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ORIGINAL ARTICLE

Ventricular septal defect in children and adolescents in Angola: Experience of a tertiary center

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KEYWORDS
Congenital heart disease;
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Abstract
Introduction and Objective: This is the first study in Angola with the aim of characterizing ventricular septal defect (VSD) among children and adolescents.
Methods: A cross-sectional study based on echocardiographic records of the largest pediatric cardiology center in Angola included all children and adolescents (0 to 18 years old) with VSD between April 2010 and March 2011. The diagnosis was made by transthoracic and Doppler echocardiography with a Medison SA 8000 system. The sample was divided into two groups: Group 1, isolated VSD; and Group 2, VSD associated with other congenital heart defects (CHDs). Age, gender, type of VSD, associated CHDs and genetic syndromes were assessed.
Results: A total of 490 CHDs were diagnosed, of which 283 were VSDs. In Group 1 (140, 49%) the mean age was 29±36 months. The most frequent age (mode) at diagnosis was 24 months. There was no predominance of gender (ratio 1:1). The majority (127, 91%) had perimembranous VSD. In Group 2 (143, 51%) 113 patients (79%) had one, 27 patients (19%) had two and three patients (2%) had three other CHDs. Trisomy 21 was the most common genetic syndrome (23, 96%).
Conclusions: The study shows that VSD is the most common CHD in childhood, the diagnosis is made late and almost half of VSDs are associated with other CHDs.

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PALAVRAS-CHAVE
Cardiopatia congenital;
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Ecocardiografia

Comunicação interventricular em crianças e adolescentes em Angola: Experiência de um centro terciário

Resumo
Introdução e objectivo: Esta é a primeira pesquisa em Angola com o objetivo de caracterizar a comunicação interventricular entre crianças e adolescentes.
Métodos: Estudo transversal, com base nos registos ecocardigráficos do maior Hospital de Cardiologia Pediátrica em Angola (abril de 2010 para março de 2011). Todas as crianças e adolescentes (0 a 18 anos de idade) com comunicação interventricular foram incluídas. O diagnóstico foi feito por ecocardiografia transtorácica e Doppler com a máquina de Medison SA 8000. A amostra foi dividida em dois grupos: Grupo I – comunicação interventricular isolada e Grupo II – comunicação interventricular associada a outras cardiopatias congénitas. A Idade, o sexo, o tipo de defeito do septo, principais cardiopatias congénitas associadas e as síndromes genéticas foram avaliados.
Resultados: Houve 490 cardiopatias congénitas diagnosticadas, das quais 283 foram comunicação interventricular. No Grupo I (140, 49%) a idade média foi de 29 ± 36 meses. A idade mais frequente (moda) ao diagnóstico foi de 24 meses. Não houve predomínio quanto ao género (1: 1). Neste grupo a maioria tinha comunicação interventricular perimembranosa (127, 91%). No Grupo II (143, 51%) 113 pacientes (79%) tinham uma, 27 (19%) tinham duas e três (2%) tinham três outras cardiopatias congénitas associadas a comunicação interventricular. A Trissomia do cromossomo 21 foi a síndrome genética mais comum (24, 96%).
Conclusões: O estudo mostra que comunicação interventricular é a cardiopatia congénita mais comum em crianças pré-escolares.

Introduction

Ventricular septal defect (VSD) is the most common congenital heart defect (CHD), affecting approximately 2–6/1000 live births.[1,2] VSD results from a malfunction of cardiac development, possibly including a failure in the alignment or in the fusion of the atrioventricular cushions during the formation of the interventricular septum.[3] The defects can be classified according to their location. Perimembranous defects are located in the membranous portion of the interventricular septum and muscular defects are located in the muscular portion of the trabecular septum or at its margins.[3] Perimembranous defect is more common, occurring in 70–80% of cases.[4,5] VSDs can present in isolation or coexisting with other CHDs.

In Africa VSD is also the most common CHD in childhood.[6–9] In Angola, little is known of the prevalence of VSD, largely because few studies have been conducted.[10] The authors of this study aim to characterize VSD in children and adolescents based on echocardiographic records from the pediatric cardiology service of the largest pediatric care center in Angola over a period of one year, from April 2010 to March 2011.

Methods

The David Bernardino Pediatric Hospital is the largest pediatric cardiology and care center in Angola. It is a tertiary teaching and postgraduate hospital with 300 beds in 11 departments. The cardiology service has an echocardiography laboratory with teleconsultation links to the pediatric cardiology department of Coimbra Hospital in Portugal. Around the country many pediatrics patients have been referred to the hospital for assessment. Consecutive echocardiographic reports of 1267 patients over a period of one year (from April 2010 to March 2011) were retrospectively reviewed. Repeat scans were not included. All children and adolescents aged 0–18 years with a diagnosis of VSD with or without associated CHD were included. The diagnosis of VSD was made by clinical examination and confirmed by transthoracic echocardiography performed by three cardiologists of the institution. The echocardiogram was performed on a Medison SA 8000 system, using an F24AC transducer.

The sample was divided into two groups, Group 1, isolated VSD; and Group 2, VSD associated with other CHDs.

The variables studied were age (months), gender, type of VSD, other CHDs and associated genetic syndromes. The data were presented as absolute and relative frequencies.

Descriptive statistics was used to determine mean, mode and standard deviation. The software used was Epi Info version 3.5.2.

Results

Over a period of a year (April 2010–March 2011), 490 CHDs were diagnosed in children and adolescents (0–18 years of age), of which 283 (57.7%) were VSDs. Figure 1 shows the division of the sample into groups: Group 1, isolated VSD