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Congenital Heart Diseases in Neonates

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Abstract

Background: To determine the frequency of congenital heart diseases in neonates

Methods: In this descriptive study, echocardiography was performed in all 459 suspected cases of congenital heart diseases.

Results: In 162 confirmed cases, the frequency of congenital heart disease was 2.86%. Male outnumbered female (100vs 62). Acyanotic lesions were more common than cyanotic lesions (127vs 35). Ventricular Septal Defect was the most common acyanotic lesion while Transposition of Greater Arteries was the most common cyanotic lesion

Conclusion: Congenital heart diseases, being one of the commonest problem in newborns, requires early diagnosis, so that the affected child can get maximum medical support and benefit

Key Words: Neonates, Congenital Heart Disease (CHD), Acyanotic, Cyanotic Lesion

Introduction

The incidence of Congenital Heart Diseases (CHD) in different studies varies from about 4/1,000 to 50/1,000 live births.[1] It accounts for nearly 25% of all congenital malformations.[2] By definition CHD is a gross structural abnormality of the heart or intrathoracic great vessels that is actually or potentially of functional significance.[3] Presentation can vary from asymptomatic accidental findings to severe cardiac decompensation and death. Early recognition has great implications on prognosis.

Patients and Methods

This descriptive study was done in Department of Neonatology Children hospital Lahore over a period of 11 months (Jan 2007-Nov2007). .All admitted neonates with the clinical suspicion of congenital heart disease, who presented with cyanosis, tachypnea or tachycardia, audible heart murmur, low oxygen saturation on pulse oximeter or X ray evidence of cardiomegaly and hemodynamically stable were included in this study. They were sent to cardiology out patient department for echocardiography. Neonates with other congenital anomalies, syndromes or hemodynamically unstable were excluded.

Results

Out of total 5650 admissions , 459 had clinical suspicion of CHD. Age ranged from 1 to 28 days. A total of 162 neonates were confirmed to have CHD on echocardiography. The frequency of CHD was 2.86% . Out of 162 neonates, 127 had acyanotic lesions and 35 had cyanotic lesions (Table 1).Male babies outnumbered female babies (100 versus 62).Fifty two (32.09%) cases were diagnosed within 7 days of birth, followed by 39 (24.07%) cases diagnosed within 8- 14 days after birth.(fig 1).In acyanotic lesions ventricular septal defect(VSD) was diagnosed in 58 neonates followed by patent ductus arteriosis (PDA)in 49 neonates (Table 2). In cyanotic lesions, TGA was the commonest (21 neonates) followed by Tetralogy of Fallot (7 neonates) (Table 3) .

Table 1: Frequency and Gender Distribution

LESION	NO. OF PATIENTS	%	M	F
Acyanotic	127	78.39%	77	50
Cyanotic	35	21.60%	23	12
Total	162	100%	100	62

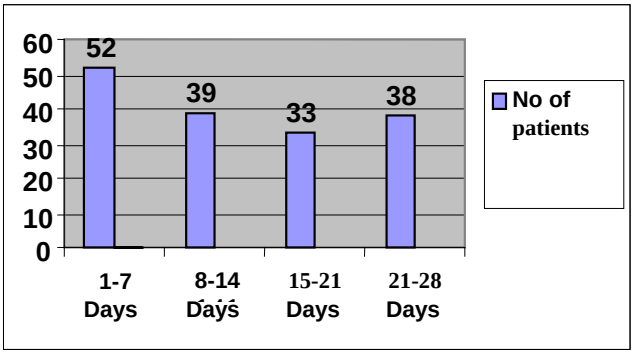

Fig 1: Age Distribution

Table 2: Frequency of Acyanotic Lesions:

Acyanotic Lesion	No of Patients	%
Ventricular Septal Defect (VSD)	58	45.66%
Patent Ductus Arteriosus (PDA)	49	38.58%
Atrial Septal Defect (ASD)	8	6.29%
Combined Atrio Ventricular Septal Defect (CAVSD)	7	5.51%
Pulmonary Atresia (PA)	3	2.36%
Coarctation of Aorta (Co A)	2	1.57%
Total	127	100%

Table 3: Frequency of Cyanotic Lesions

Cyanotic Lesions	No. of patients	%
Transposition of greater arteries (TGA)	21	60.00%
Tetralogy of Fallot (TOF)	7	20.00%
Tricuspid Atresia	4	11.42%
Pulmonary Atresia	1	2.85%
Truncus Arteriosus	1	2.85%
Total Anomalous Pulmonary Venous Circulation(TAPVC)	1	2.85%
Total	35	100%

Discussion

Each year there are about 1.5 million new cases worldwide. [4] In Pakistan, approximately forty thousand child are born each year with a congenital heart disease .It is the most common congenital condition diagnosed in newborns. In Pakistan only a few centers are taking care of children , especially neonates , with congenital heart diseases. Children Hospital Lahore is a unique centre in this regard . Approximately , fifty percent surgeries in this cohort were done here at an age of less than one year. [5]

In present study male outnumbered females. The result is similar as shown by Amir but Stephen et al showed equal distribution. [6,7] Acyanotic lesions are more common than cyanotic lesions.Similar inference was drawn by Jackson and Rahim.[8,9] Among acyanotic lesions,VSD was the most common lesion found on echo. Similar results were shown by Rehan and Faud.[10.11] PDA was found second most common lesion. Similar result were shown by Faud but differs from various studies. [11-13] It can be ascribed to the inclusion of only neonates while majority of studies included children upto 14-15 years of age. In those studies ASD was the second most common lesion. Regarding cyanotic lesions TGA was the most common lesion followed by TOF.This differs with other studies in which TOF was the most common cyanotic lesion [10 - 14]. As mentioned for acyanotic lesions, in cyantoic lesions too, the difference can be because of inclusion in the study of only neonates, while majority of studies included children upto 14-15 years of age and usually Tetralogy of Fallot presents after few months of life.

In conclusion, neonatology and children cardiology is a technology intense issue requirng highly trained staff . There is a dire need to establish centers and to train medical staff at all levels. Early detection of CHD is of utmost importance for its proper management.

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