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Original Research

Risk factors of allergic rhinitis in children

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ABSTRACT:

Background: Allergic Rhinitis is defined as inflammation of the membranes lining the nose, and is characterized by nasal congestion. The present study was conducted to assess risk factors of allergic rhinitis in children. **Materials & Methods:** The present study was conducted on 86 cases of allergic rhinitis in children of both genders. The score for AR (SFAR) scale was recorded. In all patients, symptoms and risk factors were recorded. **Results:** Out of 86 patients, males were 50 and females were 36. Clinical features were blocked nose was seen in 48, running nose in 80, sneezing in 54, itching eyes in 48, asthma in 78 and eczema in 30 patients. The difference was significant (P< 0.05). Risk factors form allergic rhinitis in children was overcrowding in 56, positive family history in 47 and low socio- economic status in 38. The difference was non- significant (P> 0.05). **Conclusion:** Authors found that allergic rhinitis in a disease of adults, however, in children it is not uncommon. Common risk factors were overcrowding, family history and low socio- economic status.

Key words: Allergic rhinitis, overcrowding, socio- economic status.

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INTRODUCTION

Allergic Rhinitis (AR) is defined as inflammation of the membranes lining the nose, and is characterized by nasal congestion, rhinorrhea, sneezing, itching of the nose and/or post-nasal discharge. It is often viewed, as a trivial disease but can significantly affect the quality of life (QOL) by causing fatigue, headache, sleep disturbances and cognitive impairment.[1] Allergic Rhinitis is also closely related to asthma and, 10-40% of people with rhinitis have concomitant asthma. According to WHO (2007), the global burden of allergic rhinitis was estimated to be 400 million and the prevalence among adults ranges between 10% and 32% in Asia Pacific region. Despite the high burden, there is paucity of community based studies in India, determining the burden and factors associated with allergic rhinitis.[2]

It is characterized by blocked or runny nose in the past 12 months in periods without accompanying cold or flu. Sensitization is simple to determine, while symptom history is nonspecific, as it is difficult to separate a history of viral symptoms from nonviral symptoms. Specificity improves if the family is interviewed by a doctor over simple questionnaire data, but remains imprecise.[3] Objective assessments may further improve our understanding of the pathologies of allergic and nonallergic rhinitis. Therefore, we have measured nasal airway patency and nasal eosinophilia in young children with doctor defined allergic and non-allergic rhinitis to assess the pathology behind such diagnoses.[4] The present study was conducted to assess risk factors of allergic rhinitis in children.

MATERIALS & METHODS

The present study was conducted in the department of Pediatrics. It comprised of 86 cases of allergic rhinitis in children of both genders. All patients were informed regarding the study and written consent was obtained. Ethical approval was obtained from institutional ethical committee prior to the study.

General information such as name, age, gender etc. was recorded. The score for AR (SFAR) scale was recorded. In all patients, symptoms and risk factors were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 86		
Gender	**Males**	**Females**
Number	50	36

Table I shows that out of 86 patients, males were 50 and females were 36.

Table II Assessment of symptoms

Symptoms	Number	P value
Blocked nose	48	0.01
Running nose	80	
Sneezing	54	
Itching eyes	48	
Asthma	78	
Eczema	30	

Table II shows that blocked nose was seen in 48, running nose in 80, sneezing in 54, itching eyes in 48, asthma in 78 and eczema in 30 patients. The difference was significant (P< 0.05).

Graph I Assessment of symptoms

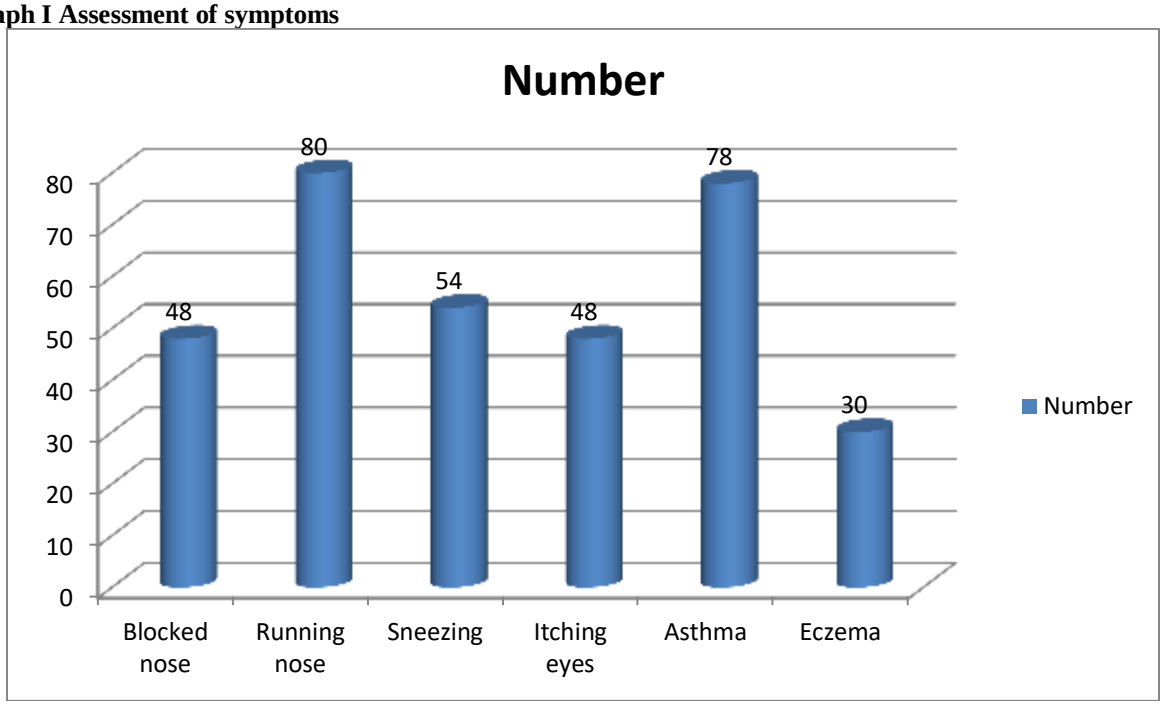

Table III Risk factors of allergic rhinitis in children

Risk factors	Number	P value
Overcrowding	56	0.07
Family history	47	
Low socio- economic status	38	

Table III, graph II shows that risk factors form allergic rhinitis in children was overcrowding in 56, positive family history in 47 and low socio- economic status in 38. The difference was non- significant (P> 0.05).

DISCUSSION

Allergic rhinitis is now a recognized global health problem and impairs Quality of Life (QOL) in context of work productivity.[5] Though rhinitis is often considered as a trivial condition, the overall impairment on work productivity may be similar to the health conditions that have been traditionally considered as being more severe from a medical perspective. Allergic rhinitis is typically triggered by environmental allergens such as pollen, pet hair, dust, or mold.[6] Inherited genetics and environmental exposures contribute to the development of allergies. Growing up on a farm and having multiple siblings decreases the risk. The underlying mechanism involves IgE antibodies attaching to the allergen and causing the release of inflammatory chemicals such as histamine from mast cells.[7] Diagnosis is usually based on a medical history in combination with a skin prick test or blood tests for allergen-specific IgE antibodies. These tests, however, are sometimes falsely positive. The symptoms of allergies resemble those of the common cold; however, they often last for more than two weeks and typically do not include a fever.[8] The present study was conducted to assess risk factors of allergic rhinitis in children.

In present study, out of 86 patients, males were 50 and females were 36. Clinical symptoms were blocked nose was seen in 48, running nose in 80, sneezing in 54, itching eyes in 48, asthma in 78 and eczema in 30 patients.

Chawes et al[9] found that a pre-tested questionnaire was used to collect information regarding symptoms, risk factors and treatment seeking behaviour. Allergic Rhinitis was diagnosed as per ARIA guidelines. Spirometry was done to diagnose asthma among them. Multivariate logistic regression analysis was done to find the association of risk factors with disease. The prevalence of Allergic Rhinitis was found to be 11% (132 subjects) and 33.3% (44 patients) among them also had asthma. Overcrowding (aOR = 6.4), absence of cross-ventilation (aOR = 2.5), occupational exposure to dust/ smoke (aOR = 2.1), tobacco smoking (aOR = 2.1), family history of allergic diseases (aOR = 2.7) and clinical allergy (aOR = 10.2) were found to be independent risk factors associated with Rhinitis. More patients of Rhinitis with asthma (75%) took treatment, relative to those without asthma (40%) who, mostly relied on home remedies (42%) or, did not seek any treatment (18%).

In present study, risk factors form allergic rhinitis in children was overcrowding in 56, positive family history in 47 and low socio- economic status in 38. Newacheck et al[10] found that 1511 students who completed the SFAR questionnaire, 291 (52.6%, girls; 47.4%, boys) had AR. Domestic dust was the most common cause of the disease. The most common symptoms of AR were rhinorrhea (76.6%), epiphora (76.3%), nasal congestion (64.3%), and itching (54.3%). According to the ARYA scale, (Allergic Rhinitis and its Impact on Asthma), 41.9% of students had moderate-to-severe rhinitis and 58.1% had mild rhinitis. A total of 43.1% of patients with moderate-to-severe rhinitis had a persistent condition and 56.9% had an intermediate condition. Results of the SF-36 questionnaire among students with AR showed a significant difference in physical functioning and bodily pain in comparison with healthy students.

CONCLUSION

Authors found that allergic rhinitis in a disease of adults, however, in children it is not uncommon. Common risk factors were overcrowding, family history and low socio- economic status.

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