



Evaluation of Clinical Manifestations and Triggers in 60 Patients with Allergic Rhinitis

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Abstract – Background: Allergic rhinitis (AR) is a common inflammatory condition of the nasal mucosa caused by immunoglobulin E (IgE)-mediated reactions to allergens. It significantly impacts quality of life due to symptoms such as sneezing, nasal congestion, rhinorrhea, and ocular irritation. **Aim:** This study aims to evaluate the clinical manifestations of allergic rhinitis among 60 patients. **Materials and Methods:** A cross-sectional observational study was conducted on 60 clinically diagnosed AR patients. Detailed history, clinical examination, and symptom scoring were performed to document manifestations. Data were analyzed to determine the prevalence of symptoms and associated factors. **Results:** Sneezing was the most frequent symptom (83%), followed by nasal congestion (75%), rhinorrhea (70%), and itching (55%). Ocular symptoms were present in 40% of cases. Seasonal variation was noted in 65% of patients, with pollen being the most common trigger. **Conclusion:** Allergic rhinitis presents with a spectrum of nasal and ocular symptoms, often with seasonal exacerbations. Awareness of these clinical patterns helps in early diagnosis and management.

Keywords – Allergic rhinitis, clinical manifestations, sneezing, nasal congestion, rhinorrhea, IgE.

INTRODUCTION

Allergic rhinitis (AR) is a common IgE-mediated inflammatory disorder of the nasal mucosa, characterized by sneezing, nasal congestion, rhinorrhea, and nasal or ocular itching [1]. It results from exposure to environmental allergens such as pollen, dust mites, molds, and animal dander [2]. AR can be classified as seasonal or perennial, depending on allergen exposure patterns. Seasonal AR is often triggered by pollen, while perennial AR is associated with indoor allergens such as dust mites and animal dander [3]. The global prevalence of AR has increased over the past few decades, affecting up to 20–30% of adults and 40% of children in some populations [4,5]. AR is frequently associated with comorbid conditions, including asthma, sinusitis, and atopic dermatitis, forming the concept of “united airway disease” [6]. These comorbidities highlight the importance of early recognition and management of AR to prevent complications and improve quality of life. Clinical diagnosis of AR relies on a detailed history and physical examination, supported by symptom scoring and allergen identification tests such as skin prick testing or serum IgE measurement [7]. Common symptoms include recurrent sneezing, watery rhinorrhea, nasal congestion, and pruritus, often accompanied by ocular manifestations such as redness and tearing [8]. Symptom severity varies according to allergen type, exposure duration, and individual sensitivity. Understanding the clinical spectrum of AR is crucial for prompt diagnosis and effective management. While epidemiological studies have described the prevalence of AR and its

common triggers, local variations exist due to environmental and genetic factors [9]. Assessing the clinical features of patients in specific regions provides valuable information for clinicians regarding symptom patterns, seasonal variations, and predominant triggers.

MATERIALS AND METHODS

Study Design: A descriptive cross-sectional observational study.

Study Population: Sixty patients diagnosed with allergic rhinitis at Department of ENT, Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka, Bangladesh from January to June 2012, aged 10–60 years, were included. Diagnosis was based on clinical criteria: nasal congestion, rhinorrhea, sneezing, nasal itching, and positive history of allergen exposure.

Inclusion Criteria:

- Patients with clinical features suggestive of AR
- Willing to participate in the study

Exclusion Criteria:

- Patients with chronic sinusitis, nasal polyps, or other nasal pathologies
- Patients on systemic steroids or antihistamines within two weeks prior to assessment

Data Collection:

- Detailed demographic data (age, sex, occupation)

- Symptom history: sneezing, nasal congestion, rhinorrhea, itching, ocular symptoms, triggers, and seasonal variation
- Clinical examination: anterior rhinoscopy, nasal mucosa assessment, presence of allergic shiners or nasal crease
- Symptom severity scored as mild, moderate, or severe

Statistical Analysis:

Data were entered in Microsoft Excel and analyzed using SPSS version 25. Frequency and percentages were calculated for categorical variables. Mean \pm SD was calculated for continuous variables. Associations between demographic factors and symptom severity were analyzed using chi-square tests.

RESULTS

A total of 60 patients with allergic rhinitis were included in the study. The age of the participants ranged from 10 to 60 years, with a mean age of 28.5 ± 12.3 years. The majority were young adults aged 21–40 years (50%), followed by 41–60 years (30%) and 10–20 years (20%). There was a slight male predominance with 35 males (58.3%) and 25 females (41.7%).

Clinical Manifestations

Most patients presented with multiple symptoms simultaneously. Sneezing was the most frequent symptom, reported in 50 patients (83%), followed by nasal congestion in 45 patients (75%). Rhinorrhea was observed in 42 patients (70%), nasal itching in 33 patients (55%), and ocular symptoms, including redness, itching, and tearing, were present in 24 patients (40%). A smaller proportion of patients (16.7%) reported cough associated with nasal symptoms.

Table-1: Clinical Manifestations

Symptom	Number of Patients	Percentage (%)
Sneezing	50	83
Nasal congestion	45	75
Rhinorrhea	42	70
Nasal itching	33	55
Ocular symptoms	24	40
Coughing	10	16.7

Seasonal Variation and Triggers

Seasonal allergic rhinitis was observed in 39 patients (65%), whereas 21 patients (35%) had perennial AR. Pollen was the most common trigger (50%), followed by dust mites (30%) and animal dander (20%). Most patients reported symptom exacerbation during spring and early summer.

Table 2: Seasonal Variation and Allergen Triggers in Allergic Rhinitis Patients (n=60)

Type of AR	Number of Patients	Percentage (%)
Seasonal AR	39	65
Perennial AR	21	35
Allergen Trigger	Number of Patients	Percentage (%)
Pollen	30	50
Dust mites	18	30
Animal dander	12	20

Table 3: Severity of Symptoms in Allergic Rhinitis Patients (n=60)

Symptom	Mild	Moderate	Severe
Sneezing	10	28	12
Nasal congestion	8	30	7
Rhinorrhea	12	22	8
Nasal itching	15	15	3
Ocular symptoms	14	8	2
Coughing	6	3	1

The severity analysis of allergic rhinitis symptoms revealed that sneezing and nasal congestion were the most pronounced complaints among patients. As shown in Table 3, 28 patients experienced moderate sneezing, and 12 patients

reported it as severe, indicating that sneezing significantly affected daily activities and comfort. Nasal congestion, similarly, was predominantly moderate in 30 patients, while 7 reported severe congestion that impacted breathing and sleep

quality. Rhinorrhea was mostly mild to moderate, with only 8 patients experiencing severe discharge. Ocular symptoms were mostly mild (14 patients) and less frequently severe (2 patients), indicating that while eye involvement is common, it is usually not as debilitating as nasal symptoms. Coughing was rare and generally mild, affecting only 10 patients, which may represent secondary irritation due to postnasal drip rather than primary disease manifestation.

DISCUSSION

The results of this study highlight the predominant clinical manifestations of allergic rhinitis in the study population. Sneezing was the most frequent symptom, observed in 83% of patients, which is consistent with global epidemiological data indicating that sneezing is the hallmark of AR [1,2]. Nasal congestion and rhinorrhea were also highly prevalent (75% and 70%, respectively), reflecting the underlying IgE-mediated inflammation of the nasal mucosa [3]. Ocular symptoms, seen in 40% of cases, underscore the importance of evaluating eye involvement in AR patients, particularly in seasonal cases triggered by pollen [4]. Nasal itching, reported in 55% of patients, is indicative of mast cell activation and histamine release, which are central mechanisms in AR pathophysiology [5]. Seasonal AR was more common than perennial AR in this study (65% vs 35%), aligning with regional patterns where environmental pollen exposure is high. Dust mites and animal dander were the main triggers for perennial AR, highlighting the importance of indoor allergen control [6]. Most patients experienced multiple simultaneous symptoms, consistent with previous studies showing that AR rarely presents as isolated symptoms [7]. The study also demonstrated demographic trends, including a slight male predominance (58%) and peak incidence in young adults, which is in agreement with prior epidemiological reports [8,9]. Symptom severity varied, with sneezing and nasal congestion being more disruptive, often affecting sleep quality and daily functioning [10]. Overall, these findings emphasize the multifaceted clinical presentation of AR, the significance of identifying triggers, and the need for tailored management strategies, including pharmacotherapy, allergen avoidance, and patient education. Incorporating these findings into clinical

practice can improve early diagnosis and enhance quality of life for AR patients.

CONCLUSION

Allergic rhinitis is characterized by a constellation of nasal and ocular symptoms, often with seasonal exacerbations. Sneezing, nasal congestion, and rhinorrhea are the most frequent manifestations. Understanding these clinical patterns assists in early diagnosis, appropriate management, and improved patient outcomes.

REFERENCES

1. Braunstahl GJ, Rabe KF. Allergic rhinitis and asthma: united airway disease. *Curr Opin Pulm Med.* 2007;13(1):29–34.
2. Bousquet J, Khaltaev N, Cruz AA, et al. Allergic rhinitis and its impact on asthma (ARIA) 2008 update. *Allergy.* 2008;63(Suppl 86):8–160.
3. Wallace DV, Dykewicz MS, Bernstein JA, et al. The diagnosis and management of rhinitis: an updated practice parameter. *J Allergy Clin Immunol.* 2008;122(2 Suppl):S1–S84.
4. Pawankar R, Canonica GW, Holgate ST, Lockey RF. Allergic diseases and asthma: a major global health concern. *Curr Opin Allergy Clin Immunol.* 2012;12(1):39–41.
5. Bousquet PJ, Chinn S, Janson C, et al. Geographical variation in the prevalence of allergic rhinitis in adults. *Allergy.* 2008;63(4):427–434.
6. Meltzer EO. Epidemiology of allergic rhinitis: impact on health and work. *J Allergy Clin Immunol.* 1997;99(6 Pt 2):S775–S782.
7. Canonica GW, Bousquet J, Mullol J, Scadding GK, Virchow JC. A survey of the burden of allergic rhinitis in Europe. *Allergy.* 2007;62(1):17–25.
8. Ciprandi G, Marseglia GL, Tosca MA, et al. Allergy and clinical impact of allergic rhinitis. *J Biol Regul Homeost Agents.* 2010;24(3):283–290.
9. Leynaert B, Neukirch C, Demoly P, Bousquet J. Epidemiologic evidence for asthma and allergic rhinitis. *J Allergy Clin Immunol.* 2000;106(3):201–205.
10. Settipane RA. Allergic rhinitis: practical considerations. *Am J Med.* 1996;101(5B):2S–10S.