

Descriptive Study of Patients with Heart Failure in Nangarhar University Teaching Hospital

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Abstract:

Failure of the heart to meet the metabolic demands of the body bears numerous complications subsequently leading to death. The overall aim of the study was to find out heart failure prevalence in patients visiting Nangarhar University Teaching Hospital and further elaborate it.

It was a descriptive retrospective study including both male and female patients aging 18 years and more during six months at Nangarhar University Teaching Hospital located at Nangarhar province of Afghanistan.

Out of 13077 patients, only 367 (2.8%) patients of whom 207 (56.6%) and 159 (43.4%) were females had heart failure. Heart failure cases increased with advancing age as there were 8.2% cases in age group 20-39 years, 11.5% cases in 40-49 years, 26.2% cases in 50-59 years, and 54.5% cases in patients with age of 60 years and over. In fact, 335 (91.1%) patients had exertional dyspnea, 102 (27.8%) patients had orthopnea, 23 (6.3%) patients had pulmonary edema. Most abundant physical signs were neck vein distention (56.6%), lower limb edema (52.4%), and pulmonary rales (31.1%), followed by gallop rhythm (12.5%) and hepatomegaly (5.1%). In addition, 42.8% patients had mildly reduced ejection fraction while 29.8% patients had moderately reduced ejection fraction and 16.4% had severely reduced ejection fraction. Moreover, 28.7% patient had regional wall motion abnormality on echocardiography while 15.8% patients had dilated cardiomyopathy, 13.9% patients had valvular heart disease, and 10.6% patients had pulmonary arterial hypertension.

Heart failure was a common disease in Nangarhar University Teaching Hospital; more specifically in females and patients with advanced age. In fact, echocardiographic findings revealed ischemic heart disease, dilated cardiomyopathy, and valvular heart disease as the leading associated factors. Measures should be taken to reduce risk factors and raise social awareness about heart failure in order to reduce its prevalence and subsequent morbidity, mortality, and expenditure.

Keywords: Heart failure, Cardiac disease, Systolic dysfunction, Diastolic Dysfunction, Afghanistan

Introduction

Heart failure is the leading cause of mortality and morbidity worldwide and its prevalence increases with advanced age specifically in the presence of other cardiovascular risk factors (1). Echocardiography still remains the gold standard diagnosing tool for patients with heart failure; in fact, in a study by Boonman de Winter *et al* in Netherlands, echo findings in patients with heart failure showed cardiomyopathy in 28% patients, regional wall motional abnormality specific for ischemic heart disease in about 23% patients, and valvular heart disease in 23% patients (2). Heart failure prevalence across gender is controversially reflected in the literature though most articles fall in the favor of heart failure being more prevalent in female patients (3). Heart failure prevalence has changed over decades due to increasing population and ageing though overall prevalence in the population is about 2% (4). Heart failure falls into two categories: heart failure with reduced ejection fraction and heart failure with preserved ejection fraction (5). However, cut off values for both differ among guidelines and some even criticize left ventricle function estimation for the diagnosis of heart failure—a complex syndrome that a tiny diagnosing tool would not suffice. In 2014, the total annual expenses on heart failure were known to be 39.2 billion dollars in the United States; in other words, 2% of the total budget was spent on heart failure (6). Individually each patient in the United States spend \$8500 for the diagnosis and treatment of heart failure (7).

Despite numerous researches on heart failure and improvements in the diagnosis and treatment of the syndrome, we still lack our local data regarding the disease so we aimed to conduct the study to know about the burden and clinical profile of the disease in our local hospital.

Methodology

It was a descriptive retrospective study including both male and female patients aging 18 years and over and visiting Nangarhar University Teaching Hospital for medical care during six months. The study was based on purposive sampling. Echocardiography was the ultimate diagnostic tool besides clinical evidence of heart failure. The study excluded diagnosis other than heart failure. Data was collected from the medical files of the patients who visited the internal medicine ward of the relevant hospital from June to November of 2023.

Echocardiographic evidences were used to diagnose heart failure cases and Ejection fraction was estimated to divide heart failure cases into two sub groups as heart failure with reduced ejection fraction and heart failure with preserved ejection fraction.

Statistical analysis was conducted in SPSS version 26 by using mean \pm standard deviation for continuous variables and frequencies for categorical variables.

Results

A total of 13077 patients were screened in both in-patient and out-patient departments at Nangarhar University Teaching Hospital. Only 367 (2.8%) patients had heart failure where 207 (56.6%) patients were female and the rest 159 (43.4%) patients were male.

Mean age of the study population was 57.6 ± 13.8 years.

Heart failure prevalence increased with advancing age i.e. 199 (54.37%) patients with heart failure were 60 years of age and over (Figure 1).

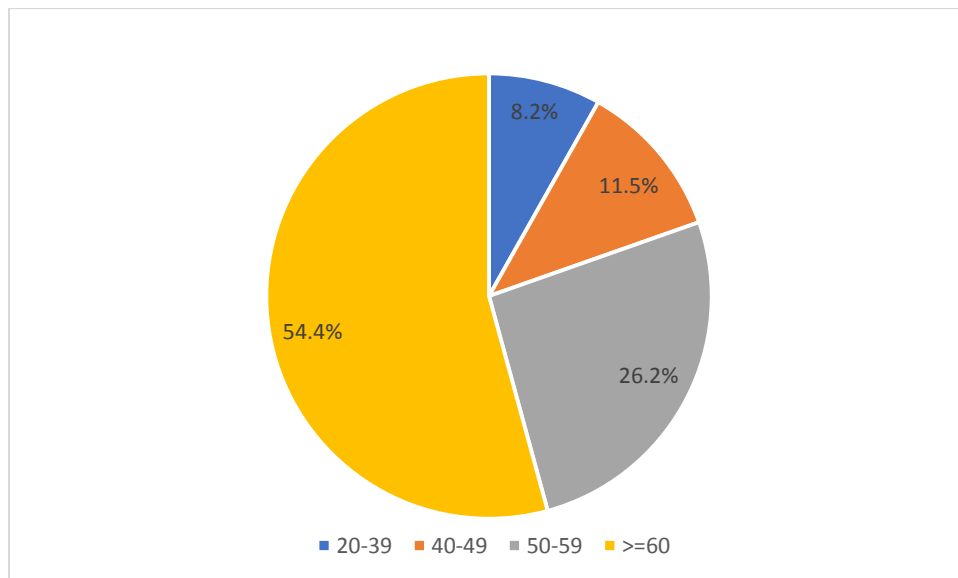


Figure 1: Heart Failure Prevalence across Age Groups

In fact, most heart failure cases were from Nangarhar province whereas the rest of the patients with heart failure were from nearby provinces such as Laghman, Kunar, Noristan, and Kabul as shown in Table 1.

Table 1: Heart Failure Regional Distribution

Province	Heart Failure cases
Nangarhar	269 (73.5%)
Laghman	41 (11.2%)
Kunar	33 (9%)
Kabul	10 (2.7%)
Noristan	8 (2.2%)
Others	5 (1.7%)

Symptoms prevalence in heart failure showed that exertional dyspnea was the most prevalent symptom among all i.e. over 90% patients had exertional dyspnea followed by orthopnea and others. However, we need to mention that patients had more than one symptom simultaneously (Table 2).

Table 2: Symptoms frequency in patients with heart failure

Symptoms	Frequency (%)
Exertional Dyspnea	335 (91.1%)
Orthopnea	102 (27.8%)
Paroxysmal Nocturnal Dyspnea	85 (23.2%)
Chest tightness	70 (19.1%)
Pulmonary edema	23 (6.3%)
Chest pain	21 (5.7%)
Cardiac asthma	18 (4.9%)

Neck vein distention was the most prevalent physical sign in the study group as shown in Table 3 along with other signs.

Table 3: Physical signs in patients with heart failure

Physical signs	Frequency (%)
Neck vein distention	208 (56.6%)
Lower limb edema	192 (52.4%)
Pulmonary rales	114 (31.1%)
Gallop rhythm	46 (12.5%)
Hepatomegaly	19 (5.1%)

Chest X ray in the study subjects showed cardiomegaly in 164 (44.8%) patients, followed normal chest x ray in 108 (29.5%) patients, pleural effusion in 38 (10.4%) patients. However, we could not find information about the x ray of 56 (15.3%) patients.

Echocardiographic findings of the patients are shown in Table 4.

Table 4: Echocardiographic findings in patients with heart failure

Echocardiographic findings	Frequency (%)	
Ejection Fraction	Mildly reduced	157 (42.8%)
	Moderately reduced	109 (29.8%)
	Severely reduced	60 (16.4%)
Diastolic Dysfunction	Preserved	40 (10.9%)
	Mild	292 (79.8%)

Moderate	23 (6.2%)
Severe	7 (1.9%)
Regional wall motion abnormality	105 (28.7%)
Dilated cardiomyopathy	58 (15.8%)
Valvular heart disease	51 (13.9%)
Pulmonary arterial hypertension	39 (10.6%)

Discussion

The major finding of the study demonstrated that heart failure was not an uncommon disease in the symptomatic patients visiting Nangarhar University Teaching Hospital. In fact, heart failure was more common in female patients in comparison to male patients. The possible reasons in females for the difference include lack of exercise, lack of healthcare seeking due to low education level, male dominant society, and poor economical status which all in turn contribute to the risk factors for the development of heart failure such as hypertension, diabetes mellitus, obesity, dyslipidemia, and etc. In fact, studies by Bragazi *et al.* and Zaman *et al.* also showed higher heart failure prevalence in females compared to males (1,3).

Heart failure prevalence increased with advanced age that is to say more than half of the cases were sixty years of age and older. In fact, patients at such age have comorbid disease which are well known risk factors for heart failure such as diabetes mellitus, hypertension, dyslipidemia, and others. In addition, a study by Masoudi *et al.* has also demonstrated high prevalence in the elderly people (8).

Besides systolic and diastolic dysfunctions in our study, echocardiography revealed regional wall motion abnormality specific for ischemic heart disease, dilated cardiomyopathy, and valvular heart disease in great number of patients. In fact, the aforementioned factors suggest poor quality of life and predicted deaths within five years (9).

Exertional dyspnea was the most common symptom in our study followed by orthopnea and others which is compatible with the results of many studies. However, a study by Albert *et al.* raised a good point whether we are asking the right question interviewing patients with heart failure; in fact, they revealed fatigue more common than dyspnea in patients with heart failure (10).

We recommend the officials and healthcare staff to raise awareness by any means so that people avoid risk factors, visit the nearby health facility at earliest convenience upon symptoms so that the number of the cases would decrease and subsequent mortality, morbidity and burden of the disease on the hospitals and government would decrease.

The study included a few limitations despite spectacular results. It was a descriptive retrospective study; we could not follow the patients up for complications and treatment response. In addition, a few variables were missing in the patients' files.

Conclusion

Heart failure was a common disease in Nangarhar University Teaching Hospital; more specifically in females and patients with advanced age. In fact, echocardiographic findings revealed ischemic heart disease, dilated cardiomyopathy, and valvular heart disease as the leading associated factors. Measures should be taken to reduce risk factors and raise social awareness about heart failure in order to reduce its prevalence and subsequent morbidity, mortality, and expenditure.

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Conflict of Interest

The authors declare no conflict of interest.

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