

Pediatric heart diseases in Madina, Saudi Arabia.
Current status and future expectations

To the Editor

I have 2 comments on the interesting study by Alnajjar et al¹ on the pediatric heart diseases in Madina, Saudi Arabia. Current status and future expectations.

First, based on the prevalence of congenital heart diseases (CHD) in Saudi Arabia (2.1 per 1000 live births),² the pattern of pediatric CHD stated by Alnajjar et al¹ is quite interesting. That pattern included in a descending order; ventricular septal defect (VSD) (34.5%), atrial septal defect (ASD) (8.9%), patent ductus arteriosus (PDA) (6%), tetralogy of fallot (TOF) (3%), atrioventricular septal defect (AVSD) (3.8%), aortic stenosis (AS) (3.5%), pulmonary stenosis (PS) (7.9%), coarctation of aorta (COA) (2.8%), transposition of great arteries (TGA) (3.5%), and others (26%). In Iraq, we have yet no study addressing the exact prevalence of pediatric CHD. However, the studied pattern of CHD in Iraqi children showed a marked disparity to that reported by Alnajjar et al.¹ That pattern included in a descending order; VSD (51.8%), TOF (17.9%), PDA (13.5%), TGA (8.9%), PS (4.4%), and ASD (3.4%).³ Various societal factors such as toxicant exposure, maternal habits, occupational hazards, psychological factors, socioeconomic status, racial disparity, chronic stress, and infection might impact the pregnancy outcome and increased the propensity to have offspring with various congenital lesions, including CHD.^{4,5} Though genetic factors, ethnic disparity, design of the study whether it is a hospital or community-based, and the skills and experiences of echocardiographers are well-known determinants that might explain the discrepancies in the prevalence and pattern of CHD in various regions, I presume that the above factors are not the sole determinants in Iraqi children. The United States and British forces used depleted uranium (DU), a waste product of uranium enrichment, in armor-piercing rounds during Gulf war. Inhalation or ingestion of particles containing DU by the nearby Iraqi civilians has resulted in a variety of adverse long-term health effects. An increased risk of various congenital defects, including severe forms of CHD in the offspring of pregnant exposed to high ionizing radiation has been stressed.^{6,7} This factor with the detrimental effect of poor nutrition and psycho-social stresses secondary to sanction (1990-2003) and wars in 1991 and 2003

most likely dominated other risk factors in increasing the propensity of Iraqi children in comparison with Saudi children to manifest ominous pattern of CHD, particularly complex lesions.

Second, CHD are one of major categories of illness that, if properly treated, can restore health and improve the quality of life. Review of the literature reported the prevalence of CHD at 6-8 per 1000 live births. Despite advances in detection and treatment, CHD account for 3% of all infant deaths and 46% of death from congenital malformations.⁸ A large underserved population of children with CHD exists in many developing countries. The workload of the pediatric cardiology consultation service is, therefore, anticipated to increase alarmingly. Development of sustainable pediatric cardiac programs and centers in developing countries presents many difficult challenges in terms of limited medical resources and operative techniques and lack of provincial or regional plans for care of these children. Throughout the "Third World" the demand for reconstructive surgery, is extremely high due to high birth rate and consequently large number of patients, as well as the shortage of both medical staffs and supplies. In developing countries, primary healthcare has always been considered a priority and so hospitals, which are used mainly for emergency operations. They are usually few and badly equipped; elective surgery is considered a luxury. General surgeons lacking specific training in cardio-thoracic surgery often treat children with congenital diseases and/or other non-congenital anomalies that are fortunate enough to reach a hospital. Those children suffering from disabling conditions are often neglected and left to live with their anomalies for the rest of their lives.⁹ I, therefore, totally agree with Alnajjar et al¹ that well-equipped hospital-based regional centers with a well-trained medical staff should be created to promote the care of children with CHD in developing countries. Based on the recommendation of American Academy of Pediatrics that pediatric cardiac center should be established for a population that generates more than 30 000 live births,¹⁰ good results and follow-up care could be provided with appropriate planning.

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Reply from the Author

No reply was received from the Author.

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