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# Optimizing Diagnosis and Treatment of Congestive Heart Failure in Primary Health Settings

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## ABSTRACT

One of the most common chronic cardiovascular conditions that contributes to hospitalization, morbidity, and death among all heart patients is heart failure. The chance of developing heart failure is about 20% higher during one's lifespan. Symptomatic forecasts typically lack specificity and are seldom able to distinguish heart failure from other illnesses. Due to its financial and medical strain on the healthcare system, this disease poses a dilemma. However, the treatment and presentation of a patient with heart failure are still up for debate. This study will focus on how crucial it is for primary care doctors to diagnose and treat patients with congestive heart failure. Eligible published English-language papers, articles, and clinical trials were collected and categorized for this evaluation. Among them was PubMed, an electronic research engine. Details on the diagnosis and treatment of congestive heart failure, including definitions and classifications, were covered in this study. The primary care physician's approach often focuses on traditional palliative medicines before the disease worsens, and aims to assess various reports about patients with heart failure during their follow-up appointments.

**Keywords:** Congestive heart failure, Diagnosis, Management, Prognosis, Primary health care

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## Introduction

One of the primary chronic cardiovascular disorders that leads to morbidity, mortality, and hospitalization for all heart patients is heart failure. The overall chance of having heart failure is roughly 20% greater [1, 2]. Men are 33% more likely than women to suffer heart failure, according to other research that calculated the entire lifetime risk percentage by gender [3, 4]. However, the prevalence of congestive heart failure varies depending on the community under study. However, for those over 70, it is believed that between 1% and 2% of people have heart failure, and it may rise to over 10% [4, 5]. In addition, the prevalence of chronic cardiovascular disorders has significantly increased in the last several decades [6, 7].

Typically, congestive heart failure is the later phase of a variety of cardiac conditions. The financial and medical strain it places on the healthcare system makes it a difficult issue. Congestive heart failure's pathological and physiological conditions have been better understood during the last 20 to 30 years, and novel approaches to finding treatments have been established [4, 8].

Nonetheless, there are still questions on how to treat and offer a patient with heart failure. In this overview, we will emphasize how crucial it is for primary care physicians to diagnose and treat patients with congestive heart failure.

In patients with severe heart failure, low-frequency neuromuscular stimulation is a secure and productive rehabilitative technique that may assist with symptoms and enhance activities by partially reversing the aberrant reaction to exercise [9].

According to an investigation by Sinuraya *et al.* [10], the cost of CVD has increased in all Bandung primary healthcare facilities after national health insurance was put into place.

This study will focus on how crucial it is for primary care doctors to diagnose and treat patients with congestive heart failure.

## Materials and Methods

This review was collected and classified from eligible published English written documents, articles, and clinical trials. This electronic research engine was included: PubMed. The keywords "Congestive" 'Heart' and 'Failure' including words used in Mesh ((((‘Diagnosis’ [Mesh])), ((‘Prognosis’ [Mesh])), ((‘Management’ [Mesh])), ((‘Primary’ [Mesh])) were used in combinations. This review discussed the diagnosis and management of Congestive heart failure, and the details regarding this topic, including definitions and classifications, were included in this review.

## Results and Discussion

*Review*

*Diagnosis*

*Symptoms and Signs in Clinical Presentation*

Congestive heart failure development and prognosis evaluation are based on the American College of Cardiology's American Heart Association (ACC) and the European Society of Cardiology's (ESC) 2016 recommendations for identifying and managing acute and chronic heart failure [11]. Forecasts based on symptoms are typically nonspecific and seldom distinguish heart failure from other illnesses. On the other hand, early indicators of heart failure, including apical impulse dislocation and elevated jugular vein stress, can be more precisely identified (**Table 1**) [11-13].

**Table 1.** Symptoms and signs in heart failure presentation [11-13]

| **Symptoms** | **Signs** |
|---|---|
| Conventional symptoms | More specific |
| Breathlessness | Jugular venous pressure elevation |
| Orthopnea | Hepatojugular reflux |
| Reduced exercise tolerance | Gallop heart rhythm |
| Paroxysmal nocturnal dyspnea | Lateral apical impulse displacement |
| Tiredness, fatigability, and more time for exercise recovery | |
| Swelling on the ankles | |
| Less conventional | Less specific |
| Wheezing | Weight gain |
| Bloated feeling | Sudden weight loss |
| Nocturnal coughing | Tissue wasting |
| Loss of appetite | Cardiac murmur |
| Confusion | Peripheral oedema (ankle, sacral, scrotal) |
| Depression | Pulmonary crepitations |
| Palpitations | Dullness to percussion and reduced air entry |
| Dizziness | Tachycardia |
| Syncope | Cheyne-stokes respiration |
| Bendopnea | Hepatomegaly |
| | Tachypnoea and irregular pulse |
| | Ascites |
| | Cold extremities |
| | Oliguria |

| | |
|---|---|
| | Narrow pulse pressure |

*Risk Factors and Prognosis*

The result of heart failure is generally linked to several important dependent and independent risk variables. One of the main risk variables that influences how illnesses turn out is ethnicity. Asian heart failure patients are projected to have a greater chance of death than their European contemporaries [14–16]. Gender disparities frequently make a noteworthy impact on patients' quality of life. Based on several studies, males are 33% more likely than females to have heart failure throughout their entire lives [3, 4]. Other research, nevertheless, revealed that females are more likely than most males to suffer from congestive heart failure. Furthermore, compared to males, females are more likely to endure typical cardiac failure with intact ejection fraction [17, 18]. Female physiological characteristics are distinct from males and are thought to be a significant risk factor for the eventual occurrence of heart failure (**Table 2**) [19].

**Table 2.** Female distinct physical and physiological characteristics in contrast to males [19]

| Physiological and anatomical features | Women compared to men |
|---|---|
| Mass in the left ventricle | Lower |
| Apoptosis and cell turnover | Lower |
| Blood pressure | Lower |
| Resting heart rate | Higher |
| Contractility | Greater |
| Catecholamine-mediated vasoconstriction | Less |
| Coronary vessel caliber | Smaller |

Repeated hospitalization and unexpected hospitalization of heart failure patients are associated with death markers [16, 20, 21]. Comorbid conditions, both cardiovascular and non-cardiovascular, have an impact on preserving the prognostic pronouncements of the course of congestive heart failure. The diagnosis and treatment of heart failure are significantly impacted by these diseases. Patients with congestive heart failure frequently have diabetes, anemia, and metabolic iron shortage (**Table 3**), all of which are known to complicate the prognostic evaluation of heart failure.

**Table 3.** Effects of heart failure on iron shortage and anemia [22]

| Anemia | Iron deficiency |
|---|---|
| Renal impairment | Iron absorption impairment. |
| Chronic inflammatory disorder | Malnutrition and iron intake reduction. |
| Dysfunction of the Bone Marrow | Blood loss from the Gastrointestinal area. |
| Hemodilution | Sequestration brought on by a compromised iron transition causes chronic inflammation. |
| Iron deficiency anemia | |

Diabetes mellitus may not enhance the chance of survival, but it does play a big part in the etiology that raises the risk of mortality for heart failure patients. The length of time, other comorbidities, and harm to organs all affect this (**Table 4**) [22, 23]. Patients with heart failure who have type 2 diabetes have a higher chance of dying than those who do not have the disease [22, 24].

**Table 4.** Classes of cardiovascular risk in diabetic patients [22, 23]

| Cardiovascular risk degree | Condition |
|---|---|
| Very high | • Diabetes and cardiovascular disease that already exists together with end-organ damage.<br>• Over three years of cardiovascular risk<br>• Having diabetes for almost 20 years |
| High | • Over ten years of diabetes is linked to cardiovascular risks rather than organ damage. |
| Moderate | • Type 1 diabetes in individuals over 35 with no cardiovascular risks for ten years;<br>• Type 2 diabetes in those over 50 with no cardiovascular risks for ten years. |

*Practical Management of Congestive Heart Failure in Primary Healthcare*

Patients with congestive heart failure may exhibit a range of severe signs and symptoms during the condition's progression. The primary care physician's strategy seeks to evaluate various reports about heart failure patients through their follow-up appointments, and frequently worries about traditional palliative medications before the situation worsens. A referral ought to be made if palliative treatment proves to be ineffective [25]. A concise overview of the practical treatment of heart failure with maintained ejection fraction is provided in Table 5 [26].

**Table 5.** Palliative care for heart failure patients whose ejection fraction remains stable [26]

| |
|---|
| The lowest diuretic dosage that is useful for monitoring volume overflow |
| Moderate dietary sodium restriction |
| Teaching patients about weight fluctuations and how to keep their ideal weight |
| comprehensive monitoring and treatment guidance, especially for recently admitted patients |
| Keeping an eye on comorbidities such as blood pressure and blood sugar |
| strict regulation of heart rate and preservation of sinus rhythm |
| Treat myocardial ischemia |
| Patients who exhibit extreme daytime drowsiness or suspected respiratory issues should have their sleep evaluated. |
| Follow up with moderate regular physical activity |

## Conclusion

The lifetime risk of developing heart failure is approximately 20% higher. Congestive heart failure is typically the later phase of a variety of cardiac conditions. Due to the financial and medical strain it places on the healthcare system, it is portrayed as a complicated issue. Variations in gender and ethnicity frequently had a stronger effect on patients' quality of life. The American College of Cardiology's American Heart Association (ACC) and the European Society of Cardiology's (ESC) 2016 recommendations for identifying and managing acute and chronic heart failure, nonetheless, are crucial for determining the course and prognostic evaluation of congestive heart failure. Congestive heart failure can present with a range of severe signs and symptoms that patients may encounter throughout practical treatment. The main care doctor's strategy frequently focuses on traditional palliative medicines before the illness worsens, and aims to evaluate various reports about patients with heart failure during their follow-up appointments. A referral ought to be made if palliative treatment proves to be ineffective.

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