Description of children with congenital heart diseases in a hospital in the state of Paraíba

Caracterización de niños con enfermedades congénitas de corazón en un hospital en el estado de Paraíba

Caracterização de crianças com cardiopatias congênitas em um hospital no estado da Paraíba

ABSTRACT

Characterize the clinical epidemiological profile and to verify the correlation between age and length of hospital stay of children with congenital heart diseases in a reference hospital complex for pediatric care. This is a cross-sectional study with a quantitative approach based on the analysis of medical records of children admitted with diagnosis of congenital heart disease. The sample consisted of 66 medical records. The predominant age group was that of infants with 54.5%; 45.5% had a weight between 3,500 kg to 10 kg; and the length of 57% of the sample was between 55 and 86 cm. There was an identification of an afebrile state in 98.5%, the heart rate in 87.7% was greater than 100 beats per minute, the respiratory rate in 92.3% was equal to or less than 60 breaths per minute, and the saturation in 78.5% of cases was equal to or greater than 91%. The prevalence of congenital acyanotic heart diseases. The conclusion of this study provided a reflection on the difficulties in the identification of congenital heart diseases acyanotic.

DESCRIPTORS: Heart disease; Epidemiology; Hospitalization.

RESUMEN

Caracterizar el perfil clínico epidemiológico y verificar la correlación entre la edad y la duración de la estancia hospitalaria de niños con cardiopatía congénita. Este es un estudio transversal con un enfoque cuantitativo basado en el análisis de registros médicos de niños ingresados con diagnóstico de cardiopatía congénita. La muestra consistió en 66 registros médicos. El grupo de edad predominante fue el de los lactantes con 54.5%; El 45,5% tenía un peso entre 3.500 kg y 10 kg; y la longitud del 57% de la muestra fue de entre 55 y 86 cm. Se identificó un estado afebril en 98.5%, la frecuencia cardíaca en 87.7% fue mayor a 100 latidos por minuto, la frecuencia respiratoria en 92.3% fue igual o menor a 60 respiraciones por minuto, y el la saturación en el 78.5% de los casos fue igual o mayor al 91%. Las cardiopatías acianóticas congénitas fueron más frecuentes. El estudio proporcionó una reflexión sobre las dificultades en la identificación de cardiopatías acianóticas congénitas.

DESCRIPTORES: Cardiopatía; Epidemiología; Hospitalización.

RESUMO

Caracterizar o perfil clínico epidemiológico e verificar a correlação entre idade e tempo de internação de crianças com cardiopatias congênitas. Trata-se de um estudo transversal com abordagem quantitativa baseada na análise de prontuários de crianças admitidas com diagnóstico de cardiopatia congênita. A amostra foi composta por 66 prontuários. A faixa etária predominante foi a de lactentes com 54,5%; 45,5% apresentaram peso entre 3.500 kg a 10 kg; e o comprimento de 57% da amostra encontrava-se entre 55 a 86 cm. Houve a identificação de um estado afebril em 98,5%, a frequência cardíaca em 87,7% era maior que 100 batimentos por minuto, a frequência respiratória em 92,3% era igual ou menor que 60 incursões respiratórias por minuto, e a saturação em 78,5% dos casos era igual ou maior que 91%. As cardiopatias congênitas acianóticas foram mais prevalentes. O estudo proporcionou a reflexão sobre as dificuldades na identificação das cardiopatias congênitas acianóticas.

DESCRITORES: Cardiopatia; Epidemiologia; Hospitalização.

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INTRODUCTION

Congenital heart diseases consist of macroscopic structural abnormalities of the cardiac muscle or of the large cardiac vessels with significant functional changes. [1] Perinatal care significantly interferes with the reduction of risk factors for heart disease. [2]

The clinical consequences of congenital heart defects are related to heart failure and hypoxemia. Insufficiency is characterized by a clinical syndrome where the cardiac functioning is inadequate to the metabolic needs, peripheral circulation, either during effort or rest. Hypoxemia, on the other hand, refers to lower than normal arterial oxygen pressure and reduced arterial saturation, this may not be evident in the clinical evaluation in the newborn's first days of life due to the latency of the ductus arteriosus. [3,4,5]

In 2010, 1.377 cases of babies born with congenital heart diseases were notified to the National System of Live Births, which represents about 5,3% of the estimated for Brazil. In 2014 it was considered the third leading cause of neonatal mortality. [6,7]

In Paraíba, health care for children with congenital heart disease is offered in state maternity hospitals. This assistance was guaranteed through a partnership between the States of Paraíba and Pernambuco, in 2011, aiming to facilitate the treatment of needy children with heart disease. [8]

The existing advances and the insertion of support programs for children with congenital heart disease, do not guarantee the reduction of neonatal mortality due to congenital heart disease, due to the population being from a low socioeconomic class with a large share of this percentage. [9]

Therefore, the early identification of clinical and epidemiological characteristics can promote the favorable prognosis of children with congenital heart disease, being able to reduce morbidity and mortality rates.

To this end, the present study aims to characterize the clinical epidemiological profile and verify the correlation between age and length of hospital stay of children with congenital heart disease in a reference hospital complex for pediatric care.

METHOD

This is a cross-sectional study with a quantitative approach based on the analysis of medical records of children admitted with a diagnosis of congenital heart disease. It was performed during the months of September to October 2018 in the medical archive service of the Pediatric Complex Arlinda Marques located in the city of João Pessoa / PB.

In 2017, the year used as the basis for this study, 108 medical records of children admitted with congenital heart disease were identified and the sample totaled 66 medical records.

For the descriptive statistical analysis, the Statistical Package for the Social Sciences version 24.0 was used and the average and equivalent percentage were calculated. To assess the relationship between age and length of hospital stay, standard deviation and variance were calculated and Pearson's correlation test was used ($p < 0.05$). This study was approved by the Ethics and Research Committee of Centro Universitário de João Pessoa under CAAE number: 95404518.3.0000.5176.

RESULTS

The sample consisted of 66 medical records of children diagnosed with congenital heart disease, of which 54.5% (36) of the patients were male. In 45.5% (30) of the cases the weight of the patients was greater than 3,500 and less than or equal to 10 kg, and in

57% (38) the length varied from 55 to 86 cm (Table 1).

According to the study, most patients did not have a high temperature, characterizing an afebrile state in 98.5% (65), the heart rate in 87.7% (58) was greater than 100 beats per minute, the respiratory rate in 92.3% (61) was equal to or less than 60 incursions per minute, and the saturation in 78.5% (51) of the cases was equal to or greater than 91%.

The most common types of congenital heart disease in 2017 were: persistence of the ductus arteriosus with 23.4% (15); the atrial septal defect with 18.8% (12); and the ventricular septal defect with 17.2% (11) (Table 1).

The average age of children diagnosed with congenital heart disease was 2.5 ± 2.8 years. The hospitalization time was 11.12 ± 8.6 days, with a minimum of one and a maximum of 40 days (table 2). Pearson's significance test (p <0.05) shows that there was no correlation between the child's age and length of hospital stay, as evidenced by p = 0.677.

Regarding the type of outcome of children with congenital heart disease hospitalization admitted in 2017, the most prevalent was surgical treatment, equivalent to 69.7% (46) surgeries performed (Table 3).

DISCUSSION

To Silva et al. [10], about ten in every thousand live newborns are affected by some type of congenital malformation. These malformations have a wide clinical symptomatology.

In this study, it was found that the heart rate was above 100 beats per minute in 87.7% of cases. Heart rate is considered normal for children, justified by its accelerated metabolism. It is understood that the public studied was mostly infants (54.5%), which strengthens the relationship with the results presented. Therefore, this association also applies to respiratory rate and temperature. [1]

Most patients had clinically afebrile, normocardial, eupneic and with adequate O2 saturation. It is assumed that these findings are linked to the types of heart disease prevalent in the study.

To understand the results found, it is necessary to understand that congenital heart diseases of the acyanotic type are characterized by the absence of cyanosis previously, as there is no obstruction of venous blood in the systemic circulation. Thus, the clinical consequences are mild and late when compared to cyanotic ones, justifying the stability in the parameters of the sample of this study. [11] The tetralogy of Fallot showed a prevalence of 14.1% [9] considered a congenital cyanotic heart disease due to insufficient oxygenation. [1]

Taking into account the predominance of the stabilized clinic directly related to the prevalence of acyanotic and infant heart diseases, the above-mentioned relationship is justified based on the anatomical and physiological characteristics of the infant's body, since in this age group the nervous system acts with an effective vasoconstriction, considered more efficient than in adults, minimizing the effects of hypoxemia. Therefore, accepted as part of the physiological process of adaptation to the extrauterine environment, it does not show immediate clinical changes for the child, making it difficult to identify cardiac malformations beforehand. [12]

Table 1: Diagnosis of congenital heart disease in a hospital in the state of Paraíba.

TIPO DE CARDIOPATIA	N (%)
Persistência do canal arterial	15 (23,4)
Defeito do septo atrial	12 (18,8)
Defeito do septo ventricular	11 (17,2)
Tetralogia de Fallot	9 (14,1)
Defeito do septo atrioventricular	6 (9,4)
Outras	11 (17,1)

Source: Research data, 2018.

Table 2: Mean values, standard deviation and confidence interval for age and length of stay in the hospital of children with congenital heart diseases admitted in 2017.

VARIÁVEIS	Média ± DP	IC95%	P
Idade (anos)	2,5 ± 2,8	0,008 – 9,7	0,677
Tempo de hospitalização (dias)	11,12 ± 8,6	1 – 40	

SD: standard deviation; CI 95%: confiance interval 95%; P: significance value. Source: Research Data, 2018.

Table 3: Outcome of children with congenital heart disease hospitalization admitted in 2017.

DESFECHO	N (%)
Óbito	6 (9,1)
Cirurgia	46 (69,7)
Cirurgia remarcada	4 (6,1)
Tratamento Clínico	9 (13,6)
Não informado	1 (1,5)

Source: Research data, 2018.

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The identification of the clinical characteristics of congenital heart diseases is intrinsic to the prognosis of hospitalized children, as well as the promotion of safe and continuous care. For this, there is a need to strengthen the assistance provided by professionals working in child health, carrying out a continuous clinical evaluation since the intrauterine period, still lasting in the extrauterine. [13]

Regarding the assistance offered, it is important to emphasize that this is not considered a determining factor in the length of hospital stay of a child diagnosed with congenital heart disease, there is also an association with several factors such as resources that are available at the institution, age, nutritional status, previous clinical condition, pain and even schooling. [14]

The association between the age of children with congenital heart disease and the length of hospital stay was not statistically significant ($p < 0.05$), indicating that other factors are intrinsically involved.

Regarding the treatment of heart disease, it will depend on the type and severity, in mild heart diseases there is a high possibility of cure without drug or surgical intervention. In other cases, drug treatments or cardiac surgery may be necessary. [15,16]

In a study carried out between the years 2008 to 2013, it was identified that the infant mortality rate due to congenital heart diseases has tended to decrease due to better prenatal conditions and the possibility of access to early diagnosis and treatment. [17]

CONCLUSION

In view of the results found, limitations during the collection process were noted, such as a lower than expected number of medical records in the sample, which may have contributed to the finding of a non-significant correlation between the variables hospitalization time and age. The justification is related to losses due to the lack of data filling in the medical records, leaving gaps in the evaluation performed and the assistance provided.

In view of the above, this study provided a reflection on the difficulties in identifying congenital heart diseases, specifically acyanotic ones, in addition to the prevalence in infants, the age range in which physiological changes in children may still occur. ■

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