



Michigan Quality Improvement Consortium Guideline

Adults with Systolic Heart Failure

The following guideline recommends diagnostic evaluation, pharmacologic treatment and education that support effective patient self-management.

Eligible Population	Key Components	Recommendation and Level of Evidence
Adults with suspicion of left-ventricular systolic dysfunction, including heart failure	Evaluation	<u>Initial assessment should include:</u> <ul style="list-style-type: none"> ◆ Thorough history and physical examination [C], including depression screening, and assessment for coronary artery disease and risk factors ◆ Testing includes: chest X-ray, 12-lead electrocardiogram, lipid profile, CBC, electrolytes, calcium, magnesium, BUN, creatinine, blood glucose, liver function tests, TSH, urinalysis, and echocardiography with Doppler [C] ◆ Serial monitoring should include: weight, volume status, electrolytes, renal function and activity tolerance
Adults diagnosed with left-ventricular systolic dysfunction, including heart failure	Pharmacological management	<u>Drugs recommended for routine use:</u> <ul style="list-style-type: none"> ◆ ACE inhibitors in all patients, unless contraindicated¹ [A] ◆ Beta-blockade using carvedilol, sustained-release metoprolol, bisoprolol in all stable patients, unless contraindicated^{1,2} [A] <u>Drugs recommended for use in select patients:</u> <ul style="list-style-type: none"> ◆ Diuretics and sodium restriction for evidence of fluid retention [A] ◆ Spironolactone for patients with moderate or severe symptoms of heart failure, preserved renal function (creatinine < 2.0 in women; creatinine < 2.5 in men) and normal serum potassium concentration [A] ◆ In patients who cannot tolerate ACE inhibitors due to cough or angioedema, use angiotensin receptor blockers [A]. ◆ Consider hydralazine and isosorbide dinitrate for patients who cannot tolerate ACE inhibitors or ARBs, or African-American patients who remain symptomatic despite therapy [A].
	Education, counseling and risk factor modification	<u>Educate patient and family regarding:</u> <ul style="list-style-type: none"> ◆ Careful review of medication regimen with patient and caregivers at hospitalization or other changes in treatment ◆ Daily self-monitoring of weight and adherence to recommended patient action plan ◆ Recognition of symptoms and when to seek medical attention ◆ Moderate dietary sodium restriction (e.g., 2,000-2,500 mg sodium/day) ◆ Risk factor modification (regular exercise 5 times per week as tolerated [B]; smoking cessation; control of BP, DM, lipids) ◆ Avoid excessive alcohol intake, illicit drug use, and the use of NSAIDS ◆ Vaccination against influenza and pneumococcal disease ◆ Consider referral for evaluation for implantable defibrillator, ventricular assist device or transplant in patients with LVEF<30%, NYHA Class III-V patients and those with worsening CHF ◆ Discuss prognosis and advanced directives with all patients

¹ Contraindications include: life-threatening adverse reactions (angioedema or anuric renal failure), pregnancy, hypotensive patients at immediate risk of cardiogenic shock, systolic blood pressure < 80 mm Hg, serum creatinine > 3 mg/dL, bilateral renal artery stenosis, or serum potassium > 5.5 mmol/L.

² Contraindications include: patients with current or recent fluid retention history, unstable or poorly controlled reactive airway disease, symptomatic bradycardia or advanced heart block (unless treated with a pacemaker), or recent treatment with an intravenous positive inotropic agent.

Levels of Evidence for the most significant recommendations: A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline lists core management steps. It is based on the ACC/AHA 2009 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 (www.acc.org). Individual patient considerations and advances in medical science may supersede or modify these recommendations.