

Sociodemographic and clinical profile of asthma and allergic rhinitis cases at the Children's State Hospital, Feira de Santana – BA

Perfil sociodemográfico e clínico de casos de asma e rinite alérgica atendidos no Hospital Estadual da Criança, Feira de Santana – BA

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RESUMO | INTRODUÇÃO: As doenças respiratórias ocorrem em todo o mundo e acredita-se que existam milhões de portadores de Asma, Rinite Alérgica e Bronquite Crônica, nos mais diversos grupos etários. **OBJETIVO:** Descrever o perfil sociodemográfico e clínico dos casos de asma e rinite alérgica atendidos em um ambulatório de Pneumologia Pediátrica. **MÉTODOS:** Trata-se de um estudo transversal, de dados secundários, de natureza descritiva, realizado em ambulatório de pneumologia pediátrica na cidade de Feira de Santana (BA), no período de janeiro a março de 2018, com 52 prontuários. Coleta de dados efetuada por formulário dos Módulos de Asma e Rinite do Questionário ISAAC e uma ficha para identificar o perfil socioeconômico desses casos. **RESULTADOS:** a idade média dos pacientes foi de 6 anos, houve predomínio do sexo masculino em 29 (56,86%) prontuários. A ocorrência de sinais e sintomas respiratórios associados à asma e/ou rinite alérgica foi de (96,29%). Foi verificado também que (32,69%) das crianças de 0 a 5 anos já apresentaram sibilos alguma vez na vida, (30,77%) tiveram crise de asma, (26,92%) apresentou coriza ou espirros sem estar resfriado, e (21,15%) já tiveram crise de rinite alérgica. **CONCLUSÃO:** Alta prevalência de asma e rinite alérgica ocorre em crianças atendidas em ambulatório. Entre os sinais e sintomas mais frequentes detectados pelo ISAAC, destacam-se sibilos, crises de asma, coriza, resfriado e rinite alérgica.

DESCRITORES: Asma. Rinite alérgica. Lactente. Criança.

ABSTRACT | INTRODUCTION: Respiratory diseases occur throughout the world and it is believed that there are millions of people with Asthma, Allergic Rhinitis and Chronic Bronchitis in the most diverse age groups. **OBJECTIVE:** To describe the sociodemographic and clinical profile of asthma and allergic rhinitis cases treated at one Pediatric Pulmonology outpatient clinic. **METHODS:** This is a cross-sectional, secondary descriptive study, carried out in a pediatric pulmonology outpatient clinic in the city of Feira de Santana (BA), from January to March, 2018, with 52 charts. Collection of data by form of the Asthma and Rhinitis Modules of the ISAAC Questionnaire and a form to identify the socioeconomic profile of these cases. **RESULTS:** the mean age of the patients was 6 years, there was a predominance of males in 29 (56.86%) medical records. The occurrence of respiratory signs and symptoms associated with asthma and / or allergic rhinitis was (96.29%). It was also verified that (32.69%) of the children aged 0 to 5 years had wheezing in their lifetime, (30.77%) had an asthma attack, (26.92%) had coryza or unexplained sneezing, and (21.15%) had an allergic rhinitis crisis. **CONCLUSION:** High prevalence of asthma and allergic rhinitis occurs in outpatient children. Among the most frequent signs and symptoms detected by ISAAC are wheezing, asthma attacks, coryza, cold and allergic rhinitis.

KEYWORDS: Asthma. Allergic rhinitis. Infant. Child.

Introduction

Respiratory diseases occur worldwide and it is believed that there are millions of people with Asthma, Allergic Rhinitis and Chronic Bronchitis in the most diverse age groups^{1,2}. Symptoms such as shortness of breath accompanied by wheezing, coughing and a feeling of intense malaise are reported by about 18 million Brazilians when they present a crisis of asthma, rhinitis or bronchitis¹.

Asthma is one of the most common chronic respiratory diseases affecting 1 to 18% of the world population, varying according to region or country³, and is among the four chronic respiratory diseases responsible for 63.2% of hospital admissions in the country from 2003 to 2013⁴. The main risk factors that aggravate these diseases are: inhalation of environmental allergens such as mites, cockroaches, dog and cat epithelia and fungi, as well as active or exposure to secondary cigarette smoke⁵. With respect to childhood asthma, Brazil is one of the most prevalent countries. In the south of the country, 20% of school-aged children have asthma, many of them presenting this pathology uncontrolled, causing physical inactivity, school absenteeism and hospitalizations. It is noteworthy that there are few studies in developing countries that report the consequence of this pathology in the population, especially in the child plot⁶.

It is worth mentioning that chronic rhinitis is a factor that can predispose asthma, in its moderate and severe forms, and is related to the lack of control of the disease^{5,7}. According to Carmelo-Nunes and Solé⁸ "Allergic Rhinitis (AR) is defined as a symptomatic disease of the nose due to the inflammatory reaction mediated by specific IgE antibodies and manifested after exposure of the cavity lining mucosa nasal to the allergen involved".

Often, allergic rhinitis is seen as a trivial and transient disease or as a disease of lesser severity when compared to asthma. It is able to change in a relevant way the quality of life of patients, as well as their performance, learning and productivity. In addition, it is commonly associated with other respiratory diseases, the cost of which further increases the socioeconomic impact of the disease⁸.

Children who have rhinitis often have some social problems, such as isolation, as crises often prevent them from participating in family activities, friendships, and even school activities. It is valid to consider that these children may present emotional changes due to learning impairments and / or due to the limitations of the activities imposed, thus impairing their ability to integrate fully and unrestrictedly with their colleagues⁹.

In view of the increasing number of respiratory problems in childhood, it is important to develop research in this area, with the aim of contributing to the reduction of morbidity, frequent hospitalizations and, consequently, infant mortality. However, it is necessary to standardize diagnosis and treatment, as well as the education of patients and their families, which may allow adequate care and an increase in the quality of life. Thus, the objective of this study was to describe the sociodemographic and clinical profile of the cases of asthma and allergic rhinitis treated at the HEC Pediatric Pulmonology outpatient clinic.

Methods

This is a study of secondary data, of descriptive nature, with a cross-sectional study. The Pediatric Pulmonology outpatient clinic of HEC, in Feira de Santana - BA, was used as the field of study. This public hospital is strategically located in Feira de Santana, the second largest city in the State of Bahia, an important road junction in North-Northeast Brazil.

We used 52 records of visits to HEC for asthma and/or allergic rhinitis, from January to March, 2018. The inclusion criteria were records of cases that had daily and/or continuous symptoms of asthma and/or allergic rhinitis, which were treated during the mentioned period. And as exclusion criteria, the medical records of cases that were not diagnosed with asthma or rhinitis.

The form of the Asthma and Rhinitis Modules of the International Study of Asthma and Allergies in Childhood Questionnaire (ISAAC)¹⁰ and a form to identify the socioeconomic profile of these cases

were used, using the following variables: gender, age, type of delivery, breastfeeding, breastfeeding time, immunization data and the environment in which the child lives, if there are reports of cases in the family of the disease and the clinical diagnosis and International Classification of Diseases (ICD).

The data were evaluated descriptively, by means of absolute and relative frequency. Finally, the information was systematized using the software Paste 3.0.

This study was submitted to the Estácio University Center of Bahia's Research Ethics Committee and approved under the 90698618.8.0000.0041 protocol number.

Results

A total of 54 records of cases attended at the HEC Pediatric Pulmonology outpatient clinic were identified, of which 52 had a diagnosis of asthma and/or allergic rhinitis, according to the eligibility criteria. In this population, there was a predominance of males in 29 (56.86%) medical records, ranging in age from 0 to 15 years and a median of 6 years. The distribution of these cases according to the place of residence prevailed for residents of Feira de Santana (62.76%). The month that happened most of the attendances was the month of January (47.06%), followed by the month of February (43.24%). Table 1 presents the distribution of the data according to the variables: sex, age, city of origin, month of care, type of environment in which they live and family history.

Table 1. Distribution of the cases seen in the HEC outpatient clinic with signs and symptoms of asthma and / or allergic rhinitis. Feira de Santana - Bahia, 2018

VARIABLES	N	%
<i>Sex</i>		
Male	29	56,86
Female	22	43,14
<i>Age</i>		
0-5 years	25	49,02
6-10 years	17	33,33
11-15 years	9	17,65
<i>City</i>		
Feira de Santana	32	62,76
Cities in the region	19	37,25
<i>Month service</i>		
January 2018	24	47,06
February 2018	22	43,14
March 2018	5	9,80
<i>Environment</i>		
Controlled	10	19,60
Not controlled	21	41,18
Uninformed	20	39,22
<i>Family history</i>		
Yes	25	49,02
Not	1	1,96
Uninformed	25	49,02
<i>Diagnosis</i>		
Asthma	20	39,22
Allergic Rhinitis	6	11,76
Asthma and Allergic Rhinitis	21	41,18
In analysis	4	7,84

Source: HEC, 2018.
Prepared by the author.

The occurrence of respiratory signs and symptoms associated with asthma and/or allergic rhinitis among the cases attended at the outpatient clinic was (96.29%). Table 2 shows the distribution of signs and symptoms associated with asthma according to sex, where a higher frequency is observed for males, with wheezing (45.10%), asthma attacks (47.06%) and crises of rhinitis ever in life (23.53%).

Table 2. Distribution of affirmative responses to respiratory signs and symptoms associated with asthma and allergic rhinitis, according to gender, according to ISAAC. Feira de Santana - Bahia, 2018

	Male		Female	
	N	%	N	%
Has the child ever had wheezing (wheezing in his chest)?	23	45,10	17	33,33
In the last 12 (twelve) months, did the child have wheezing (wheezing)?	18	35,30	16	31,37
In the last twelve (12) months was the wheezing so strong that it could not say more than two words between breaths?	4	7,84	7	13,73
Have you ever had asthma in your life?	24	47,06	15	29,41
In the past 12 (twelve) months, has the child wheezed after exercise?	8	15,69	2	3,92
In the last 12 (twelve) months, did the child have a dry cough at night, without the flu or with a respiratory infection?	6	11,76	5	9,80
Has your child ever had problems with sneezing or runny nose (nasal discharge), or nasal obstruction, when he or she has not had a cold or a flu?	13	25,49	10	19,60
In the last 12 months, has the child had problems with sneezing or runny nose, or nasal obstruction, when he or she has not had a cold or a flu?	11	21,57	10	19,60
In the last 12 (twelve) months, has this nasal problem been accompanied by tearing or itching of the eyes?	1	1,96	0	0
Has the child ever had rhinitis?	12	23,53	9	17,65

Source: HEC, 2018.
Prepared by the author.

Based on the research carried out in the medical records, the cases that showed signs and symptoms associated with asthma and/or rhinitis in the period from January to March 2018 (32.69%) of children 0-5 years old have already had wheezing (30.77%) had wheezing in the last 12 months, (30.77%) had an asthma attack, (26.92%) had runny nose or sneezing without ever having a cold, and (21,15 %) had already had an allergic rhinitis crisis, according to ISSAC (Table 3).

Table 3. Distribution of affirmative responses to respiratory signs and symptoms associated with asthma and allergic rhinitis, according to age, according to ISAAC. Feira de Santana - Bahia, 2018

	0-5 years		6-10 years		11-15 years	
	N	%	N	%	N	%
Has the child ever had wheezing (wheezing in his chest)?	17	32,69	16	30,77	7	13,46
In the last 12 (twelve) months, did the child have wheezing (wheezing)?	16	30,77	14	26,92	5	6,92
In the last twelve (12) months has the child's wheezing been so strong as to prevent it from being able to say more than two words between each breath?	6	11,54	4	7,69	1	1,92
Have you ever had asthma in your life?	16	30,77	16	30,77	7	13,46
In the past 12 (twelve) months, has the child wheezed after exercise?	3	5,77	4	7,69	3	5,77
In the last 12 (twelve) months, did the child have a dry cough at night, without the flu or with a respiratory infection?	5	9,62	6	11,54	0	0
Has your child ever had problems with sneezing or runny nose (nasal discharge), or nasal obstruction, when he or she has not had a cold or a flu?	14	26,92	6	11,54	3	5,77
In the last 12 months, did the child have any problems with sneezing, runny nose, or nasal obstruction, when he or she was not having the flu or with a cold?	13	25	5	6,92	3	5,77
In the last 12 (twelve) months, has this nasal problem been accompanied by tearing or itching of the eyes?	0	0	1	1,92	0	0
Has the child ever had rhinitis?	11	21,15	6	11,54	4	7,69

Source: HEC, 2018.
Prepared by the author.

Discussion

In the present study it can be verified that (41.18%) of the cases attended in the outpatient clinic were diagnosed with asthma and allergic rhinitis. Several authors document the coexistence of allergic rhinitis and asthma, and it is estimated that 60 to 78% of asthmatics have allergic rhinitis. In addition, the latter has been recognized as a risk factor for developing asthma in about 20 to 38% of cases^{11,12}. With the growth of epidemiological studies related to the coexistence of allergic rhinitis and asthma, the importance of upper respiratory infections as a factor of asthma accentuation and of the presence of rhinitis as a risk factor for the sinusitis¹¹.

Strachan et al.¹³ already demonstrated through ISAAC that the prevalence of symptoms associated with rhinosinusitis ranged from 0.8 to 14.9% among children aged 6 and 7 years and from 1.4 to 39.7% at ages 13 and 14 years. The same study also revealed that co-morbidity between asthma and allergic rhinitis can reach (80%). The picture of allergic rhinosinusitis is very frequent and its incidence has increased with 53 to 70% in children and adolescents with rhinitis presenting sinusitis¹². In this study, a greater frequency of cases of allergic rhinitis was found in children between 0 and 5 years old (50%), followed by the age group of 11 to 15 years (33.33%).

With regard to asthma, there was a balanced prevalence in two of the age groups: 0-5 years (45%) and 6-10 years (45%). In two studies carried out in Feira de Santana, Solé et al.¹⁴ pointed out that 20.7% of the children of school age (6 and 7 years) with wheezing in the last 12 months. Brandão et al.¹⁵ reported that (40.7%) of the same group had wheezing in the last 12 months. In this investigation, we found (26.92%) cases, in the same age and locality, with wheezing in the last 12 months. Sorio et al.¹⁶ did an epidemiological work in Sorocaba (SP) in the Child Care Program (PAC), where children from 0 to 12 years old are cared for. Of the 3075 children treated, 260 have diagnosed asthma participating in the Asthma Control Program. The children who participated in the research had between 5 and 7 years of age, and (43.6%) in addition to the diagnosis of asthma they also had a medical diagnosis of rhinitis.

Brandão et al.¹⁵ showed in their study that the prevalence of asthma symptoms was higher in males (57.6%). Sorio et al.¹⁶, in their research also points out that the majority of children treated for asthma were male (66.7%). In the present study, (50.0%) of the female cases diagnosed with asthma and (33.3%) of female children with a diagnosis of asthma associated with allergic rhinitis, thus having a greater frequency of cases for males.

In the present study, (7.69%) of children aged 6 to 10 years presented severe rhinitis. However, the highest indices occurred in the age range of 0 to 5 years with (11.54%) of the cases. Severe rhinitis is defined as wheezing that is so strong as to prevent the child from being able to say more than two words between each breath¹⁴. Solé et al.¹⁴ did research in 20 Brazilian cities from 2002 to 2003, with children aged 6-7 years, reports that the city of Feira de Santana has one of the highest prevalences in the country with (25.3%) cases. Brandão et al.¹⁵, who performed their work in 32 schools from the same city from September 2010 to April 2011, with children of the same age group, showed that (25.8%) of the cases were severe rhinitis.

Being a regional hospital, the State Children's Hospital serves the residents of the city of Feira de Santana and other surrounding municipalities. In the study it was observed that the number of children in the region had a representative result with (37.25%) of the visits. These cities in the region that are treated at the hospital have distances greater than 100km.

An increase in the rates of allergic rhinitis and asthma in the last thirty years correspond to the increase in air pollution. These environmental pollutants may favor responses mediated by immunoglobulin E (IgE). Several agents can be perceived as atmospheric contaminants: agents of natural origin, marine mists (bacteria and micro crystals of chloride and alkaline bromides), plant products (pollen grains), products of volcanic eruption (sulfur, sulfur oxide, various types of particles, sulfuric acid) and extraterrestrial dust (pulverized material from meteorites that enter the atmosphere)¹².

Considering these factors, the present study also analyzed the environmental conditions of the homes in which the patients lived, as well as the presence of a family member with asthma or rhinitis. Among the charts studied, many did not present this information, but (41.18%) reported that the patients lived in uncontrolled environments for the pathologies studied. Were checked domestic animals, plush animals, curtains and contact with dust or smoke. With regard to family inheritance, (49.02%) of the cases had relatives with at least one of the pathologies, most of them were in the 0-5 age group (64%).

Similar data were found by Kashiwabara et al.¹² in their research, such as environmental factors, frequency of household hygiene, and use of damp cloth and presence of animals. Their results show that (27.0%) of those surveyed living in urban areas had animals, and (65.0%) had dogs and (17.0%) had cats. Some authors have reported to the time of the correlation between cats and prevalence of asthma in children between the ages of 2 and 5 years^{17,18,19}. Regarding the family inheritance, 84 to 86% of the respondents had relatives with the pathologies¹².

New studies should be carried out with a longer period of time, so that an outline of the profile of the cases treated at HEC can be traced, with diagnosis of asthma and allergic rhinitis, since this hospital is a reference in the North-Northeast of Brazil. Also, it is necessary to carry out new research with longer intervals, having as indicators the pathologies associated with the seasons, differences within the urban and rural regions and how much those can influence the exacerbations of the cases. In this way, it will be possible to formulate actions in healthcare to minimize the complications inherent to asthma and allergic rhinitis.

Conclusion

High prevalence of asthma and allergic rhinitis occurs in outpatient children. Among the most frequent signs and symptoms detected by ISAAC are wheezing, asthma attacks, coryza, cold and allergic rhinitis.

Author contributions

Gadéa SFM, Rodrigues RP, Bião MAS participated in the conception of study design, analysis and interpretation of results, writing and final approval of the manuscript.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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