# FREQUENCY OF CONGENITAL HEART DISEASES IN NEONATAL NURSERY OF TERTIARY CARE HOSPITAL

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## ABSTRACT

**Background:** Congenital heart disease (CHD) are one of condition with significant morbidity and mortality among neonates. **Objective:** To determine the frequency of congenital heart diseases in neonatal nursery of tertiary care hospital, Rahim Yar Khan. **Methodology**: Study design**:** Cross sectional study. Place and duration of study**:** Neonatal unit, department of Paediatrics, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan from 1st January 2015 to 31st December 2016. In this study all the neonates admitted in neonatal unit and have some suspicion of cardiac defect (cyanosis, murmur etc) were investigated (CXR, ECG, Echocardiography). The frequency of CHD was measured and presented as percentage. **Results:** We found that 0.44 % of congenital heart disease including both cyanotic and acyanotic were admitted in neonatal unit. **Conclusion:** A significant number of CHD are admitted in neonatal unit.

**Key words:** Frequency, Congenital heart diseases, Neonates.

## INTRODUCTION

Congenital heart disease are having significant burden of disease.[1] The incidence of congenital cardiac abnormalities is about 0.8 % of live birth (8:1000).[1,2] Congenital cardiovascular malformations account for about 20% of all congenital defects observed in live born infants.[3] They occur about 5-8/1000 of live birth and percentage in still born patient probably high.[4] CHD account for one quarter of all developmental anomalies.[5] Multifactorial etiology includes, Maternal infections (rubella, cytomegalovirus), Drugs misuse by mother (folic acid antagonist, anti-convulsants), Alcohol use by mother, Maternal lupus Erythromatosus and Genetic or chromosomal abnormalities. VSD involving the membranous portion of septum is the most common cardiac malformation occurring as an isolated condition in 12/10,000. TOF is the most frequently occurring abnormality of the conotruncal region is due to an unequal division of the conus resulting from anterior displacement of conotruncal septum.[3] Both cyanotic and acyanotic lesion are reported and ventricular septal defects are most common.[5] This study was conducted to assess the frequency of congenital heart disease in neonates admitted in neonatal nursery of Sheikh Zayed Medical College/ Hospital, Rahim Yar Khan.

## METHODOLOGY

Place of Study: Neonatal Nursery in department of Paediatrics Sheikh Zayed Medical College/Hospital, Rahim Yar Khan. Duration: 1st January 2015 to 31st December 2016. Type of Study: Cross sectional study. The suspected cases were screened for congenital heart disease by performing x-ray chest, ECG and echocardiography. Inclusion Criteria: Neonates admitted in neonatal unit, Sheikh Zayed Hospital, Rahim Yar Khan. Exclusion Criteria: Children above neonatal age. Data Collection Method: Performa was filled by PGR (a 2nd year resident) and a house officer. Data Analysis Plan: All the collected data was analyzed through SPSS version 16.0. Qualitative variables like gender and socioeconomic status of the child. Post stratification Chi-Square applied. P value ≤0.05 was taken as significant.

## RESULTS

Our study showed that 0.44 % of neonates admitted in neonatal nursery were having congenital heart disease including both cyanotic and acyanotic.

**Table I: Frequency of congenital heart disease among neonates.**

| Description | 2015 | 2016 | Total |
|---|---|---|---|
| No. of admissions in Neonatal unit | 5927 | 5888 | 11815 |
| Total identified cases of CHD in Nursery | 22 | 30 | 52 |
| Percentage | 0.37 % | 0.50 % | 0.44 % |

## DISCUSSION

Congenital heart disease bening one of the common birth defect and leading cause of morbidity and mortality in neonates and due to advances in

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diagnostic and surgical management, pathophysiology of disease has been well under stood. In our study, 11815 neonates were included, admitted in neonatal unit in two years. Diagnosis was confirmed by echocardiography. Identified cases of CHD during 2015 was 22 out of 5927 patient, (0.37% that is 3:1000). Identified cases of CHD during 2016 was 30 out of 5888 patient (0.50% that is 5:1000). Total identified cases of CHD were 52 out of 11815 in 2 year. In past many studies has been done on congenital heart disease. The relative frequency of different major forms of CHD also differs from study to study. Julien I.E Hoffman et al, found that the incidence of CHD in different studies varies from about 4/1,000 to 50/1,000 live births.[6] Shabbir Hussain et al[7] in their prospective study concluded that out of 5800 neonates, 87 (1.5%) were found to have congenital heart disease with an incidence of 15/1000. In their study Seon Young Cho et al, observed CHD in 3.7% of full term and 6.8 % preterm infants.[8] In one study by Johnson LC, found that prenatal diagnosis of CHD is helpful in the management of CHD.[9] Kemper AR et al, found that early detection and management of CHD decreases the morbity and mortality.[10]

Dorfman AT et al, found that the patients with CHD have a high frequency of multiple congenital anomalies.[11] In their study Ferreira SM et al, found that four defects (patent arterial duct, ventricular septal defect, atrial septal defect and pulmonary stenosis) together accounted for two thirds of all cardiac abnormalities.[12]

In a retrospective study on incidence and significance of heart murmurs in newborn by Minervini M et al, found that in 17% patients, congenital heart defect were diagnosed on further evaluation.[13] In a study by Friedl G, Rautenburg HW et al found a higher incidence of CHD.[14] One study by Mark D. Reller, et al, found that prevalence of CHD was 81.4/10000 births, addition most common CHD was ventricular septal defect, perimembranous ventricular septal defect, and secundum atrial septal defect.[15] Similarly, Nelson Itiro Miyague et, al found that ventricular septal defect was the most frequent heart defect.[16] Another study described that Congenital heart disease (CHD) was the most common birth defect and a leading cause of morbidity and mortality in patients with congenital malformations.[17] In different studies, The found that all obese women were significantly more likely than normal-weight women to have children with a congenital heart defect.[18,19]

## CONCLUSION

A significant number of neonates with Congenital Heart Disease, are admitted in neonatal unit. An anomaly scan during pregnancy will be helpful for early diagnosis and intervention in these neonates.

### Conflict of interest

There is no conflict of interest among all authors.

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