GUIDELINES FOR CHRONIC HEART FAILURE

Heart failure (HF) is associated with significant morbidity and mortality. Greater than 4.5 million people have HF and approximately 500,000 new cases are diagnosed each year. Due to the prevalence and effect of this disease state on society, healthcare professionals need to provide optimal care and services to this patient group. This issue briefly reviews the treatment guidelines of HF that were prepared for primary care physicians and heart failure specialists.

Gomberg-Maitland M, Baran DA, Fuster V. Treatment of congestive heart failure: guidelines for the primary care physician and the heart failure specialist. Arch Intern Med 2001 Feb 12;161(3):342-52.

RECOMMENDED DRUGS

Diuretics

- Demonstrate fast improvement in sodium excretion, symptoms of fluid overload, exercise tolerance, and cardiac function; start therapy for symptoms of fluid retention and continue after symptoms improve.
- Should not be prescribed as monotherapy; combine with a low-salt diet, a β-blocker, and an ACE inhibitor.
- Loop diuretics are first-line therapy; use thiazides for refractory overload.
- Begin with oral furosemide 20 to 40 mg once daily and titrate; with doses ≥ 240 mg/day, metolazone 2.5-5 mg can be added 30 minutes before each dose for improved diuresis. Use with caution because of potential hypokalemia and hypomagnesemia.

ACE Inhibitors

- ACE inhibitors are recommended as preventative treatment in patients who have experienced a recent or remote ischemic or nonischemic event resulting in systolic dysfunction. Morbidity and mortality benefits of ACE inhibitors have been demonstrated by clinical controlled trials. However, ACE inhibitors are underprescribed and underdosed.
- Six ACE inhibitors are approved by the FDA for the treatment of HF; captopril, enalapril, fosinopril, lisinopril, quinapril, and trandolapril. Ramipril is approved for HF after a myocardial infarction.
- ACE inhibitor treatment should begin with lower doses and titrate to tolerated doses. Recommended target doses are as follows: captopril 150 mg/day, enalapril 20 mg/day, lisinopril 40 mg/day, quinapril 40 mg/day, ramipril 10 mg/day, and trandolapril 4 mg/day.

β- Adrenergic Receptor Antagonists

- All patients with stable NYHA class II or III HF due to left ventricular systolic dysfunction are recommended to receive β-blockers; also recommended in diabetics.
- β-blocker therapy should not be initiated during an acute worsening of clinical status or fluid overload. During acute episodes, the β-blocker dose should be decreased or stopped if the patient is in severe failure.
- With mild to moderate symptoms, the dose may be halved or continued with temporary lowering of the ACE inhibitor dose and increasing doses of diuretics.
- β-blocker and ACE inhibitor doses should be separated by 1-2 hours if patients experience symptomatic hypotension.
- The COMET trial currently is directly comparing carvediol and metoprolol use for 4 years.

Aldosterone Antagonists

- HF specialists selectively prescribe this agent for HF patients even though guidelines published this year in the *American Journal of Cardiology* did not recommend use.
- This agent should be reserved for patients with stable NYHA class III or IV HF, an ejection fraction of < 0.35, a serum creatinine level < 2.5 mg/dL, and a potassium level < 5 mEq/L.

Digoxin

- Recommended for patients with atrial fibrillation.
- Digoxin can be added to therapy consisting of ACE inhibitors, diuretics, and β-blockers.
- Digoxin levels should not be monitored routinely unless digitalis toxicity is suspected.

NONRECOMMENDED DRUGS

Angiotensin Receptor Antagonists

- Only recommended if ACE inhibitors are not tolerated because of angioedema or cough.
- Evidence does not support combination therapy of ACE inhibitors and angiotensin receptor blockers.
- Valsartan and candesartan are each being evaluated in multicenter trials.

Hydralazine and Isosorbide

- Only recommended if ACE inhibitors are not tolerated and/or the patient has renal insufficiency.

Calcium Channel Antagonists

- No clinical trials have documented a mortality benefit with calcium antagonists.

Inotropic Drugs and Vasodilators

- Intermittent infusion of inotropic agents has no proven mortality benefit; long-term treatment increases mortality.
- Vasodilators are not useful in the routine management of HF.

Antiarrhythmic Agents

- Recommended if the atrial or ventricular arrhythmia causes clinical deterioration.
- Amiodarone is preferred in the treatment of atrial arrhythmias (fibrillation) in HF patients.
- Amiodarone is recommended for additional heart rate lowering despite use of digoxin and β-blockers.
- Amiodarone is started at 200 to 400 mg/day. Doses of digoxin and β-blockers must be reduced.
- Amiodarone and β-blockers may be contraindicated in patients with lung disease.

Anticoagulation

- Remains controversial in patients without atrial fibrillation and with diminished left ventricular function.

POSTHOSPITALIZATION DISCHARGE

Patient Education

- Salt and fluid restrictions.
- Check weight daily; contact physician for a 0.5 -1.5 kg weight gain.
- Contact physician for clinical signs of peripheral edema, number of pillows needed to sleep, and decrease in exercise tolerance.

Prepared Feb 2001 by Michelle Roberson Whitehead, Pharm D. Candidate Reviewed by: Mike Kendrach, Pharm D.