PREVALENCE OF CARDIOMYOPATHY IN CONGENITAL HEART DISEASES IN INFANTS AND CHILDREN

Yasser A. Aahmed[1] and Taghreed Abd Alrahman Ahmed[2]

[1]Department of Pediatrics, Faculty of Medicine, Al-Azhar University, Assiut, Egypt
[2]Department of Cardiology, Faculty of Medicine, Al-Azhar University, Cairo, Egypt

ABSTRACT

Background: Pediatric cardiomyopathy (CM) is a rare but serious and often life-threatening condition. In children, cardiomyopathy is often a part of multisystem disorder, which requires the attention of multiple subspecialists.

Aim: The aim of this study was to estimate the prevalence of cardiomyopathy among infants and children with congenital heart disease (CHD) and to determine the relationship of cardiomyopathy to type of CHD. **Methods**: This retrospective descriptive study was carried out in the Pediatric Cardiology outpatient clinic, Al Zahra Hospital , Assiut Hospital Al-Azhar University, during the period from January 2012 to September 2014, to review the files of patients diagnosed with cardiomyopathy. The study included 60 cases included 29 (48.3 %) cases with DCM, 28 (46.7%) cases with HCM and 3 (5%) cases with RCM The age of studied cases ranged from 10 days to 8 years with mean age 20.61± 25.62 month .The files of all of these patients were reviewed for the following data: file number, name, age, sex, address, date of diagnosis, frequency of follow up, date of last follow up, presenting symptoms, clinical manifestation, consanguinity, other affected sibling, previous viral infection, history of drug intake and investigation done including electrocardiogram, chest X-ray and echocardiographic data.

Results: The most common clinical presentation was dyspnea (86.6%) followed by respiratory infection (48.3%), followed by palpitation (15%). According to different types of congenital heart diseases, our study showed that patent foramen oval (PFO), patent ductus arteriosus (PDA) and atrial septal defect (ASD) were the main congenital heart defects in the isolated shunt lesion where they represented 50%, 25% and 22.7% respectively. Consanguinity was positive in 50% of patients, while a family history of another affected sibling was positive in (10%).

Conclusion: The most prevalent form of CHD among cardiomyopathic patient was the isolated shunt lesion followed by combined obstructive and shunt lesion then isolated obstructive lesions and lastly the cyanotic lesion. Our results reveals highly significant difference between types of cardiomyopathy and left ventricular end diastolic diameter (LVEDD), left ventricular end systolic diameter (LVESD) .

Keywords: *Cardiomyopathy, congenital heart diseases, demographic features, outcomes, Statistical analysis.*

INTRODUCTION

The extremely heterogeneous groups of heart muscle diseases that are associated with structural and/or functional cardiac dysfunction (cardiomyopathy) are important causes of morbidity and mortality in the pediatric population. Certain anatomic and physiologic conditions such as congenital heart disease (CHD), hypertension, and coronary artery disease (CAD) may result in heart muscle dysfunction [1]. (Steven, 2011)

When CHD and cardiomyopathy occur together, the structural lesions reported are usually simple ones, such as secundum atrial septal defect (ASD), small ventricular septal defect (VSD), persistent ductus arteriosus (PDA), pulmonary valve stenosis (PS), Aortic valve stenosis, and coarctation of the aorta. All these as isolated lesions may have a reasonable prognosis which means there may be time for adaptive or reactive myocardial changes to develop [2]. ***(Diegoli et al., 2011)***.

Pathophysiologically, these CHD commonly present some degree of right-to-left shunting at the atrial, ventricular, or arterial level, which results in the presence of non-oxygenated blood in the systemic circulation and therefore varying degrees of hypoxemia and cyanosis [3] ***(Miller et al., 2010)***.

In spite of the advances in management strategies, however, patients with cyanotic CHD continue to be at risk for the development of heart failure, cardiomyopathy, arrhythmias, and premature death. Although the causes related for these disorders are complex and likely multi-factorial, their occurrence may be at least in part related to changes in myocardial structure and function induced by, or related to, the occurrence of varying periods of hypoxemia during the early stages of development due to the underlying disease process[4] ***(Diegoli et al., 2011).***

The effects of chronic hypoxia on the ventricular myocardium can also be compounded by the mechanical stress caused by pressure and volume overload, also the result of the patho-physiologic conditions associated with specific forms of CHD [5].***(Roberts and Sigwart, 2001)***.

We aimed to estimate the prevalence of cardiomyopathy among infants and children with congenital heart disease (CHD) and to determine the relationship of cardiomyopathy to type of CHD who attending the outpatient clinic

of pediatric cardiology at Al-Azhar University Hospital.

SUBJECTS AND METHODS

The present study was retrospective descriptive study which included the clinical data of pediatric patients presenting to the pediatric outpatient clinic, Faculty of Medicine. Al-Azhar University Hospital. a tertiary referral center for pediatric patients; over a period of 2 years in the time interval from January 2012 to September 2014.

This study included 850 cardiomyopathic patients following up in the Pediatric Cardiology Clinic of cardiomyopathy were examined Sixty 60 (7%) of them had associated CHD, they were 30 (50%) female patients and 30 (50%) male patients, the sixty patients were presented with symptoms of cardiomyopathy with heart failure or in impending heart failure according to modified Ross classification and according to their files and past history they were diagnosed as (dilated cardiomyopathy, hypertrophic cardiomyopathy and restrictive cardiomyopathy) based on World Health Organization classification of cardiomyopathy [6] **Richardson et al., 1996).**

Inclusion criteria:

Any patient diagnosed as cardiomyopathy (all types of cardiomyopathy DCM, RCM and HCM).

Exclusion criteria:

- Patients with rheumatic heart disease (RHD).
- Patients with infection.
- Postoperative cardiac patients with myocardial dysfunction.

A)Thorough history and complete systemic clinical examination where obtained from the available medical records of each enrolled patients including:

Full clinical history the demographic data, presenting symptoms and current medications. Records for Assessment of growth by anthropometric measurements was represented by weight and length/height, which were plotted on Egyptian growth Chart [7] (Ghalli **et al.,** 2002). to detect weight for age and height/length for age percentiles [8] (Briars GL, **et al.).**

Cardiac symptoms including:

Diagnosis of HF was based on clinical evaluation, modified Ross scoring (II-IV). The modified Ross Classification incorporates feeding difficulties, growth problems, and symptoms of exercise

intolerance into a numeric score comparable with the New York Heart Association (NYHA) classification for adults which is not applicable to most of pediatric population [9**] (Ross et al 1992).** The Ross Classification was developed to provide a global assessment of HF severity in infants, and has subsequently been modified to apply to all pediatric ages [10] **(Ross, 2012).**

Table (1): Modified Ross heart failure classification for infants and children

Class	Patient Symptoms
Class I	Asymptomatic
Class 11	Mild tachypnea or diaphoresis with feeding in infants Dyspnea on exertion in older children
Class III	Marked tachypnea or diaphoresis with feeding in infants Prolonged feeding times with growth failure Marked Dyspnea on exertion in older children
Class IV	Symptoms such as tachypnea , retraction, grunting or diaphoresis at rest

[9] (*Ross et al 1992*)

Other cardiac symptoms including:

- Syncope, chest pain, palpitation and cyanosis.
- History of recurrent chest infection wheezes or coughs.
- History of previous hospital admission for inotropic support.
- History of receiving immunoglobulin.

Etiology: Idiopathic, familial or congenital heart anomalies.

Clinical assessment:

General assessment: all the patients data were reviewed regarding dysmorphic features, mentality, neuromuscular system, GIT, endocrine and renal system affection as an evidence for the presence of metabolic or systemic causes, heart rate, blood pressure, peripheral pulsations, lower limb edema or hepatomegaly.

Cardiac examination: The clinical data for cardiological assessment regarding Inspection/ palpation and auscultation for heart sound or murmur were reviewed.

B) Imaging and diagnostic tools:

Review for all available Chest X-ray was done for:-

- Presence or absence of Cardio-megaly.
- Pulmonary vasculature.
- Radiological evidence of chest infection.
- Presence of Pericardial and / or pleural effusions.

Electrocardiogram (ECG):

Revision and interpretation for the available and readable ECGs for the presence of chambers enlargement, or cardiac arrhythmias.

Echocardiography:

Echocardiography reports were reviewed for:

A) **Type of machine and frequency of transducer used** where VIVID 7 GE systems were used and all cases were examined using multiple transducers ranging from 3.5 to 7MHZ.

B) **M-Mode Measurements including:** Left ventricular internal dimensions at the end systole and diastole (LVESD, LVEDD) respectively, fractional shortening (FS %), ejection fraction (EF %) and left atrium diastolic dimension. FS % varies with age (ranges from 35-45%) and EF% normal value is approximately 55-65% in children [11] (**Lohar et al 2009).**

C) **Two dimensional echo (2D echo):** 2D echo images were reviewed regarding the anatomy and the final diagnosis of different types of CHD and for anatomy and integrity of atrioventricular valves.

D) **Doppler echocardiography:**

Data for Pulsed wave Doppler of the mitral and tricuspid valves flow was reviewed, also continuous Doppler study of pulmonary, aortic valves and PDA were reviewed to assess the systolic pressure gradient across the pulmonary, aortic valves across PDA and at aortic arch in cases of coarctation of the aorta.

Patients were divided into four groups:

- **Group A:** patients with shunt lesions as VSD, ASD, PDA
- **Group B:** patients with obstructive lesions as pulmonary stenosis.

- **Group C:** patients with combined shunt and obstructive lesions.
- **Group D:** patients with congenital cyanotic heart diseases which include transposition of great arteries (TGA), total anomalies pulmonary venous return (TAPVR), Persistent truncus arteriosus (PDA), Tetralogy of Fallot(TOF), double outlet right ventricle with pulmonary stenosis (DORV with PS) , pulmonary atresia (PA) and tricuspid atresia (TA).

Statistical analysis:

Data were analyzed using Statistical Program for Social Science (SPSS) version 18.0. Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done:

- A one-way analysis of variance (ANOVA) when comparing between more than two means.
- Chi-square (X^2) test of significance was used in order to compare proportions between two qualitative parameters.
- Probability (P-value).
  - P-value <0.05 was considered significant.
  - P-value 0.01 was considered as highly significant.
  - P-value >0.05 was considered insignificant.

RESULTS

Table (2): Demographic data of the studied group:

Variable	N = 60	%
Male Gender	30	50
Female Gender	30	50
History of consanguinity	30	50
Family history of sudden death	9	15
Other affected family member	6	10

Table (3): Descriptive data of the studied group

Variable	Range	Mean ± SD
Age (months)	0.30-96.00	20.61± 25.62
Weight (Kg.)	2.00- 38.00	8.58 ±6.66
Height or length (cm)	48.00- 144.00	7 1.52 ±20.70
Age of onset of CM (month.)	0.30- 96.00	14.84 ±27.12

Demographics: The age of studied cases ranged from 10 days to 8 years with mean age 1.7 years, 30(50%) were male and 30 (50%) were female, Positive family history (FH) was 58.5%, FH of similar condition 10%, FH of positive consanguinity 50%, FH of sudden death 15%. The age of onset of cardiomyopathy in the study group ranged from 10 days to 8 years, the mean value of age in months was (14.84 ± 27.12).

Table (4): **Classification of the studied group according to modified Ross classification of heart failure symptoms**.

Modified Ross class of heart failure symptoms	No.	%
Class 1	29	48.33
Class 2	17	28.33
Class 3	8	13.33
Class 4	6	10.00
Total	60	100.00

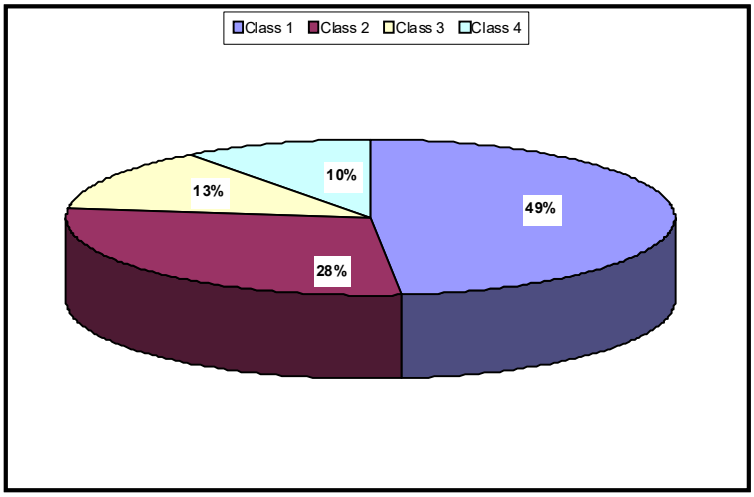

Figure (1): Modified Ross classification of the studied groups

Table (5): Shunt Lesions among congenital heart disease in the studied group:

Shunt Lesion	**Isolated Shunt lesion (n=44)**		**Combined shunt lesions (n-11)**	
	No. (%)		**No. (%)**	
PFO	22 (50.00%)		2(15%)	
VSD	1 (2.27%)		3 (25%)	
ASD	10 (22.73%)		0 (0%)	
PDA	1 1 (25 %)		6 (60%)	
Total	44(100%)		11 (100%)	
Chi-square	18.461			
p-value	0.005			
	Cyanotic lesion		Obstructive lesion	
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**
	1	100%	5	100%

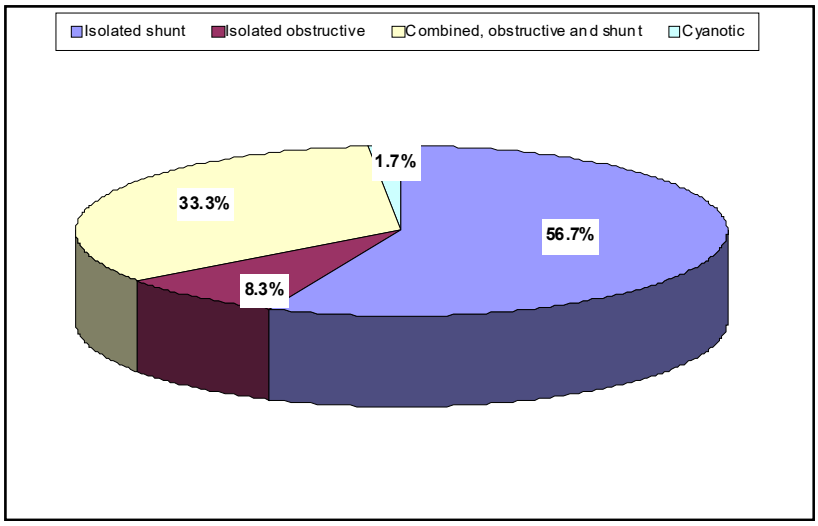

Figure (2): Types of congenital heart diseases

The most prevalent form of congenital heart diseases among cardiomyopathic patient in the study was the isolated shunt lesion (56.7%) followed by combined, obstructive and shunt lesion (33.3%) then isolated obstructive lesions (8.3%) and lastly the cyanotic lesion (1.7%).

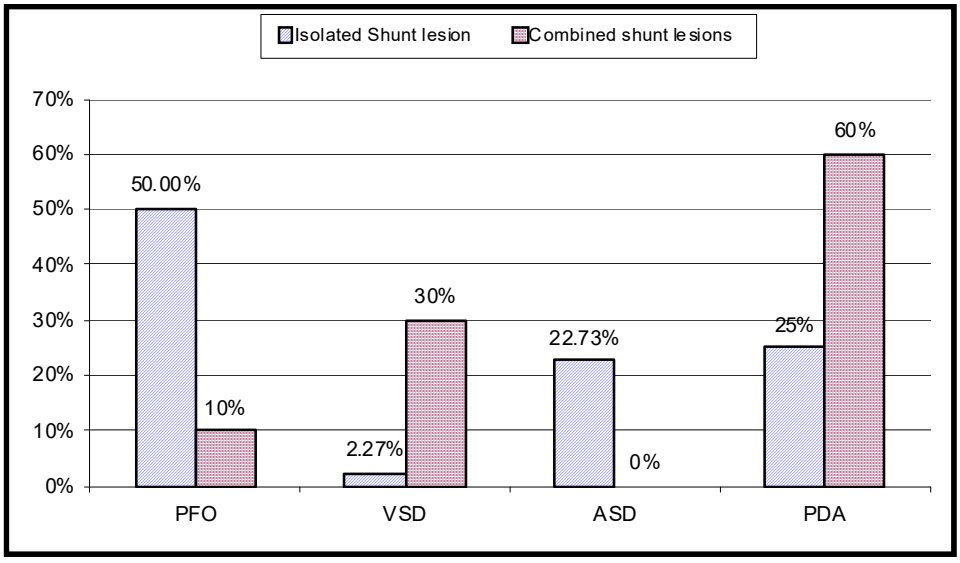

Figure (3): Shunt Lesion.

PFO =patent foramen ovale, ASD = atrial septal defect, VSD= ventricular septa! defect, PDA= patent ductus arteriosus

Echocardiographic assessment of the shunt lesions group showed that the most prevalent form of shunt lesion was PFO (50%) followed by PDA (25%) in the isolated group while in the combined group the most prevalent form of shunt lesion was PDA (60%) followed by VSD (30%) with statistically significant difference with p-value 0.005.

Table (6): Prevalence of types of cardiomyopathy in the studied group.

Type of CM	No. (%)
Dilated Cardiomyopathy	29(48.3)
Hypertrophic Cardiomyopathy	28(46.7)
Restrictive Cardiomyopathy	3(5)
Total	60(100)

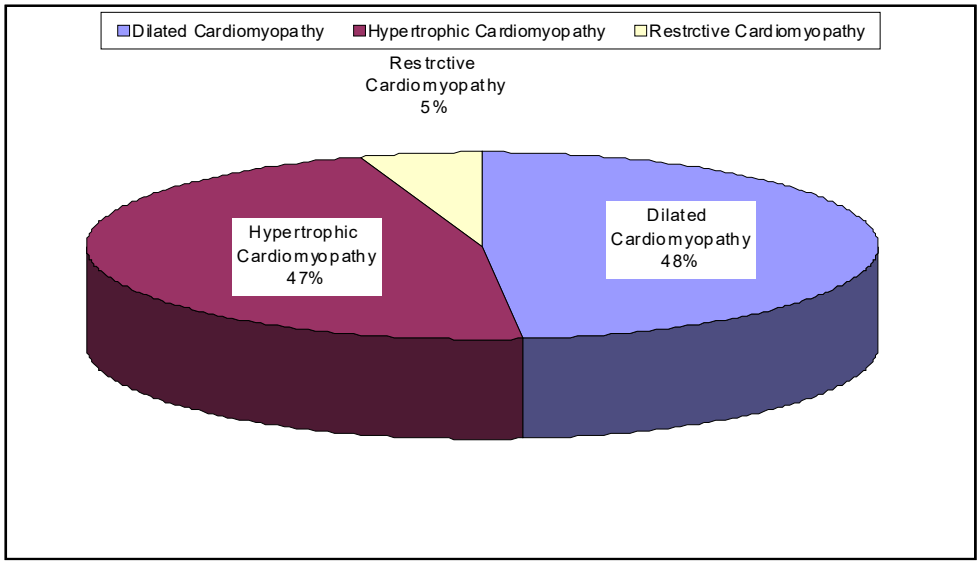

Figure (4): Prevalence of Cardiomyopathy.

The most prevalent form of cardiomyopathy was DCM 48.3%, followed by HCM (46.7%).

Table (7): Relation between different types of cardiomyopathy and congenital heart diseases.

CHD / Type of CM	Shunt lesion(n=44)	Obstructive lesion(n=5)	Cyanotic lesions(n=l)	Combined lesions(n=10)	Total
Dilated CM	26(59.1%)	1(20%)	0	2(20%)	29(48.3%)
Hypertrophic CM	15(34.1%)	4(80%)	1(100%)	8(80%)	28(46.7%)
Restrctive CM	3(6.8%)	0	0	0	3(5%)
X2	10.791				
p-value	0.048				

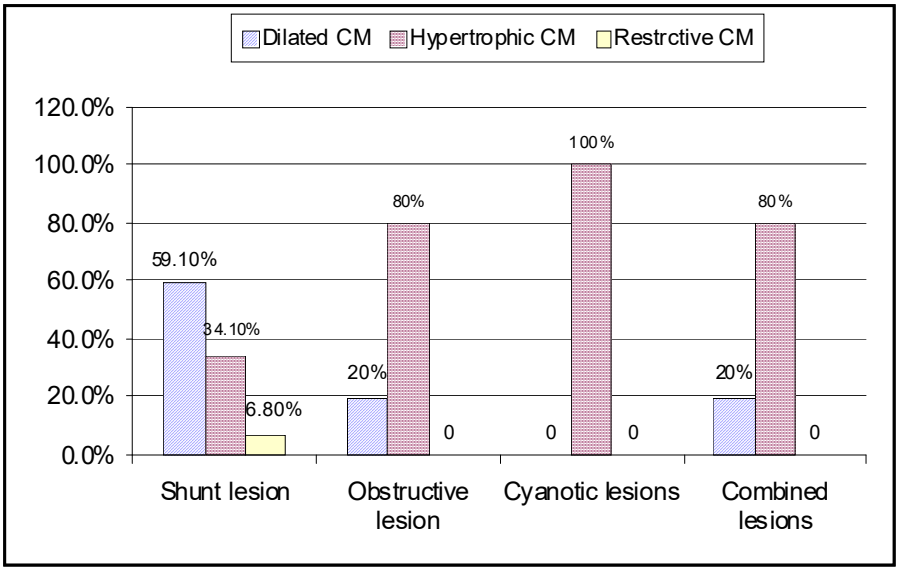

Figure (5): Relation between different types of cardiomyopathy and congenital heart diseases.

The highest incidence of congenital heart diseases with dilated Cardiomyopathy (48.3%) followed by hyper – trophic Cardiomyopathy (46.7%) and restrictive Cardiomyopathy (5%).

Table (8): Relation between M-mode measurements echo in different types of cardiomyopathy.

	Dilated CM	Hypertrophic CM	Restrictive CM	p-value
IVS (mm)	0.70±1.15	1.30±1.48	0.58±0.07	0.242
LVEDD (mm)	3.86±0.73	1.99±0.82	3.10±0.60	<0.001
PWT (mm)	0.77±1.22	0.91±0.76	0.71±0.08	0.874
LVESD (mm)	2.89±0.80	1.15±0.57	1.63±0.25	<0.001
AO (mm)	1.40tt0.48	1.25±0.41	1.58±0.96	0.528
LA (mm)	2.16±0.79	1.44±0.55	3.10±0.70	0.002

IVS=interventricular septum, LVEDD=left ventricular end diastolic diameter, LVESD=left ventricular end systolic diameter, PWT=posterior wall thickness, AO=aorta. LA=left atrium

This table shows statistically highly significance difference between types of cardiomyopathy and LVEDD (mm), LVESD (mm) and LA (mm), using ANOVA test, with p-value <0.001.

Table (9): Fraction Shortening (FS) and Ejection Fraction (EF) ratio in Congenital Heart disease:

		Mean ± SD	p-value
FS%	Shunt lesion (n-44)	31.6±12.63	0.001
	Obstructive lesion (n=5)	41.8±12.24	
	Combined lesions (11)	48. 2±13.37	
EF%	Shunt lesion (n=44)	56.04±18.09	0.017
	Obstructive lesion (n-5)	78±4.24	
	Combined lesions (21)	75.8±37.31	

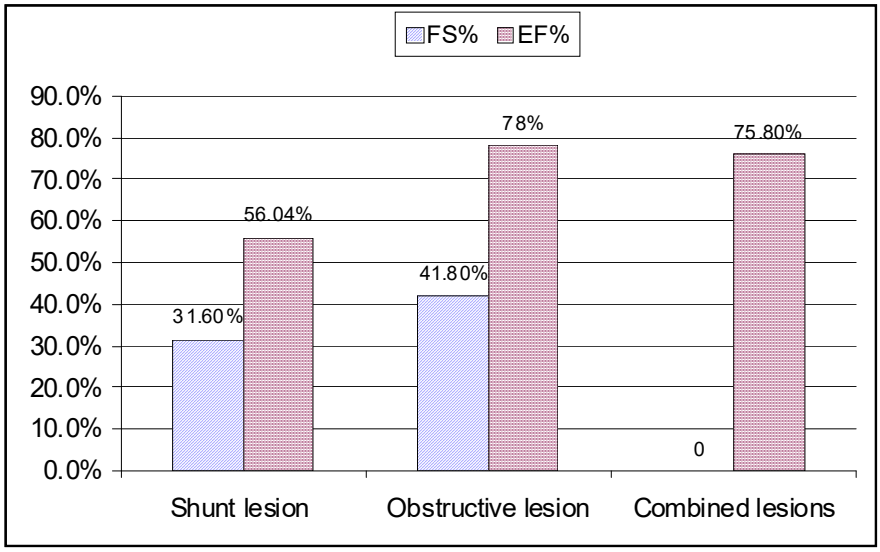

Figure (6): FS and EF ratio in congenital heart disease

FS% & EF% is statistically highly significant in the obstructive lesion whether isolated or combined lesion with p-value <0.001.

DISCUSSION

Although pediatric cardiomyopathy is a rare disorder, it is a very serious condition in children. Cardiomyopathy can be classified mainly into 4 categories, and each can result in congestive heart failure (CHF) [12] ***(Somarriba et al., 2008)***. Dilated cardiomyopathy (DCM) remains the most common type of heart muscle disease in children (***Choi et al., 2011)*** [13].

The present study was designed to describe the most common features of all cases diagnosed as cardiomyopathy followed up at the Pediatric cardiomyopathy out-patient Clinic, Al-Azhar University Hospital, during the period of study.

Among 850 cardiomyopathic patients following up in the Pediatric Cardiology Clinic of cardiomyopathy only Sixty (60) of them had associated congenital heart disease about (7%). They were 30 female patients (50%) and 30 male patients (50%).

Our finding comes in agreement with **(Jeffrey et al. (2006)** [14], who reported that no statistical significant difference was found

between sex and occurrence of different forms of cardiomyopathy, However***(Harmon et al. (2009)*** **[15]** reported that there is slight increase in males to female ratio, 51% males and 49% females.

Lipshultz et al. (2003) [16] hypothesized that the differences in incidence between boys and girls among children who received a diagnosis after infancy, and the significant interaction between age and sex, were consistent with the male predominance and age-related expression of X-linked Cardiomyopathy related to neuromuscular diseases. Sex-related differences in children with other types of heart disease have been observed. However, previous single-center studies concluded that the incidence of cardiomyopathy was similar in the two sexes ***(Diegoli et al., 2011)*****[17]**.

In our study, the age of patients at presentation ranged from 10 days to 8 years with a mean of 20 months which is close to the mean age of I5 months reported by ***(Towbin et al., 2006)*** **[18]** but lower than the mean age of 27 months reported by ***Cox et al. (2006)*** **[19]** ***and Azevedo et al. (2004)*** **[20]**.

Also, ***Lipshultz et al. (2003)*** **[21]** found that the incidence of cardiomyopathy was significantly higher in the first year of life than at older ages. The incidence of 8.34 cases of cardiomyopathy per 100,000 children during the first year of life is very similar to the six-year prevalence of 10 per 100,000 estimated in the Baltimore-Washington Infant Study ***Oh et al (2011)*** **[22].** The latter study assessed the prevalence of cardiomyopathy, which would be higher than the incidence, but given the narrow age range, this would not have much of an effect. The Baltimore-Washington study also did not exclude secondary cardiomyopathies, which accounted for at least 13% of the cases in that study and which were excluded from our data bases. The exclusion of these cases would result in a rate of 8.7 per 100,000, which is quite similar to ours.

In this study, there was no statistically significant difference in demographic data as regard age and sex among the study group.

The main complaint in the studied patients was dyspnea (86.6%), respiratory infection in (48.3%), followed by palpitation in (15%) and bluish discoloration (15%). Other signs and symptoms showed low frequencies such as syncope (6.6%), and chest pain (5%).

Richard et al. (2006) **[23]** found that dyspnea, recurrent chest infection and cyanosis were the main symptoms among cases of CHD associated with cardiomyopathy where they represented 92.3%, 52.41%, 15.38% respectively.

Positive family history (FH) of consanguinity (50%), FH of sudden death (15%) of the patients, FH of other member affection (10%) which was in accordance to the findings **of (*Richard et, al2006)*** [23].who reported a majority of HCM and at least (30%) of DCM are familial forms, with most often an autosomal dominant mode of inheritance.

These observations in agreement with those reported by **(*Murphy and Starling, 2005)*** [24]. Found that a careful family screening suggests that dilated cardiomyopathy is genetically transmitted in up to 50 % of cases. ***Also, Mohan et al. (2002*** **[25].** found that systematic family screening may show echocardiographic abnormalities in 25% of relatives of patients with dilated cardiomyopathy; the abnormalities include dilated cardiomyopathy-and left ventricular enlargement. Moreover, large scale screening programs suggest that 10% to 25% of these patients with left ventricular enlargement will develop clinical dilated cardiomyopathy, with symptomatic heart failure, arrhythmia, or thromboembolism within 5 years. In addition patients with left ventricular enlargement have histological abnormalities comparable to changes seen in dilated cardiomyopathy.

Thorough cardiac examination of our cases revealed; LV enlargement in 65%, biventricular 6.67%, two cases (3.3%) presented with gallop, 18.3% had diminished SI. Majority of cases 16/60 (26.7%) had Mitral Regurge.

Oh et al. (2011) **[26]** found that LV enlargement, biventricular enlargement and Mitral Regurge were the main cardiac finding among cases of CHD associated with cardiomyopathy where they represented 71.9, 7.34, and 38.46% respectively.

The most prevalent form of congenital heart diseases among cardiomyopathic patient in the study was the isolated shunt lesion (56.7%) followed by combined, obstructive and shunt lesion (33.3%) then isolated obstructive lesions (8.3%) and lastly the cyanotic lesion (1.7%).

These findings was discordant with ***Kahler et al., (2003)*** **[27]**

Who found that the most prevalent form of congenital heart diseases among cardiomyopathic patient the isolated obstructive lesion (38.46%) followed by isolated shunt (30.76%) then combined shunt and obstructive lesions (23.07%) and lastly the cyanotic lesion (7.69%).

According to different types of congenital heart diseases, our study showed that patent foramen ovale (PFO), patent ductus arteriousus (PDA) and atrial septal defect (ASD) were the main congenital heart defects in the isolated shunt lesion where they represented 50%, 25% and 22.7% respectively. The commonest defect found in obstructive lesion was pulmonary stenosis.

As regard the pressure gradient across PV, we found that the mean pressure gradient across PV is higher in the combined, obstructive and shunt lesion (80+39.32)

Than the isolated obstructive lesions (32 +11.31) with no statistically significant difference. As regard the cyanotic lesion we found only one case of TGA (1.67%).

In our study 29 cases (48.3%) presented with dilated cardiomyopathy, 28 cases (46.7%) presented with HCM divided as; (12 cases (20%) presented with HCM without LVOTO, 16 cases (26.7%) presented with HCM with LVOTO) and 3 cases (5%) presented with restrictive cardiomyopathy (RCM).

These results agreed with ***Kahler et al., (2003)*** who found that dilated cardiomyopathy made up 58.6% of cases, hypertrophic cardiomyopathy 25.5%, and restrictive cardiomyopathy 2.5%. This result is also in agreement with ***Cox et al., (2006)*****[28].** who found that dilated cardiomyopathy made up 53.8% of cases and hypertrophic cardiomyopathy 34.2%. This difference might be due to genetic cause, differences in age or sex, or reflecting different environmental exposure patterns.

Codd et al. (1989)**[29]** found that dilated cardiomyopathy is the most common type of cardiomyopathy accounting for over 70 % of all cardiomyopathic patients referred to specialized centers.

Another study by ***Oh et al. (2011).*** revealed 69.8%, 90.3%, 47.2% and 42% had DCM, HCM, RCM and unclassified cardiomyopathy, respectively with a highly statistically significant difference ($P < 0.017$).

As regard the relation between different types of cardiomyopathy and congenital heart diseases, our

results revealed that, 26 cases out of 29 cases of DCM had shunt lesions, 15 cases out of 28 cases of HCM had shunt lesions and all cases with RCM (3 cases) had shunt lesions with statistically highly significant difference with p- value 0.048.

As regard the M-mode Trans - thoracic echocardiography in different types of cardiomyopathy we found that; in dilated cardiomyopathic patients the mean of LVEDD Z score was 3.86 ± 0.73mm, LVESD Z score was 2.89 ± 0.80mm, 1VS was 0.70 ± 1.15mm, PW was 0.77 ± 1.22 mm and LA 2.16 ± 0.79mm.

In hypertrophic cardiomyopathic patients the mean of LVEDD Z score was 1.99 ± 0.82 mm, LVESD Z score was 1.15 ± 0.57 mm, IVS was 1.30 ± 1.48mm, PW of 0.91 ± 0.76 mm and LA 1.44 ± 0.55mm. In restrictive cardiomyopathic patients the mean of LVEDD Z score was 3.10 ±0.60 mm, LVESD Z score was 1.63 ± 0.25 mm, IVS was 0.58 ± 0.07mm, PW of 0.71 ± 0.08 mm and LA 3.10 ± 0.70mm.

Our results reveals statistically highly significant difference between types of cardiomyopathy and LVEDD, LVESD and LA with p-value <0.001.

Similarly in the study of ***Towbin et al. (2006)*** **[30]** an Echocardiogram was available for 97% of patients (1378/1419). The mean LVEDD Z score was 4.17 (SD, 2.70), whereas the mean LVESD Z score was 5.96 (SD, 2.86). Left ventricular fractional shortening was severely depressed, with a median Z score of -9.16 (interquartile range, -11.08 to -6.10). Left ventricular end-diastolic posterior wall thickness and septal wall thickness were on average.

The current study was limited by its retrospective nature, and it is possible that we did not capture every patient with CM who had been hospitalized at our institution. Additionally, data collected during the initial admission were not collected at uniform

CONCLUSION

The most prevalent form of congenital heart diseases among cardiomyopathic patient in our study is the isolated shunt lesion (56.7%) followed by combined obstructive and shunt lesion (33.3%) then isolated obstructive lesions (8.3%) and lastly the cyanotic lesion (1.7%). Our results reveals statistically highly significant difference between types of cardiomyopathy and LVEDD, LVESD and LA diameters with p-value O.001. FS% & EF% is

statistically highly significant in the obstructive lesion whether isolated or combined with p-value <0.001.

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معدل انتشار إعتلال عضلة القلب في عيوب القلب الخلقية عند الرضع والأطفال

يعتبر مرض ضعف عضلة القلب في الأطفال من الأمراض الخطيرة التي تهدد الحياة والتي تتطلب جهود التخصصات المختلفة.

في هذه الدراسة الوصفية التي أجريت في العيادة الخارجية في مستشفي أسيوط الجامعي كليه الطب جامعه الأزهر على كل الحالات المصابة بمرض ضعف عضلة القلب والذين يعانون من عيوب خلقية في القلب التي التحقت بالعيادة في الفترة من سنة 2003 إلى 2014.

ألقينا الضوء على أهم الملامح الديموجرافية ونتائج العيادة في الأطفال المصابين بهذا المرض في هذه الفترة من خلال مراجعة هذه الحالات وتسجيل التاريخ الشخصي، شكوى المريض عند الدخول وما هي الأعراض التي كان عليها مثل الأعراض القلبية وجود زرقة - أعراض فشل القلب مثل (صعوبة التنفس - زيادة ضربات القلب)، هل هناك تاريخ سابق للمرض كذلك التاريخ العائلي للمرض: هل هناك قرابة بين الوالدين وما هي الأمراض المنتشرة في العائلة، هل هناك أخوة للمريض عندهم نفس المرض.

تم مراجعة جميع الأبحاث التي تم عملها للمريض مثل أشعة عادية على الصدر – رسم القلب – موجات صوتية على القلب خلال الفترات السابقة من المرض.

تبين من الدراسة أن إجمالي الحالات 60 حالة منهم 29 حالة ضعف عضلة القلب التمددي و 28 حالة للقلب المتضخم و3 حالة لضعف القلب التقييدية. وقد تراوحت أعمار الحالات ما بين 10 أيام إلى 14 سنة بمتوسط 20 شهر، نسبة الذكور 50% ونسبة الإناث 50% أهم الأعراض التي كانوا يعانون منها هي ضيق التنفس ثم اضطراب ضربات القلب، وكانت هناك قرابة بين الوالدين في 50% من الحالات.

أظهرت النتائج أن الشكل الأكثر شيوعاً من عيوب القلب الخلقية لدى مرضى اعتلال عضلة القلب هي مجموعة عيوب القلب التحويلية (56.7%) تليها مجموعة عيوب القلب الخلفية الانسدادية والتحويلية معاً (33.3%) ثم عيوب القلب الانسدادية (8.3%) وأخيراً عيوب القلب المزرقة (1.7%).

وقد أوصت الدراسة بضرورة تضافر جهود جميع المراكز الطبية المتخصصة في علاج مرض ضعف عضلة القلب في الأطفال وذلك لعمل دراسات مقارنة بين البيانات المحلية والأرقام العالمية لمعرفة المزيد عن المرض بهدف الاكتشاف المبكر للمرض وزيادة الوعي لدى المواطنين وبالتالي أخذ العلاج المناسب في الوقت المناسب.