

PREVALENCE OF CONGENITAL HEART DISEASE IN PRIMARY SCHOOL CHILDREN IN BASRAH

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ABSTRACT

A Total of 1139 children from 5 primary schools in Basrah were examined during the period of March to May 1994. Their ages ranged from 6-12 years, congenital heart defects were detected in 6 children, yielding a prevalence of 5.3/1000. Five children had ventricular septal defects and 1 child had tetralogy of Fallot. In all but one the diagnosis was made for the first time during the study. Despite the limitation of the prevalence study, it can be concluded that the prevalence of congenital heart disease is in the upper part of range of rates in school surveys in other countries.

INTRODUCTION

Cardiology has made considerable progress over the past half century and improvement in diagnosis and surgical techniques has led to an increased understanding of many forms of heart disease and their management⁽¹⁴⁾.

Congenital heart disease refers to structural or functional heart disease that is present at birth⁽²⁾, or even if it is discovered much later⁽²⁾. The reported frequency of congenital heart disease in children is much influenced by the standard of health care and availability of cardiac services to detect and treat children⁽³⁾.

Congenital heart disease occurs in approximately 8/1000 live birth. Among infants born with

cardiac defects there is a spectrum of severity, 2-3/1000 infants with congenital heart disease will be symptomatic in the first year of life⁽⁴⁾. Left to nature 60% would die in infancy, 25% in the newborn period, and probably only 15% would survive to adolescence⁽⁵⁾.

Estimation of the prevalence of congenital heart disease in primary school children provides some indications of the extent of the problem in the community and also of the frequency with which it is missed through childhood years. It does not reflect the true frequency of congenital heart disease as it does not take into account the large number of children who died in infancy or early childhood. Furthermore, many small ventricular septal defects may close spontaneously during the first few years of life and will not be detected in school surveys⁽²⁾. In this study, we try to estimate the prevalence of congenital heart disease in primary school children in Basrah.

SUBJECTS AND METHODS

A stratified random-sample of 1139 children from five primary schools in Basrah were examined during the period of March to May 1994, 739 were males and 400 were females.

The children were examined by 2 pediatricians, during the visit to the schools, auscultation was performed on all children in supine position in a side room provided by the school administration. All children were examined initially by one observer, but if organic heart disease was suspected or detected, the child was then examined by the other, these children were referred to the hospital, electro cardiogram and chest x-ray were done to them. The relation of congenital heart disease to age, sex social class and school performance was assessed. A family history of congenital heart disease was interviewed. Children with organic heart were examined 6

months later by the same observers.

RESULTS

Congenital heart defects were detected in 6 of the total 1139 children, ranging in age from 6-12 years (figure 1). The prevalence in the primary school population was 5.3/1000. In all but one child, the diagnosis was made for the first time during the visit.

The prevalence of congenital heart disease in children at different educational levels was shown in (figure 2).

The prevalence rate in males was 6.7/1000 while in females was 2.5/1000. The ratio of prevalence in boys to that in girls was 2.6. Ventricular septal defect was detected in 5 children and tetralogy of Fallot in one patient. Only one child with ventricular septal defect has cardiomegaly on chest X-ray. The ventricular septal defects were assessed clinically as small in 4 and moderate in 1. One child, an 11-year old boy, known case of tetralogy of Fallot with surgical correction was recorded in the survey.

DISCUSSION

The prevalence of congenital heart disease in primary school children in Basrah is in the upper part of range of rates obtained in school survey in other parts of the world (Table 1)⁽⁹⁾.

However, caution is necessary when comparing rates in these studies because the methods of initial screening of the children differ, in some surveys, tape recordings, computers, or examinations by unspecialized doctors were used.

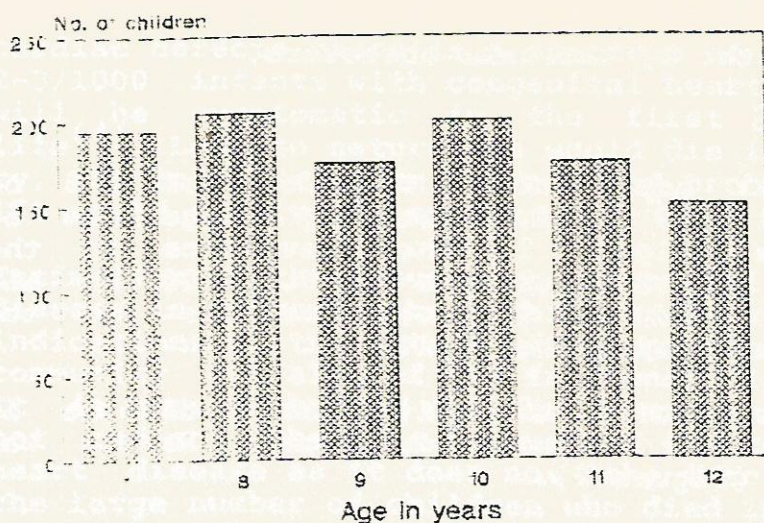


Fig 1. Age distribution of school children studied.

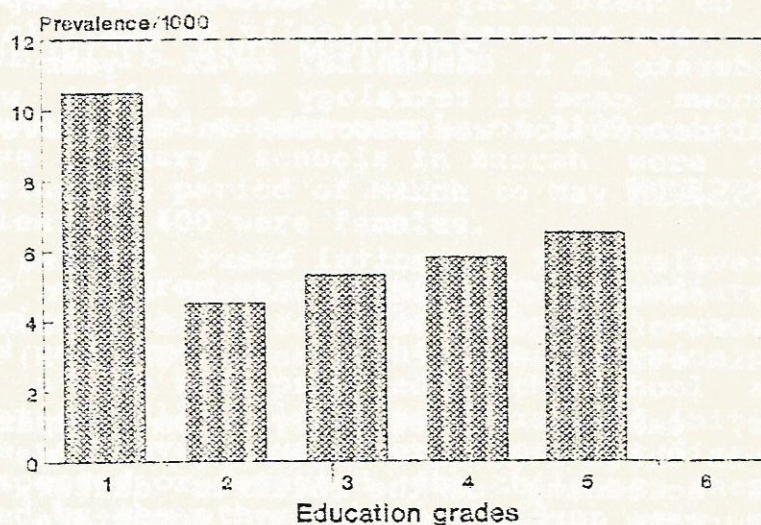


Fig 2. Prevalence of congenital heart diseases in children of different educational levels.

Table 1. Prevalence of congenital heart disease in school surveys.

Place	year of survey	Initial screening method	Rate per 1000	Percentage not previously diagnosed
Sydney	1955	School medical officer	2.8	?
Colorado	?	physicians	2.7	30
chicago	1962	Tape recordings	1.4	42
Denver	1963	Duplicate physician examination and tape recordings	4.6	45
Los Angeles	1966	Phonocardiogram cardiologists (for 10% of sample)	3.6	50
Sacramento	1969	Phonocardiogram, cardiologists for 20% of sample)	5.1	27
Soweto		Cardiologists	3.9	98

The practice of examination of all children with abnormal hearts by the other observers and the re-examination of such children, reduced the yield of false positive results and also observer bias. The mortality rate of congenital heart disease in the first few years of life is high and many children with severe forms of congenital heart disease do not attend school, the prevalence rate may, therefore, be an underestimate of the true prevalence in this community.

The predominance of ventricular septal defect was also found in other studies^(3,6), however, the number of children examined was small and the total number of positive cases was too small to permit reliable estimates of the prevalence of individual defects and conclusion therefore.

The predominance of males with ventricular septal defects is much more than that observed in other studies which showed that male excess is slight but probably not significant in ventricular septal defects⁽⁶⁾.

The variation in age and geographical distribution did not suggest a clustering of cases with a common causation. The prevalence of previously undiagnosed heart disease was high as in the study done in south Africa⁽⁹⁾.

The large proportion of children with congenital heart disease detected for the first time and the high prevalence rate of these defects in this study, compared to other countries are causes for concern about the availability and utilization of quality of health care for these children.

We have to admit that this was a simple preliminary study to estimate the prevalence of congenital heart disease in primary school children. Although this prevalence could not be the accurate one, but it will shed the light on the size of the problem. We hope that this will be re-

garded as a nucleus for further intensive studies to evaluate the size of the problem, the social impact of congenital heart disease in the society, and evaluation of the services conducted for the children with congenital heart disease.

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