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CLINICAL DEMONSTRATION OF PATIENTS ADMITTED WITH HEART FAILURE IN PUNJAB INSTITUTE OF CARDIOLOGY, LAHORE

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Abstract:

Background: *Heart failure is a complex clinical syndrome that results from abnormalities in the structure and / or function of the heart (hereditary or acquired) that impair the ability of the left ventricle to fill or eject blood. The global incidence and incidence of heart failure (HF) is approaching epidemic proportions, as evidenced by the continuing increase in hospitalizations for HF, the rising number of HF-related deaths, and the rising cost of caring for patients with HF. Worldwide, HF affects nearly 23 million people. In the United States, HF affects approximately 4.7 million people (1.5 to 2 percent of the total population), and approximately 550,000 cases of HF are diagnosed annually. Patients with heart failure have different symptoms and a different etiology. The aim of this study was therefore to get acquainted with various clinical pictures of hospitalized patients with heart failure.*

Methods: *The present study was conducted to review the clinical presentation of heart failure patients admitted to the Cardiology department of Punjab Institute of Cardiology Lahore for three-year duration from August 2017 to August 2020. A total of 2,112 patients were enrolled in this study.*

Results: *The majority of patients (65%) belonged to the 51-70 age group. 75% (1,584) of patients were male. 98% of patients reported SOB, 95% of patients had a basilar pancreas, 74% orthopnea, 59% paroxysmal nocturnal dyspnea (PND), 40% lower limb edema, and 25% elevated JVP. The mean heart rate was 85 beats / min, the mean systolic B.P. was 118 mmHg and the mean diastolic B.P. was 73 mm Hg. 45% of the population had hypertension, 29% had diabetes, and 27% had comorbid respiratory disease. The mean EF was 38%. Ischemic cardiomyopathy was the most common (39%) cause of heart failure, acute coronary syndrome was the second most common cause (29%) and valvular heart disease was the third most common cause.*

Conclusion: *Most patients with heart failure are elderly. Most patients experienced shortness of breath and bilateral basal combs. Most patients have comorbidities that affect the natural course of patients with heart failure. The most common causes include ischemic cardiomyopathy following an ischemic heart injury. Therefore, patients with acute or chronic ischemic heart disease should be treated and monitored, also taking into account their socioeconomic status.*

Key words: *clinical picture, heart failure, hospitalized patients.*

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INTRODUCTION:

Pakistan is undergoing an epidemiological transformation. The burden of communicable disease is declining, and as life expectancy increases and lifestyle changes are widespread, the number of non-communicable diseases increases [1]. Cardiovascular disease is currently one of the leading causes of morbidity and mortality in the country. Heart failure (HF) is a significant and growing health problem as the population ages. Despite improvements in therapy, mortality and morbidity remain high.[1,2] Heart failure is a complex clinical syndrome that develops secondary to abnormalities in the structure and / or function of the heart (hereditary or acquired) that impair the ability of the left ventricle to fill or eject. Blood [2]. Worldwide, the prevalence and incidence of heart failure is approaching epidemic proportions, as evidenced by the continuing increase in deaths from heart failure, as well as the rising cost of caring for patients with heart failure. Worldwide, heart failure affects approximately 23 million people. In the United States, about 4.7 million people (1.5 to 2 percent of the total population) are affected by heart failure, with nearly 550,000 cases of heart failure diagnosed each year. Estimates of the incidence of symptomatic heart failure in the general European population are similar to those in the United States, ranging from 0.4 to 2 percent [3-4]. The incidence of heart failure is exponential, increasing with age, affecting 6 to 10 percent of people over the age of 65. The overall incidence of heart failure is believed to be on the rise, in part because our current treatments for heart disease, such as myocardial infarction, valvular heart disease, and cardiac arrhythmias, allow patients to survive longer [5-6].

In developed Western countries, coronary artery disease, alone or in combination with hypertension, appears to be the most common cause of heart failure. However, it is very difficult to establish what the primary etiology of heart failure is in a patient with multiple potential causes (e.g., coronary artery disease, hypertension, diabetes, atrial fibrillation, etc.). Moreover, even the absence of overt hypertension in a patient with heart failure does not exclude a significant etiological role in the past, consisting in the normalization of blood pressure as pump failure develops. The initial Framingham heart study cohort was monitored through 1965; Arterial hypertension turned out to be the most common cause of heart failure, identified as the main cause in 30% of men and 20% of women, respectively, and as a co-factor in another 33% and 25%, respectively. In addition, ECG evidence of left ventricular hypertrophy in the presence of hypertension was associated with an approximately 15-fold increase in the risk of developing heart failure [5-6]. However, in the following years of follow-up, coronary artery disease became increasingly common before the development of heart failure, and as an identified cause of new cases of heart failure, it increased from 22% in the 1950s to almost 70% in the 1970s. During this period, the relative proportion of hypertension and heart valve disease decreased dramatically [7-8]. During this period, there was an approximately 5% and 30% decrease in the prevalence of hypertension per decade in men and women, respectively. The decreasing proportion of arterial hypertension most likely reflects the introduction of antihypertensive treatment; a parallel decrease in the frequency of left ventricular hypertrophy supports this assumption. It is also likely that over the same period, the increasing accuracy in determining the presence of coronary artery disease contributed to its growing importance in this regard. The Framingham data must take into account the fact that heart failure was identified by clinical criteria alone and clearly included people without left ventricular systolic dysfunction [9]. Conversely, large-scale clinical trials largely recruited patients who decreased left ventricular ejection fractions and used an extensive list of exclusion criteria.

METHODS:

The present study was conducted to review the clinical presentation of heart failure patients admitted to the Cardiology department of Punjab Institute of Cardiology Lahore for three-years duration from August 2017 to August 2020. The study population consisted of patients admitted to hospital with symptoms of heart failure. Diagnostic criteria for the diagnosis of congestive heart failure are paroxysmal nocturnal dyspnea, orthopnea, exertional dyspnea, elevated JVP, basal pulmonary aneurysm, third heart tone, peripheral edema, night cough, hepatomegaly, pleural effusion, cardiomegaly in CXR, pulmonary edema in CXR, and echocardiographic. A total of 2,112 patients were enrolled in the study. The Ethics Committee issued ethical approval for the study. The cardiologist collected a standardized medical history, examined all patients upon admission to the hospital and noted the clinical results of the admitting doctors. If possible, an electrocardiogram, chest radiograph, transthoracic echocardiogram, serum chemistry and hematology, and thyroid function tests were performed. The echocardiogram was performed according to a standard protocol and in accordance with the guidelines adopted by the cardiologist, and two-dimensional M-mode, Doppler and Color-flow images were recorded.

RESULTS:

Table-I

Baseline Characteristics of study population N=2112

Characteristics	
Age range	14-87 years
Average age	46 ± 07 years
Most of patients (75%)	51-70 years
Male patients	1584(75%)
Female patients	528(25%)
Ejection fraction	38%
Average LV dimension in Diastole	57 mm
Average LV dimension in Systole	45 mm
Average pulse/min	85 beats/min
Average Systolic BP	116.46 mm Hg
Average Diastolic BP	75.77 mm Hg

Table-II

Associated co-morbid conditions of study population

N=2112

Characteristics	Percentage (%)
Hypertension	45%
Diabetes	29%
Dyslipidemia	20%
Atrial fibrillation	09%
Respiratory Diseases	27%

Table-III

Presenting Features of study population *N=2112*

Characteristics	Percentage (%)
Shortness of Breath	98%
Bilateral Basal Creps	95%
Orthopnea	74%
Paroxysmal Nocturnal Dyspnea	59%
Leg edema	40%
Raised JVP	25%

DISCUSSION:

A total of 2,112 patients with heart failure were enrolled. Patients are between 14 and 87 years of age. The mean age was 46 ± 07 years. Most of the patients (75%) are in the 51-70 age groups. In the SOLVD clinical trial, the mean age of 12 years was 61 years. In DIG (1997), 13 RALES, 14 MERIT-HF, 15 ATLAS16, the mean age was 64 years. M Kabiruzzaman et al showed that the mean age was 54 years. The Hillingdon Heart Failure Study assessed the incidence and etiology of heart failure in one borough of West London, England, based on clinical and echocardiographic data and a case definition based on three cardiologists using the ESC definition of heart failure [8-9]. The median age at diagnosis of heart failure was 76 years. The incidence of heart failure was significantly higher in men than in women of all ages, with an age-standardized coefficient of 1.75. The primary etiology was coronary artery disease (36%), unknown (34%), hypertension (14%), valvular disease (7%), atrial fibrillation alone (5%), and others (5%)[10]. Mcmurray et al. They studied trends in hospitalization for heart failure in Scotland in 1980–1990. They found that seventy-eight percent of the discharges were from people> 65 years of age, and 48% were from men. In our study, men were 75% and women 25%. In the SOLVED clinical trial, 80% were male and 20% female. In study DIG and MERIT-HF, 78% were male. In this study, 98% of patients experienced dyspnea, 74% of orthopedic patients, 59% of paroxysmal nocturnal dyspnea (PND), 40% of ankle swelling, 25% of elevated JVP, and 95 of bilateral base crackles. In the present study, as comorbidities, 45% had a history of hypertension, 29% had diabetes, 27% had respiratory disease, and 9% had atrial fibrillation. In the SOLVD (1991) clinical trial 12.42% had hypertension, 26% had diabetes, and 10% had atrial fibrillation. In the MERIT-HF 15 clinical trial, 44% had hypertension, 25% diabetes, and 17% had atrial fibrillation. In our study, 69.42% were diagnosed with ischemic heart disease (acute coronary syndrome 29.37%; ischemic cardiomyopathy 38.03% and chronic ischemic heart disease 2.02%. In the SOLVD clinical trial, 71% had ischemic cause of heart failure, in study DIG 70% had a cause of heart failure, in study MERIT-HF 66% had an ischemic cause of heart failure [11-12]. In ATLAS 64% had an ischemic cause of heart failure. In RALES 14 54% had an ischemic cause of heart failure 08.39% of patients had hypertension, heart failure, 09% had hypertensive heart failure in DIG (1997), and 20% had hypertensive heart failure in ATLAS [13]. In this study, 15.29% had valvular heart failure. In ATLAS 06% had valvular heart failure. The cause of heart failure In the SPICE registry, 05% had a valvular cause of heart failure, 4.12% in our study had a diagnosis of DCM (dilated cardiomyopathy) as the cause of heart failure. In the SOLVD study (1991) 18% had DCM, in the DIG study 15% had DCM as the cause of heart failure [14]. The SOLVD registry and 13% had DCM. In ATLAS, 28% had DCM as the cause of heart failure. 17% of the SPICE registry had DCM. In Pakistan, Jafary et al. Examined 196 patients with a mean age of 61.2 ± 12.8 years, with a large majority of men. All of them suffered from systolic heart failure with LVEF d "40%, requiring admission to hospital, of which over 60% suffered from hypertension (67.3%) and diabetes (60.7%), and over three-quarters had a history of arteries past coronary artery disease. In the UK, most heart failure patients admitted to hospital are over 65 years of age. The incidence of heart failure increases from about 1% in the 50–59 age group to 5–10% in the 80–89 age group. Heart failure is often caused by coronary artery disease [15].

CONCLUSION:

Despite the decline in age-adjusted mortality from ischemic heart disease (CHD) in the developed world overall, the number of patients with chronic coronary disease is increasing. This is mainly due to two separate trends. First, the proportion of elderly people in the population is increasing rapidly, and these people have the highest incidence of CHD and hypertension. Second, the survival rate of people with coronary heart disease is improving. In particular, it has been shown that survival after acute myocardial infarction has increased significantly over the past decade, at least in part due to better treatment. As coronary artery disease is the most powerful risk factor for heart failure, it is likely that these trends will lead to an increase in its incidence in the future. Therefore, chronic heart failure can become a more common symptom of chronic heart disease and cause too many deaths. In our study, the majority of patients with heart failure are elderly. The most common cause is ischemic cardiomyopathy following an ischemic heart injury. Therefore, patients with acute and chronic ischemic heart disease should be treated and monitored taking also into account their socioeconomic status. NSAIDs, steroids and other fluid retention drugs should be used with caution in cardiac patients prone to heart failure. The number of heart failure patients is bound to increase in premature age if appropriate measures are not taken to manage risk factors and raise public awareness. Clinical and epidemiological studies are needed to know further details.

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