

Pathophysiology of heart failure: compensatory mechanisms

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Heart failure or congestive heart failure is a global pandemic currently affecting around 26 million people worldwide. It is a state in which the heart cannot provide sufficient blood supply to satisfy the metabolic needs of the human body. According to the American heart association's 2017 heart disease and stroke statistics update, the number of people diagnosed with heart failure is expected to rise by 46 percent by 2030. While the morbidity and mortality rates from other cardiovascular diseases have been declining the past few decades, the incidence of heart failure is increasing and projected to increase significantly. This life-threatening disease is considered to be a global priority being one of the leading causes of heart related deaths worldwide.

The etiology for this troublesome condition ranges from hypertension to consequences of concomitant diseases of lung, kidney and other organs. The primary manifestations include dyspnea, fatigue and fluid retention. Once the initial diagnosis of heart failure is made, the survival rate is approximately 50 percent within 5 years.

Consequently, the compensatory mechanisms of heart failure arise. These could be defined as intra – or extra- cardiac. Intracardiac mechanisms further appear as short term and long term, providing assistance to cardiac function immediately and progressively.

The primary focus of this study would be on the long term intracardiac mechanism of hypertrophy of myocardium – its mechanism, stages, and outcome. The main features of this hypertrophy include deregulation of heart due to delayed nerve endings, relative coronary insufficiency, and decrease in contractility of heart, among others.

Due to the widespread case of heart failure and its ability to occur at any age group, it is prudent to understand how our bodies react and respond to this condition, in order to aid and assist in improving these mechanisms with more favorable outcomes. To have a deep understanding of the pathophysiology of this state and henceforth, find ways to aid the extension of life expectancy of the patient. With the alarming escalation of heart failure predicted in the near future, it is pertinent to discover ways of enhancing the cardiac capacity in the provided condition and tend to any secondary effects that might rise as a result of heart compensation.