *National Institutes of Health*. Retrieved from <https://www.nhlbi.nih.gov/health-topics/heart-failure>