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ORIGINAL ARTICLE

Assessment of prevalence of congenital heart disease

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ABSTRACT
Background: Congenital heart disease (CHD) is 1 of the most frequently diagnosed congenital disorders afflicting approximately 0.8% to 1.2% of live births worldwide. The present study was conducted to assess prevalence of congenital heart disease. **Materials & Methods:** 46 patients of both genders were included. Ultrasound examinations were performed. All cases with atrio-ventricular septal defect, simple coarctation of the aorta, double-inlet or -outlet ventricle, hypoplastic left heart syndrome, simple transposition of the great arteries (TGA), tetralogy of Fallot and truncus arteriosus were evaluated. **Results:** Out of 46 patients, males were 30 and females were 16.Among CHD various disorders were atrioventricular septal defect (24), simple coarctation of the aorta (4), double-inlet or -outlet ventricle (6), hypoplastic left heart syndrome (3), simple transposition of the great arteries (TGA) (2), tetralogy of Fallot (3) and truncus arteriosus (4). The difference was non- significant (P< 0.05). **Conclusion:** Most common CHD issimple transposition of the great arteries.Maternal binge drinking is also associated with an increased risk of congenital cardiac defects and the combination of binge drinking and smoking may be particularly dangerous.
Key words: Congenital heart disease, great arteries, live births

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INTRODUCTION

Congenital heart disease (CHD) is 1 of the most frequently diagnosed congenital disorders afflicting approximately 0.8% to 1.2% of live births worldwide.[1] Generally, CHD is defined as a structural abnormality of the heart and great vessels that is present at birth. Although numerous etiologic investigations have been conducted, only approximately 15% of cases of CHD can be attributable to a known cause. Moreover, the incidence and mortality of CHD are substantially heterogeneous across the world.[2]

Understanding the epidemiology of CHD incidence along with mortality is of great interest for epidemiologists and policymakers and of great importance for knowing the disease burden of CHD. Furthermore, differences in incidence rates and time trends among different regions may also lead to better insight into its etiology. Limited knowledge for the etiologies of CHD and the high heterogeneity in CHD epidemics constitutes the major obstacles for CHD prevention and early screening.[3]

Multiple studies have found that in poorer countries, delayed diagnosis of CHD is a major issue. Late presentation with avoidable severe complications (for example, development of the Eisenmenger phenomenon in patients with large septal defects) is known to contribute significantly to adverse outcomes in these settings.Known maternal risks include maternal smoking during the first trimester of pregnancy. Exposure to secondhand smoke has also been implicated as a risk factor.[4] Maternal binge drinking is also associated with an increased risk of congenital cardiac defects and the combination of binge drinking and smoking may be particularly dangerous. A greater risk of congenital heart defects is also seen in women who both have a high BMI.[5]The present study was conducted to assess prevalence of congenital heart disease.

MATERIALS & METHODS

The present study comprised of 46patients of both genders. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. Ultrasound examinations were performed. All cases with atrio-ventricular septal defect, simple coarctation of the aorta, double-inlet or -outlet ventricle, hypoplastic left heart syndrome, simple transposition of the great arteries (TGA), tetralogy of Fallot and truncus arteriosus were evaluated.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Total- 46		
Gender	**Male**	**Female**
Number	30	16

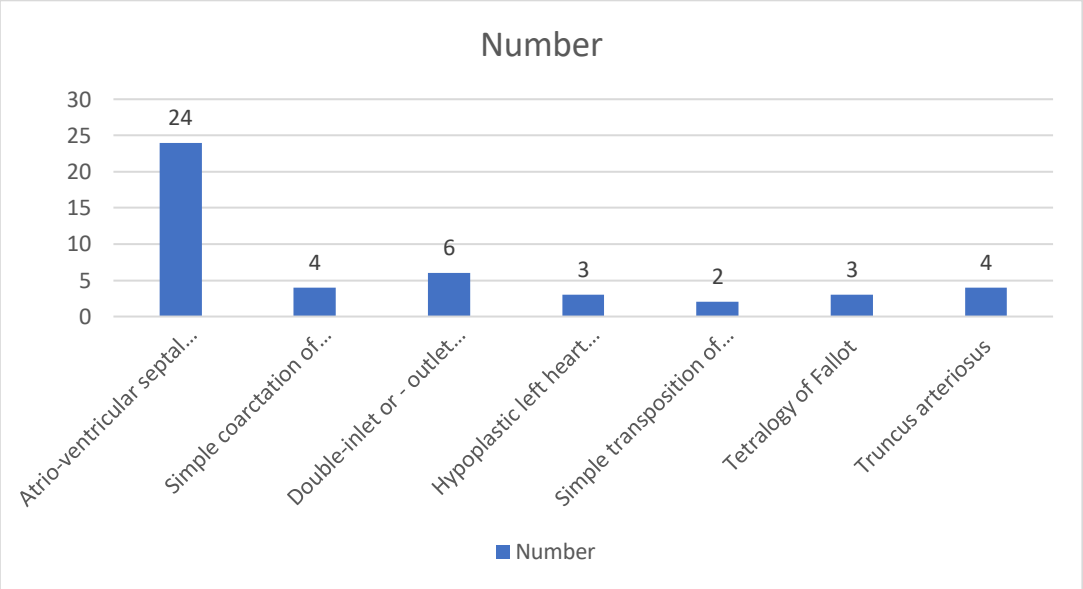
Table I shows that out of 46 patients, males were 30 and females were 16.

Table II: Congenital heart diseases

CHD	Number	P value
Atrio-ventricular septal defect	24	0.01
Simple coarctation of the aorta	4	
Double-inlet or - outlet ventricle	6	
Hypoplastic left heart syndrome	3	
Simple transposition of the great arteries (TGA)	2	
Tetralogy of Fallot	3	
Truncus arteriosus	4	

Table II, graph I shows thatamong CHD various disorders were atrioventricular septal defect (24), simple coarctation of the aorta (4), double-inlet or - outlet ventricle (6), hypoplastic left heart syndrome (3), simple transposition of the great arteries (TGA) (2), tetralogy of Fallot (3) and truncus arteriosus (4). The difference was non- significant (P< 0.05).

Graph I



DISCUSSION

The number of adults with some form of congenital heart disease (CHD) is growing rapidly as therapy becomes increasingly effective. Some of these patients have only mild disease with relatively little need for medical care, but others have complicated problems and require the services of an array of people with great expertise in the field.[6] To assess the needs for care for these patients, we need first to determine the incidence of CHD as a group and of the individual major congenital heart lesions.[7] This determination is usually incomplete, and there is substantial variation in the estimated incidence of CHD.[8,9]The present study was conducted to assess prevalence of congenital heart disease.

We found that out of 46 patients, males were 30 and females were 16.Most of the known causes of congenital heart disease are sporadic genetic changes, either focal mutations or deletion or addition of segments of DNA.[8]Trisomies 13,18 and 21 are about 5–8% of cases of CHD, with trisomy 21 being the most common genetic cause.[10,11]

Hoffman et al[12]determined the reasons for the variability of the incidence of congenital heart disease (CHD), estimate its true value and provide data about the incidence of specific major forms of CHD. The incidence of CHD in different studies varies from about 4/1,000 to 50/1,000 live births. The relative frequency of different major forms of CHD also differs greatly from study to study. In addition, another 20/1,000 live births have bicuspid aortic valves, isolated anomalous lobar pulmonary veins or a silent patent ductus arteriosus. The incidences reported in 62 studies published after 1955 were

examined. Attention was paid to the ways in which the studies were conducted, with special reference to the increased use of echocardiography in the neonatal nursery. The total incidence of CHD was related to the relative frequency of ventricular septal defects (VSDs), the most common type of CHD. The incidences of individual major forms of CHD were determined from 44 studies. The incidence of CHD depends primarily on the number of small VSDs included in the series, and this number in turn depends upon how early the diagnosis is made. If major forms of CHD are stratified into trivial, moderate and severe categories, the variation in incidence depends mainly on the number of trivial lesions included. The incidence of moderate and severe forms of CHD is about 6/1,000 live births (19/1,000 live births if the potentially serious bicuspid aortic valve is included), and of all forms increases to 75/1,000 live births if tiny muscular VSDs present at birth and other trivial lesions are included. Given the causes of variation, there is no evidence for differences in incidence in different countries or times.

We found that among CHD various disorders were atrioventricular septal defect (24), simple coarctation of the aorta (4), double-inlet or -outlet ventricle (6), hypoplastic left heart syndrome (3), simple transposition of the great arteries (TGA) (2), tetralogy of Fallot (3) and truncus arteriosus (4). Tegnander et al[13] found that the overall birth prevalence of CHD from 1993 to 2002 in Victoria was 7.8/1000. The antenatal detection rate for the seven selected defects from 1999 to 2002 was 52.8%. All but 4.8% of the cases had an ultrasound examination at >13 weeks' gestation. Antenatal detection was highest for hypoplastic left heart syndrome (84.6%) and lowest for simple TGA (17.0%).

The limitation the study is small sample size.

CONCLUSION

Authors found that most common CHD issimple transposition of the great arteries.Maternal binge drinking is also associated with an increased risk of congenital cardiac defects and the combination of binge drinking and smoking may be particularly dangerous.

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