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Prevalence of Bronchial Asthma among School Children (Under 12 Years of Age) In Nedumangadu Municipality Area

(Original Research Article)

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ABSTRACT

Background. *Bronchial asthma is the chronic airway obstruction and increased airway hyperresponsiveness. The prevalence of bronchial asthma increased steadily over the latter part of the last century, first in the developed and then in the developing world.*

Objective *To find out the prevalence of bronchial asthma among school children under 12 years and to find out the association between bronchial asthma and its risk factors.*

Methodology *A Cross sectional study was conducted in Nedumangad area during the period May-August 2014. 200 children under age of 12 were interviewed using questionnaire and examined. Data was analysed using SPSS Version 16. Results: Out of 200 study population, 18.5%, ie, 37 persons were found to be asthmatic. Of these 81% are males,93% had positive family history,73% are passive smokers,86.6% had history of other allergy,80% are exposed to allergens. There is association between gender and bronchial asthma. (chi square=11.61)Odds ratio = 3.65. p value=0.056. There is association between family history and bronchial asthma. Odds ratio = 2.52. p value = 0.022.*

Conclusion. *Of the total study population 18.5% are asthmatic. There is significant statistical association between gender, family history and bronchial asthma.*

Keywords: *PREVALENCE, BRONCHIAL ASTHMA, SCHOOL, CHILDREN UNDER 12 YEARS.*

Introduction

Bronchial asthma is the chronic airway obstruction and increased airway hyperresponsiveness[1]. Typical symptoms include wheeze, cough, chest tightness and dyspnoea which are accompanied by the presence of airflow obstruction that is variable over short periods of time ,or is reversible with treatment[2].The prevalence of bronchial asthma increased steadily over the latter part of the last century, first in the developed and then in the developing world[3]. The socioeconomic impact is enormous, particularly when poor control leads to days lost from school or work, unscheduled health-care visits and hospital admissions.[4]With increasing severity and chronicity of the disease, remodeling of the airway occurs, leading to fibrosis of the airway wall, fixed narrowing of the airway and a reduced

response to bronchodilator medication[5]. The relationship between atopy and asthma is well established, and in any individuals there is clear relationship between sensitization (demonstration of skin prick reactivity or elevated serum specific IgE) and allergen exposure. Inhalation of an allergen into the airway is followed by a two phase bronchoconstrictor response with both an early and a late phase response. Common examples include house dust mites, pets such as cats and dogs , pests such as cockroaches and fungi.

Objective

- To find out prevalence of bronchial asthma in school children under 12 years.
- To find the association between bronchial asthma and its risk factors

Review of literature

Bronchial Asthma is a disease that causes the airways of the lungs to swell and narrow, lead to wheezing, shortness of breath, chest tightness and coughing. Many previous studies have been done on prevalence of bronchial asthma in children[6].Bronchial Asthma is an important health issue especially in developing countries like India. In the year 2009, India accounted for 277 diability adjusted life years lost per 1,00,000 population and 57,000 during childhood period[7]. Results varied to a large extend with regard to overall prevalence in a majority of studies. Wide differences in samples, primary outcome variable, lack of consistency in age category, rural urban variation, criteria for positive diagnosis and study instruments confounded the primary outcome variables in previous studies[8].Although numerous epidemiological studies have been carried out all over the world, the magnitude of problem of ashma has not been defined with certainity. lndeed bronchial asthma studies lack consistency possibly because of ill defined diagnostic criteria, non standardized study protocols and different methodologies. These have made international and even national comparisons difficult with incidentally an increase in morbidity, mortality as well as healthcare burden from asthma has been recognized lately[9].In recent years a majority of researchers are either using a questionare suggested by 50 nations, International study of bronchial asthma and allergy in children (ISSAC) or the definition of bronchial asthma as modified by United kingdom medical research council(MRC). The ISSAC study compared the prevalence rate of bronchial asthma and atopic diseases in 155 centres in 56 countries worldwide and was conducted over a period of one year. They found the prevalence of bronchial asthma tend to be higher in English speaking countries. Also their study showed that the distribution of childhood bronchial asthma varied between global population from <2%- >33%. Prevalence reached 17-30% in United Kingdom, Newzealand, whereas area of low prevalence(l-7%) include eastern Europe, China etc Urban and male predominance with wide inter regional variation was also observed in various Indian studies. environmental factors including increased exposure to pollution, allergies, tobacco smoke and sedentary lifestyle were identified as risk factors for asthma During childhood period bronchial asthma is often undiagnosed and untreated which may lead to severe psycho social disturbances in the family. National family health survey -3 showed that the prevalence of bronchial asthma among school children of age group 15-17 years in India as little as 9%, whereas studies showed varied result ranging from 1.9%-16.6% on different age groups. In urban areas the problem is increased due to increase in environmental smoke and air pollution resulting from urbanisation and industrialization.

Material and Methods

Study Design cross sectional study

Study Setting Study was conducted among 200 students of age bolow 12 years of Govt.U P School Nedumangad and Govt U P School Vencode.

Study Period Two months (September - October 2014)

Study Subjects The study subjects included children under 12 years.

Sample Size 200 children

Data Collection Study tools: questionnaire

Data Analysis Method of data analysis was done using SPSS version 16. Association between Bronchial Asthma and its risk factors was found by using appropriate test of significance (Chi Square) with 95 % confidence level and $p < 0.05$ level.

Results and Discussion

Table 1. Prevalence of Bronchial Asthma in the study population

	Number of individuals
Bronchial asthma	37
No bronchial asthma	163

Inference: Out of 200 study population, 18.5%, ie, 37 persons were found to be asthmatic

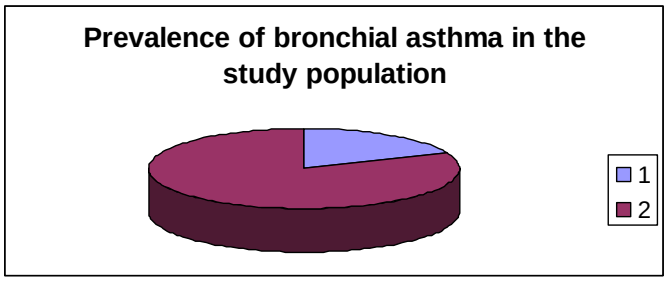

Table 2. Association between risk factors and Bronchial Asthma in the study population

Associaton of gender with bronchial asthma		
	Bronchial asthma	w/o bronchial asthma
Male	30	88
Female	7	75
Association of passive smoking with bronchial Asthma		
	Bronchial asthma	w/o bronchial asthma
Passive smoking	27	91
No passive smoking	10	72
Association of allergen exposure with bronchial asthma		
	Bronchial asthma	w/o bronchial asthma
Exposure to allergens	24	94
No exposure to allergens	13	69
Association of atopy with bronchial asthma		
	Bronchial asthma	w/o bronchial asthma
Atopy	26	92
No Atopy	11	71
Association of family history with bronchial asthma		
	Bronchial asthma	w/o bronchial asthma
Family history +	28	90
Family history -	9	73

Inference: there is association between family history and bronchial asthma. Odds ratio = 2.52 p value = 0.022. There is association between gender and bronchial asthma. (chi square=11.61) Odds ratio = 3.65 p value=0.001.

Conclusion

Of the total study population 18.5% are asthmatic. Of the 200 school children analysed 37 are asthmatic. Of these 81% are males,93% had positive family history,73% are passive smokers,86.6% had history of other allergy,80% are exposed to allergens. there is association between family history and gender with and bronchial asthma

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