



Transition Coordinator Education: Heart Failure

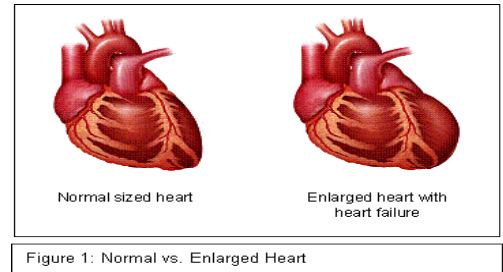


Figure 1: Normal vs. Enlarged Heart

Definition:

Heart failure is a very complex condition with progressive deterioration of the heart muscle. It is a mechanical failure of the heart muscle, which results in decreased pumping ability of the heart. Therefore, the amount of blood the heart pumps out with each beat is decreased. The amount of blood the heart pumps out with each beat continues to decrease as the condition progresses (decreasing ejection fraction). Initially symptoms occur during exercise/exertion but with progression of the disease symptoms will be present at rest.

Types of Heart Failure

- Left sided – systolic failure
 - Left sided failure occurs when there is decreased pumping ability of the left side of the heart. The heart cannot effectively pump the blood out to circulate through the rest of the body (head, abdomen, arms, legs).
- Right sided – diastolic failure
 - Right sided occurs when the heart has impaired filling ability. The heart muscle can not relax and the chambers do not fill properly with blood.

Causes of Heart Failure

- Hypertension – usually poorly treated and uncontrolled can enlarge the heart muscle and make the chambers smaller and thicker with less room in them for blood.
- Heart attacks or poor circulation to the heart muscle.
- Other cardiac disease such as disease of one or more valves (rheumatic fever, bacterial endocarditis)
- Diabetes
- Poorly or reoccurring anemia or thyroid disorder
- Alcohol use

Risk Factors for Heart Failure

- Male gender or family history of heart failure in another family member: parent or sibling
- Smoking
- Diabetes
- Hypertension
- High cholesterol levels
- Congenital heart disease
- Coronary artery disease, peripheral vascular disease, angina (chest pain)
- Alcohol use
- Chest injury from accident or fall
- Anemia
- Hypothyroidism

Red Flag Symptoms and When to Seek Medical Attention :

- Paroxysmal Nocturnal Dyspnea-waking up feeling like they cannot breath or catch their breath.
- Orthopnea-feeling like they are unable to breath when lying flat.
- Dyspnea-shortness of breath or labored breathing during activities.
- Edema-fluid retention in the legs, ankles, feet, or around the middle or ascites.
- Rapid weight gain
- Decreased exercise tolerance-inability to exercise or stay active for very long.
- Unexplained confusion, changes in mental status.
- Extreme fatigue.

Unstable Symptoms Which Require Emergent Care:

- Dyspnea-difficulty breathing at rest
- Orthopnea-sudden worsening of shortness of breath when lying down
- Coughing up pink/frothy sputum-there is fluid in the lungs
- Dizziness or fainting
- Chest pain
- Evidence the person is not getting enough oxygen-cyanosis or confusion



Treatment:

Treatment is started with lifestyle modifications of diet, exercise, and smoking cessation.

Medication will be used to decrease the demands or workload on the heart. Other conditions will have to be managed as well such as diabetes, high cholesterol levels and hypertension.

Laboratory tests and values will be monitored to determine if there is stress on the heart, if medications are at correct dosages, and if other conditions are being managed.

- B-Type Natriuretic Peptide (B-NP) an elevated level says the heart is being stressed
- Complete blood count-to look for anemia or too many red blood cells
- Electrolytes - Na⁺,K⁺and Cl⁻, Bicarbonate, Ca⁺⁺, MG⁺⁺. Abnormal levels of electrolytes can cause the heart to beat irregularly
- Renal (kidney) function (blood urea nitrogen [BUN], creatinine [Cr])-changes can occur with diuretics and kidney function can decrease as disease progresses and develop into renal failure
- Liver function (aspartate transaminase [AST], alanine transaminase [ALT], alkaline phosphatase, bilirubin, total protein (T Prot), albumin)-fluid overload can cause damage to the liver
- Digoxin levels if on digoxin
- Thyroid-stimulating hormone (TSH)-abnormal thyroid functioning can cause heart failure worsening
- Prothrombin time/international normalized ratio (PT/INR)-especially if on blood thinners for atrial fib or other conditions

Medication management will vary per person based upon their cause and type of heart failure. Commonly used ones are:

- ACE inhibitors: slow disease process, improve exercise ability, reduce hospitalizations and mortality, decreases blood pressure
- Angiotensin II receptor agonists: usually used if a person cannot tolerate an ACE inhibitor: reduces the pressure the heart pumps against, reduces blood pressure
- Anticoagulants: to prevent clots if the person also has atrial fibrillation, a history of blood clots or a valve disease and/or replacement
- Beta-blockers: Lowers the heart rate and blood pressure, reduces hospitalization and mortality,

increases exercise duration, the person has to be stable before a beta-blocker can be started.

- Calcium Channel blockers: used with caution as it can decrease the heart's pumping ability, relaxes blood vessels which decreased the blood pressure and pressure the heart is pumping against, used to treat hypertension, angina, irregular heart rates.
- Digoxin: Heart beat will be stronger and more regular, improves tolerance for exercise
- Diuretics: removes extra fluid from the body
- Hydralazine/isosorbide dinitrate: relaxes blood vessels which will decrease blood pressure so the heart does not have to push so hard.
- Spironolactones: removes excess fluid from the body

Participant Self-Management Skills Needed

- Take medications as prescribed.
- Daily weights:
 - Weigh self every morning right when getting out of bed, after urinating, before any change in clothes, food or fluid. Report to healthcare provider:
 - Increase in 2 pnds overnight, or
 - Increase in 3 pounds in 5 days, 5 pounds in 7 days, or
 - Decrease of 3-5 pounds, they maybe becoming dehydrated.
 - Record on weight and symptom log and take the log to every MD visit.
- Fluid restriction-not all persons require a fluid restriction but if they do get edema (swelling) limit to 2000 cc/day or 8.5 cups
- Sodium (salt) restriction-2000- 3000 mg a day not more than 700 mg per meal
- Decrease or if advance heart failure avoid alcohol.
 - Alcohol consumption should be limited to special occasions. (10 ounces of beer, 5 ounces of wine, 1.5 ounces of hard liquor)
- Smoking cessation – smoking causes an elevation in blood pressure, pulse rate and increase the hearts need for oxygen.
- Encourage exercise if stable – low level of exercise 3-4 x a week and slowly increase. After a hospitalization person may be a candidate for cardiac rehab.
- Stress reduction – relaxation techniques.
- Call healthcare provider when symptoms start to change and not wait till they are severe.
- Make a living will to state wishes for care to health care providers and their family members.
- Keep all follow up appointments with healthcare providers.

What Education, Coaching and Support can I give to help Manage this Condition?



- Ensure a medication management plan is in place prior to transition
- Provide participant with a scale and blood pressure monitor and log to document daily weights and blood

pressure results in. During each visit ask to see log and encourage continued use.

- Encourage participant to take log to all provider visits.
- Encourage participant to speak to provider about diet and exercise and a health weight
- Encourage smoking cessation if the participant smokes.
- Instruct participant to obtain copy of labs from provider and ask questions so that he/she understands the results.
- Engage participant in plan from the initial visit and have them prioritize care needs, goals and strategies.