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Dr. Shabir Malik

Department of Paediatrics,
Government Medical College
and Hospital Jammu, Jammu
and Kashmir, India

Assessment of etiological factors and clinical profile in pediatric asthmatic patients

Dr. Shabir Malik

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Abstract

Background: Asthma is a chronic inflammatory disease of the airways. The present study was conducted to assess etiological factors in pediatric asthmatic patients.

Materials & Methods: The present study was conducted 68 children age ranged 3-14 years of both genders. After obtaining written consent from all children, careful clinical examination was performed. Ethical approval was obtained prior to the study. Clinical features and type of wheezing were recorded.

Results: Out of 68 patients, males were 32 and females were 34. Clinical features such as cough in 65, wheezing in 58, shortness of breath in 46 and chest tightness in 51. The difference was significant ($p < 0.05$). Etiological factors in asthma patients were dust in 43, smoke in 26, obesity in 28, gestational age < 37 weeks in 11 and positive family history in 17. The difference was significant ($P < 0.05$). Different type of wheezing in children was transient in 45%, nonatopic in 28%, persistent asthma in 23% and severe intermittent wheezing in 9%. The difference was significant ($P < 0.05$).

Conclusion: Asthma is increasing in pediatric population. Most common wheezing type in children was transient, nonatopic, persistent asthma and severe intermittent wheezing.

Keywords: Asthma, Children, Wheezing

Introduction

Asthma is a chronic inflammatory disease of the airways that is characterized by bronchial hyper-reactivity and variable airway obstruction which results in recurrent episodes of wheezing, breathlessness, chest tightness and/or coughing that can vary over time and in intensity^[1]. Diagnosing children < 6 years is difficult due to lack of pulmonary function testing (as children < 6 typically cannot do the test reliably), overlap of viral symptoms with asthma symptoms, maturing of the respiratory and immune systems, natural history, scarcity of good evidence, and a diverse and frequently unpredictable response to treatment^[2].

It is more prevalent in children with a family history of atopy, and symptoms and exacerbations are frequently provoked by a wide range of triggers including viral infections, indoor and outdoor allergens, exercise, tobacco smoke and poor air quality^[3]. Many infants and preschool children experience recurrent episodes of bronchial symptoms, especially wheezing and cough, beginning at a few months of age, mainly during a lower respiratory tract infection, and since a clinical diagnosis of asthma usually can be made with certainty by age 5, the early diagnosis, monitoring and treatment of respiratory symptoms are essential^[4]. Asthma therapy has improved considerably over the last decades, we are still unable to cure the disease. Increased knowledge of possible contributing triggers, and especially the introduction of inhaled corticosteroids during the 1980's, have resulted in better disease control and a reduction in asthma exacerbations. Current medications allow children to live a more or less normal life^[5]. The present study was conducted to assess etiological factors in pediatric asthmatic patients.

Materials & Methods

The present study was conducted in the department of Pediatrics. It comprised of 68 children age ranged 3-14 years of both genders. The diagnosis of asthma was based on recurrent episodes (≥ 3) of one or more of the following symptoms-wheeze, cough, breathing difficulties and chest tightness, particularly at night or in the early hours of the morning; respiratory symptoms improve spontaneously or after treatment (bronchodilators with or without corticosteroids); presence of triggers or aggravating factors such as exposure to allergens or irritants, physical exercise.

After obtaining written consent from all children, careful clinical examination was performed. Ethical approval was obtained prior to the study. Clinical features and type of

Corresponding Author:

Dr. Shabir Malik

Department of Paediatrics,
Government Medical College
and Hospital Jammu, Jammu
and Kashmir, India

Wheezing were recorded. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

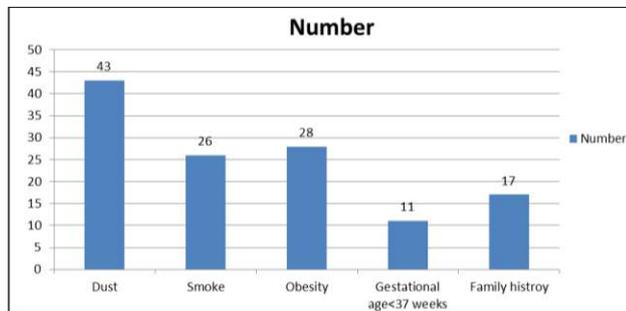
Total- 68		
Gender	Males	Females
Number	32	34

Table I shows that out of 68 patients, males were 32 and females were 34.

Table 2: Clinical features in patients

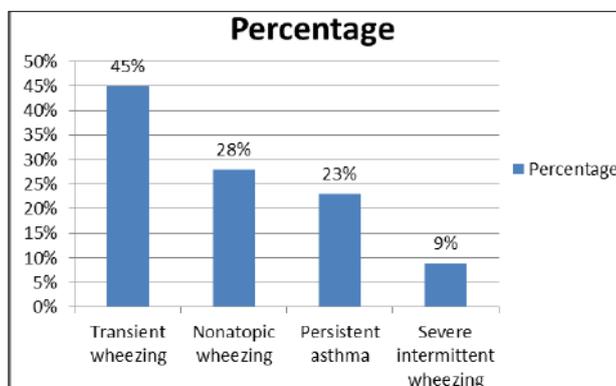
Clinical features	Number	P value
Cough	65	0.81
Wheezing	58	
Shortness of breadth	46	
Chest tightness	51	

Table II shows common clinical features such as cough in 65, wheezing in 58, Shortness of breadth in 46 and chest tightness in 51. The difference was significant ($P < 0.05$).



Graph 1: Possible etiological factors in asthma patients

Graph I shows that etiological factors in asthma patients were dust in 43, smoke in 26, obesity in 28, gestational age < 37 weeks in 11 and positive family history in 17. The difference was significant ($P < 0.05$).



Graph 2: Type of wheezing in children

Graph II shows that different type of wheezing in children was transient in 45%, nonatopic in 28%, persistent asthma in 23% and severe intermittent wheezing in 9%. The difference was significant ($P < 0.05$).

Discussion

It has been proposed that changes in dietary habits may be

one of the factors responsible for increase in asthma. Numerous epidemiological studies have been conducted to investigate the association between dietary habits and the risk of asthma in children. These studies have identified the intake of fruits, vegetables and fish as protective factors against childhood asthma while fast food consumption as a risk factor for the disease. Studies on dietary habits and severity of asthma are few and show reconstistent results [6]. The present study was conducted to assess etiological factors in pediatric asthmatic patients.

In present study, out of 68 patients, males were 32 and females were 34. Common clinical features such as cough in 65, wheezing in 58, shortness of breath in 46 and chest tightness in 51 were present. Asher [7]. Conducted a study and found that after adjusting for confounding factors, maternal smoking during pregnancy, preterm birth and obesity were significantly associated with persistent asthma, with adjusted respectively. No significant association was observed between frequency of consumption of specific foods, food groups, or dietary pattern (pro-or contra-Mediterranean diet) and the severity of asthma.

We found that etiological factors in asthma patients were dust in 43, smoke in 26, obesity in 28, gestational age < 37 weeks in 11 and positive family history in 17. Different type of wheezing in children was transient in 45%, nonatopic in 28%, persistent asthma in 23% and severe intermittent wheezing in 9%.

Asthma in children can be described as repeated attacks of airway obstruction and intermittent symptoms of increased airway responsiveness to triggering factors, such as exercise, allergen exposure and viral infections. However, the definition becomes more difficult to apply confidently in infants and preschool age children who present with recurrent episodes of coughing and/or wheezing. Although these symptoms are common in the preschool years, they are frequently transient, and children with infantile wheeze will be healthy at school age. Physicians should manage and exclude diagnoses other than asthma, and be aware of the variable natural history patterns of recurrent wheezing in early childhood [8].

In preschool children one third of all children have these symptoms before the age of six, but only 40% of these wheezing preschoolers will continue to have asthma. In older school aged children the majority of the children have asthma. Quality of life is affected by asthma control. Sleep disruption and exercised induced airflow limitation have a negative impact on participation in sports and social activities, and may influence family life. The goal of asthma therapy is to achieve asthma control, but only a limited number of patients are able to reach total control [9].

Conclusion

Asthma is increasing in pediatric population. Most common wheezing type in children was transient, nonatopic, persistent asthma and severe intermittent wheezing.

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