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Original Article

## Management protocols for chronic heart failure

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### ABSTRACT

Heart failure is a common clinical syndrome and a global health priority. The burden of heart failure is increasing at an alarming rate worldwide as well as in India. Heart failure not only increases the risk of mortality, morbidity and worsens the patient's quality of life, but also puts a huge burden on the overall healthcare system. The management of heart failure has evolved over the years with the advent of new drugs and devices. This document has been developed with an objective to provide standard management guidance and simple heart failure algorithms to aid Indian clinicians in their daily practice. It would also inform the clinicians on the latest evidence in heart failure and provide guidance to recognize and diagnose chronic heart failure early and optimize management.

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### 1. Introduction

Chronic heart failure (HF), a progressive and debilitating disease, is increasing in epidemic proportions and affecting both the developed and the developing world.<sup>1,2</sup> Heart failure is associated with shorter life expectancy, increased frequency of hospitalization and poor quality of life (QoL), and is a major public health challenge even in India.<sup>3–6</sup> However, there is no large study

that has explored the burden and impact of HF in India.<sup>6</sup> The available data is primarily based on extrapolation of Indian data for risk factors of HF, i.e., hypertension, ischemic heart disease (IHD), obesity, diabetes mellitus (DM), and rheumatic heart disease (RHD).<sup>7</sup>

### 2. Definition

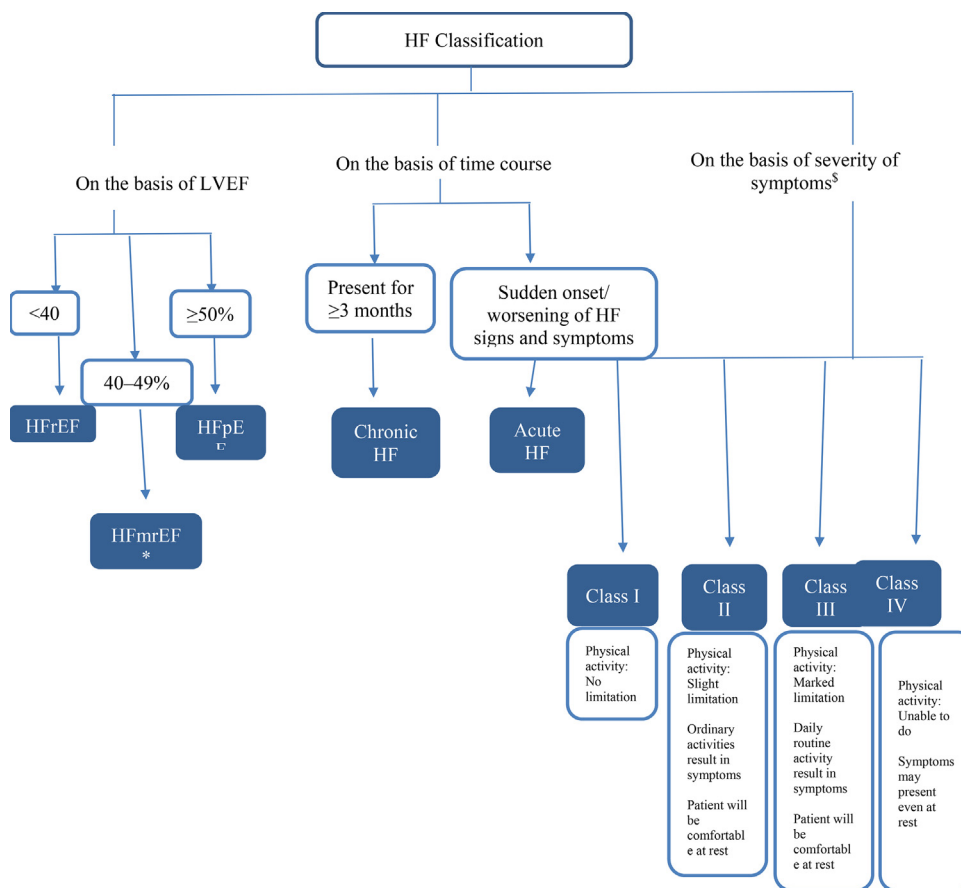
Heart failure is a complex clinical syndrome that underlines the inability of the heart to perform its circulatory function with the desired efficiency due to structural and/or functional (systolic or diastolic) alterations.<sup>3,8,9</sup>

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HF = heart failure; LVEF = left ventricular ejection fraction; HFrfEF = heart failure with reduced ejection fraction; HFmrEF = heart failure with mid-range ejection fraction; HFpEF = heart failure with preserved ejection fraction

\* It is referred to as a "grey zone" as the protocol and treatment for this group is not clear  
§ New York Heart Association classification

**Fig. 1.** Different classification systems for HF. HF=heart failure; LVEF=left ventricular ejection fraction; HFrfEF=heart failure with reduced ejection fraction; HFmrEF=heart failure with mid-range ejection fraction; HFpEF=heart failure with preserved ejection fraction  
\*It is referred to as a grey zone as the protocol and treatment for this group is not clear.  
§ New York Heart Association classification.

**3. Classification**

There is no single agreed classification system for HF. Fig. 1 summarizes the commonly followed classification systems in HF management.<sup>8,9,10</sup>

Other terms commonly used in HF are as below:<sup>8,9</sup>

- **Stable HF:** When a HF patient on treatment does not exhibit any major change in the symptoms and signs of HF for at least one month, then the patient’s condition is referred to as “stable”.
- **Decompensated HF:** When the condition of a “chronic” previously “stable” HF patient deteriorates suddenly or slowly, it is referred to as “decompensated”.
- **New-onset/de novo HF:** A patient with new-onset/de novo HF may present with symptoms in an acute or subacute (gradual) fashion.
- **Advanced HF:** It refers to patients with severe cardiac dysfunction, recurrent decompensation and severe symptoms despite optimal standard medical therapy.

**4. Epidemiology, etiology and prognosis**

**4.1. Global data**

Heart failure has emerged as a major global health issue, with an estimated worldwide prevalence of >37.7 million.<sup>11</sup> The burden is rapidly increasing and it is projected that by 2030, the number of HF patients would rise by 25%.<sup>12</sup>

The prevalence of HF increases with age.<sup>13</sup> At 55 years of age, the lifetime risk of HF is 33% and 28.5% for men and women, respectively.<sup>14</sup> The key risk factors and causes of HF are mentioned in Box 1.<sup>8,9,11</sup> The exponential rise in the incidence of hypertension and DM over the last couple of years has shaped the trajectory of HF development seen today.<sup>11–13</sup>

Data indicates that the mortality rate is ~50% at 5 years from the initial diagnosis of HF.<sup>9</sup> HF is a leading cause of hospitalization and represents 1–5% of total hospital admissions.<sup>3,11,15</sup> About 2–17% of HF patients admitted to hospital die while in the hospital.<sup>3</sup> Patients who survive have a high rate of rehospitalization and poor QoL.<sup>3,5</sup> Despite improvements in medical care over the years, the

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