

Original article:

Study of Extra-Cardiac manifestations in CHD pediatric patients in rural population

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Abstract:

Introduction: Congenital heart disease is a structural and functional heart disease present at the time of birth even if it is detected later on According to study conducted by Mitchell et al . With this background present study was planned to assess the incidence of extra cardiac manifestations in CHD patient in rural population in pediatric age group.

Materials and methods: The present observational survey based study was conducted in Dept. of Pediatrics of Rural Medical College, Loni over a period of two years from September 2012 to August 2014 , after obtaining approval from the Institutional Ethics Committee.

Observations: In the present study we have observed that 81 patients (67.5%) had ACHD and 39 cases (32.5%) had CCHD. In our study we observed extra cardiac anomalies in 22 cases (18.33%).

Conclusion: Cleft lip (3 cases) was most common isolated lesion and Down's syndrome (3 cases) was the most common syndrome observed.

Introduction:

Congenital heart disease is a structural and functional heart disease present at the time of birth even if it is detected later on¹According to study conducted by Mitchell et al². Somatic anomalies were associated in 17.9% of patient with CHD. Down's syndrome was the commonest anomaly (9.3%, n=4) followed by congenital talipes equinovarus (6.4%,n=3), anencephaly (4.6%,n=2) and craniosynostosis and micrognathia accounted for one case each(2.3%).Echocardiography has revolutionized the diagnosis and management of cardiac malformation. It is a non invasive investigation that can precisely diagnose most congenital heart disease as well as offer treatment options, whether medical or surgical. With this background present study was planned to assess the

incidence of extra cardiac manifestations in CHD patient in rural population in pediatric age group.

Materials and methods:

The present observational survey based study was conducted in Dept. of Pediatrics of Rural Medical College, Loni over a period of two years from September 2012 to August 2014 , after obtaining approval from the Institutional Ethics Committee. (PMT / PMIS/RC/2012/110) . All the patients attending Paediatrics IPD and OPD during the study period; with symptoms suggestive of congenital heart diseases were screened.

Inclusion criteria

□ Children from birth to 12 years of age; who were freshly diagnosed to have congenital heart disease; from OPD and IPD (admitted in neonatal ICU ward and paediatrics ward) of Rural Medical College, Loni were included.

Exclusion criteria

- Old cases of CHD evaluated by Echocardiography
- Children with acquired Heart disease
- Unstable suspected CHD patients who died before confirming the disease

Suspected patients of CHD fulfilling all the inclusion criteria were approached for enrollment. The parents/lawful guardians were informed about the purpose and nature of the research study and all were given the study information sheet. Their consent was recorded in the Informed Consent Document

Observations and results:

Table1: Extra cardiac anomalies/syndromes among CHD patients Extacardiac anomalies / syndromes

	No. of cases (percentage) N=120	Associated CHD
Cleft lip	3(2.5%)	PDA, TGA, VSD
Cleft palate	2(1.67%)	TGA, VSD
Pre auricular tag	2(1.67%)	TGA, VSD
CTEV	2(1.67%)	VSD, PDA
Low set ears	1(0.83%)	ASD
Polydactyly	2(1.67%)	PDA, TAR
Micrognathia	1(0.83%)	PDA
Down's syndrome	3(2.5%)	ASD, VSD (2)
Turners syndrome	1(0.83%)	COA
Edwards syndrome	1(0.83%)	PDA
Golden har syndrome	1(0.83%)	VSD
Treacher Collin syndrome	1(0.83%)	ASD
Aperts syndrome	1(0.83%)	VSD
Holt-oram syndrome	1(0.83%)	ASD
Total	22 (18.33%)	-

All suspected patients were thoroughly examined. These patients were then referred for Echocardiography. The echocardiography was done along with Dr Prabhat Kumar (Paediatric cardiologist) and Dr Rachana Sable (Paediatric cardiologist) at Rural medical college, Loni.

The Echocardiography machine used was Siemens sonoline G 60 S with both neonatal and paediatric probes as applicable.

All the investigations like ECG, chest X-ray and Echocardiography were done free of cost by the institution.

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Discussion:

CHDs may be diagnosed at virtually any age. Some conditions are always discovered in neonates; others rarely are identified during infancy⁸⁴. In the present study there were 71 males (59.17%) and 49 females (40.83%). Male to female ratio obtained was 1.45:1. Congenital heart diseases are classified into Acyanotic congenital heart disease and Cyanotic congenital heart disease.

In the present study we have observed that 81 patients (67.5%) had ACHD and 39 cases (32.5%) had CCHD. In our study we observed extra cardiac anomalies in 22 cases (18.33%). Cleft lip (3 cases) was most common isolated lesion and Down's syndrome (3 cases) was the most common syndrome observed.

In a study conducted by Humayun KN, et al¹⁰⁰, 31% had extra cardiac anomalies in the form of VATER syndrome, imperforate anus, cryptorchidism, polydactyly, tracheoesophageal fistula and cleft palate.¹⁰⁰³

In a study conducted by Tank et al³⁸, 10% of cases of congenital heart disease had syndromes and other associated somatic anomalies among which Down's syndrome was the commonest.⁴

References:

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Kasturi L, et al¹⁰¹, 20% of cases with congenital heart disease had extra cardiac anomalies.⁵ somatic anomalies in patients with congenital Heart disease

Pai et al⁹⁰ found ECA in 24% of CHD cases.⁶

Gilcer et al¹⁰² found ECA upto 45% of CHDs (on autopsy)⁷

Our findings were similar to Kasturi L et al¹⁰¹ and Khalil et al¹⁰². In our study upon further analysis we observed that 7 cases of VSD, 6 cases of PDA, 4 cases of ASD, 3 cases of TGA and 1 case each of Truncus arteriosus and COA had Extacardiac anomalies. Among 3 cases of Down's syndrome two had VSD and one had ASD. Turners syndrome, Edward syndrome, Golden har syndrome, Treacher Collin syndrome, Aperts syndrome and Holt-Oram syndrome were the other syndromes observed.

Conclusion:

In the present study we have observed that 81 patients (67.5%) had ACHD and 39 cases (32.5%) had CCHD. In our study we observed extra cardiac anomalies in 22 cases (18.33%). Cleft lip (3 cases) was most common isolated lesion and Down's syndrome (3 cases) was the most common syndrome observed.

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