

# Frequency and Outcome of Congenital Heart Disease in admitted Patients in Pediatric Department PMCH

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## ABSTRACT

**Objective:** This study was done to look at the frequency and outcome of children diagnosed with congenital heart disease at our setup.

**Study Design:** Retrospective study

**Place and Duration of Study:** This study was conducted at the Pediatric Unit of PMCH Nawabshah from November 2016 to October 2017.

**Materials and Methods:** Files of patients who were diagnosed with congenital heart disease were collected and data was retrieved regarding age, gender, type of congenital heart disease, and outcome (discharge, discharged on request, left against medical advice, referred and expired).

**Results:** Total patients admitted in ward 10554 from November 2016 to October 2017, of these patients 118 were diagnosed as having congenital heart disease. Ages ranged from 4 days to 10 years. Male were 56.7% and females 43.2%. Of these 118 congenital heart disease patients, 42(35.6%) were having cyanotic heart disease, rest of the 76(64.4%) patients have acyanotic heart disease. Out of these, 57 patients were discharged, 21 patients were discharged on request, 12 patients were left against medical advice, 11 patients were referred and 17 patients expired.

**Conclusion:** Authors concluded that the congenital heart diseases are one of the common birth defects, with a significant mortality. Hence there is a high need of special diagnostic and treatment facilities for such patients in our setup.

**Key Words:** Congenital, CHD, cyanotic, acyanotic

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## INTRODUCTION

Congenital heart disease can be defined as structural abnormality of heart itself or of major vessels that is present since birth<sup>1</sup>. Its incidence in the developed countries is stated to be 8/1000 live births<sup>2</sup>, however this prevalence rate does not take in account the regional differences. In our country there have not been any population based studies to show exact prevalence of congenital heart disease or its percentage among overall birth defects, so only hospital based studies are available which only reflect the cases which are presented as inpatients or outpatients for treatment<sup>3</sup>. In past years the survival of children with congenital heart disease was not good but as the research improved and

better palliative and corrective treatment options were made available, resulting in the adults now outnumber the children in terms of congenital heart defects<sup>4</sup>. But increased survival is not free from complications like heart failure and arrhythmias<sup>5</sup> both of which can be a disease manifestations of CHD or a side effect of treatment, and it is also observed at some centers that while some patients are waiting for corrective cardiac surgeries in conditions like tetralogy of Fallot, transposition of great vessels or other cyanotic heart lesions there is an overall increased risk for neurological complications as well like stroke<sup>6</sup>. So generally outcome of patients largely depends on the type of heart defect (acyanotic/cyanotic), the severity of the condition (critical PS, Transposition of great arteries with intact septum), the age of patients at presentation (neonates presents with severe forms of congenital heart defects) and eventually the facility (basic health units VS tertiary care centers or specific cardiac hospitals) where the child is seeking care as there are only few centers in our region are equipped with state of the art facilities to deal with severe or complex congenital heart disease. Few studies have shown that the gestational age has an inverse relationship with the mortality in babies with congenital heart disease, that babies who are born in early preterm period have high

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mortality<sup>7,8</sup>, and decrease mortality is seen in babies born between 34-40 weeks of gestation<sup>9,10</sup>. Worldwide the natural history of congenital heart disease has changed; researchers are working on the primary prevention of congenital heart disease by intervening in expectant mothers<sup>11</sup>. These interventions are yet to be followed in our setup and all the regions so we are still looking at the high burden of congenital disease here. Furthermore it is stated in literature that one of the factors that might affect the prevalence or reporting of a particular condition like congenital heart disease is highly dependent on the diagnostic facility available in that area like fetal echocardiography, pediatric echocardiography, saturation studies etc, and the expertise level of technical staff that operates there<sup>12</sup>. As the general reporting and treatment facilities have been made available in peripheries recently in our country, so definitely the prevalence of various congenital heart diseases has also increasingly reported thus affecting the overall prevalence. Our current study was also an attempt to look at the records of cases of congenital heart disease in our patients to see the prevalence, the type of CHD and their outcome.

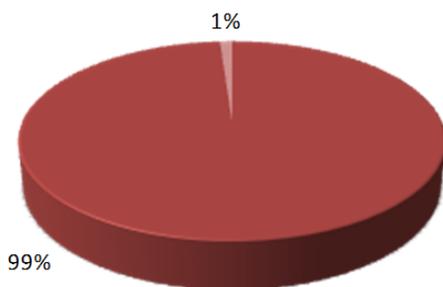
**MATERIALS AND METHODS**

This is a retrospective study which was done at pediatric unit of PMCH Nawabshah. Files of patients who were diagnosed with congenital heart disease were collected and data was retrieved regarding age, gender, type of congenital heart disease, and outcome (discharge, discharged on request, left against medical advice, referred and expired).

**RESULTS**

Total patients admitted in ward 10554 from November 2016 to October 2017, of these patients 118(1.1%) were diagnosed as having congenital heart disease (Figure-1). Ages ranged from 4 days to 10 years, Males were 56.7% and females 43.2% of the cases (table-1).

■ Total Admitted Patients    ■ Number of CHD Patients



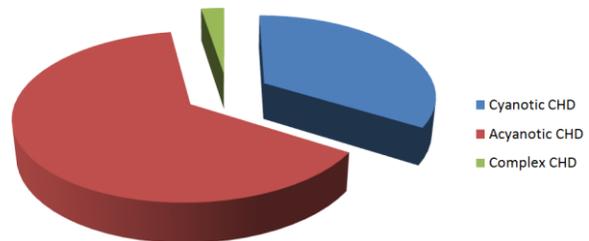
**Figure No.1: Percentage of Congenital heart disease patients among total admissions**

Of these 118 congenital heart disease patients, 40(33.9%) were having cyanotic heart disease,

75(63.55%) patients had acyanotic heart disease and 03(2.54%) neonates were diagnosed as complex congenital heart disease (figure-2). Out of these, 57 (48.3%) patients were discharged, 21(17.8%) patients were discharged on request, 12 (10.17%) patients were left against medical advice, 11 (9.3%) patients were referred and 17 (14.4%) patients expired (Table-2).

**Table No.1: Age and Gender Distribution of Patients with congenital heart disease**

S.No:	Age	Total	M/F
1	0-4 weeks	25	15/10
2	1 month-12 months	36	20/16
3	1-3 years	30	14/16
4	3-5 years	22	15/7
5	5-10 years	5	3/2
Total		118	67/51



**Figure No.2: Type of Congenital Heart Disease (acyanotic, cyanotic and complex congenital heart disease)**

**Table No.2: Outcome of Patients in relation with gender**

S. No.	Outcome	N0. of Patients	M/F
1	Discharged	57	27/30
2	Discharged on Request	21	14/7
3	Left Against Medical Advice	12	7/5
4	Referred	11	8/3
5	Expired	17	11/6
Total		118	

**DISCUSSION**

The current study was done to evaluate the frequency and outcome of patients who are diagnosed as having congenital heart disease at Paeds ward PMCH Nawabshah, in our hospital there was no specific pediatric cardiac facilities at the time this study was conducted. In our study the frequency/prevalence of patients with congenital heart disease was 1.1% (118) out of total 10554, if we compare our prevalence with the global prevalence which is 8/1000 live births (0.8%)<sup>2</sup>, this difference is probably because our study population is limited and does not depicts the whole

population. In a study from India the overall prevalence of congenital heart disease in their study population was also 0.8%<sup>13</sup>. The gender distribution trends that we observed in our study were stating that the mortality was higher in males as compared to males, this could either support the evidence that there was a higher male patient ratio as compared to females or because studies have been done that also supports that the mortality and morbidity is increased in male counterparts<sup>12,14</sup>. We made another observation in our patients that the babies diagnosed in early neonatal life with CHD were less as compared to children that were diagnosed beyond neonatal age; this same finding is seen in a study from India<sup>15</sup>. In our patients acyanotic heart disease was more common 63.55%, and cyanotic heart disease was seen in 33.9%, in a study from Jordan the percentage of patients with acyanotic heart disease was 74% and cyanotic heart disease was 26%<sup>16</sup>. The overall mortality rate in our admitted patients in ward was 14.4%, in United States the overall heart failure related mortality is 7%<sup>17</sup>, but this study is a population based study and therefore the study population was much larger compared to our study which is a hospital based study with a very small cohort of patients. Another study by Engelfriet and colleagues<sup>13</sup> was done to evaluate the mortality in both sexes in adult congenital heart disease patients has shown that overall morbidity and mortality was higher in adult male as compared to female patients (not dependent on pregnancy state) expressing the privileges of protective effects of female hormones, but this effect of course will not be responsible for the decrease mortality in females of paediatric age group

## CONCLUSION

Authors concluded that the congenital heart diseases are one of the common birth defects and pose a significant mortality burden on inpatient departments. Therefore specific strategies should be chalked out in expectant mothers to decrease the prevalence of congenital heart disease in newborns, because once the babies are born the mortality and morbidity is higher.

### Author's Contribution:

Concept & Design of Study:	Ali Akbar Siyal
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Data Analysis:	Juverya Naqvi, Imran Ilahi Soomro
Revisiting Critically:	Ali Akbar Siyal, Naseer Ahmed Memon
Final Approval of version:	Ali Akbar Siyal

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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