Management of Patients Who Have or Are at Risk of Heart Failure

**Stage A:** At high risk of heart failure, but without structural heart disease or symptoms of heart failure
Includes patients with:
- Atherosclerotic disease
- Diabetes mellitus
- Hypertension
- Metabolic syndrome
- Obesity
Or patients
Using cardiotoxins
With a family history of cardiomyopathy

**Therapy**
Goals:
- Control metabolic syndrome
- Discourage alcohol intake and illicit drug use
- Encourage regular exercise
- Encourage smoking cessation
- Treat hypertension
- Treat lipid disorders
Drugs:
- ACE inhibitors or ARBs in appropriate patients
  for vascular disease or diabetes

**Stage B:** Structural heart disease but without signs or symptoms of heart failure
Includes patient with:
- Asymptomatic valvular disease
- Left ventricular remodeling, including left ventricular hypertrophy and low ejection fraction
- Previous myocardial infarction

**Therapy**
Goals:
- All measures under stage A
Drugs:
- ACE inhibitors or ARBs in appropriate patients
- Beta blockers in appropriate patients
Devices in selected patients:
- Implantable cardioverter-defibrillators

**Stage C:** Structural heart disease, with previous or current symptoms of heart failure
Includes patients with:
- Known structural heart disease
  and
- Shortness of breath and fatigue, reduced exercise tolerance

**Therapy**
Goals:
- All measures under stages A and B
- Restrict dietary sodium
Drugs for routine use:
- ACE inhibitors
- Beta blockers
- Diuretics for fluid retention
Drugs in selected patients:
- Aldosterone antagonists
- ARBs
- Digitalis
- Hydralazine/nitrates
Devices in selected patients:
- Biventricular pacing
- Implantable cardioverter-defibrillators

**Stage D:** Refractory heart failure requiring specialized interventions
Includes patients who have marked symptoms at rest despite maximal medical therapy (e.g., those who are recurrently hospitalized or cannot be safely discharged from the hospital without specialized interventions)

**Therapy**
Goals:
- All measures under stages A, B and C
- Decide appropriate level of care
Options:
- Compassionate end-of-life care, hospice
- Extraordinary measures (e.g., chronic inotropes, experimental drugs or surgery, heart transplant, permanent mechanical support)

**Figure 1.** Algorithm of the stages in the development of heart failure, with recommended therapy for patients by stage. (ACE = angiotensin-converting enzyme; ARB = angiotensin-II receptor blocker.) Adapted from Jessup M, Abraham WT, Casey DE, et al. 2009 focused update: ACCF/AHA Guidelines for the Diagnosis and Management of Heart Failure in Adults: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines: developed in collaboration with the International Society for Heart and Lung Transplantation. Circulation. 2009;119(14):1981.

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