

## EDITORIAL

# Management of Heart Failure

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Medical care for heart failure includes a number of nonpharmacologic, pharmacologic, and invasive strategies. Nonpharmacologic therapies include dietary sodium and fluid restriction; physical activity as appropriate and attention to body weight. Pharmacologic therapies include the use of diuretics, vasodilators, inotropic agents, anticoagulants, beta-blockers, and digoxin. Among the invasive therapies for heart failure are electrophysiologic intervention such as cardiac resynchronization therapy (CRT), pacemakers, and implantable cardioverter defibrillators (ICDs); revascularization procedures such as coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI); valve replacement or repair and ventricular restoration.

Following comorbidities should always be kept in mind during heart failure management:-

*Coronary artery disease* may be the underlying cause in up to two thirds of heart failure patients with low ejection fraction, but coronary artery disease may also play a role in the progression of heart failure through mechanisms such as endothelial dysfunction, ischemia, and infarction, among others.

*Valvular heart disease* may be the underlying etiology or an important aggravating factor in heart failure.

*Anaemia* is also common but ignored in chronic heart failure. Anaemia may be a reflection of the severity of the heart failure or it may contribute to worsening heart failure.

*Sleep apnea* has an increased prevalence in patients with heart failure and is associated with increased mortality. Sleep apnea should be treated aggressively in heart failure patients.

*Cardiorenal syndromeme* reflects advanced cardiorenal dysregulation manifested by acute heart failure, worsening renal function, and diuretic resistance. Treatment of cardiorenal syndrome in patients with heart failure is largely empirical, but it typically involves the use of combination diuretics, vasodilators, and inotropes as indicated.

*Atrial fibrillation* and heart failure can adversely affect each other.

### **Nonpharmacologic Therapy**

Patients with heart failure can benefit from attention to exercise, diet, and nutrition. Restriction of activity promotes physical deconditioning, so physical activity should be encouraged except during acute heart failure exacerbations and in patients with suspected myocarditis. Dietary sodium restriction to 2-3 g/day is recommended. Fluid restriction to 2 L/day is recommended for patients with evidence of hyponatremia and for those whose fluid status is difficult to control despite sodium restriction and the use of high-dose diuretics.

### **Pharmacologic therapy**

*Diuretics* remain the cornerstone of standard therapy for acute heart failure. In such patients, IV administration of a loop diuretic (ie, furosemide, bumetanide, torsemide) is preferred initially because of potentially poor absorption of the oral form in the presence of bowel edema. In patients with hypertensive heart failure who have mild fluid retention, thiazide diuretics may be preferred because of their more persistent antihypertensive effects.

### *Vasodilators*

Vasodilators (eg, nitroprusside, nitroglycerin, or nesiritide) may be considered as an addition to diuretics for patients with acute heart failure for relief of symptoms.

The combination of *sacubitril/valsartan* is approved by FDA in 2015 to reduce the risk of cardiovascular death and hospitalization for heart failure in patients with NYHA class II-IV heart failure and reduced ejection fraction.

### **Invasive therapy**

If there is evidence of organ hypoperfusion, use of inotropic therapies and/or mechanical circulatory support (eg, intra-aortic balloon pump, extracorporeal membrane oxygenator [ECMO], left ventricular assist

device [LVAD] and continuous hemodynamic monitoring are indicated.

When there is no viable therapeutic alternative heart transplantation has become a choice of therapy when progressive end-stage heart failure occurs despite maximal medical therapy, when the prognosis is poor. However, mechanical circulatory devices such as ventricular assist devices (VADs) and total artificial hearts (TAHs) can bridge the patient to transplantation; in addition, VADs are increasingly being used as permanent therapy.

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**Reference:**

April 28, 2017-2013 ACCF/AHA Guideline for the management of Heart Failure