Heart Failure

Heart failure develops when the heart malfunctions as a pump. Systolic heart failure is the inability of the heart to squeeze enough blood from the ventricles (heart chambers) to supply the body’s needs. Diastolic heart failure results from the inability of the heart muscle to relax in between heartbeats, causing a backup of blood in the heart’s chambers and in the blood vessels. Both systolic and diastolic heart failure can cause edema (fluid) to build up in the lungs and the rest of the body. The heart tries to make up for this malfunction by dilating (enlarging the heart chambers) or becoming hypertrophic (thickening of the heart walls). For individuals older than 65 years, heart failure is the most common cause of hospitalization. The November 16, 2011, issue of JAMA is a theme issue on cardiovascular disease. This Patient Page is based on one previously published in the May 13, 2009, issue of JAMA.

**SIGNS AND SYMPTOMS**

- Fatigue or weakness
- Shortness of breath during physical activity
- Difficulty breathing when lying in a flat position
- Waking at night feeling short of breath
- Swollen neck veins (jugular veins)
- Abdominal swelling (ascites) from excess fluid
- Lower leg or foot swelling (pedal edema)
- Palpitations (sensation of fast or irregular heartbeat)

**DIAGNOSIS AND TESTING**

A detailed medical history and physical examination often reveal whether a person has heart failure. Testing may include a chest x-ray to look for cardiomegaly (an enlarged heart), pulmonary edema (fluid in the lungs), or pleural effusion (collection of fluid around the lungs). Other tests commonly include an electrocardiogram (tracing of the heart rhythm) and an echocardiogram (ultrasound examination showing the heart structures and function of heart valves).

**TREATMENT**

Treating heart failure depends on the reasons why heart failure developed. It is important to work with your doctor to find the best treatment plan, including an exercise program.

- A low-sodium diet is prescribed to decrease fluid retention.
- Medications used to treat heart failure often include beta-blockers that allow the heart to work better, ACE inhibitors that lower blood pressure and help the heart pump against less pressure, and diuretics to remove excess fluid.
- Pacemakers and implantable defibrillators may be useful to help the heart contract in a coordinated way and monitor for irregular, life-threatening heart rhythms.
- Surgery may be recommended for heart valve disease or congenital heart disease.
- For persons who have severe advanced heart failure, medications called inotropes may be used to help the heart beat more strongly. Use of these drugs often requires a long-term intravenous catheter. Mechanical devices may be required, such as intra-aortic balloon pumps, left, right, or biventricular assist devices; or, rarely, a mechanical heart pump.
- Heart transplantation may be considered when severe heart failure does not respond to the usual treatments.

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