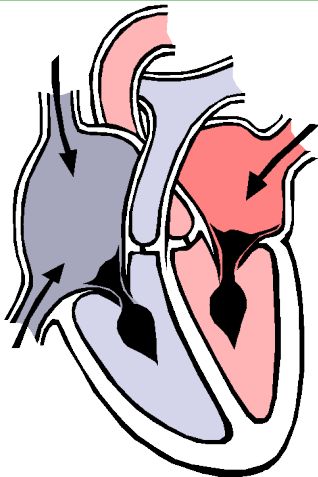


Focus on Partnership

Heart Failure



Symptoms of Heart Failure

- Unusual fatigue with activity
- Shortness of breath with activity & at rest
- Difficulty breathing with lying down
- Cough with exercise or lying down
- Ankle swelling
- Loss of appetite and abdominal discomfort
- Fluid weight gain

These symptoms are also common to other medical conditions.

For additional information please contact:
Mary Ann Suda at 412-257-1263

There are at least 4 to 5 million people in the United States with heart failure, about 50% are over 65 years old.

What is heart failure?

Heart failure is a decreased ability of the heart to fill and empty. The major purpose of the heart is to circulate blood, which carries oxygen and nutrients to the body. In the normal heart, 50% to 70% of the blood in the pumping chambers is ejected out of the heart with each contraction of the heart muscle. The normal heart has strength far beyond what we need every day. Even if the heart has decreased ability, it can pump well enough for the person to

enjoy usual daily activities.

Heart failure has several different forms:

Systolic heart failure is when the heart muscle pumps blood out with less strength than normal.

Eventually, the pumping chambers thin and enlarge. In late stages, there is not enough blood pumped around the body to meet the body's needs.

Diastolic heart failure occurs when the heart grows stiff and cannot relax enough to accept the blood returning to it. In these people, fluid built-up can cause symptoms of heart failure with peripheral edema "congestion," even though the heart's normal pumping function is nor-

mal. This often occurs in older people who have histories of hypertension and diabetes. Anything that causes damage to the heart muscle can lead to heart failure. This damage could be caused by the following:

- Heart attacks due to coronary artery disease
- Viral infections
- Genetic abnormalities
- Some chemotherapeutic agents
- Illicit drugs
- Excessive alcohol intake

Diagnosis: Heart Failure

There are a variety of tests that the resident must undergo to confirm HF and gauge its severity, type and cause. Some of the tests include:

- **Arterial Blood Gas (ABG)** analysis, evaluates oxygenation
- **Chest X-Ray**, detects fluid in the lungs or cardiac enlargement
- **Cardiac blood pool imaging**, determines how well the left ventricle pumps by using a dye contrast injected into the vein with an EKG attached. The heart will be synchronized with the EKG to correlate both images. The EKG reveals conduction abnormalities.
- **Cardiac Catheterization**, evaluates the function of the heart and areas of delivered blood flow in vessels.



Heart Failure Treatments



The body normally reacts to sudden emergencies by activating reflexes that make the heart pump harder and faster. These reflexes remain turned on in Heart Failure, increasing the work of the injured heart and weakening it further. The medications for heart failure counteract these reflexes and help the heart work more efficiently.

Their main use is in hypertension (high blood pressure), diabetic nephropathy (kidney damage due to diabetes) and heart failure. They are primarily used for the treatment of hypertension if the patient is intolerant of ACE inhibitor therapy.



Did You Know...

Heart failure is most often caused by: **Coronary Artery Disease**. This disease causes a direct decrease in blood flow to the heart muscle. If the arteries become blocked the heart becomes starved for oxygen and nutrients. In a short time damage is done to the heart. The damaged area can no longer pump normally, causing heart failure.

ACE (Angiotension Converting Enzyme) Inhibitors neutralize the effects of hormones that constrict blood vessels, increase fluid, and alter heart muscle proteins.

Beta blocking agents block the receptor sites of chemicals that make the heart beat.

Angiotension Receptor Blockers (ARB) Angiotensin II Receptor Antagonists or **Sartans**, are a group s which modulate the renin-angiotension-aldosterone system.

Diuretics help the kidneys eliminate extra fluid.

Digoxin may slow a fast heart in the case of abnormal rhythm and increase the force of contraction.

K & Mg supplements may be needed to replace the losses of these minerals in the urine when taking diuretics.

Other medications may be prescribed for related conditions, such as coronary artery disease, clot formation and irregular heart rhythms.

Depending on the stage of heart failure patients may take two or more of these classes of medications.



References for this newsletter: MayoClinic.com keyword CHF; Practical Considerations for Switching B Blockers in Heart Failure Patients William T. Abraham, MD, Srinivas Iyengar MD, Circulation 2001;104e89 Take Heart Failure;jan.ucc.nau.edu

Medications that Treat Heart Failure

ACE Inhibitors	Cardiac Glycosides	Beta Blockers	Diuretics	Angiotension Receptor Blockers (ARB)
<ul style="list-style-type: none"> Enalapril (Vasotec) Captopril (Capoten) Lisinopril (Zestril) (Prinivil) 	<ul style="list-style-type: none"> Digitoxin (Crystodigin) Digoxin (Lanoxin) (Deslanoside) 	<ul style="list-style-type: none"> Atenolol (Tenormin) Carvedilol (Coreg) Metoprolol (Lopressor, Toprol XL) Bisoprolol (Zebeta) 	<ul style="list-style-type: none"> Furosemide (Lasix) Bumetanide (Bumex) Spirolactone (Aldactone) HCTZ (Hydrodiurel) 	<ul style="list-style-type: none"> Atacand (Candesartan ciletil) Diovan (Valsartan)

Digoxin Toxicity A Potential Problem

Nearly one third of residents using Digoxin experience Digoxin toxicity.

Therapeutic Level:
0.8-2.0 ng/ml

Toxicity Level:
>2.4ng/ml

Symptoms of toxicity:

- Abdominal pain
- Headache
- Diarrhea
- Fatigue
- Visual disturbances
- Nausea/vomiting
- Weakness

Testing for toxicity:

Serum samples taken at least 6 hours after an oral dose. The duration is necessary for serum and tissue level to reach equilibrium.

Treating Digoxin Toxicity:

Digibind is the antidote for overdose or holding medication.

Actions To Improve Heart Failure

Manage other diseases that may effect heart failure: diabetes, hypertension, obesity and lung disease. Know your medications and possible side effects. Weigh the resident at the same time every morning, document any weight increase. This is often the first sign of fluid buildup. Sodium promotes fluid retention. Limit sodium intake. Monitor the resident's daily fluid intake. Too much or too little can both be problems. Regular exercise program with adequate rest.

Risks of Hypertension

Heredity:

If your parents have or had high blood pressure, there is a greater chance that you will also have it.

Race:

African-Americans are more likely to develop high blood pressure than their white counterparts.

Gender:

Men run a greater overall risk for developing high blood pressure than women do.

Age:

The older we get, the greater the risk for developing high blood pressure.

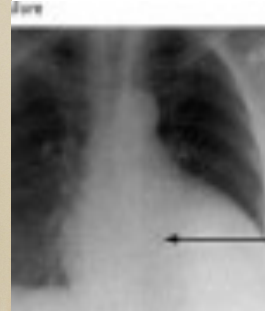
Obesity:

People who are overweight are more likely to develop high blood pressure.



DID YOU KNOW.....

Heart Failure



Normal



“One reason diuretics may have an advantage over other drugs is that they are good at decreasing the volume that the heart has to deal with, and the other drugs don’t do that however, he added: “ACE” inhibitors remodel the heart, which may have a more long-term effect on preventing HF”.

Barry Davis, University of Texas School of Public Health

“ Roughly 550,000 people are diagnosed with heart failure each year. It is the leading cause of hospitalization in people older than 65 ”. “ It contributes to or causes approximately 300,000 deaths each year ”.

Source: http://www.webmd.com/content/pages/9/1675_57819.htm;

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Inside Edition...

Heart Failure

Diagnosis

Signs and Symptoms

Treatments

Your prescription to clinical excellence