ORIGINAL ARTICLE

Evaluating the Seasonal Pattern of Allergic Rhinitis in Adults

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Abstract

Objectives: This research explores the link between seasonal pattern and allergic rhinitis in adults alongwith dominant symptoms, major risk factors and common diagnostic techniques used by patients.

Methodology: A cross sectional study was performed and data was collected from 203 adult patients (18 years & older) who had symptoms of allergic rhinitis including running nose, frequent sneezing and nasal congestion. History of these symptoms were taken for understanding development of allergic rhinitis in different seasons and data regarding seasonal effect of these symptoms , aggravating and relieving factors was collected.

Results: Out of 203 patients, 130 experienced all three symptoms (sneezing, nasal congestion and runny nose making these most prevalent symptoms with percentage of 64%. However, 49.3% patients reported these symptoms in spring season. While 66.5 % patients had family history as a major risk factor for allergic rhinitis, but only 47.3% of these patients used to take anti histamines as treatment making it the most common treatment method used by patients .Out of 40 patients who carried out laboratory investigation, 15 had IgE serum levels elevated and this was found to be most common investigation method.

Conclusion: The cases of allergic rhinitis increase in spring season. Family history of allergic rhinitis is the major risk factor

Keywords: Allergic rhinitis, seasonal pattern, nasal obstruction, sneezing, running nose, seasonal comparison

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Introduction

Allergic Rhinitis, is immunological hypersensitive response to allergens such as pollen particles, dust and insects. Hallmarks include sneezing, nasal obstruction and running nose in acute phase, however, the chronic phase may include orbital and otological complications. Allergic Rhinitis is classified into two types seasonal and perennial. Both patterns differ in etiology and pathogenesis. The symptoms of perennial allergic rhinitis are not as severe as seasonal type; these include frequent colds, stuffy nose, loss of sense of smell and post nasal drip. Its pathogenesis also differs as it is due to blockage of Eustachian tube or fluid in middle ear which progresses to allergic rhinitis. In Seasonal type, symptoms are severe they include paroxysmal sneezing, watery nasal discharge, itching of nose , palate , eyes and nasal obstruction. These symptoms occur due to IgE meditated immunological response causing release of allergic mediators from mast cell.

A study by Singhal(2021) suggests that the symptom pattern in allergic rhinitis maybe shifting toward more persistent course in some populations with nasal congestion, sneezing and itchy eyes being the most common symptoms[1].Major risk factors for allergic rhinitis are genetic/family history, other factors being allergens such as pollen, dust mites, dander and molds. Diagnostic methods include total and differential WBC count, nasal smear, skin test, radio allegrosorbent test and nasal provocation test.

Management includes a voidance of allergen exposure, treatment with drugs and Immunotherapy. Drugs include anti histamine, sympathomimetic drugs, corticosteroids, sodium cromoglycate, anti-cholinergics ,leukotriene receptor anatagonists and anti IgE therapy. International studies also showed a positive correlation between bacterial diversity in the middle meatus during season change and the nasal lavage eosinophil count of SAR subjects.($p < 0.05$) for all comparisons[2]. LP Nilsen, in his research observed that acoustic rhinometry to be a sensitive and objective method of assessment of nasal obstruction in allergic rhinitis[3].

Objectives:

This research explores the link between seasonal pattern and allergic rhinitis in the adults alongwith dominant symptoms, major risk factors and common diagnostic techniques used by patients.

Methodology

This study uses cross sectional design to evaluate the seasonal pattern of Allergic Rhinitis in adults. The data for this design was collected from patients reporting to OPD of participating medical centers being diagnosed with allergic rhinitis

A Total of 203 patients were recorded for data collection for this design. Inclusion Criteria was set as :

1. Patients Diagnosed with Allergic Rhinitis
2. Adults patients (18 years & older)

All relevant information from eligible patients was collected through Questionnaire Forms and Interviews regarding demo-graphic details, frequency of symptoms in different seasons, past medical history and treatment measures taken.

Results

Among the 203 patients included in the study, 130(64%) had all three symptoms (sneezing, runny nose and nasal congestion). These are most dominant symptoms present in sample population.

Family history and predispositional allergy to dust mites dander and insects were the major risk factors. Out of 203 patients, 135 (66.5%) had the positive family history of allergic rhinitis followed by second dominant risk factor; allergy to dust mites contributing 37.4% (76) cases

Out of 40 patients, 15(37.5%) had carried out IgE serum levels elevated that was the most common diagnostic approach along with X ray of sinuses in 27.5% and skin prick test in12.5%.

Out of 203 patients, 96 (47.3 %) had taken anti histamines, 54 (26.6 %) used nasal decongestants, 10(4.9%) used steroids.

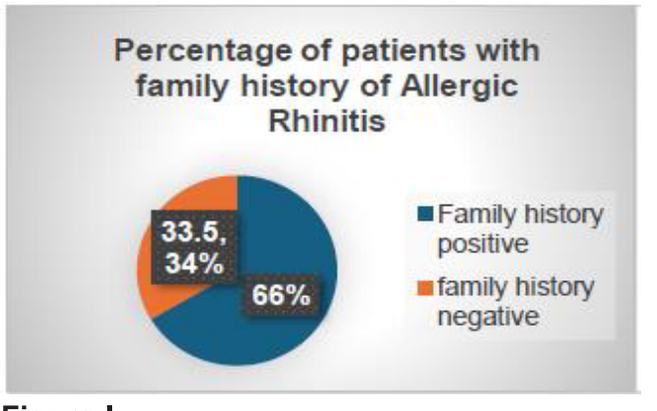

Figure-I

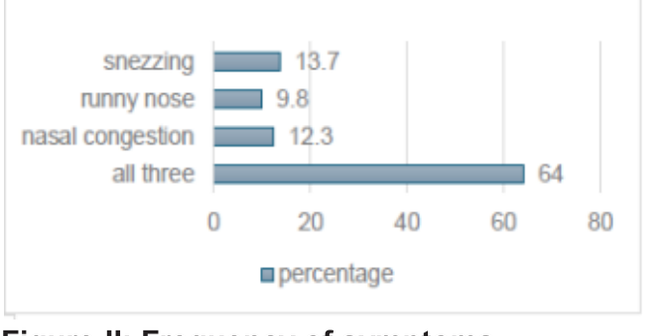

Figure-II; Frequency of symptoms

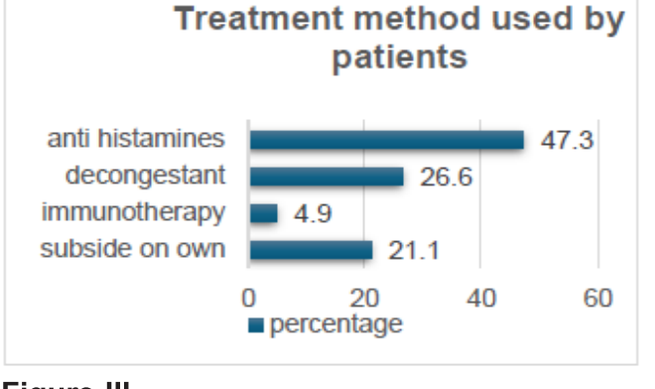

Figure-III

Test statistic	value	df	P value
Pearson chi square	68.13	3	$1.2x10^{-14}$

Table-I statistical significance.

P value is less than 0.001 which shows test is highly significant, distribution is not equal and Spring season shows higher number of cases which indicates number of cases increase in spring season.

Discussion

This study aimed at identifying the seasonal pattern of allergic rhinitis including comparison between seasons for cases of allergic rhinitis. We collected data from May to August 2025 from patients of allergic rhinitis. All three symptoms (nasal conges-tion, runny nose and sneezing) were dominant in majority of patients 64%.The qualitative effect of seasonal change showed that for 28.1% of patients symptoms subside in summer. Prominent risk factors brought under study were family history of allergic rhinitis and known allergy to dust mites and insects. 66.5% had family history and 37.4% had allergy to dust mites and insects this coincides with study by Kammili Joyothimayi[4] which also suggested that dust mites followed by pollens yield the highest number of positive responses among the inhalent allergens. Most authentic method of investigation was IgE test to find out underlying pathology. Most common treatment method was found out to be anti-histamine which is also persistent with the International study conducted byAzelastine-fluticasone[5].

This research evaluates the maximum cases of allergic rhinitis occur in spring season which also coincides with the study 'Allergy, Asthma and &Immunology[6] which concludes that pollen concentration being higher in spring is a trigger to symptoms of allergic rhinitis.

Conclusion:

The cases of allergic rhinitis increase in spring season. Family history of allergic rhinitis is the major risk factor.

Limitations

Recall Bias was minimized by confirming the symptoms with the medical records

Disclaimer: None
Conflict of Interest: None
Source of Funding: None

Reference

1. Singhal D. Allergic rhinitis among adults: A clinic study. Int J Life Sci Biotechno lPharma Res. 2021;10(2):233-5.
2. Choi CH, Poroyko V, Watanabe SO, Jiang D, Lane J, de Tineo M, et al. Sea sonal allergic rhinitis affects sinonasa lmicrobiota. Am J Rhinol Allergy. 2014; 28 (4):281-6.
3. Nielsen LP, Bjerke T, Christensen MB, Pedersen B, Rasmussen TR, Dahl R. Assessment of the allergic reaction in seasonal rhinitis: Acoustic rhinometry is a sensitive and objective method. Clin Exp Allergy. 1996;26(11):1268-75.
4. Jyothirmayi K. Analysis of distribution of allergens and its seasonal variation in allergic rhinitis. J Med Sci. 2020;5(3):59-62.
5. Qin JY, Huang G, Pan ZH, Liao LF, Hu HF. Different medications for seasonal allergic rhinitis in adults: A systematic review and meta-analysis. World J Meta-Anal. 2024;12(4):98508.
6. 6. Park KJ, Kim HA, Kim KR, Lee JW, Lee SY, Choi YJ, et al. Allergenic pollen calendar in Korea based on probability distribution models and up-to-date obser vations. Allergy AsthmaImmunol Res. 2020;12(2):259-73.