ORIGINAL ARTICLE

PATTERN OF CONGENITAL HEART DISEASE AT
LADY READING HOSPITAL PESHAWAR

Inayatullah Khan, Amir Muhammad, Taj Muhammad
Department of Paediatrics, Lady Reading Hospital & Khyber Teaching Hospital, Peshawar, Pakistan

ABSTRACT

Background: Congenital heart disease is a defect in the structure of heart and great vessels present at birth. Early recognition will help to treat the child and if possible get corrective surgery done. The aim of this study was to see the pattern of congenital heart disease in our set-up.

Material & Methods: This descriptive study was conducted at Department of Pediatrics, Lady Reading Hospital, Peshawar, from June 2010 to July 2011. Patient from birth to 10 years of age with clinical and echocardiographic evidence of congenital heart disease were included. Demographic profile was noted.

Results: A total of 114 patients with clinical and echocardiographic evidence of congenital heart disease were included. They were 60(52.6%) males and 54(47.4%) females with a male to female ratio of 1.1:1. Among these, 79(69.30%) had acyanotic and 35(30.7%) cyanotic congenital heart disease. Ventricular septal defect (29%) followed by patent ductus arteriosus (14.9%), atrial septal defect (10.5%) and pulmonary valve stenosis (7.1%) were the most common acyanotic congenital heart diseases, whereas Fallot’s tetrology (12.3%) followed by transposition of great vessels (7%) were the commonest cyanotic congenital heart diseases.

Conclusion: Congenital heart diseases are not uncommon in our set-up. VSD is the commonest acyanotic and Fallot’s tetrology as cyanotic congenital heart disease.

KEY WORDS: Congenital heart disease, Cyanotic congenital heart disease, Acyanotic congenital heart disease.

INTRODUCTION

Congenital heart disease (CHD) is one of the most common structural malformation and comprises up to 25% of all congenital anomalies. It contributes significantly to infant morbidity and mortality. It occurs in 0.5–0.8% of live births, and each year there are about 1.5 million new cases worldwide.

Congenital heart disease has a wide spectrum of severity in infants: about 2–3 in 1,000 newborns infant will be symptomatic with heart disease in the first year of life.

The prognosis for children with CHD has improved dramatically over a 20 years period. In 1986, 60% of deaths from CHD occurred in the first year of life, whereas in 1990s the majority of deaths occurred in adults over the age of 20. It is predicted that 78% of the babies with congenital heart disease today will survive into adulthood.

Incidence of CHD is underestimated due to home deliveries and early discharge of mothers along with their neonates from hospitals without proper neonatal examination pertinent to cardiovascular system by a qualified and experienced person.

Congenital cardiac defects are grossly divided into two types; acyanotic and cyanotic heart diseases, the former being more common. Ventricular septal defect and Tetrology of Fallots are the commonest among acyanotic and cyanotic congenital heart disease respectively.

The aim of this study was to see the pattern of congenital heart disease in our set-up.

MATERIAL AND METHODS

This was a descriptive study carried out for a period of one year, from June 2010 to July 2011, at Pediatric Department, Lady Reading Hospital, Peshawar. Patient from birth to 10 years of age with clinical and echocardiographic evidence of congenital heart disease were included. Demographic profile (name, age, sex) was noted. All the data was recorded on a proforma, and the data entered and analyzed for frequency, percentages and means on SPSS version 10.

Examination pertinent to cardiovascular system was done. Echocardiography 2D with Doppler examination was performed. Consideration was given to total number of cases of congenital heart disease, age at presentation, sex distribution and type of congenital heart disease. Patients with bicuspid aortic valve in the absence of aortic
Congenital heart disease at Lady Reading Hospital Peshawar

RESULTS

A total of 114 patients were included; 60 males (52.6%) and 54 females (47.4%), with male to female ratio of 1:1.1. Patients were from newborn to 10 years of age with mean age of 16.95±26.81 months. More than two thirds (71%) patients were under 1 year of age. Out of these, 79 (69.3%) patients had acyanotic and 35 (30.7%) cyanotic congenital heart lesions. Ventricular septal defect followed by patent ductus arteriosus, atrial septal defect, and pulmonary valve stenosis were the commonest acyanotic congenital heart lesions; 29%, 14.9%, 10.5%, 7.1% respectively. Tetrology of Fallot (12.3%) followed by transposition of the great arteries (7%) were the commonest cyanotic congenital heart diseases. (Table 1)

DISCUSSION

The objective of the present study was to determine the pattern of congenital heart disease at Lady Reading hospital Peshawar, however it does not give a true prevalence of CHD in the total population. In the present study, there is slight predominance of male sex among patients with congenital heart disease, coinciding with a number of reports.7,12 While in other studies, the number of cases were higher among females,13-16 or no difference between sexes were observed.17-19 There was a female predominance in patent ductus arteriosus and AV canal defects 82.35% and 80% respectively. This finding is consistent with that reported by Kenna et al20, Khaled et al21, and Aman et al22 but contrary to that observed by Masood et al.8

Most of the cases (71%) are detected in infancy. It is consistent with studies done by Masood et al8 and Akhtar et al23 nationally and by Subramanyan et al24 in Oman and George & Frank-Brigs in Nigeria.25

In our study the frequency of VSD was 29%. This is comparable to worldwide incidence (25–30%)1 and to that reported by Masood et al8 and Abbag26 but is less than what is reported by Burki & Babar18 and Shann.27 Patent ductus arteriosus is the next most common acyanotic CHD (14.9%) in this study. It is consistent with that reported in Saudi Arabia26 but higher than that reported by Khaled et al21 and Rahim et al.28 Atrial septal defect ranked third in frequency (10.5%) in our study which correlates with Abbag.26 This observation is however contrary to Khaled et al,21 Aman et al,22 and Ahmad et al.29 Pulmonary valve stenosis is the fourth most common acyanotic congenital heart lesion (7.1%) in this study. It is also consistent with that reported by other authors.21,22 There is a significant difference in the incidence of Coarctation of aorta in the developing countries as compared to that of developed countries.30,31 It is reported to be 3.5% in our study as compared to 10.2% in Sweden.32

<table>
<thead>
<tr>
<th>S. No</th>
<th>Cardiac lesion</th>
<th>Number</th>
<th>Male</th>
<th>Female</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ventricular septal defect</td>
<td>33</td>
<td>19</td>
<td>14</td>
<td>29%</td>
</tr>
<tr>
<td>2</td>
<td>Patent ductus arteriosus</td>
<td>17</td>
<td>3</td>
<td>14</td>
<td>14.9%</td>
</tr>
<tr>
<td>3</td>
<td>Atrial septal defect</td>
<td>12</td>
<td>9</td>
<td>3</td>
<td>10.5%</td>
</tr>
<tr>
<td>4</td>
<td>Pulmonary valve stenosis</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>7.1%</td>
</tr>
<tr>
<td>5</td>
<td>Atrioventricular canal defect</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>4.4%</td>
</tr>
<tr>
<td>6</td>
<td>Coarctation of Aorta</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>3.5%</td>
</tr>
<tr>
<td>7</td>
<td>Tetrology of Fallot</td>
<td>14</td>
<td>10</td>
<td>4</td>
<td>12.3%</td>
</tr>
<tr>
<td>8</td>
<td>Transposition of the great arteries</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>9</td>
<td>Complex congenital heart disease</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>6.1%</td>
</tr>
<tr>
<td>10</td>
<td>Tricuspid atresia</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2.7%</td>
</tr>
<tr>
<td>11</td>
<td>Truncus arteriosus</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1.8%</td>
</tr>
<tr>
<td>12</td>
<td>Total anomalous pulmonary venous return (APVR)</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Table 1: Sex and percentage distribution of Congenital Heart Disease.
Tetralogy of Fallot followed by transposition of the great vessels were the commonest cyanotic congenital heart lesions in our study. This finding is similar to other studies nationally\(^5\) and internationally.\(^{21}\) Complex congenital heart disease was seen in 6% patients in this study which is comparable with other studies.\(^{8,22,33}\)

The cause of most congenital heart disease is unknown. Most cases are thought to be multi-factorial and result from a combination of genetic predisposition and environmental stimuli.\(^1\)

A growing list of CHD has been associated with specific chromosomal abnormalities, and several have been linked to specific gene defects.\(^1\) This emphasizes the importance of genetic counseling to patients with family history of congenital heart disease.\(^{34,35}\)

**CONCLUSION**

Congenital heart diseases are not uncommon in our set-up. Ventricular septal defect is the commonest acyanotic and Fallot’s tetralogy as cyanotic congenital heart disease.

**REFERENCES**

4. Mortality from Congenital Heart Disease, British Heart Foundation’s Statistics Website
23. Akhtar K, Maadullah, Ahmed W. Profile of congenital heart disease and correlation to risk adjustment for surgery; an Echocardiographic


Corresponding author:
Dr. Inayatullah Khan
Senior Registrar
Children B Ward
Lady Reading Hospital
Peshawar, Pakistan
E-mail: kinayat9011@yahoo.com