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Original Research Paper

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A STUDY ON PATTERN AND CLINICAL PROFILES OF CONGENITAL HEART DISEASES IN TERTIARY CARE CENTRE, KAKINADA.

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ABSTRACT

BACKGROUND: Congenital heart disease is an abnormality of anatomical structure of the heart that is of paramount importance. The incidence is approximately 8 per 1000 live births. CHD not only contributes to significant mortality and morbidity but also causes tremendous psychological stress and economical burden to whole family. **OBJECTIVE:** To study the pattern and clinical profile of congenital heart diseases in a tertiary care hospital and to aid for early detection and quick referral of children with congenital heart disease **RESULTS:** In this study, done between January 1st 2020 to june 31st 2021, 54 children with confirmed congenital heart disease were observed. ACHD was the most common type of CHD and of them, VSD was the most common type, followed by ASD. Based on sex distribution, 31 were male (55.5%) and 23 were female (44.5%), with a male: female ratio of 1.25:1. Most children belonged in the age group 6m – 1year (46.2%) followed by (42.5%) in 30days – 6months age. The common clinical presentation observed in this study was breathlessness. The common complication observed in the current study was heart failure followed by malnourishment and recurrent LRTI.

KEYWORDS : Acyanotic and cyanotic heart disease, ASD, DORV,VSD, TOF

INTRODUCTION

Congenital heart disease (CHD) refers to structural heart defects that are present at birth.CHD accounts for nearly one third of all major congenital anomalies. The incidence is approximately 6- 8 per1000 live births;25% are life threatening and require early intervention.

The incidence is higher in stillborn, spontaneous abortions and premature infants. Among the various CHD's VSD is the commonest heart disease with a frequency of 35-50%, followed by ASD 6-7%, PDA 6-8%. Among cyanotic congenital heart diseases TOF has higher frequency 5-7% of occurrence.

It is critical to identify CHD and early referral of these cases to higher centre for timely intervention in order to improve quality of life and to reduce morbidity and mortality of children. This study is therefore undertaken to find out the pattern and clinical profile of congenital heart diseases among the children admitted at a tertiary care hospital

MATERIALS AND METHODS

The present study is a Hospital based observational study including Children in the age group of 1month to 12years of age group admitted in government general hospital Kakinada from 1st January 2020 to 30th June 2021.

Inclusion Criteria:

Children diagnosed to have heart defects on echocardiography.

Exclusion Criteria:

Children without any identifiable heart defects on echocardiography

Methodology:

This study has been conducted after approval by the institutional ethics committee.Children aged 1month – 12years diagnosed with CHD by echocardiography were included. Detailed history was taken and examination was done along with investigations like electrocardiography, echocardiography, chest x- ray and other related investigations based on their presentation were done. All of the information gathered was recorded on a pre-made data sheet and analysed.

OBSERVATION AND STATISTICS

Total of 54 patients with confirmed congenital heart disease were included in the study. Acyanotic congenital heart disease was the most common type of CHD presented (96.3%). CCHD comprised 3.7% of the total congenital heart diseases presented in the study(table 1).

Based on gender, it was observed that 31 were male (55.5%) and 23 were Female (44.5%) with a male: female ratio of 1.25:1(Table 2). Of these cases, based on age distribution 46.2% were in the age group 6months -1year, 42.5% cases were in 30days to 6months age, 7.4% were in 1-3years age and 1.8% were in 3-5yrs and 5- 12years age respectively(Table 3).

Table 1: Distribution According To Type Of Chd

Type	Male	Female	Total	% Of Chd
Achd	30	22	52	96.3%
Cchd	1	1	2	3.7%

Table No. 2: Sex Distribution Of Childern With Chd

Sex	Total No.Of Cases	% Of Chd
Male	31	55.5%
Female	23	44.5%

Table 3: Age Distribution Of Children With Congenital Heart Disease

Age	Male	Female	Total No. Of Cases	% Of Total Chd
30days- 6months	13	10	23	42.5%
7m – 12m	14	11	25	46.2%
>1-3yrs	3	1	4	7.4%
>3-5yrs	-	1	1	1.8%
5- 12 yrs	-	1	1	1.8%

In the present study, VSD was the most common type of ACHD and comprised of 50% of total congenital heart diseases. The second most common type of ACHD was ASD (34.6%), while others include ASD with PDA (5.7%), VSD with ASD (3.8%) and PDA (3.8%)(table 4). Among CCHD , one case was tetralogy of fallot and other was double outlet right ventricle with pulmonary stenosis(Table 5).

Table 4: Distribution According To Type Of Achd

Type Of Chd	Male	Female	No.Of Cases	% Of Achd	% Of Chd

Vsd	18	9	27	51.9%	50%
Asd	6	12	18	34.6%	33.3%
Vsd With Asd	2	-	2	3.8%	3.7%
Asd With Pda	2	1	3	5.7%	5.5%
Pda	2	-	2	3.8%	3.7%

Table 5: Tyes Of Cyanotic Congenital Heart Diseases

Type Of Cchd	Male	Female	No.Of Cases	%Of Cchd	%Of Chd
Tof 1 - 1 50% 1.85%	1	-	1	50%	1.85%
Dorv Ps - 1 1 50% 1.85%	1	-	1	50%	1.85%

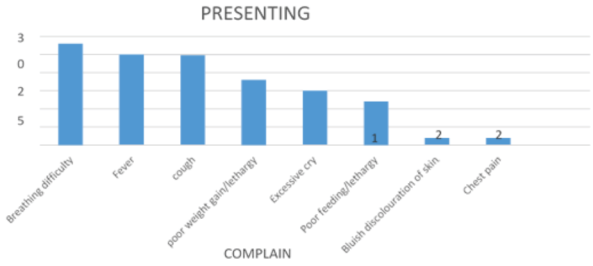

Figure 1: Representation of Presenting complaint of CHD

Figure 2: Distribution Based On Complications Of Chd

It was observed in the study population that the most common presenting complaint was breathing difficulty (62.9%), followed by fever (48.1%), poor weight gain (33.3%), cough (46.2%), excessive cry (29.6%), poor feeding/lethargy (22.2%), bluish discolouration skin (3.7%), chest pain (3.7%) (Fig 1). The most common complication was malnourishment (35.1%), mostly observed among cases with VSD. Other complications include heart failure (29.6%), RLRTI (recurrent lower respiratory tract infection) (14.8%) and pulmonary artery hypertension (9.2%) mainly in cases with VSD (Fig 2).

DISCUSSION

The anatomical abnormalities of the heart characterized as congenital heart disease is of utmost significance. Given that these diseases may cause abrupt deterioration and mortality, early detection and diagnosis are crucial.[1]

The purpose of this study was to determine the pattern and clinical profile of heart illnesses in 54 infants admitted to our hospital who were diagnosed with congenital heart disease by echo-cardiography.

In present study, it was observed that 96.3% cases had ACHD (acyanotic congenital heart disease) and 3.7% cases had CCHD (cyanotic congenital heart disease). As per study done by Shaad et al[6], Acyanotic heart disease and CCHD contributed to 72.50% And 27.50% cases respectively. Acyanotic CHD was the most prevalent form, accounting for 86.8% of all CHDs in a different study by N. golmei et al[5] with remaining 13.2% being cyanotic CHD.

There was a male predominance in the current study with incidence of 57.4% and remaining 42.6% being females. The male to female ratio in this study was 1.25:1. Similar findings are observed in other studies conducted by Ravinder K.G et al[1] ,L. shamima et al[2] and nowneet kumar et al[4] with male to female ratio of 1.17:1, 1.3:1,1.4:1 respectively.

Most of the cases in the current study presented during infancy(88.8%), of which 46.2% belong to 7months to 12months and 42.5% belong to 30days to 6months age group. In the N.golmei et al[5] study, 51.8% of the participants were under 1 year of age. In a different study conducted by Rajkumar et al[3], 56.28% of the participants were under 1 year old. Rakshit et al[7] study also showed that 66.3% of participants were younger than 1 year.

In the present study population among Acyanotic heart diseases, VSD was most common(51.9%) followed by ASD(34.6%),ASD with PDA(5.7%) similar to Another study by Hajela S.et al[8] showing Ventricular septal defect (29%) as the most common ACHD observed, followed by Atrial septal defect (13%) and PDA (5%). Among cyanotic congenital heart diseases, TOF (1.8%) and DORV with PS (1.8%) were presented in this study. TOF was also the most prevalent lesion(18% of total cases) in a study done by Shaad et al[6].

It was noted that the most common presenting complaint was breathing difficulty(62.9%) followed by fever(48.1%) and poor weight gain (33.3%)in the currentstudy. Similar presentations are seen in other studies by Ravinder K.G et al[1] (69% breathlessness and 50% cough) and Rakshit et al[7](58.1% breathlessness and 26.5% cough).

Most common complication in this study was heart failure(29.6%) observed mainly in cases with moderate and large size VSD. Isolated ASD were mostly uncomplicated, but when associated with PDA or VSD, pulmonary hypertension was observed.

In a study by Ravinder K.G et al[1] the most common complication observed was growth failure 31% followed by heart failure (21%), recurrent chest infections (17%) and pulmonary hypertension (4%).

In another study done by Shamima et al[2] the most commonly observed complication was growth failure 44.9% followed by recurrent chest infections 42.8%, heart failure 30.6% and pulmonary hypertension 14.2%.

As most of the cases observed in the current study presented during early infancy growth failure could not be well established in the current study.

This implies that early screening and identification of CHD's is very important which can be done by pulse oximeter testing during infancy or by proper clinical examination and prompt identification of murmurs. Early identification helps quick initiation of treatment and referral for surgery which helps in preventing long term complications and mortality.

CONCLUSION

In this study done between January 1st 2020 to june 31st 2021, 54 children with confirmed congenital heart disease were observed. ACHD was the commonest type of CHD observed and of them VSD was the common type of CHD followed by ASD. 30 were male (55.5%) and 24 were female (44.5%), with a male: female ratio of 1.25:1.

Most of the congenital heart diseases in this study were observed in the age group 6m -1year (46.2%) followed by 42.2% in 30days – 6months age. The common clinical presentation observed in this study was breathlessness. The common complication observed in the current study was heart failure followed by malnourishment and recurrent LRTI.

Most of the congenital heart diseases are asymptomatic and form majority of heart diseases. Therefore accurate assessment and diagnosis is essential to understand the demands placed on healthcare system.

This study also emphasizes the need to screen asymptomatic children for CHD, as early diagnosis and early intervention can alone prevent complications, morbidity and mortality in these children.

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