Heart Failure: Knowledge for Effective Self-Care
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Heart failure is a progressive and chronic condition in which the heart’s muscle no longer pumps effectively. Heart failure can be caused by many reasons, including blocked arteries in the heart, heart attacks, high blood pressure, and heart valve problems. The three types of heart failure are: systolic heart failure, diastolic heart failure and valvular heart failure. Your heart function and type of heart failure can be measured by having an echocardiogram (ultrasound of your heart).

Heart failure of all types causes an enlarged heart or thickened walls of the heart because the body compensates for the weak heart muscle. When the heart muscle no longer works effectively, stress hormones are released which tell the arteries to constrict, making it more difficult for the failing heart to pump. The stress hormones also cause the kidneys to hold onto salt and water, increasing the volume of blood for the weak heart. It is important to take your medications regularly to block these signals and to make it easier for your heart to pump.

**Systolic Heart Failure**

Systolic heart failure is diagnosed by an echocardiogram showing a weakened ejection fraction (amount of blood the heart pumps). Your ejection fraction is considered weak if it is less than 50%. The heart’s pumping ability worsens after being injured and it can no longer pump enough blood to supply the body’s needs. The blood then backs up into the lungs and other parts of the body, causing shortness of breath and/or swelling in the legs. These symptoms can be controlled with medications and a proper diet.

**Diastolic Heart Failure**

Diastolic heart failure is diagnosed by an echocardiogram showing a stiff heart that has difficulty relaxing. When the heart cannot properly relax, it cannot properly fill with blood to circulate to the body. This causes increased pressure and blood to back up in the lungs, liver, legs and other areas of the body, causing symptoms of swelling, shortness of breath, and the inability to tolerate activity. These symptoms also can be controlled with medications and a proper diet.

**Valvular Heart Failure**

Valvular heart failure is caused by a backward flow of blood in your heart or a narrowing of the valve area through which blood can flow. Either of these valvular
abnormalities can cause your heart muscle to weaken, pump less effectively, or cause increased pressure in your lungs. When these problems occur, many of the following symptoms of heart failure can occur:

**Symptoms of heart failure**

It’s important to take your medicines properly, weigh yourself daily and eat a proper diet to help control these symptoms:

- Sudden weight gain (2 lbs. overnight or 3-4 lbs. in two days)
- Swelling of the legs or ankles
- Needing to sleep with your head propped up on two or more pillows
- Sleeping in a recliner in order to breathe
- Shortness of breath (all the time, when laying flat, with exertion, or waking up breathless from sleep)
- Frequent dry cough
- Nausea or loss of appetite
- Fatigue from little activity

**Avoid unnecessary demands on your heart**

- Stop smoking! Tobacco products cause tightening of the arteries and increase the workload for your weakened heart muscle. Talk to your health care provider if you need help quitting.
- Avoid alcohol. Alcohol weakens the heart, therefore heart failure symptoms and your heart function may improve if you stop drinking.
- Reduce emotional stress.
- Avoid NSAIDs such as Advil®, Motrin®, or Aleve® because these drugs can damage your kidneys. If you must take pain relievers, use Tylenol™.

**Weigh yourself daily**

In addition to watching for swelling or changes in symptoms, it is very important to record your weight every day. Weigh yourself each morning in the same amount of clothing, after urinating.

Watch for any weight change of two pounds or more within 24 hours, or four pounds in two or more days. If you notice these changes call your health care provider. Regularly monitoring your weight and adapting to changes can prevent frequent heart failure hospitalizations. If you notice increased weight and worsening symptoms, your provider may prescribe you an increased diuretic dose or a “booster pill” for your diuretic such as Metolazone.

**When should you call your health care provider?**

- Weight gain of more than two pounds overnight, or three to four pounds in two to three days
- Sudden need for additional pillows to sleep comfortably
- Sudden need to sleep in a recliner in order to breathe
- Increased or new swelling in your legs or ankles
- Increase in abdominal girth, requiring loosening of your belt
- Progressive shortness of breath
- Chest pain
- Severe muscle cramping
- Decreased exercise or activity tolerance
The importance of medications

Following your heart failure diagnosis, you may have been prescribed many new medications. This can be very overwhelming at first but this booklet will help you understand and organize your medications so you can effectively manage this chronic illness.

It’s important to always keep in mind that your medications play an important role in the treatment of heart failure. **Research shows that heart failure medications can stabilize the function of your heart, slow down the progression of heart failure, and even improve heart function.** It is important to understand that these medications take time to go into effect and you might not notice a difference right away. Always stick to your medication regimen unless you are instructed otherwise by your health care provider.

Following your prescribed medication regimen can:

- Help you live longer
- Alleviate symptoms
- Help you breathe easier
- Give you more energy, allowing you to increase your activity level
- Alleviate swelling in the legs or ankles
- Reduce hospital re-admissions

Heart failure medications

**Beta blockers** are a class of drugs that block hormones that can put stress on your heart. Examples of heart-stressors include high blood pressure and/or a fast heart rate. Beta blockers slow your heart rate and dilate your arteries, which lowers your blood pressure and allows a stiff heart more time to relax and properly fill with blood. Dilating your arteries also increases blood to your kidneys, decreases salt retention and increases fluid elimination. It is important to remember that beta blockers are beneficial to your heart even if you don’t have a fast heart rate or high blood pressure because they decrease the hormones that can put stress on your heart.

Common examples of beta blockers:
- Carvedilol (Coreg®)
- Metoprolol Succinate (Toprol XL®)
- Metoprolol Tartrate (Lopressor®)

**ACE inhibitors** make it easier for your heart to pump by dilating your blood vessels. ACE inhibitors limit the amount of angiotensin II available in your body. Angiotensin II is responsible for tightening your arteries, which increases your blood pressure and the workload of your heart. Like beta blockers, ACE inhibitors decrease the amount of stress hormones secreted that can worsen heart failure. The long-term effects of ACE inhibitors can slow the progression of heart failure and improve symptoms. ACE inhibitors can increase your heart function or ejection fraction over time.

Common examples of ACE inhibitors:
- Enalapril (Vasotec®)
- Captopril (Capoten®)
- Lisinopril (Zestril®, Prinivil®)
- Ramipril (Altace®)
**Angiotensin receptor blockers**, also known as ARBs, are an alternative for patients who can’t tolerate ACE inhibitors. Like ACE inhibitors, ARB’s block angiotensin II from being used in the body, thus decreasing stress hormones which can negatively affect your heart.

Common examples of ARBs:
- Candesartan (Atacand®)
- Losartan (Cozaar®)
- Valsartan (Diovan®)

**Diuretics**, often called a “water pill,” help your body get rid of extra fluid, reducing the fluid volume your heart has to pump. You should notice a decrease in swelling to your legs and feet and an improvement in your breathing. Overall, you should feel more comfortable because the diuretic is eliminating the excess fluid in your legs and lungs. A diuretic will cause you to urinate frequently and should be taken during the day to avoid sleep interruption. Most diuretics lower your potassium (an important electrolyte for your heart) so your health care provider might check your potassium levels with blood draws.

Common examples of diuretics include:
- Furosemide (Lasix®)
- Torsemide (Demedex®)
- Bumetanide (Bumex®)
- Metolazone (Zaroxolyn®) is a medication which can be taken 30 minutes prior to a diuretic to “boost” its effectiveness.

**Digoxin, also known as Lanoxin® or Digitek®,** is a medication that helps your heart pump slower and more effectively. It is important to note that although Digoxin (Lanoxin®, Digitek®) can be an appropriate treatment for heart failure, it is not appropriate for all heart failure patients. Patients deemed appropriate for Digoxin (Lanoxin®, Digitek®) may experience fewer hospital admissions, and are typically able to breathe easier due to the increased pumping action of the heart.

**Vasodilators** are a class of medications that are not used in all heart failure patients. If you are on a vasodilator it is important to know that these drugs decrease the workload of your heart by dilating your blood vessels and improving the blood supply to your heart, kidneys, and other parts of your body.

Common vasodilators:
- Isosorbide Dinitrite (Isochron®)
- Hydralazine (Apresoline®)
- Isosorbide Mononitrate (Imdur®, Ismo®)

**Aldosterone antagonists** are a group of medications that block a hormone called aldosterone, which causes fluid retention and can intensify symptoms of heart failure. Aldosterone antagonists are a type of diuretic that prevent potassium depletion in your body. Your health care provider will check your potassium and kidney function through blood work a week after starting this type of medication. It is important to know that research shows that heart failure patients on aldosterone antagonists have lived longer and have had a decreased number of hospitalizations due to recurrence of symptoms.

Common examples of aldosterone antagonists:
- Spironolactone (Aldactone®)
- Eplerenone
Fluid Restriction

In addition to taking medications to control heart failure, there are other lifestyle changes you can make such as restricting your fluid intake. We all need fluid every day to keep our bodies functioning properly. However, in heart failure extra fluid builds up in the body, which makes the heart work harder. Restricting fluid intake can help limit the build up of fluid in your body. Your health care provider may recommend that your intake of fluid be limited to 1.5 to 2 Liters, which equals 1500 to 2000 ml or six to eight cups of fluid per day. Count all fluids that you consume including: water, coffee, tea, juice, milk, soft drinks, ice cubes, soup and fluids you use to take with medications. Also include the fluids in foods that become liquid at room temperature, such as Jell-O, sherbet, ice pops and ice cream.

What can I do about a dry mouth?

- Suck on hard, sugar-free candy, a lemon wedge, frozen orange sections, frozen grapes, or chew gum to moisten your mouth. Frequently brushing your teeth will also help moisten the mouth.

- Eat fresh, juicy fruits such as watermelon, grapes, oranges, peaches, etc. If you consume more than three servings per day of these juicy fruits, count each additional serving as a fluid. (1 cup or 1 piece of fruit = ½ cup fluid)

- Prepare a measured amount of ice chips and flavor with lemon or lime juice, if desired. This still counts as fluid, but ice melts to about half its original amount so you will be more refreshed than drinking the same amount of beverage. (example: 1 cup ice = ½ cup fluid).

To help you measure:

- 2 tablespoons of fluid = 1 oz = 30 ml
- ½ cup of fluid = 4 oz = 120 ml
- 1 cup of fluid = 8 oz = 240 ml
- 4 cups of fluid = 1 quart = 32 oz = 960 ml

Keeping on track

If you are limited to 2000 ml or 2 Liters, use a 2-Liter container to help you measure your fluid consumption. Before you drink anything, measure it and pour the same amount of fluid into the container. This will help you keep track of how much fluid you have left for the day. Be sure to use your fluid allowance evenly throughout the day and save enough fluid to take the medicines you need to take late in the day.

Sodium Restriction

Sodium restriction is an important lifestyle change for your heart failure. Successful management of heart failure is made easier by reducing the sodium in your diet. The recommended amount of sodium for heart failure patients is 2,000 milligrams daily. Heart failure patients should avoid adding table salt to food or cooking. One teaspoon of salt has 2,360 milligrams of sodium – more than you should get in a whole day! Try using fresh or dried herbs or spices to season your food, or experiment with a salt substitute such as Mrs. Dash®. Avoid foods with labels containing the words salt, sodium, sodium chloride, monosodium glutamate (MSG), brine, broth, corned, pickled, or smoked, as these tend to be high in sodium.
Tips to manage your sodium intake:

- Buy only foods labeled “low sodium” or “reduced sodium.”
- Eat only small amounts of foods that have 150-350 milligrams of sodium per serving.
- Avoid foods with more than 350 milligrams of sodium per serving, such as frozen, canned, or boxed foods.
- Try to eat mostly fresh, unprocessed foods.

Devices for heart failure

Internal Cardiac Defibrillator (ICD)

Those with weakened heart muscles and ejection fractions less than 35% are at risk for lethal arrhythmias or abnormal heart rhythms. Because of this, your health care provider could recommend an internal cardiac defibrillator (ICD), which is inserted through a small incision in your upper chest. Similar to a pacemaker, the ICD protects you by pacing your heart back into a normal rhythm or delivering a shock to restore normal rhythm if a lethal rhythm abnormality occurs. Your health care provider can explain this device and procedure in more detail if necessary.

Bi-ventricular Internal Cardiac Defibrillator (ICD)

If your heart shows signs of dysynchrony, meaning it doesn’t beat effectively, your health care provider could recommend a bi-ventricular ICD. This means you would have pacemaker leads in both sides of your heart, which would help it beat in sync and more effectively while protecting you against lethal abnormal heart rhythms. Your health care provider determines if you meet criteria for this treatment based on your symptoms and by reviewing your electrocardiogram (EKG) and echocardiogram (ultrasound of the heart). This therapy has been shown in research to improve heart function, improve symptoms, and improve quality of life with heart failure.

Living with Heart Failure

As mentioned earlier, heart failure is a progressive and chronic disease, but with proper treatment and lifestyle changes many patients will experience a full and rewarding life. The guidelines in this book give you the tools to make necessary lifestyle changes and help you learn to live with heart failure. Following the instruction in this book and working closely with your health care provider are extremely important to your long-term health. Be sure to talk with your health care provider about other possible treatment options and how to manage your type of heart failure, as they might have other suggestions and treatment options.

References


