

Prevalence of Adult Congenital Cardiac Disease in a Tertiary Care Centre in Uttarakhand

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ABSTRACT

BACKGROUND

Congenital heart diseases are mostly diagnosed in newborn period or within first year of life. The lack of awareness and good cardiac facilities leads to late diagnosis of majority of heart diseases. The improvement in diagnosis and early therapeutic interventions can decrease the burden of adult congenital cardiac disease. Uttarakhand being a hilly state does not have good infrastructural and advance imaging facilities compared to many other states of India.

OBJECTIVES

The objectives of this study were to determine the prevalence and pattern of congenital cardiac disease amongst adults in a tertiary care center in the state of Uttarakhand.

MATERIALS AND METHODS

All adult patients of age more than 18 years who presented to the cardiology department over a period of 5 years from July 2016 to June 2021 were thoroughly evaluated. The suspected patients of congenital heart disease were evaluated further using Electrocardiogram (ECG), echocardiography and chest X-ray.

RESULTS

Out of 108000 patients who visited the cardiology department of hospital over a period of 5 years from January 2016 to January 2021, 315 were diagnosed to have congenital cardiac disease. 55.57 % cases were of males while 44.13 % were females. 80 % cases were of cyanotic heart disease while 20 % cases were of non-cyanotic heart disease. The most common heart disease was Atrial Septal Defect (ASD) which was observed in 38.4 % cases followed by Ventricular Septal Defect (VSD) observed in 25.07 % cases. Many of them were asymptomatic and were referred for routine evaluation of murmur or anxiety. The commonest symptoms were found to be palpitation and dyspnea.

CONCLUSION

The data regarding prevalence of adult congenital heart disease in state of Uttarakhand is sparsely available; therefore, the present study would be useful in formulating policy for early diagnosis and management of congenital heart disease. It will also help in assessing the risk factors for treatment of complications of adult congenital heart disease.

KEYWORDS

Adult congenital cardiac disease, Uttarakhand, ASD, VSD, Palpitation

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INTRODUCTION

The congenital cardiac disease is the major cause of morbidity and mortality amongst children as well as in adults too. The prevalence of the disease has been reported to be 3000 per million while that amongst children, it is 19 to 75 per 1000 live births all across the World.¹⁻³ The regional, socio - economic and demographic differences play a very crucial role in determining the prevalence of disease. The impact of disease amongst adults is quite devastating which affects their quality of life. The technological advancements are leading to the early diagnosis of these diseases due to which the survival rate is increasing in the recent times.⁴ However, the patients have to undergo regular health checkups resulting into the increase in the economic burden upon them.⁵ The disease can be classified as acyanotic and cyanotic heart disease based presence of central cyanosis. Most of the acyanotic heart diseases are mild. However they can lead to Eisenmenger syndrome if not treated early. Diseases like bicuspid aortic valve with stenosis, regurgitation, Tetralogy of Fallot (TOF) and atrioventricular canal defects are moderate defects which requires early intervention in first few months of life. Cyanotic heart disease includes tetralogy of fallot, Transposition of great arteries and total anomalous pulmonary connection which requires early surgery. Complex congenital heart diseases includes single ventricle, pulmonary atresia, transposition of great arteries with pulmonary stenosis.⁶ which requires palliative surgeries. The present study was carried out to determine the prevalence of congenital cardiac disease amongst the adults.

MATERIAL AND METHODS

All adult patients of age more than 18 years who presented in the departments of cardiology of a tertiary care hospital of Uttarakhand over a period of 5 years from July 2016 to June 2021 were included in the study. The suspected patients of congenital cardiac disease were screened using Electrocardiogram (ECG), echocardiography and chest X - ray. Detailed history, examination and other parameters were compiled in preformed questionnaire.

RESULTS

Out 315 cases were found to be suffering from congenital heart disease out of 108000 individuals who visited cardiology department of our hospital over a period of 5 years from January 2016 to January 2021. The most common cause of hospital visit of patient was found to be palpitation or rhythmic disorder (30.16 %) followed by evaluation of murmur (25.08 %) (Table 1).

Cause	Number (n = 315)	Percentage
Palpitation/rhythm disorder	95	30.2
Heart failure	62	19.7
Asymptomatic / evaluation of murmur	79	25.1
Cyanosis	64	20.3
Hypertension	15	4.76

Table 1. Causes of Admission of Patients with Congenital Heart Disease.

Heart failure was found in 19.68 % cases. Anxiety disorder

was found in many patients who were referred for evaluation of heart disease. 55.8 % of patients were found to be males while 44.2 % were females. The spectrum of congenital disease according to age is given in Tables 2 and 3.

Acyanotic heart disease	18 - 25 Years (n = 133)		25 - 40 Years (n = 91)		40 - 60 Years (n = 26)		60 Years (n = 2)	
	Male	Female	Male	Female	Male	Female	Male	Female
ASD	24	32	19	26	8	10	1	1
VSD	28	16	17	12	4	2	0	0
PDA	6	2	2	2	0	0	0	0
Coarctation	3	0	1	0	0	0	0	0
AS	8	4	6	4	2	0	0	0
PS	8	2	2	0	0	0	0	0
Total	77	56	47	44	14	12	1	1

Table 2. Age - Wise Spectrum of Acyanotic Disease.

Cyanotic Heart Disease	18 - 25 Years (n = 44)		25 - 40 Years (n = 15)		40 - 60 Years (n = 4)		60 Years (n = 0)	
	Male	Female	Male	Female	Male	Female	Male	Female
TOF	18	14	8	4	3	1	0	0
Ebstein	2	4	0	2	0	0	0	0
Single ventricle	2	0	0	0	0	0	0	0
Eisenmenger	3	1	1	0	0	0	0	0
TGA	0	0	0	0	0	0	0	0
TA	0	0	0	0	0	0	0	0
Total	25	19	9	6	3	1	0	0

Table 3. Age - Wise Spectrum of Cyanotic Disease.

80 % cases were of cyanotic heart disease while 20 % cases were of acyanotic heart disease. The most common heart disease was Atrial Septal Defect (ASD) which was observed in 38.4 % cases followed by Ventricular Septal Defect (VSD) observed in 25.07 % cases. TOF was observed in 50.7 % of cyanotic heart disease cases. In this study ASD was found to be the most common congenital defect with female predominance. Most common age group for diagnosis of congenital heart disease after childhood was 18 - 25 years as they experience symptoms of palpitation, breathlessness and anxiety in this age group frequently. Atrial Fibrillation (AF) was found to be the most prevalent arrhythmia amongst patients (10.15 %). It increases with increasing age, male gender and heart failure (Table 4).

Type	Number	Percentage (%)
Atrial Fibrillation (AF)	32	10.15
Ectopic atrial rhythm	12	3.81
Paroxysmal Supraventricular Tachycardia (PSVT)	12	3.81
Ventricular Tachycardia (V - Tach)	8	2.54
Complete Heart Block (CHB)	6	1.9

Table 4. Spectrum of Arrhythmia amongst Cardiac Disease.

DISCUSSION

We the congenital cardiac disease has been reported to be one of the major causes of mortality and morbidity. The

prevalence of adult congenital cardiac disease all across the world has been reported to be 2000 to 4000 per million adults.⁵⁻⁸ while in India it has been reported to be 2.4 per 1000 adults.⁹ In the present study, 315 cases were found to be suffering from congenital heart disease out of 108000 individuals who visited cardiology department of our hospital. The data is though not a correct representation as only the symptomatic cases have been investigated. Palpitation was found to be the major symptom reported by the patients. Acyanotic heart disease was found to be more prevalent than cyanotic disease which has also been reported in children.¹⁰⁻¹³ ASD was found to be the most prevalent with more occurrences in females from 18 - 60 years of age. This is in agreement with the previous study carried out.¹⁴ 22.22 % of cases were found to be associated with arrhythmia. AF was found to be the most prevalent arrhythmia (10.15 %). Prevalence of arrhythmia increases with increasing age, male gender, double outlet right ventricle, atrioventricular septal defect, heart failure. Complete heart block was found only in 1.90 % cases.

CONCLUSION

The adult congenital heart disease prevalence is not very high in the state of uttarakhand, but it may be underreported. It is a major cause of morbidity and mortality. Many of these theses are fully curable and once operated can improve the quality of life. The poor socio - economic conditions along with the comorbidities, lack of cardiac facilities, remote locations and delayed diagnosis needs to be addressed. The health care facilities in the state need to be accessible to the remote hilly areas and awareness needs to be generated.

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