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Original Research Article.

Assessment of Incidence and Profile of Asthma Patients among Known Population: An Institutional Based Study

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ABSTRACT

Background: Asthma is characterized by the action of airway leading to reversible airflow obstruction in association with airway hyperresponsiveness and airway inflammation. It is one of the most common chronic conditions affecting both children and adults, yet much remains to be learned of its etiology. Hence; the present study was undertaken for assessing the incidence and profile of Asthma patients among known population.

Materials & Methods: A total of 769 patients were screened during the study period. Asthma was suspected if the patient had a positive medical history of recurrent dry coughing, especially at night, rhonchus, wheezing, chest tightness, or shortness of breath. Lung function testing confirmed the diagnosis if an airway obstruction was found reversible based on an FEV_1 (Forced expiratory Volume in 1 second) increase of >12 % and >200 ml (in adults) after administering 200–400 µg salbutamol. Complete demographic details of all the patients found positive for Asthma was obtained. A Performa was made and clinical details of all the patients were recorded separately. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Therefore; the overall incidence of asthma was found to be 17.94 percent. 38.41 percent of the patients were males while the remaining were females. Out of 138 patients, positive family history of asthma was found to be present in 69.57 percent of the patients. 64.50 percent of the patients were of rural residence while the remaining 35.50 percent of the patients were of urban residence.

Conclusion: Asthma is a world-wide common disease, thereby affecting a significant proportion of patient population. If not treated properly, it carried significant morbidity.

Key words: Asthma, Incidence, Profile.

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INTRODUCTION

Asthma is characterized by the action of airway leading to reversible airflow obstruction in association with airway hyperresponsiveness (AHR) and airway inflammation. The disease is affecting more than 300 million persons all over the world, with approximately 250,000 annual deaths. In the last couple of decades, as the inhaled corticosteroid has become the major treatment agent for asthma, the mortality of asthma has decreased. Meanwhile, allergic diseases, such as asthma, have markedly increased in the past half centuries associated with urbanization. Children have the greatest percentage of asthma compared with other generation groups.[1-3] Then, it is expected that the number of the patients will increase by more than 100 million by 2025. Asthma is one of the most common chronic conditions affecting both children and adults, yet much remains to be learned of its etiology. Although genetic predisposition is clearly evident, gene-by-environment interaction probably explains much of the international variation in prevalence rates for allergy and asthma. Environmental factors such as infections and exposure to endotoxins may be protective or may act as risk factors, depending in part on the timing of exposure in infancy and childhood.[4-6] Hence; the present study was undertaken for assessing the incidence and profile of Asthma patients among known population

MATERIALS & METHODS

The present study was conducted in the Department of TB & Chest, Saraswati Medical College, Unnao, U.P. (India) and it included assessment of incidence and profile of Asthma patients among known population. Written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 769 patients were screened during the study period. Asthma was suspected if the patient had a positive medical history

of recurrent dry coughing, especially at night, rhonchus, wheezing, chest tightness, or shortness of breath. Lung function testing confirmed the diagnosis if an airway obstruction was found reversible based on an FEV_1 (Forced expiratory Volume in 1 second) increase of >12 % and >200 ml (in adults) after administering 200–400 µg salbutamol.[7] Complete demographic details of all the patients found positive for Asthma was obtained. A Performa was made and clinical details of all the patients were recorded separately.

All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance.

Table 1: Incidence of Asthma

Parameter	Incidence of Asthma
Number of patients with Asthma	138
Percentage of patients	17.94

Table 2: Demographic Profile

Parameter		n	%
Age group (Years)	**Less than 30**	39	28.26
	30 to 50	44	31.88
	More than 50	55	39.86
Gender	**Males**	83	38.41
	Females	55	61.59

Table 3: Family history and residence profile

Parameter		n	%	p- value
Family history of Asthma	**Present**	96	69.57	0.00
	Absent	42	30.43	(Significant)
Residence	**Rural**	89	64.50	0.88
	Urban	49	35.50	

RESULTS

In the present study, a total of 769 patients were analysed. Among these 769 patients, asthma was found to be present in 138 patients. Therefore; the overall incidence of asthma was found to be 17.94 percent. Among these asthma patients, mean age was found to be 52.8 years. 39.86 percent of the patients belonged to the age group of more than 50 years. 31.88 percent of the patients belonged to the age group of 30 to 50 years.

In the present study, 38.41 percent of the patients were males while the remaining were females. Out of 138 patients, positive family history of asthma was found to be present in 69.57 percent of the patients. 64.50 percent of the patients were of rural residence while the remaining 35.50 percent of the patients were of urban residence.

DISCUSSION

Asthma comprises a range of heterogeneous phenotypes that differ in presentation, etiology and pathophysiology. The risk factors for each recognized phenotype of asthma include genetic, environmental and host factors. Although a family history of asthma is common, it is neither sufficient nor necessary for the development of asthma. The substantial increases in the incidence of asthma over the past few decades and the geographic variation in both base prevalence rates and the magnitude of the increases support the thesis that environmental changes play a large role in the current asthma epidemic. Furthermore, environmental triggers may affect asthma differently at different times of a person's life, and the relevant risk factors may change over time.[5-8] Hence; the present study was undertaken for assessing the incidence and profile of Asthma patients among known population

In the present study, a total of 769 patients were analysed. Among these 769 patients, asthma was found to be present in 138 patients. Therefore; the overall incidence of asthma was found to be 17.94 percent. Among these asthma patients, mean age was found to be 52.8 years. 39.86 percent of the patients belonged to the age group of more than 50 years. 31.88 percent of the patients belonged to the age group of 30 to 50 years. Giarola BF et al compared admission characteristics, severity indices, treatment, discharge plans and readmissions in Indigenous and non-Indigenous children. Median age was 3.6 years (interquartile range 2.2, 6.8). A significantly higher proportion of Indigenous children (95.2%) were exposed to tobacco smoke compared with non-Indigenous children (45.7%). The difference in proportions was -0.41 (95% confidence interval (CI) -0.60, -0.22). Other risk factors, asthma severity (moderate 83.9% vs. 83.3%; severe 16% vs. 16.1%), length of stay (1.9 vs. 1.3 days) and readmission rate (27.4% vs. 27.5%) were similar between Indigenous and non-Indigenous children. Indigenous children were significantly more likely to be followed up in a community clinic (difference in proportions = 0.10, 95% CI 0.1, 0.17) and less likely by a paediatrician. Only 62.5% of all children had an asthma action plan on discharge. Unlike other common respiratory diseases requiring hospitalisation, biological factors are unlikely major contributors to the known gap in asthma outcomes between Indigenous and non-Indigenous children.[9] The rates of death and

complications are high among patients with refractory asthma and account for a disproportionate amount of the health resource burden attributed to asthma. The airway abnormality in severe asthma is different from that in more mild asthma in having a more heterogeneous pattern of inflammatory response, with greater involvement of neutrophilic inflammation and the distal lung and increased airway remodeling.[7- 9]

In the present study, 38.41 percent of the patients were males while the remaining were females. Out of 138 patients, positive family history of asthma was found to be present in 69.57 percent of the patients. 64.50 percent of the patients were of rural residence while the remaining 35.50 percent of the patients were of urban residence. De Marco R et al the incidence and remission of asthma from birth to the age of 44 years by using data from 18,873 subjects involved in a large, nationally representative, cross-sectional study carried out in Italy from 1998 through 2000. The onset of asthma was defined as the age at the first attack, and remission was considered present when a subject was neither under treatment nor had experienced an asthma attack in the last 24 months. The average annual incidence rate for the 1953 to 2000 period was 2.56/1000 persons per year. Incidence peaked in boys less than 10 years of age (4.38/1000 persons per year) and in women 30 years of age or older (3.1/1000 persons per year) and showed a generational increase (incident rate ratio = 2.63 and 95% CI = 2.20-3.12 for 1974-1979 vs 1953-1958 birth cohort). The overall remission rate was 45.8% (41.6% in women and 49.5% in men, P <.001). Asthmatic patients in remission had an earlier age at onset (7.8 vs 15.9 years, P <.001) and a shorter duration of the disease (5.6 vs 16.1 years, P <.001) than patients with current asthma. The probability of remission was strongly (P <.001) and inversely related to the age at onset (62.8% and 15.0% in the <10- and > or =20-years age-at-onset groups, respectively). With respect to its natural history, asthma presents 2 different forms: early-onset asthma, which occurs early in childhood, affects mainly boys, and has a good prognosis, and late-onset asthma, which generally occurs during or after puberty, mainly affects women, and has a poor prognosis.[10]

CONCLUSION

From the above results, it was concluded that Asthma is a world-wide common disease, thereby affecting a significant proportion of patient population. If not treated properly, it carried significant morbidity.

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