

Original Article

Profile of individuals with cardiomyopathy patients

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Abstract

Objective: To find out the socio-demographic and clinical profile of patients with cardiomyopathy in a tertiary care teaching hospital in Bangladesh.

Methods: A descriptive, cross sectional study was conducted from July 2022 to December 2022 among 50 patients attending at Cardiology Outpatient Department of the Cumilla Medical College Hospital after obtaining requisite consent from the patients. Data were collected through the interviewing of the patients. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to know the socio-demographic and clinical profile of patients with cardiomyopathy in a tertiary care hospital. The study was approved by the institutional ethical committee.

Results: In a pool of 50 cardiomyopathic patients, 26 (52%) patients belong to 61-70 years old. More than half of the respondents were male (n=31, 62%). Overall, 33 (66%) patients have ejection fraction (LVEF) >25% while 17 (34%) patients have ejection fraction (LVEF) <25%. Pedal edema was the most commonly associated findings (66%) with cardiomyopathy followed by hypertension (46%), diabetes mellitus (42%) and dyslipidaemia (38%)

Conclusion: Present study concluded that most of the patients of cardiomyopathy were male and belonged to age 61-70 year age group.

Keywords: Cardiomyopathy patients, Ejection Fraction

Introduction

Cardiomyopathies are defined as diseases of the myocardium associated with cardiac dysfunction. They are classified as dilated cardiomyopathy, hypertrophic cardiomyopathy, restrictive cardiomyopathy, and arrhythmogenic right ventricular cardiomyopathy.¹ Dilated Cardiomyopathy (DCM) is a disease of the heart muscle characterized by enlargement and dilation of one or both of the ventricles along with impaired contractility defined as left ventricular ejection fraction (LVEF) less than 40%. By definition, patients have systolic dysfunction and may or may not have overt symptoms of heart failure. This disease process can be classified as either primary or secondary DCM. Primary DCM is considered idiopathic and the diagnosis can only be made after excluding secondary causes. In most cases DCM is progressive, leading to heart failure and death. Without a transplant, the survival rates are poor.²

Hypertrophic cardiomyopathy (HCM) is a genetic disorder that is characterized by left ventricular hypertrophy unexplained by secondary causes, and a non-dilated left ventricle with preserved or increased ejection fraction. It is commonly asymmetric with the most severe hypertrophy involving the basal interventricular septum. In the majority of patients, HCM has a relatively benign course. However, HCM is also an important cause of sudden cardiac death, particularly in adolescents and young adults. Mutations in over a dozen genes encoding sarcomere-associated proteins cause HCM. *MYH7* and *MYBPC3*, encoding β -myosin heavy chain and myosin binding protein C, respectively, are the two most common genes involved, together accounting for about 50% of the HCM families.³ Restrictive cardiomyopathy (RCM) is a heterogeneous group of diseases characterized by restrictive left ventricular pathophysiology, i.e. a rapid

rise in ventricular pressure with only small increases in filling volume due to increased myocardial stiffness. More precisely, the defining feature of RCM is the coexistence of persistent restrictive pathophysiology, diastolic dysfunction, non-dilated ventricles, and atrial dilatation, regardless of ventricular wall thickness and systolic function. Beyond this shared haemodynamic hallmark, the phenotypic spectrum of RCM is wide. Restrictive cardiomyopathy (RCM) has been considered the least common form of heart muscle disease.⁴ Arrhythmogenic right ventricular cardiomyopathy/dysplasia (ARVC/D) is an inherited myocardial disease characterized by fibro-fatty replacement of the right ventricular myocardium, and associated with paroxysmal ventricular arrhythmias and sudden cardiac death (SCD). It is currently the second most common cause of SCD after hypertrophic cardiomyopathy in young people <35 years of age, causing up to 20% of deaths in this patient population. This condition has a male preponderance and is more commonly found in individuals of Italian and Greek descent.⁵ In many patients the diagnosis of a cardiomyopathy is made after the onset of heart failure symptoms, atrial or ventricular arrhythmias, or a stroke. These complications of the underlying cardiomyopathy represent major causes of cardiovascular morbidity and mortality and frequently result in referral for echocardiography. Echocardiography provides an assessment of systolic and diastolic function as well as an estimation of left and right heart filling pressures. In addition, specific echocardiographic features allow the clinician to determine more accurately the aetiology of the cardiomyopathy. Integration of clinical and echocardiographic features now allows for a better assessment of both immediate risk and long term prognosis in patients with a cardiomyopathy.⁶

Materials & method

A descriptive, cross sectional study was conducted from July 2022 to December 2022 among 50 patients attending at Cardiology Outpatient Department of the Cumilla Medical College Hospital after obtaining requisite consent from the patients. Data were collected through the interviewing of the patients. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to know the socio-demographic and clinical profile of patients with cardiomyopathy in a tertiary care teaching hospital. The study was approved by the institutional ethical committee. Purposive sampling was adopted for

J. Dhaka National Med. Coll. Hos. 2023;29 (01): 34-36 collecting data. The interviews were held directly in the corridor just outside the Outpatient Department.

Result

The table shows that the age structures of those patients have been categorized in years into five groups. Overall, 4 (8%) patients were in ≤ 40 years old while 10 (20%) patients were in 41-50 years old. 5 (10%) patients belong to 51-60 years age group while 26 (52%) patients belong to 61-70 years old. 5 (10%) patients belong to > 70 years age group (Table-I).

Table-I: Age distribution of the study population (n=50)

Parameters	Number	Percentage
Age of the patients		
≤ 40 years	4	8
41-50 years	10	20
51-60 years	5	10
61-70 years	26	52
>70 years	5	10
Total	50	100

Total numbers of patients both male and female were 50. Male cardiomyopathy patients (62%) were more than the female patients (38%) at the Cardiology outpatient department. (Figure-I)

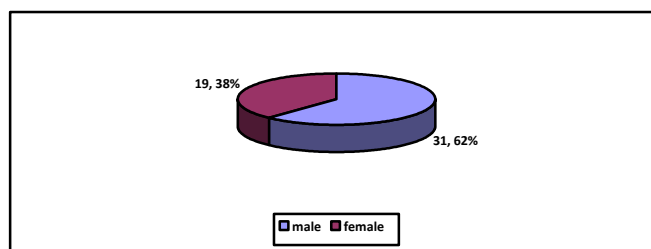


Figure-I: Pie Chart Showing Sex of the Patients

LVEF (left ventricular ejection fraction) of cardiomyopathy patients have been categorized into two groups. Overall, 33 (66%) patients have ejection fraction (LVEF) $>25\%$ while 17 (34%) patients have ejection fraction (LVEF) $<25\%$ (Figure-II)

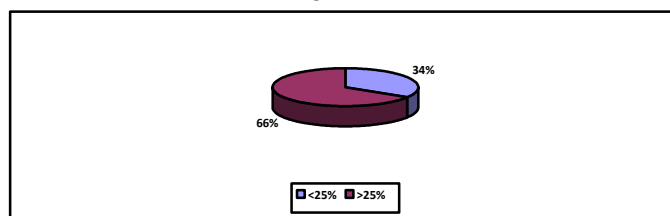


Figure-II: Pie chart showing LVEF of the cardiomyopathy patients (n=50).

Pedal edema was the most commonly associated findings (66%) with Cardiomyopathy followed by hypertension (46%), diabetes mellitus (42%) and dyslipidaemia (38%) (Table-II)

Table-II: Prevalence of Common systemic findings associated with cardiomyopathy patients (n=50)

Common findings	Present	Absent
Pedal edema	33 (66%)	17 (34%)
Hypertension	23 (46%)	27 (54%)
Diabetes mellitus	21 (42%)	29 (52%)
Dyslipidaemia	19 (38%)	31 (62%)

Discussion

A total of 50 patients were interviewed during the study period. This study showed that cardiomyopathy was more prevalent in male patients than in female patients. Similar results were obtained in the study conducted by Menyar et al.⁷ This study revealed a higher prevalence of cardiomyopathy among 61-70 age group patients. A study done in Bangladesh by Hoque et al.⁸ also found similar result. In our study pedal edema was the most commonly associated findings (66%) with cardiomyopathy followed by hypertension (46%), diabetes mellitus (42%) and dyslipidaemia (38%). Mansour et al.⁹ conducted a study in Egypt about cardiomyopathy patients. In their study they stated that about 25% cardiomyopathic patients had diabetes and 17% patients had hypertension.

In our study, 33 (66%) patients have ejection fraction (LVEF) >25% while 17 (34%) patients have ejection fraction (LVEF) <25%. Dr. Vikant Verma and Dr. Shailja Chauhan conducted a study in India about socio-demographic characteristics of cardiomyopathy patients. In their study they stated that about 18 patients (52.94%) have ejection fraction (LVEF) <25% and 16 patients (47.05%) have ejection fraction (LVEF) >25%.¹⁰

Conclusion

It can be concluded that most of the patients of cardiomyopathy were male and belonged to age 61-70 year age group. Pedal edema, hypertension, diabetes mellitus and dyslipidaemia were the common systemic findings associated with cardiomyopathy. Introducing preventive and early diagnostic programs may have an impact on reducing the mortality and morbidity rates of cardiomyopathy. Routine baseline echocardiography study is recommended in families with consanguineous marriages and a history of cardiomyopathy.

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Conflict of interest: None

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