

A Study to Determine the Prevalence of Bronchial Asthma in School Going Children

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A B S T R A C T

Introduction: Asthma is one of the most important chronic diseases of childhood, causing substantial morbidity. Its impact on the family and childhood is considerable due to the chronic nature of the disease. Hence; the present study was undertaken for determining the prevalence of bronchial asthma in school going children.

Material and methods: A total of 180 school going children between the age group of 12 to 15 years were included in the present study. Complete demographic and clinical history of all the children were recorded. Children who were having any underlying chronic lung disease such as tuberculosis or any restrictive lung diseases or children with history of any congenital heart diseases were excluded from the study. A pre-framed questionnaire was given to all the subjects and answers were recorded and analysed. All the results were recorded and were analysed by SPSS software 21.

Results: The result showed the overall prevalence of Asthma among school going children was found to be 16.11 percent. Among these 29 children, 20 were females while the remaining were males. Mean age of the asthmatic patients in the present study was found to be 14.5 years. In the present study, among these 29 asthmatic patients, 24.14 percent of the patients had rural residence while the remaining had urban residence.

Conclusion: Significant proportion of school going children is affected by asthma with urban children being at significantly higher of developing asthma.

Keywords: Asthma, School Going Children

INTRODUCTION

Asthma is one of the most common occurring chronic diseases of childhood, causing substantial morbidity. The rates of hospital admission and primary care contacts for asthma in childhood is increased which has led to concern regarding prevalence or severity of increasing wheezing illness in children. There is scarcity of studies in India regarding asthma in children. The recent studies showed wide variation (4–19%) in the prevalence of asthma in school-going children from different geographic areas in India. Identification of the problem of Asthma in children is very necessary, since the spectrum of presentation of disease is variable and multiple for proper management. Childhood bronchial asthma has multifactor causation.¹⁻³

Geographical locations, environmental, racial as well as factors related to behavior and lifestyle are found to be associated with the disease. Its impact on the family and childhood is considerable due to the chronic nature of the disease. People suffering from asthma are 300 million. The WHO has estimated that 15 million disability-adjusted life years are lost annually due to asthma, representing 1% of the total global disease burden.⁴⁻⁶ Hence; the present study

was undertaken for determining the prevalence of bronchial asthma in school going children.

MATERIAL METHODS

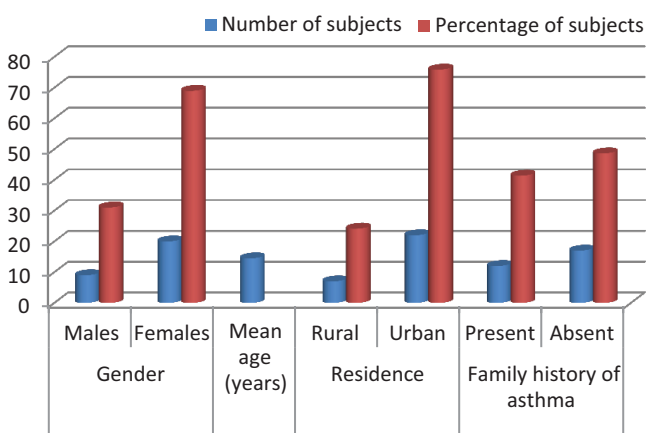
The present study was conducted for assessing the prevalence of bronchial asthma in school going children. The ethical approval was obtained from the ethical committee of the institute and written consent was obtained from all the parents/guardians of all the subjects after explaining in detail the entire research protocol. A total of 180 school going children between the age group of 12 to 15 years were included in the present study. Complete demographic and clinical history of all the subjects were recorded. Children who were having any underlying chronic lung disease such as tuberculosis or any restrictive lung diseases or children with history of any congenital heart diseases were excluded from the study. Method described by the International Study of Asthma and Allergy in Childhood (ISAAC) for describing the prevalence of asthma and other atopic disorders was used for identifying Asthma. A pre-framed questionnaire was given to all the subjects and answers were recorded and analysed. All the results were recorded and were analysed by

Parameter	Number of subjects	Percentage of subjects
Total subjects	180	100
Asthma	29	16.11

Table-1: Prevalence of asthma

Parameter		Number of subjects	Percentage of subjects	p- value
Gender	Males	9	31.03	0.00
	Females	20	68.97	
Mean age (years)		14.5		-
Residence	Rural	7	24.14	0.01
	Urban	22	75.86	
Family history of asthma	Present	12	41.38	0.10
	Absent	17	48.62	

Table-2: Details of subjects with asthma



Graph-1: Details of subjects with asthma

SPSS software 21. Chi-square test was used for evaluation of level of significance.

RESULTS

In this study, a total of 180 school going children were included. Asthma was found to be present in 29 children. The overall prevalence of Asthma among school going children was found to be 16.11 percent (table-1). Among these 29 children, 20 were females while the remaining were males. Mean age of the asthmatic patients in the present study was found to be 14.5 years. In the present study, among these 29 asthmatic patients, 24.14 percent of the patients had rural residence while the remaining had urban residence. Positive history of asthma was found to be present in 41.38 percent of the patients (table-2, graph-1). Significant results were obtained while analysing gender and residence as risk factors of asthma among school going children.

DISCUSSION

Large no. studies have examined various treatments in older children with classic allergic asthma, yet there were relatively few studies that have considered the many young children who have recurrent wheeze. Many common treatments now have good results, but gaps still exist, such as treatments for the most difficult and severe childhood asthma on which studies are very few. The therapeutic advances occur in the form of both new drugs and new licences for older drugs.

In urban areas, this problem is increasing due to increase in environmental smoke and air pollution resulting from urbanization and industrialization. Bronchial asthma is often underdiagnosed and undertreated during the childhood, which later may cause severe psychosocial disturbances in the family.⁶⁻⁸ The diagnosis of asthma include the clinical presentation of bronchospasm, variable airway narrowing, bronchial hyperresponsiveness, airway inflammation, and response to inhaled bronchodilators or corticosteroids. For the diagnosis of asthma spirometry can be used, but its results are often normal, and also it is difficult to carry out spirometry in small children. Even the reversibility to bronchodilators is not constantly present.^{9,10,11} Hence; the present study was undertaken for determining the prevalence of bronchial asthma in school going children.

In this study, a total of 180 school going children were analysed. Asthma was found to be present in 29 children. The overall prevalence of Asthma among school going children was found to be 16.11 percent. Among these 29 children, 20 were females while the remaining were males. Mean age of the asthmatic patients in the present study was found to be 14.5 years. Bhalla K et al assessed the prevalence of bronchial asthma and various risk factors that are associated in the age group and determine the extent of under diagnosis. Prevalence of bronchial asthma in adolescents was 13.1% (n = 121) of which 10.3% had episodes in the past 1 year. Prevalence was higher among males (8.77%) compared to females (4.33%). About 77.7% of total asthmatics were newly diagnosed cases. Prevalence was significantly higher among those having pets at home (P < 0.001), belonging to higher socioeconomic status (P = 0.021), using smoke-producing fuel at home (firewood/cow dung/kerosene; P = 0.032), and with history of smoking among family members (P = 0.035). Among current asthmatics, 72.3% reported cold/rhinitis (54.6% in March–May duration), 63.6% nocturnal dry cough, 50.5% sleep disturbances, and 38.9% speech disturbances in the past 1 year. The study showed higher prevalence of bronchial asthma in school-going population (11–16 years) compared to other parts of Northern India possibly attributable to rapid industrialization and post harvesting season when the study was carried out.¹²

In the present study, among these 29 asthmatic patients, 24.14 percent of the patients had rural residence while the

remaining had urban residence. Positive history of asthma was found to be present in 41.38 percent of the patients. Significant results were obtained while analysing gender and residence as risk factors of asthma among school going children. Pal R et al assessed time trends and the overall prevalence rate of bronchial asthma among Indian children. Literature search for data sources was done through an extensive search in indexed literatures and website-based population survey reports. Fifteen epidemiological studies were identified on the development of asthma in Indian children from 300 potentially relevant articles. The mean prevalence was $7.24 \pm SD 5.42$. The median prevalence was 4.75% [with IQR = 2.65 – 12.35%]. Overall weighted mean prevalence was found to be 2.74. Childhood asthma among children 13 – 14 years of age was lower than the younger children (6 – 7 years of age). Urban and male predominance with wide inter-regional variation in prevalence was observed. Their findings indicated that the burden of bronchial asthma in Indian children is higher than was previously understood.¹³

CONCLUSION

The present study concluded that significant proportion of school going children are affected by asthma with urban children being at significantly higher of developing asthma. However; further studies are recommended.

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