e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2024; 16(6); 730-733

Original Research Article

Study on Clinical Profile Analysis of Dilated Cardiomyopathy Patients

Sushil Kumar[1], Gopi Nath Dubey[2], Megha Choudhary[3], Krishna Kumar Jha[4]

[1]Assistant Professor, Department of Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Bihar

[2]Assistant Professor, Department of Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Bihar

[3]BDS

[4]Professor, Department of Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Bihar

Received: 25-01-2024 / Revised: 23-02-2024 / Accepted: 26-03-2024

Corresponding Author: Dr. Gopi Nath Dubey

Conflict of interest: Nil

Abstract:

Background: Cardiomyopathies are a heterogeneous group of diseases of the myocardium associated with mechanical and/or electrical dysfunction that usually (but not invariably) exhibit inappropriate ventricular hypertrophy or dilatation and are due to a variety of causes that frequently are genetic.

Method: The present study was conducted on all newly diagnosed cases of dilated cardiomyopathy coming to the medicine OPD of Darbhanga Medical College and Hospital, Laheriasarai, Bihar from January 2023 to December 2023.

Results: As shown in above table, majority of patients (85.0%) presented with swelling of feet. Out of 40, 13 (32.5%) had dyspnea, 12 (30.0%) had fatiguability, 21 (52.5%) had palpitations, 12 (30.0%) had chest pain and 8 (20.0%) had syncope.

Conclusion: It was concluded from the study that Dyspnea is invariable and present in all forty patients. Signs of failure are seen commonly in DCM. DCM characteristically has cardiomegaly on chest X-ray.

Keywords: DCM, RV, 2D-Echo Cardiographic, Cardiomyopathy.

Introduction

Cardiomyopathies are a heterogeneous group of diseases of the myocardium associated with mechanical and/or electrical dysfunction that usually (but not invariably) exhibit inappropriate ventricular hypertrophy or dilatation and are due to a variety of causes that frequently are genetic. [1]

Cardiomyopathies are classified traditionally according to morphological and functional criteria into four categories: dilated cardiomyopathy (DCM), hypertrophic cardiomyopathy (HCM), restrictive cardiomyopathy (RCM) and arrhythmogenic right ventricular (RV) cardiomyopathy/dysplasia (ARVC/D).

DCM is the most common form of heart muscle disease, comprising approximately 60% of all cardiomyopathies and characterized by left ventricular (LV) dilatation and systolic dysfunction. The dilated cardiomyopathy is often assumed as a common pathway of several cardiovascular pathologies. [2]

Dilated Cardiomyopathy is characterized by an enlarged left ventricle with decreased systolic function as measured by left ventricular ejection fraction. Systolic failure is more marked than the frequently accompanying diastolic dysfunction, although the latter may be functionally severe in the setting of marked volume overload.[3] Heart Failure is a clinical syndrome that occurs in patients who, because of an inherited or acquired abnormality of cardiac structure and/or function, develop a constellation of clinical symptoms (dyspnea and fatigue) and signs (edema and rales) that lead to frequent hospitalizations, a poor quality of life, and a shortened life expectancy. [4]

Material and Methods

The present study was conducted on all newly diagnosed cases of dilated cardiomyopathy coming to the medicine OPD of Darbhanga Medical College and Hospital, Laheriasarai, Bihar.

The period of data collection was from January 2023 to December 2023. After collection of data, the data entry forms were checked for their completeness and missing and incomprehensible data was rechecked from the respective participant profile. Data entry was done in MS Excel data sheet. The data cleaning and the retrieval of the missing data were done over a period of one month.

Study subjects:

Inclusion criteria

1. Age >18 Years.
2. All Patients with Heart Failure confirmed as Dilated Cardiomyopathy on 2D ECHO Cardiographic Studies
3. Priorly Diagnosed Dilated Cardiomyopathy Patients on treatment presenting with heart failure.

Exclusion criteria

1. Patients with Acute Myocardial Infarction
2. Patients with Dilated Cardiomyopathy secondary to Chronic Renal failure
3. Patients with Valvular Heart Disease.

Data management and analysis was done using Microsoft excel and Epi-info software.

The frequency distribution and graph were prepared for the variables. The categorical variables were assessed using Pearson chi-square.

The test was considered significant only if the p value comes out to be less than0.05.

Results

Table 1: Gender-wise distribution of dilated cardiomyopathy patients

Sex	Frequency	Percentage
Male	19	47.5%
Female	21	52.5%
Total	40	100%

As shown in above table, 19 (47.5%) dilated cardiomyopathy patients were male and 21 (52.5%) were female.

Table 2: Distribution of dilated cardiomyopathy patients according to duration of stay

Duration of stay	Frequency	Percentage
<2 days	8	20.0%
2-7 days	19	47.5%
>7 days	13	32.5%
Total	40	100%

Mean duration of stay was 4.8 ± 2.3 days. Out of 40, 19 (47.5%) patients had to stay for 2 to 7 days. Thirteen (32.5%) patients stayed for more than 7 days and 8 stayed for less than 2 days.

Table 3: Distribution of dilated cardiomyopathy patients according to clinical presentation

Presentation	Frequency	Percentage
Dyspnea	13	32.5%
Fatiguability	12	30.0%
Palpitations	21	52.5%
Chest pain	12	30.0%
Swelling of feet	34	85.0%
Syncope	8	20.0%

As shown in above table, majority of patients (85.0%) presented with swelling of feet. Out of 40, 13 (32.5%) had dyspnea, 12 (30.0%) had fatiguability, 21 (52.5%) had palpitations, 12 (30.0%) had chest pain and 8 (20.0%) had syncope.

Table 4: Distribution of dilated cardiomyopathy patients according to Past Medical History

Past Medical History	Frequency	Percentage
Past History of Heart Failure	30	75.8%
Ischaemic Heart Disease	24	60.0%
Peripheral vascular disease	8	19.3%
Atrial Fibrillation	13	32.5%
Coronary artery disease	24	59.0%
Ventricular tachycardia/fibrillation	4	9.0%
COPD/asthma	13	33.0%
Diabetes Mellitus	18	45.0%
Hypertension	30	75.0%
Hyperlipidemia	15	38.5%

Past medical history among dilated cardiomyopathy patients are shown in above table.

Table 5: Distribution of dilated cardiomyopathy patients according to Personal History

Personal History	Frequency	Percentage
Current smoker	6	14.0%
Alcoholic	18	45.0%
Consuming Tobacco	5	12.5%

As shown in above table, out of 40 patients, 18(45.0%) had history of alcohol consumption, 6(14.0%) were current smoker and 5 (12.5%) were consuming tobacco.

Table 6: Finding of General Examination among patients of dilated cardiomyopathy

General Examination	Mean±SD
Heart Rate (beat/min)	88.0±23.0
Respiratory Rate	29.0±7.3
Temperature	36.0±3.8
Body Mass Index (kg/m^2)	29.6±7.5
Systolic Blood Pressure (mmHg)	145.4±32.3

As shown in above table, mean heart rate was 88±23 beats/min, mean respiratory rate was 29±7.3 per minute and mean temperature was 36.0±3.8 degree Celsius. Mean body mass index was 29.6±7.5 kg/m^2 and mean Systolic blood pressure was 145.4±32.3 mm of Hg.

Table 7: Clinical signs among patients of dilated cardiomyopathy

Clinical Signs	Frequency	Percentage
Jugular Venous Distension	31	77.5%
Hepatojugular reflux	19	47.5%
S_3 sound	5	12.5%
Murmur	12	30.0%
Crepitation	39	97.5%
Hepatomegaly	14	35.0%

As shown in above table, 39 (97.5%) patients found to have crepitation on systemic examination. Out of 40 patients, 31 (77.5%) had Jugular Venous Distension, 19 (47.5%) had Hepatojugular reflux and 14 (35.0%) patients had hepatomegaly.

Discussion

Chest pain though uncommon is a recognized feature of IDC. It is reported to occur in approximately 10% of patients. [5,8] Chest pain is generally atypical in nature but occasionally has the features suggesting myocardial ischemia. In asymptomatic disease the physical signs are minimal and subtle but as the heart failure develop the signs of congestive heart failure without obvious cause appear.

The peripheries are constricted and the peripheral pulse is low volume. There is commonly tachycardia at rest. Jugular venous pressure is usually raised. When the patient is in sinus rhythm, there is a prominent “a wave” followed by a poorly marked “X descent” and a prominent “V wave” due to tricuspid regurgitation. When there is atrial fibrillation the “a wave” disappears with the presence of a single wave due to a combination of right atrial filling and tricuspid regurgitation. Cyanosis appears in severe cases. Sometimes when typical, this pain can be indistinguishable from ischemic angina pain necessitating need for coronary angiography to rule out coronary artery disease. Chest pain could also be secondary to the mechanical effect of an enlarged heart, a reduction in the coronary flow reserve [5,9] or a rise in pulmonary artery pressures. Investigating chest pain by exercise testing and/ coronary angiography is an important consideration in such patients since the clinical picture and echocardiography may not be able to differentiate between IHD and IDC. Syncope, an uncommon complaint, may be due to transient ventricular arrhythmias. The presence of this symptom in 20% of our group does not correlate well with the recording of ventricular arrhythmias on 24-hour ambulatory Holter ECG. In one patient it was due to complete heart block. Since this particular patient was aged 62 years, conduction tissue degeneration of old age could be the cause of CHB. Another explanation of syncope or pre- syncope in patients with IDC could be a low cardiac output state.

The resting ECG is almost always abnormal in IDC. [6] A variety of abnormalities may be present; the most consistent being left ventricular hypertrophy (LVH) pattern and occasionally biventricular hypertrophy (BVH) pattern. In the initial stages only non-specific depolarisation abnormalities may beseen. In the present study, 39 (97.5%) patients found to have crepitation on systemic examination. Out of 40 patients, 31 (77.5%) had Jugular Venous Distension, 19 (47.5%) had Hepatojugular reflux and 14 (35.0%) patients had hepatomegaly. The apex impulse is displaced laterally due to cardiac enlargement and is diffuse. Pulsations to the left of the sternum may also be present suggesting right ventricular dilatation. Auscultation often reveals

murmurs of tricuspid and mitral regurgitation. A gallop rhythm is common. At this time pulmonary congestion, hepatomegaly due to vascular congestion and oedema (often with ascites) are commonly present. As the cardiac output becomes dangerously low a trace of icterus appears, due to hepatic congestion (or occasionally to pulmonary infarction) associated with signs of peripheral vasoconstriction.

In the present study, out of 40 patients of dilated cardiomyopathy, 4 (10.0%) belonged to class I of NYHA heart failure, 15 (37.5%) belonged to class II, 13 (32.5%) belonged to class III and 8 (20.0%) belonged to class IV. Dyspnea on exertion of varying severity, the major presenting symptom, was present in all our patients. Other studies [6], 1 have reported 75-85% patients presenting with this complaint, while Sugrue [6,2] in a population-based study of IDC found that 90% of patients were in III or IV functional class NYHA (New York Heart Association). In the present study, past history of heart failure was seen in 75.8% cases, ischemic heart disease in 60% cases, Peripheral vascular disease in 19.3% cases, COPD/asthma in 33.0% cases, Coronary artery disease in 59% cases, Hypertension in 75.0% cases, Hyperlipidemia in 38.5% cases, Atrial fibrillation in 32.5% cases and Diabetes Mellitus in 45.0% cases.

Conclusion

It was concluded from the study that Dyspnea is invariable and present in all forty patients. Signs of failure are seen commonly in DCM. DCM characteristically has cardiomegaly on chest X-ray.

References

1. Strauss D.G., Loring Z., Selvester R.H., et al; Right, but not left, bundle branch block is associated with large anteroseptal scar. J Am CollCardiol. 2013; 62:959-967.
2. Sisakian H. Cardiomyopathies: Evolution of pathogenesis concepts and potential for new therapies. World J Cardiol 2014 June 26; 6(6): 478-494
3. Da L. Longo, Anthony, S. Fauci et al Cardiomyopathy and Dilated Cardiomyopathy. Harrisons Principles of Internal Medicine. 18th edition New York: McGraw. Chapter. 2011; 238:1951-70.
4. Douglas L Mann. Disorders of Heart, Heart failure and Corpulmonale. Harrisons Principles of internal medicine.18th edition. New York: McGraw; Page.1901-15, 2011.
5. Cacciaputo F. Natriuretic Peptide System and Cardiovascular Disease. Heart Views 2010; 11(1): 10–15.
6. Coutance G, La Page O, Lo T, Hamon M. Prognostic value of brain natriuretic peptide in acute pulmonary embolism. Critical Care 2008; 12: 1–7.
7. Nunez J, Nunez E, Robies R, Bodi V, Sanchis J, Carratala A, Aprici M, Liacer A. Prognostic value of brain natiuretic peptide in acute heart failure: mortalità and hospital readmission. Rev EspCardiol 2008; 61:1332– 1337.
8. Masson S, Latini R, Arnand IS, Phil D, Barlera S, Angelici L, et al. for the Val-HeFTinvestigators. Prognostic value of changes in N-terminal proBNP in Val-HeFT. J Am CollCardiol 2008; 52: 997–1003.
9. Kasper, Denis Lh.; et al. (2005). Harrison's Principles of Internal Medicine, 16th edn. McGrawHill. ISBN 0071391401.