

**Clinical Guidelines
For the
Management of CHF**

Congestive Heart Failure Clinical Guidelines

The American College of Cardiology/American Heart Association Task Force on Practice Guidelines has developed Congestive Heart Failure clinical guidelines in collaboration with the International Society for Heart and Lung Transplantation. This document has been endorsed by the Heart Failure Society of America. These guidelines were published in 2001 and updated in 2004 and January of 2005. New AAC/ AHA guidelines will be forthcoming in mid to late 2005. Schaller Anderson has adapted the above for its use in treating congestive heart failure.

The complete Standards of Care are available on the Web:

<http://www.acc.org>

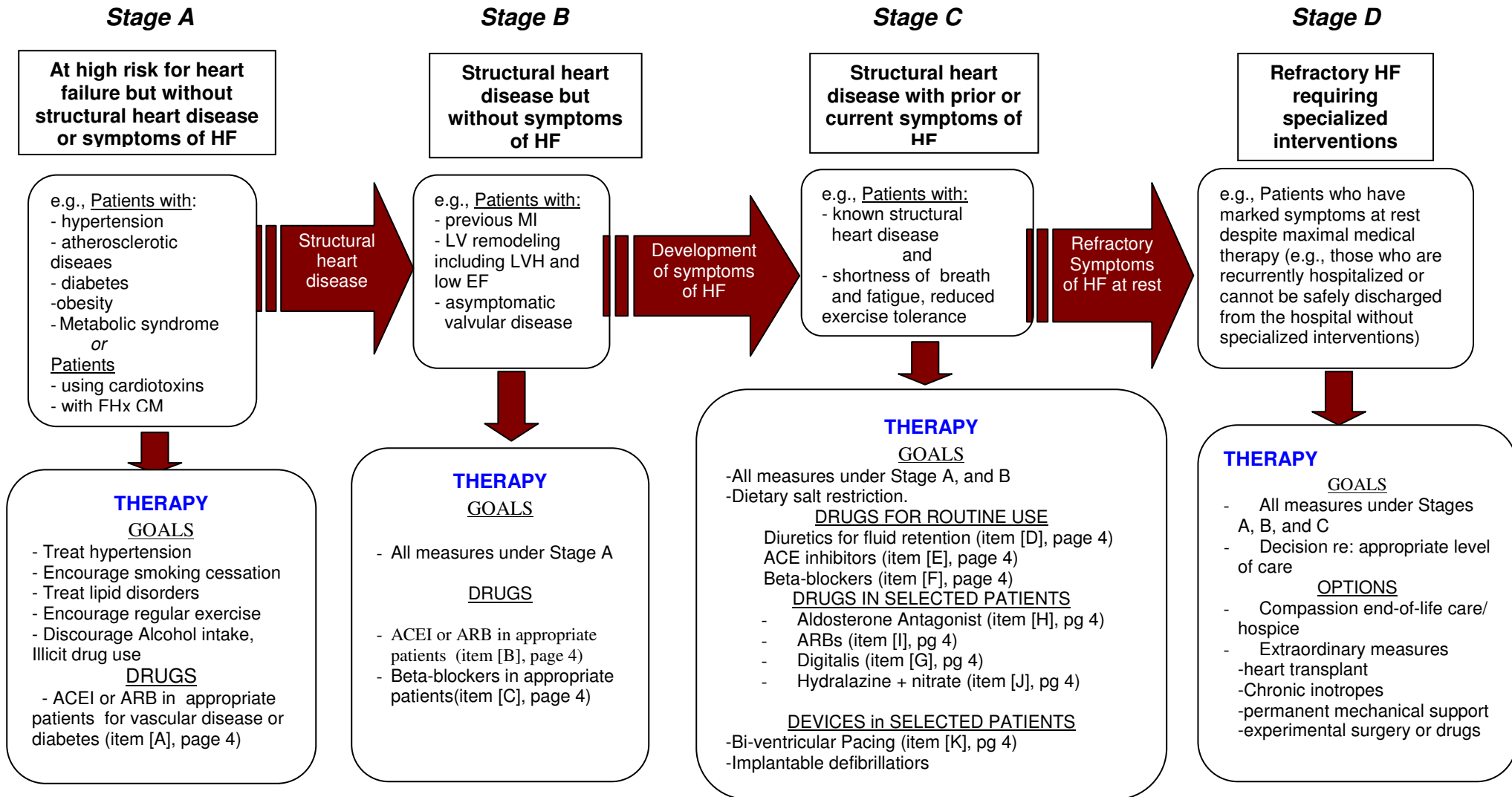
In addition to the above standards, you may find Oregon Heart Failure Project useful. Information regarding this project is available at

http://www.acc.org/gap/or/oregon_gap.htm.

These guidelines are distributed under a quality improvement/utilization management program in order to identify criteria for appropriate and effective use of health care services and consistency in the care provided to plan enrollees. The guidelines are not intended to: (i) supplant the duty of a qualified health professional to provide treatment based on the individual needs of a patient; (ii) constitute procedures for or the practice of medicine by the party distributing the guidelines; or (iii) guarantee coverage or payment for the type or level of care proposed or provided.

Congestive Heart Failure Summary Guideline

Stages in the evolution of heart failure (HF) and recommended therapy by stage. FHx indicates family history of cardiomyopathy; MI, myocardial infarction; LV, left ventricular; and IV, intravenous.



Adapted from ACC/AHA guidelines for the evaluation and management of chronic heart failure in the adult: executive summary: a report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1995 Guidelines for the Evaluation and Management of Heart Failure). Hunt SA, Baker DW, Chin MH, Cinquegrani MP, Feldman AM, Francis GS, Ganiats TG, Goldstein S, Gregoratos G, Jessup ML, Noble RJ, Packer M, Silver MA, Stevenson LS. J Am Coll Cardiol 2001;38:2101-13. Permission granted for one time use. Further reproduction is not permitted without permission of the ACC/AHA. The American College of Cardiology Foundation granted Schaller Anderson permission to reproduce the aforementioned material in print and electronic formats on October 4, 2005.

ACE Inhibitors - CHF

Do you need to take ACE inhibitors?

- If you had a heart attack, heart disease or heart failure, your doctor may prescribe ACE inhibitors
- ACE inhibitors can lower the chance of you having a heart attack
- ACE inhibitors can not only make you live longer, they can improve the quality of your life

How do I take it?

- Ask your doctor how often to take your ACE inhibitor
- Some are taken once a day. Others may be taken 2 or 3 times a day

You may need your blood checked.

- Before you start
- After a change in prescription
- At regular check ups

Beta-blockers- CHF

Do you need to take beta-blockers?

- If you had a heart attack or have heart disease, your doctor may prescribe a beta-blocker

How do beta-blockers work?

- Beta-blockers slow your heart rate
- Lower your blood pressure
- Block stress hormones

Names of beta-blocker drugs

- Blocadren or Timolide (timolol)
- Coreg (carvedilol)
- Corgard (nadolol)
- Inderal or Inderide (propranolol)
- Lopressor or Toprol XL (metoprolol)
- Tenormin (atenolol)

- [A] Angiotensin converting enzyme (ACE) inhibitors in patients with a history of atherosclerotic vascular disease, diabetes mellitus, or hypertension and associated cardiovascular risk factors.
- [B] ACE inhibitor in patients with a recent or remote history of myocardial infarction regardless of ejection fraction or evidence of reduced ejection fraction without history of myocardial infarction.
- [C] Beta Blocker in patients with a recent myocardial infarction regardless of ejection fraction or reduced ejection fraction whether or not they have experienced a myocardial infarction.
- [D] Diuretics in patients who have evidence of fluid retention
- [E] ACE inhibitors in all patients unless contraindicated.
- [F] Beta-adrenergic blockers in all stable patients unless contraindicated. Patients should have no or minimal evidence of fluid retention and should not have required treatment recently with an intravenous positive inotropic agent.
- [G] Digoxin in doses that produce pre-dosing digoxin blood levels of 0.5-0.9ng/dl.
- [H] Spironolactone in patients with recent or current Class IV (Stage D) symptoms, preserved renal function and a low or normal potassium concentration. (Must monitor potassium levels after beginning therapy.)
- [I] Angiotensin receptor blockers (ARB) in patients who are being treated with digitalis, diuretics, and a beta-blocker and who cannot be given an ACE inhibitor because of cough or angioedema.
- [J] A combination of hydralazine and a nitrate in patients who are being treated with digitalis, diuretics, and a beta-blocker and who cannot be given an ACE inhibitor because of hypotension or renal insufficiency. If blood pressure elevated in spite of ACE-I/ARB, beta blockers, and diuretics.
- [K] Biventricular Pacing indicated in patients with prolonged QRS (≥ 130 ms), and EF < 35% with prolonged evidence of dyssynchrony on echocardiogram.

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Drugs Commonly Used for Treatment of Chronic Heart Failure

Drug	Initial Dose	Maximum Dose
Loop Diuretics*		
Bumetanide	0.5 to 1.0 mg once or twice daily	Titrate to achieve dry weight (up to 10 mg daily)
Furosemide	20 to 40 mg once or twice daily	Titrate to achieve dry weight (up to 400 mg daily)
Torsemide	10 to 20 mg once or twice daily	Titrate to achieve dry weight (up to 200 mg daily)
Metolazone**	2.5 to 5mg three times weekly	Titrate to achieve 5 to 20 mg once daily.
ACE Inhibitors		
Captopril	6.25 mg 3 times daily	50 mg 3 times daily
Enalapril	2.5 mg twice daily	10 to 20 mg twice daily
Fosinopril	5 to 10 mg once daily	40 mg once daily
Lisinopril	2.5 to 5.0 mg once daily	20 to 40 mg once daily
Quinapril	10 mg twice daily	40 mg twice daily
Ramipril	1.25 to 2.5 mg once daily	10 mg once daily
Beta-Receptor Blockers		
Metoprolol tartrate	6.25 mg twice daily	75 mg twice daily
Metoprolol succinate Extended release ⁺	12.5 to 25 mg daily	200 mg once daily
Bisoprolol	1.25 mg once daily	10 mg once daily
Carvedilol***	3.125 mg twice daily	25 mg twice daily; 50 mg twice daily for patients more than 85 kg
Aldosterone Antagonists		
Spironolactone	12.5 mg daily	50 mg daily
Eplerenone	25 mg daily	50 mg daily
Digitalis Glycosides		
Digoxin		0.0625 to 0.25 mg daily (Pre-dosing levels 0.5-0.9mg/dl)

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ACE indicates angiotensin-converting enzyme.

- * Thiazide diuretics are not listed in this table but may be appropriate for patients with mild heart failure or associated hypertension or as a second diuretic in patients refractory to loop diuretics alone.
- ** Reserved for fluid retention refractory to high dose loop metolazone diuretics
- *** Medication may require prior authorization for coverage in some plans.
- + Referred to in some publications as metoprolol CR/XL.

Comments:

- Large definitive study showed a trend for better survival in patients treated with an ACE inhibitor than those treated with an ARB (angiotensin receptor blocker)
- ARB should be used in HF patients who are intolerant of ACE inhibitors, i.e. intractable cough or angioedema

Care should be taken when adding an aldosterone antagonist. Hyperkalemia is common especially with decreased renal function. Spironolactone is contraindicated in patients with a CrCl of less than 10 ml/min and Eplerenone is contraindicated in men with creatinine greater than 1.8 mg/dl and women greater than 2.0 mg/dl.

References:

1. Chronic Heart Failure in the Adult: ACC/AHA Practice Guidelines for Evaluation and Management of J Am Coll Cardiol 2001; 38: 2101-13. (Also available at www.acc.org)
2. Treatments that improve outcome in the patient with heart failure, left ventricular systolic dysfunction, or both after acute myocardial infarction. Heart. 2005;91 Suppl 2:ii17-20; discussion ii31, ii43-8.
3. Combination of Isosorbide Dinitrate and Hydralazine in Blacks with Heart Failure. NEJM 2004; 351: 2049-57.
4. Cardiac resynchronization in chronic heart failure. N Engl J Med 2002;346:1845-53.