

Congestive Heart Failure

General Management Principals

- Stop smoking
- Restrict alcohol use
- Salt restriction to 2 or 3 grams of sodium per day, or less
- Weight reduction in obese members to within 10 percent of ideal body weight
- Daily weight monitoring and logging to detect fluid accumulation before it becomes symptomatic
- Review for drugs that might contribute to CHF or worsen some aspect of the condition (partial list of important drugs shown below)
 - NSAIDs – causes fluid retention
 - Aspirin – can interfere with the effects of beta-blockers
 - Cardiodepressive calcium channel blockers, like Verapamil
 - Thiazolidinediones – cause fluid retention
 - Metformin – required sometimes in Type II diabetics, but increase risk of lactic acidosis.
 - Cardiotoxic chemotherapeutic drugs, like Cytosan, anthracyclines, etc. – decrease myocardial contractility
 - Tumor necrosis factor inhibitors, like infliximab – worsen CHF
 - Glucocorticosteroids – cause sodium and water retention
 - Carbamazepine – negative inotropic effect
 - Tricyclic antidepressants – negative inotropic effect
 - Itraconazole – negative inotropic effect
- Annual pneumococcal and influenza vaccination

Important Clinical Interventions

- Treat Contributing factors
 - Eliminate unneeded drugs that exacerbates CHF
 - Control elevated blood pressure
 - Correct anemia
 - Correct abnormal heart rhythms, especially atrial fibrillation.
 - Recognize and treat heart valve problems
 - Correct hypothyroidism, if present
 - If bed ridden, post-operative, or hypercoagulable state (i.e. cancer), exclude pulmonary embolus
 - Rule out superimposing infection, such a pneumonia
 - Correct electrolyte abnormalities
 - Recognize and treat renal dysfunction
 - If child-bearing female, exclude pregnancy
- Pharmacotherapy
 - Required
 - Angiotensin converting enzyme inhibitors (ACE inhibitors) in all CHF patients who can tolerate them, unless contraindicated
 - Angiotensin receptor blockers (ARBs) in CHF patients who cannot tolerate ACE inhibitors, unless contraindicated
 - Diuretics and salt restriction for fluid retention

- Beta blockers in all stable patients, unless contraindicated. Especially, bisoprolol, carvedilol, and sustained-release metoprolol.
- African-American patients with moderately severe CHF may benefit from hydralazine and nitrates.
- Aldosterone antagonist for selected members with moderately severe or severe CHF who can tolerate them.
 - o Creatinine should be less than 2.0 mg/dl in women and 2.5 mg/dl in men.
 - o Potassium should be less than 5.0 mEq/L, and should be monitored if on ACEI or ARB.

Helpful

- Digitalis in members with poor symptom control may reduce hospitalizations
- Addition of hydralazine and nitrates to symptomatic members already taking ACEI and beta-blockers.
- Addition of ARB to members already taking ACEI, and other drugs, if uncontrolled

Other Indicated Clinical Interventions

- Exercise training in stable ambulatory members
- AICD in members with sudden cardiac arrest, ventricular fibrillation, or hemodynamically destabilizing ventricular tachycardia
- Cardiac resynchronization therapy (CRT), with or without an ICD, unless contraindicated, in patients who meet the following criteria: cardiac dyssynchrony as defined by a QRS duration >120 msec, LVEF \leq 35 percent, sinus rhythm, and New York Heart Association functional class III or ambulatory class IV symptoms despite optimal medical therapy

Patient Education Issues

- Medication noncompliance
- Dietary indiscretion
- Alcohol consumption
- Tobacco and other substances abuse
- Weight monitoring
- Early symptom recognition (i.e. ankle swelling, PND, orthopnea, DOE, *etc.*)

ACC Guideline at <http://content.onlinejacc.org/cgi/reprint/46/6/1116.pdf>

VA/DoD Guideline at http://www.healthquality.va.gov/chf/chf_full_text.pdf

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