



# Clinical Practice Guideline for the Management of Chronic Heart Failure

Heart failure (HF) is a major and growing public health problem in the United States. Approximately 5 million patients in the country have heart failure and there will be approximately 550,000 new cases of heart failure each year. Heart failure accounts for approximately 12 to 15 million office visits each year and 6.5 million hospital days each year. The total estimated cost for heart failure is about 27.9 billion dollars each year and 2.9 billion of that is spent on drugs.

## Stages of Chronic Heart Failure

- Class 1:** At risk for heart failure, but without structural heart disease or symptoms of heart failure. (e.g. patients with hypertension, atherosclerotic disease, diabetes, obesity, metabolic syndrome)
- Class 2:** Structural heart disease, but without signs or symptoms of heart failure. (e.g patients with previous MI, left ventricular remodeling including LVH and low ejection fraction, asymptomatic valvular disease)
- Class 3:** Structural heart disease with prior or current symptoms of heart failure. (e.g. patients with known structural heart disease and shortness of breath and fatigue, reduced exercise tolerance)
- Class 4:** Refractory heart failure requiring specialized interventions. (e.g. patients who have marked symptoms at rest despite maximal medical therapy)

## Clinical Signs to Obtain

- Thorough history and physical examination in patients presenting with HF to identify cardiac and non-cardiac disorders or behaviors that might cause or accelerate the development or progression of heart failure.
- History of prescription medications, alternative medicines, chemotherapy drugs, illicit drugs, and alcohol use.
- Assessment of patient's current daily activities.
- Assess patient's volume status, orthostatic blood pressure changes, measurement of weight, height, and calculation of body mass index.

## Lab Values to Obtain

- Patients with heart failure should have a complete blood count, urinalysis, serum electrolytes (which include magnesium and calcium), blood urea nitrogen, serum creatinine, fasting blood glucose (glycohemoglobin), lipid profile, liver function tests, thyroid- stimulating hormone, BNP (Brain natriuretic peptide) and calculated glomerular filtration rate
- A twelve-lead electrocardiogram and chest radiograph (PA and lateral) should be performed.
- Two-dimensional echocardiography with Doppler should be performed during initial evaluation of patients presenting with heart failure to assess LVEF, LV size, wall thickness and valve function.

## Treatment Goals for Each Class

- Class 1:** Treat all other diseases (e.g. hypertension, diabetes, lipid disorders, etc.), encourage smoking cessation, discourage alcohol use, discourage illicit drug use, encourage exercise. Drug therapy includes ACE (angiotensin converting enzyme) inhibitor or ARB (angiotension II receptor blocker) in appropriate patients for vascular disease and diabetes.

- Class 2:** Take into account all of the steps for class one. Drug therapy includes ACE inhibitor or ARB's. Also beta-blockers for appropriate patients.
- Class 3:** Take into account all of the steps for classes one and two. Also include dietary salt restriction. Drug therapy includes diuretics for fluid retention, ACE inhibitor, and Beta-blockers. For selected patients, treatment may include Aldosterone antagonist, ARB, Digitalis, Hydralazine, or Nitrates.
- Class 4:** Take into account all of the steps for the first 3 classes. Also reassess appropriate level of care.

## Education

- Educate patient on weight reduction and recording weight daily at home. Contact physician if there is any abrupt weight gain or weight gain of more than 3-5 pounds since the last physician examination.
- If patient has diabetes, educate to take blood glucose levels, keep logs, and set goals for patient.
- If patient has hypertension, educate to obtain blood pressure scores and set goals.
- Inform patient about diet and exercise.
- For ACE inhibitors, educate patient about possible side effects including cough, diarrhea, headache, increased sensitivity to the sun, nausea, tiredness, or fatigue. For all other side effects, contact physician.
- For ARB, educate patient about possible side effects including back pain, cough, fatigue, dizziness or lightheadedness, headache, sore throat, nasal congestion, or runny nose. For all other side effects, contact physician.
- For Beta-blockers, educate patient about side effects including diarrhea, dry itching skin, headache, nausea, sexual difficulties, impotence, or unusual tiredness. For all other side effects, contact physician.
- For aldosterone antagonist, educate patient about possible side effects including breast tenderness in females, deepening of voice in females, diarrhea, dizziness, drowsiness, headache, increased hair growth in females, irregular menstrual periods, nausea, vomiting, sexual difficulty, inability to have an erection, stomach pain or cramps, and indigestion. For all other side effects, contact physician.
- For Digitalis, educate patient about breast enlargement in men and women, and sexual problems such as impotence. For all other side effects, contact physician.
- For nitrates, educate patient about possible dizziness or fainting, flushing of the face or neck, headache (common after a dose, but usually only lasts for a short time), irregular heartbeat, palpitations, nausea, and vomiting. For all other side effects, contact physician.
- For Diuretics, educate patient about possible dizziness or lightheadedness, headache, increased sensitivity to the sun, loss of appetite, stomach upset, pain, or cramps.

## References

ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult. A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure): Developed in Collaboration With the American College of Chest Physicians and the International Society for Heart and Lung Transplantation: Endorsed by the Heart Rhythm Society © 2005 American Heart Association, Inc.

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