

RHEUMATIC HEART DISEASE IN URBAN SCHOOL CHILDREN OF PESHAWAR

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ABSTRACT

Objective: To conduct a survey of male school going children of Peshawar to find the prevalence of Rheumatic Heart Disease (RHD) in young population

Material and Methods: School children of Peshawar city in the premises of school were screened by a team including a Cardiologist for RHD by physical examination and confirm the diagnosis by Echocardiography. During 8 visits of different schools, children of lower socioeconomic status of city of Peshawar were screened. Relevant history of Rheumatic Fever and RHD along with physical examination including, BP, height, weight and CVS was performed

Results: 1773 school children were screened. 3 children were found to have RHD. One boy had severe MR/AR, one had moderate degree of MR and last one had severe AR. Only one boy was aware of his cardiac problem and was taking prophylaxis. 3 boys were found to have Congenital Heart Disease, one had a TGA with PS, one had mild AS and one had mild AS/AR

Conclusion: RHD is on decline in urban male school going children of Peshawar and the prevalence is on decline since last four decades. The prevalence of RHD 3/1773, which seems to be lower than reported previously.

Key words: Rheumatic heart disease (RHD), Rheumatic fever (RF), Mitral Regurgitation (MR), Aortic regurgitation (AR), Aortic stenosis (AS), Trans position of great arteries (TGA) Pulmonic stenosis (PS).

INTRODUCTION

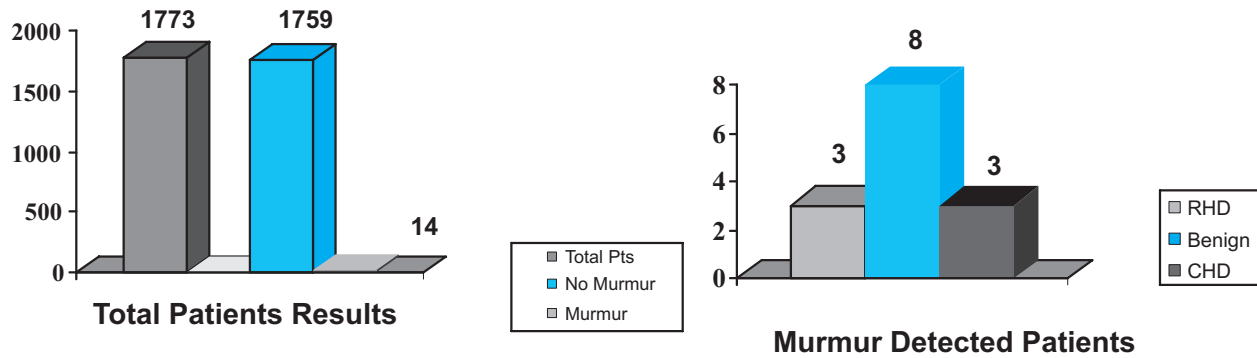
The theoretically highly preventable Rheumatic Heart Disease (RHD) is unacceptably too prevalent in Pakistan. In the underdeveloped countries of the world, which constitute two thirds of total world population, RHD remains significant public health problem. It is still a crippling heart disease and innumerable children and young need cardiac surgical procedures which neither them nor their governments can afford.¹ There is also lack of good quality prevalence surveys of rheumatic heart disease in developing countries.² In India certain surveys claim declining prevalence of rheumatic heart disease in rural school children.³ An institutional study from India claims no decrease in the incidence or severity of disease over a period of 25 years with a change of disease pattern with patients who had a previous surgery now are returning with valve dysfunction and related

problems.⁴ Our institution database is not showing any decrease in the magnitude of disease as far as the numbers of total admissions of RHD and its resultant sequel of CCF, RTI, CVA and infective endocarditis in the last ten years are concerned. The WHO data also supports this observation. A further distressing situation is that less than 20% of the effected know about their cardiac problem and only 8% are taking prophylaxis.⁵

MATERIAL AND METHODS

A study was conducted during 2006-07 in District Peshawar, capital city of North West Frontier Province of Pakistan among the school going children, aged 6 to 16 years. For the purpose of activity, the government schools were selected. A team comprising of an experienced Cardiologist and paramedical staff visited the selected school. A Performa including history of sore throat, fever,

SURVEY TO MEASURE THE PREVALENCE OF RHEUMATIC HEART DISEASE (RHD) IN PESHAWAR.



family history of rheumatic heart disease was filled from every child. The children were worked up with the height, weight, throat examination, blood pressure measurement and clinical examination. Cardiovascular examination was done in supine, left lateral and sitting position. In case of an abnormal finding in cardiovascular system, the children were taken to the Echo Room of the Cardiology Unit where detailed study was done. All the children of the school were examined.

RESULTS

During 8 visits 1773 school children were examined. Mean age was 13.33 ± 2.90 years.

Mean height was 5ft.1inch ± 0.65 ft. Mean systolic pressure 109.94 ± 12.84 mmHg and mean diastolic pressure 72.24 ± 11.35 mmHg.

Pallor was present in 14.5%, clubbing 0.3%, history of arthritis in 0.3%, history of joint pains in 15.6% and family history of RHD 0.2%. Sore throat was present in 31%. 21% had history of sore throat once a year, 25% had history of sore throat twice a year, 15% had sore throat thrice a year and 6% had more than 4 attacks an year.

Significant cardiac murmur was detected in 14 cases. During workup of these cases 8 cases were having benign murmur. 3 cases were having congenital heart disease. One was having VSD, TGA with large VSD and PS, second had mild AS and third had mild AS and AR. Only 3 cases were found to have rheumatic heart disease. One boy had severe MR/AR, other had moderate MR and third had severe AR. This showed a prevalence of rheumatic heart disease as 1.6/1000. Only one boy was aware of his cardiac problem.

DISCUSSION

In the countries of the Indian subcontinent including India, Pakistan, Nepal, Bhutan, Srilanka and Bangladesh, no recent survey has been done.

The historical data from the Indian subcontinent mentions that rheumatic fever and rheumatic heart disease were once a rarity in this part of the world.⁶ The data about the prevalence has been mainly derived from the school based surveys in Indo Pak.

A school based survey from Agra, India, a total 8449 children 5-15 years were screened. Twelve children (1.4/1000) were found to have rheumatic heart disease.⁷ The situation in other countries of the subcontinent is not different. A study from Nepal reported a prevalence of 1.2 per 1000 in a school survey involving 4736 people.⁸ The prevalence rates reported from Africa in an epidemiological survey from Sudan reported rates of rheumatic fever as 8/1000 and for rheumatic heart disease as 3/1000, age 5-15 years.⁹

In NWFP, the only large school based survey was carried out in 1973-76.¹⁰ It compared the prevalence in the school children of Peshawar and a relatively unprivileged far flung area of Chitral. Figures as high as 11/1000 children were reported from Chitral, while in Peshawar figure of 7/1000 was reported. The other school surveys are mentioned in the table.

The prevalence rates from the community study from Aligarh, India, where 3760 subjects from 11 villages were screened, the prevalence rate of 6.4/1000 of general rural population was reported.¹¹

The only community based study is reported from the rural area of Rahim Yar Khan. Status of rheumatic heart disease in rural Pakistan.¹² In this study 54 cases were found among the 9430 people screened. Only 20% cases in the study were aware of the diagnosis before participation in the study.

In contrast, in western countries, the prevalence of rheumatic heart disease in children is below 0.5 per 1000.¹³

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Reference (year of study)	Site	Study	Age (years)	Sex	Total No.	% RHD
Hashmi (1963-64)	Sindh (urban and rural)	Community	20-80	Male	2146	6
Syed (1967-8)	Karachi (urban)	Community	30-60	Both	1785	5.9
	Punjab (rural)				2412	6.7
Abbasi (1968)	Karachi (urban)	School	8-14	Both	4003	1.8
Ilyas (1979)	Peshawar (urban)	School	5-15	Both	17662	7
	Chitral (rural)				2678	11
Malik (1981)	Islamabad (urban)	School	5-15	Both	15100	1.5
WHO global programme for the prevention of rheumatic fever/rheumatic heart disease (1988)	Islamabad	School	5-15	2000	15831	0.6
	Rawalpindi				945	7
	Peshawar		6-18		2243	1.7
	Quetta					1
	Hyderabad					0.5

Table 1

With the introduction of echocardiography in screening the children for RHD, a much higher prevalence has been reported. In a study of randomly selected school children 6 to 17 years of age from Cambodia and Mozambique screened for RHD by standard clinical and echocardiographic criteria, a much higher prevalence of RHD (approximately 10 times as great) was found.

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