Heart Failure: What's the Next Step?

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“Heart failure? How can that be? I am only 30 years old!” For this client, they thought at age put them outside the bracket of possibility for heart failure. They were wrong. Heart failure can be defined generally as the heart’s inability to either fill properly or pump blood back into circulation efficiently. No one is exempt or immune from the possibility of heart failure. When pumping properly, the heart is responsible for circulating about 2000 gallons of blood a day (American heart association, n.d.). It is this circulation that provides the body with the needed oxygen, transportation of cellular nutrients and waste removal for us to maintain homeostasis. Without the main pump of the body working, every other body system will be affected. Swelling in the lower extremities, fluid in the lungs making it hard to get oxygen into circulation, kidneys not receiving enough blood to diurese toxins out of the blood, tissue ischemia and cellular death though out the body; this list is just a few of the symptoms of heart failure (Lippincott advisors, 2022).

In a normally functioning heart, we have blood returning from the Superior and Inferior Vena Cava. The blood moves from the vascular system into the Right Atrium. From there it passes the Tricuspid Valve and heads to the Right Ventricle. Next, blood passed through the Pulmonary Valve and heads to the lungs via the Pulmonary Artery to exchanged carbon dioxide for oxygen. Blood returns to the heart via the Pulmonary Vein with oxygenated blood. It passes into the Left Atrium and then through the Mitral Valve and goes into the Left Ventricle. Blood is then ejected through the Aortic Valve and exits the heart via the Ascending or Descending Aorta. If there is one malfunction in this well-oiled machine, we could see a client in heart failure. This paper is going to explain what heart failure is, how its classified, some general background information and statistics, ways to prevent heart failure, some critical education topics and management the public needs to know about heart failure.

Statement of the Problem

When looking at mortality and morbidity rates in The United States, heart failure is at the pinnacle. According to the Heart Failure Society of America, “6.5 million Americans over the age of 20 have heart failure” (Heart Failure Society of America, 2023). This number continues to grow year over year as we see the general population aging. It is also thought that heart failure accounts for “8.5% of all heart disease deaths in the United States” and “remains the number one cause of hospitalization in our Medicare population” (Heart Failure Society of America, 2023).

Heart Failure can be broken down into two main divisions. There is right sided heart failure and left sided heart failure. Right sided heart failure is the heart’s inability to contract the right ventricle effectively. Typically we see right sided heart failure as a direct result of left sided heart failure and fluid overload in the pulmonary system. Left sided heart failure is the heart’s inability to contract the left ventricle effectively resulting in a significant decreased cardiac output (Lippincott advisors, 2022). Under these two divisions is further classification. There is systolic heart failure with reduced ejection fraction; simply this means that the left ventricle is not able to overcome the vascular resistance and pump effectively against the load in the pulmonary vascularity. Diastolic heart failure with preserved ejection fraction means that left ventricle cannot relax in diastole to fill with enough blood to effectively push it back into circulation. A normal ejection fraction is 65%-70%.

Based on the above information and statistics, it is evident that we are headed for a major health crisis as a nation, with increasing incidence of coronary artery disease (CAD), hypertension, obesity and hyperlipidemia, COPD at the forefront, we are going to see the numbers of people living with chronic failure inevitably increase (Schwinger, 2021). As Americans, we rely on convenience foods, quick and unhealthy options, larger portion sizes and

overall are not generally taking care of ourselves as best we could. We are not managing our risk factors and ultimately, our hearts are going to pay the price (Center for Disease Control and Prevention, 2022).

With increasing demand on hospitals, nurses will have more demanded of them. There will be more people seen with heart failure in the clinical setting because of the increased incidence. More will be expected from nursing staff. The problem becomes that there will not be enough qualified and credentialed nurses to meet this ever-increasing demand within the hospital system. We are headed for a public health emergency with the Boomer generation retiring and leaving a huge labor gap in its wake. We as the new cop of nurses must be aware and ready to handle the influx of clients leaving the labor force and entering the hospitals as clients.

Risk Reduction/Treatment of the Problem

Chronic heart failure is not a sudden disease so prevention and education are always going to be the best course of action. Although there are instances of acute onset, generally the main population will be those living with chronic heart failure. We know that social behaviors like smoking and drinking, excessive amounts of processed foods, high fat convenience foods, and high salt foods are going have an impact on a client's heart health health. If we can have a client understand that there are modifiable risk factors that they can control (such as the ones above) then we can have an impact on their overall health and wellbeing. As a nurse, it is imperative that we identify a person that is at significant risk while they are in front of us. They may be in the hospital for something unrelated, but if we review with them some modifications to their lifestyle, we may have an impact in their longevity (Schwinger, 2021).

The other piece of education is monitoring lab values and obtaining imaging. A client is only as good as the information they have and the team they have reviewing their results. Ensuring that the client is getting their annual blood work with labs like total cholesterol and a lipid panel, procalcitonin, BNP, A1C, and/or getting a baseline for imaging such as a calcium CT, chest x-ray or an Echocardiogram is important. Encouraging younger people to get screened for cardiac conditions like heart failure earlier, could impact the length of people's lives. Making the lifestyle changes earlier in life will also help to preserve the heart overall.

In addition, we see a whole medical management aspect of this disease process. Clients may be put on a diuretic to pull excessive fluid out of their bodies. The saying of "time is muscle" and in this case, starting to pull the fluid out of the body to give the cardiac muscle some relief is important. "A Japanese registry showed that rapid volume unloading within the first 30 min is associated with improved prognosis than delaying the first relieving diuretic therapy beyond one hour" (Abdin et. al. 2021). If we as medical professionals can advocate for our clients and start pulling fluid off and preserving cardiac muscle and thus function, then we have done our jobs proficiently. Another kind of medication management that could be used is a hypertension medication. Something like a ACE inhibitor, ARB or a beta blocker could be used to reduce the resistance within the vascularity and help blood be ejected from the heart and circulated more easily. In conjunction to hypertension medications, a nurse would probably also see some sort of anti-platelet therapy like clopidogrel or aspirin being used to prevent an myocardial infarction or stroke in addition.

Planning of Teaching Content

In order to best communicate information to the general public, we will be presenting information at the health fair at the library in Lewes. We will provide handouts, pamphlets and

have two visual aids (a poster and a model of the heart) to help our presentation. Not only will there be visual cues ad handouts, we will be talking with patrons and imparting knowledge through face-to-face interaction. With any teaching, there must be different methods of delivery for people to grasp the material. We will be using a variety of modalities to ensure that the largest number of people can engage with the material and retain and apply the information to their own lives.

The best way to know if teaching was effective is to get a client, or in this case, a patron of the event, to teach-back or verbalize understanding. If a patron can verbalize and explain three modifiable risk factors (decreasing or quitting smoking, reducing the amount of fat they take in daily and increasing exercise and water intake for example) then teaching was effective. Also if a patron can describe the difference between right and left sided heart failure, then teaching was effective.

Conclusion

Hearing the words “You are in heart failure” can be a highly emotional and triggering phrase for a client and their loved ones. It leaves a client with more questions than answers in most instances. A nurse can set the intention of teaching their client about living with chronic heart failure, modifiable risk factors and medical management of symptoms. It is important that as nurses, we are a reliable resource to help our clients and encourage clients to make healthy lifestyle choices. It is imperative that we explain there are things that a client can do to lower their risk factors. Although we see various methods to treat heart failure, we must inform the client that a multi-factor approach will deliver the best outcomes and longevity. It is our job to advocate, educate, help plan the next steps and help the client and their families navigate the arduous road of heart failure that lies ahead; It is not for the faint of heart.

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