

TABLE 5-5 IDENTIFYING ADVANCED HEART FAILURE

Repeated (≥ 2) hospitalizations or ED visits for HF in the past year
Progressive deterioration in renal function (e.g., rise in BUN and creatinine)
Weight loss without other cause (e.g., cardiac cachexia)
Intolerance to ACE inhibitors due to hypotension and/or worsening renal function
Intolerance to β -blockers due to worsening HF or hypotension
Frequent systolic blood pressure <90 mm Hg
Persistent dyspnea with dressing or bathing requiring rest
Inability to walk 1 block on the level ground due to dyspnea or fatigue
Recent need to escalate diuretics to maintain volume status, often reaching daily furosemide equivalent dose >160 mg/day and/or use of supplemental metolazone therapy
Progressive decline in serum sodium, usually to <133 mEq/L
Frequent ICD shocks

Modified from Yancy CW, Jessup M, Bozkurt B, et al: 2013 ACCF/AHA guidelines for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, *J Am Coll Cardiol* 62:e147–e239, 2013.

ACE, Angiotensin-converting enzyme; BUN, blood urea nitrogen; ED, emergency department; HF, heart failure; ICD, implantable cardiac defibrillator.

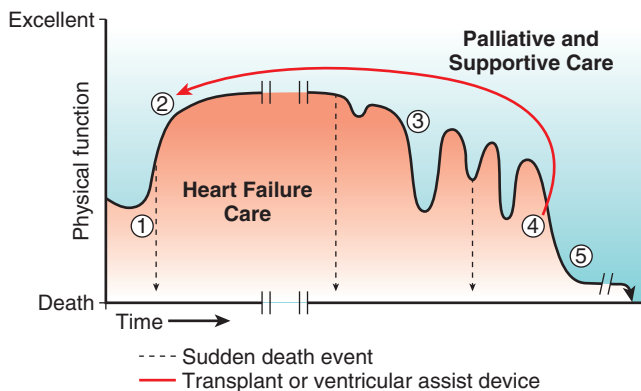


FIGURE 5-9 Conceptualizing comprehensive heart failure (HF) care. Early in therapy (1), supportive efforts focus on education for the patient and family about HF and self-management. Diuresis and evidence-based therapies achieve a plateau of improved function (2). Even when a plateau of improved function is achieved, the patient and family can benefit from efforts that improve symptoms and assist them in coping with HF and its impact on their lives. Functional status declines with intermittent exacerbations of HF that respond to rescue efforts (3). Heart transplantation or destination therapy ventricular assist devices (4) improve function for patients for a period and carry a different burden of chronic illness. At the end of life or when significant physical frailty or comorbidities predominate (5), the major focus of care is palliation, but some HF therapies remain important. HF is different from cancer, for which potentially curative treatments are discontinued as the patient reaches the end stage. (Modified from Goodlin S: Palliative care in congestive heart failure, *J Am Coll Cardiol* 54:386–396, 2009.)

Prognosis

The disease trajectory of HF is complex and characterized by variable intervals of clinical stability (Fig. 5-9). Although many randomized, controlled trials have demonstrated a symptom and mortality benefit with ACE inhibitors, ARBs, β -blockers, mineralocorticoid receptor blockers, and ICD and CRT therapy, the sobering 5-year mortality rate for HF remains at 50%, and the 10-year survival rate for patients with symptomatic HF is only 20%.

For a deeper discussion on this topic, please see Chapter 58, “Heart Failure: Pathophysiology and Diagnosis,” in *Goldman-Cecil Medicine, 25th Edition*.

SUGGESTED READINGS

- Bardy GH, Lee KL, Mark DB, et al: Amiodarone or an implantable cardioverter-defibrillator for congestive heart failure, *N Engl J Med* 352:225–237, 2005.
- Cook D, Simel DL: The rational clinical examination: does this patient have abnormal central venous pressure? *JAMA* 275:630–634, 1996.
- Digitalis Investigation Group: The effect of digoxin on mortality and morbidity in patients with heart failure, *N Engl J Med* 336:525–533, 1997.
- Drazner MH, Rame JE, Stevenson LW, et al: Prognostic importance of elevated jugular venous pressure and a third heart sound in patients with heart failure, *N Engl J Med* 345:574–581, 2001.
- Felker M, O'Connor CM, Braunwald E, et al: Loop diuretics in acute decompensated heart failure: necessary? Evil? A necessary evil? *Circ Heart Fail* 2:56–62, 2009.
- Felker M, Lee KL, Bull DA, et al: Diuretic strategies in patients with acute decompensated heart failure, *N Engl J Med* 364:797–805, 2011.
- McAlister FA, Ezekowitz J, Hooton N, et al: Cardiac resynchronization therapy for patients with left ventricular systolic dysfunction: a systematic review, *JAMA* 297:2502–2514, 2007.
- Nohria A, Lewis E, Stevenson LW: Medical management of advanced heart failure, *JAMA* 287:628–640, 2002.
- Packer M: Effect of carvedilol on survival in severe chronic heart failure, *N Engl J Med* 344:1651–1658, 2001.
- Pitt B, Zannad F, Remme WJ, et al: The effect of spironolactone on morbidity and mortality in patients with severe heart failure. Randomized Aldactone Evaluation Study Investigators, *N Engl J Med* 341:709–717, 1999.
- Roger VL, Go AS, Lloyd-Jones DM, et al: Heart disease and stroke statistics—2011 update: a report from the American Heart Association, *Circulation* 123:e18–e209, 2011.
- SOLVD Investigators: Effect of enalapril on survival in patients with reduced left ventricular ejection fractions and congestive heart failure. The SOLVD Investigators, *N Engl J Med* 325:293–302, 1991.
- Taylor AL, Ziesche S, Yancy C, et al: African-American Heart Failure Trial Investigators: Combination of isosorbide dinitrate and hydralazine in blacks with heart failure, *N Engl J Med* 351:2049–2057, 2004.
- Yancy CW, Jessup M, Bozkurt B, et al: 2013 ACCF/AHA guidelines for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, *J Am Coll Cardiol* 62:e147–e239, 2013.