



Epidemiology and Clinical Profile of Cardiomyopathy Patients

* Dr
**.I.S.S.V.PRASADA
MURTHY RAJU**

ASSOCIATE PROFESSOR, DEPARTMENT OF MEDICINE, GANDHI
MEDICAL COLLEGE, SECUNDERABAD-500002, TELANGANA, INDIA
* CORRESPONDING AUTHOR

**Dr.THRILOK
CHANDER**

Dch.M.D. ASSISTANT PROFESSOR, DEPARTMENT OF MEDICINE,
GANDHI MEDICAL COLLEGE, SECUNDERABAD-500002, TELANGANA,
INDIAcv

Dr. KVN MOUKTHIKA

SENIOR RESIDENT, DEPARTMENT OF MEDICINE, GANDHI MEDICAL
COLLEGE, SECUNDERABAD-500002, TELANGANA, INDIA

ABSTRACT

BACKGROUND:- Cardiomyopathy is a distinctive disorder of heart muscle leading to progressive heart failure with considerable morbidity and mortality. The heterogeneity of these disorders has to be evaluated as the heart failure due to cardiomyopathy is significant.

OBJECTIVES: The objectives are to study the clinical profile of patients with Cardiomyopathy in relation to echocardiographic profile

STUDY DESIGN: prospective cross sectional observational study.

MATERIALS & METHODS: 100 cardiomyopathy patients who were admitted to Gandhi Hospital to the department of General medicine and Cardiology between August 2014 and September 2015 were included in study protocol .

Statistical methods: Results were given as mean \pm SD. Means are compared by unpaired Students t-test. Chi-square was used as appropriate. The observations and data were analyzed in the statistical package social sciences (SPSS) trial version 11. The level of significance was set at $P < 0.05$.

Results: cardiomyopathies were seen most commonly in the age group of 45 -60 yr. Males are affected more than females. The most common symptom was dyspnoea followed by Fatigue and ,Pedal oedema.The most common electrocardiographic abnormality was Sinus Tachycardia followed by ectopics.

The Mean value LVESD observed was 5.0 cm with SD \pm 0.69. The Mean value LVESD observed was 6.0 cm and SD of 0.69. The Mean value of LVESD observed was 5.0 cm with SD \pm 0.69. Out of 100 patients studied 98 were diagnosed as DCM , 2 cases were diagnosed as HOCM.

In Dilated cardiomyopathy group most common is due to ischemic cardiomyopathy(37%) followed by alcoholic cardiomyopathy (17%) , peripartum cardiomyopathy(16%)and idiopathic (14%).Among the miscellaneous each 2 cases were identified due to hypothyroid , HIV,and myocarditis.

Conclusions:- 1.DCM is the most common cause for cardiomyopathy followed by HCM

2. Ischemic DCM is the most common cause followed by alcohol Cardiomyopathy in dilated cardiomyopathy group.

3. PPCM is the most common cause of DCM in women of reproductive age group

KEYWORDS

cardio myopathy, Dilated cardiomyopathy(DCM), Hypertrophic obstructive cardio myopathy (HOCM), Peripartum cardiomyopathy

INTRODUCTION:

Cardiomyopathy is a primary disorder of the heart muscle that causes abnormal myocardial performance and is not the result of disease or dysfunction of other cardiac structures. The dominant feature is a direct involvement of the heart muscle itself. They are distinctive because they are not the result of pericardial, valvular, hypertensive or congenital diseases.

Although the diagnosis of Cardiomyopathy requires the exclusion of these etiological factors, the features of Cardiomyopathy are often sufficiently distinctive both clinically and by echocardiography to allow a definite diagnosis to be made. Cardiomyopathy is a significant cause of morbidity and mortality. The incidence and prevalence of heart failure related to Cardiomyopathy appear to be increasing.¹

The primary cardiomyopathy group have dilated, restrictive and hypertrophic phenotypes based on anatomic description of chamber in systole and diastole.

The secondary cardiomyopathies are those associated with known cardiac or systematic processes. These are referred to

as specific cardiomyopathies named for the disease process with which they are associated. Thus an ischemic Cardiomyopathy would be a specific Cardiomyopathy related to previous myocardial infarction and the subsequent remodelling process. Similarly peripartum cardiomyopathy²,alcoholic cardiomyopathy³.

Dilated Cardiomyopathy is the most common type of Cardiomyopathy accounting for up to 90% of cases of Cardiomyopathy . Dilated Cardiomyopathy⁴ accounts for about 25% of cases of congestive heart failure. Dilated Cardiomyopathy is the most common cause of the clinical syndrome of chronic heart failure.

MATERIALS AND METHODS:-

Patients who were admitted to the department of General medicine and Cardiology of Gandhi hospital with clinical diagnosis of heart failure and confirmed by Echocardiogram , over a period of one year that is from August 2014 to September 2015,were prospectively non-randomized (by Consent and Cafeteria method) to study the objectives.

Inclusion Criteria: includes clinical and ECHO criteria

1.Clinical criteria : Patients with symptoms and signs of heart failure(FRAMINGHAM HEART FAILURE)

2.ECHO criteria

- Left ventricular ejection fraction < 45%
- Left ventricular end diastolic dimension > 32cm / body surface area.
- Global hypokinesia.
- Dilatation of all the chambers of heart.

Exclusion Criteria:

- Valvular heart disease
- Congenital heart disease
- Pericardial disease
- Cor pulmonale with CHF

A total of 100 patients were studied which included a thorough clinical evaluation and appropriate investigations like echocardiography, chest radiography and electrocardiography. Other relevant investigations pertinent to certain cases like ischemic cardiomyopathy, diabetic cardiomyopathy, alcohol cardiomyopathy, etc included coronary angiography, haemoglobin blood glucose, HbA1C, liver function tests, etc.

The clinical evaluation included symptoms and signs of heart failure. The symptom profile included dyspnoea, palpitation, PND, orthopnoea, pedal oedema, chest pain, cough, easy fatigability, syncope etc. Physical examination included signs like basal crepitations, JVP, hepatomegaly, pedal oedema, S3,S4, murmurs, etc.

These patients were subjected to echocardiography, ECG and chest radiography. The echocardiographic criteria were based on the recommendations of the American society of echocardiography and American heart association. The diagnosis of ischemic cardiomyopathy was based on either past history of myocardial infarction or coronary angiography showing significant luminal occlusion (>75%).

Peripartum cardiomyopathy⁵ was diagnosed based on the criteria laid down by Demakis and colleagues which includes (1) Development of cardiac failure in the last month of pregnancy or within 5 months of delivery (2) absence of recognizable heart disease prior to the last month of pregnancy. (3) Left ventricular systolic dysfunction demonstrated by classical echocardiographic criteria (4) Absence of other causes of heart failure. The diagnosis of diabetic cardiomyopathy⁶ was made in patients with long standing (>10 years) diabetes mellitus and in whom no other cause was obvious.

In patients with echocardiography proven dilated cardiomyopathy with history of long term (>80 gm Of alcohol in men and 40 g in females for >5 years) alcohol intake in whom no other causes were found , were included as alcoholic cardiomyopathy⁷ . Patients in whom no obvious cause was found were categorized as idiopathic DCM.

RESULTS AND DISCUSSION:-

Out of the total 100 patients studied Maximum number of patients observed were in the age group of 45-60 yr(45%) with a mean age of 45 ± 16.8 yr followed by 28% in 15-30 yr age group and 21% were in 30-45 yr age group .

Out of the total 100 females were 42% and males were 58% .females were younger than males as Males were in the age group of 45-60 yr group and Females were in 15 -30 yr age group.

In present study[figure-1] breathlessness 100% was most common presenting symptom and fatigue (80%) and pedaledema (75%) and cough(52%),chest pain(50%)were next to it with 'p' <0.001. Dyspnoea was the most common symptom seen in 100% and out of which 43% presented with Grade 3 dyspnoea ,37% of presented with Grade 4 dyspnoea, Orthopnoea and PND were seen in 41% of cases .

The most common abnormality in pulse observed was Sinus Tachycardia and Missed beats were 44% and 33% respectively..

Among physical findings Basal crepitations was seen in 80% of cases, pedal oedema was seen in 78% of cases, Raised JVP was seen in 65% of cases. 1 patient had Cardio embolic stroke and presented with Focal neurological deficit.

The most common ECG abnormality⁸ was Sinus Tachycardia seen in 50% of cases, followed by ectopics atrial or ventricular together constituting 60% ,AF was seen in 15% of cases. CHB in 3% of cases[Figure-2]

Out of 100 cases studied 98 had Cardiomegaly of which 48 patients had CT ratio of 50-60%, 40 had CT ratio of 60-70% , and 10 patients had CT ratio of >70%.Pulmonary plethora was seen in 60 % of cases and Pleural effusion was seen in 40% of cases.

Among 100 cases studied[table-1] the maximum EF was 50%, minimum EF was 14%,and Mean EF was 30% with SD±of 8.5.SAM was seen in 2 % of cases who were diagnosed as having HOCM. Mitral regurgitation was seen in significant number of patients (70%) Pericardial effusion was seen 6% of our patients.

The LVEDD observed was 7.6 cm to 4.5 cm with a Mean value of 6.0 cm with SD ±0.69.The maximum LVESD observed was 6.2 cm to 3.5 cm with a Mean of 5.0 cm with SD ± 0.69 similar to other studies⁹.

Biventricular failure was the most common clinical presentation (70%) Left ventricular failure was seen in 20 % of cases, Predominantly Right ventricular failure seen in 10% of cases

Out of 100 cases studied 43% were in NYHA class 3, 37% of cases were in NYHA class 4 , 19% were in NYHA class -2. Majority of cases of Ischemic DCM and PPCM were in Class -4 and majority of patients with Alcoholic Cardiomyopathy were in Class -3.

Out of 100 patients. Most common type of cardiomyopathy observed was (98%)Dilated cardiomyopathy .Hypertrophic cardiomyopathy was seen in 2% of cases.

Out of 98 patients[Figure-3] diagnosed with Dilated Cardiomyopathy (DCM) (figure-1)37% were due to ischemic cardiomyopathy , 17% were alcoholic cardiomyopathy, 16% were PPCM , 14 % were idiopathic.

Among the miscellaneous cases 2 were hypothyroid , 2 cases were seropositive for HIV¹⁰, 2 cases had a past history of myocarditis. Ischemic cardiomyopathy was the most common subtype in males while idiopathic and Peripartum cardiomyopathy were the common in females

1case of DCM had Areflexic Quadriplegia denoting a post infectious complication which resulted in both myocarditis leading to DCM and the Neurological involvement.

LIMITATIONS.1) sample size should be more to make generalized analysis.

2)Although the study design(cross sectional)measures the burden of DCM but not useful to study the etiologies of DCM

CONCLUSION:- 1.DCM is the most common cause for cardiomyopathy followed by HCM

2 . Ischemic DCM is the most common cause followed by alcohol Cardiomyopathy in dilated cardiomyopathy group.

3. PPCM is the most common cause of DCM in women of reproductive age group.

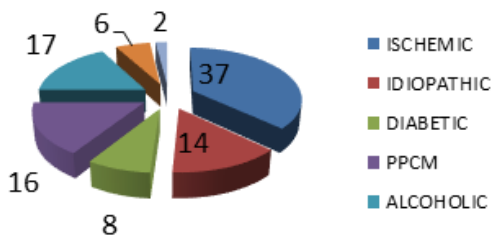
4.Echocardiographic profile included reduced ejection fraction

and globalhypokinesia in patients with DCM .Ejection fraction correlated well with NYHA class in patients with DCM..Normal EF with Diastolic dysfunction in HCM

SUMMARY: our study emphasizes the significant burden of Ischemic dilated cardiomyopathy and next to it was alcoholic cardiomyopathy. A total 35 patients had potentially reversible cardiomyopathy like peripartum, alcoholic and myocarditis, hence early diagnosis and management is of vital importance in the form of judicious use of anticoagulant, digoxin, diuretics, ACE inhibitors and betablocker is mandatory to reduce complications, morbidity and mortality associated with reversible cardiomyopathies.

TABLE-1 PARAMETER	NUMBER	%
EJECTION; 40 – 50 % FRACTION :	15	15
30-39 %	39	39
20-29 %	36	36
< 20%	10	10
LVEDD : 4.5 – 4.9	8	8
5 – 5.9	36	36
>6	56	56
LVESD : 3.5 -4	10	10
4 – 4.9	25	25
>5	65	65
MR	70	70
TR	20	20
SAM	2	2
PERICARDIAL EFFUSION	10	10

Figure 3--ETIOLOGY



REFERENCES:

1. Goodwin JF, Gordan H, Hollman A. Clinical aspects of cardiomyopathy. Br Med J 1961 ; 1 : 69.
2. Ritchie. Pregnancy and the heart. AM J Med 2000 ; 114:49.
3. Rubin. Alcohol and the heart. N Engl J Med. 1979 ; 301 : 28-33
4. Jain A, Tewari S, Kapoor A Kumar S, Garg N, Goel PK, Sinha N. Clinical profile of dilated cardiomyopathy. Indian Heart J 2004 ; 56 : 507-517.
5. Akhter WM, Shotan A, Hameed A, et al: Pregnancy associated cardiomyopathy: Clinical profile in 137 patients diagnosed in the U.S. J Am CollCardiol 2003 ;41:1136.
6. Sajad A. Hayat, Billalpatel, Rajdeep S. Khattar and Rayaz A. Malik. Diabetic Cardiomyopathy : mechanisms, diagnosis and treatment. Ind Heart J 2004 : 19 (4) :21-24.
7. Gavazzi A, De Maria R, Parolini M, et al: Alcohol abuse and dilatedcardiomyopathy in men. Am J Cardiol 85:1114, 2000.
8. Saxon LA, De Marco. Electrocardiogram in dilated cardiomyopathy. Electrophysiol Rev 2002 ; 6 : 18.
9. Ahmad S, Rabbani M, Zaheer M, Shirazi N. Clinical ECG and Echocardiographic profile of patients with dilated cardiomyopathy. Indian J Cardiol 2005 ; 8 : 25-29.
10. Cohen. HIV and the heart. Circulation 2002 ; 114-16.

FIGURE-1:SYMPTOMS

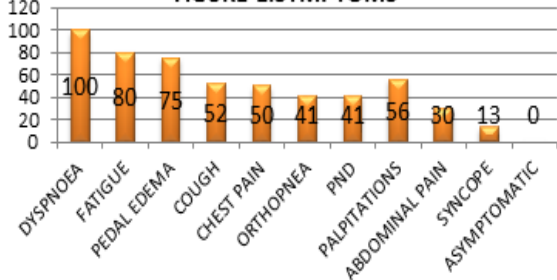


FIGURE 2-ARRHYTHMIAS

