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Systemic review on pediatric cardiology

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Introduction: Congenital heart disease is defined as the structural, functional or positional defect of the heart in isolation or in combination, present from birth, but may manifest at any time after birth or may not manifest at all. There are many different types of congenital heart defects; they can be divided into three main categories; heart valve defects, heart wall defects and blood vessel defects. A normal heart has valves, arteries and chambers that carry the blood in a circulatory pattern. When all chambers and valves work correctly, the blood is pumped through the heart, to the lungs for oxygen, back the heart and out to the body for delivery of oxygen. When valves, chambers, arteries and veins are malformed, this circulation pattern can be impaired. Common congenital heart diseases are tetralogy of Fallot, truncus arteriosus, transposition complexes, endocardial cushion defects and univentricular heart. Conditions occur are pulmonary hypertension, arrhythmias, infective endocarditis, anticoagulation and congestive heart failure. Causes of CHD are genetic defects, viral infection during 1st trimester, diabetic mellitus/gestational diabetes mellitus, drugs and alcohol intake. Affecting systems are respiratory system causing breathing problems and pulmonary hypertension, clotting disorders causing anticoagulation and skeletal malformations.

Objective: To determine the effect of congenital heart diseases on other systems of body in pediatric population.

Methodology: This cross-sectional study was conducted from January 2015-September 2016. Sample size is 397. Pediatric patients under 7 years of age were recruited in this study. A history and examination form designed from an application "Forms" particularly for the study which was filled by concerned doctor. Diagnostic tests carried out to collect the data were fetal echocardiogram/echocardiogram (to record the electrical activity of patient's heart and can help diagnose heart defects or rhythm problems), CT scan (to take an X-ray movie of the heart and lungs), angiogram, chest X-ray (to see if the heart is enlarged or if the lungs have extra blood or other fluid in them) and pulse oximetry (to check oxygen concentration in patient's blood). For data analysis SPSS 16.0 software was used.

Results: The median age of all patients with severe CHD was 3 years (inter quartile range, 1.5 to 6 years). Distribution of CHD are 32.8% tetralogy of Fallot, 25.2% truncus arteriosus, 23.1% transposition complexes, 10.4% endocardial cushion defects and 8.5% univentricular heart. Causes are genetic defects 47.2%, viral infection 29.8%, alcohol 17% and drugs 6%. Percentages of affecting systems are 47.2% respiratory system causing breathing problems and pulmonary hypertension, 24.8% clotting disorders causing anticoagulation and 24% skeletal malformations.

Conclusion: The best prognosis was found in pulmonary stenosis (survival rate 95.55%). The first week was survived by 91.46%, the first month by 87.14%, 6 months by 82.42%, and the first year of life by 80.02% and 77.11% (95% CI 75.91-78.31%) survived to age 7 years. Patients with severe primary pulmonary hypertension have a poor prognosis but those with a patent foramen ovale may survive longer.

Biography

Sonia Shahid is currently a MBBS student of Karachi Medical and Dental College, Karachi, Pakistan. She has been a part of several national and international researches and many are ongoing. She has attended several national and international seminars and conferences. She is an inquisitive student with a passion for education as a power for change and improvement in the healthcare field of her country and is very ambitious in pursuing her career.

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