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Allergic rhinitis: Clinical manifestations and diagnosis-60 Cases

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A B S T R A C T

Introduction: Allergic rhinitis, or allergic rhinosinusitis, is characterized by inflammation of the nasal mucosa leading to paroxysms of sneezing, rhinorrhea, and nasal obstruction, often accompanied by itching of the eyes, nose, and palate. The clinical manifestation recurs after each exposure to the initiating allergen.

Methods: This research is descriptive type with a cross-sectional study was carried out at Dept. of ENT, BSMMU, Dhaka, Bangladesh from July 2022 to August 2023. Total 60 patients included in our study. The highest range of age in the 18-49 years. The sampling technique in this research was sequential (consecutive sampling). The type of data used is primary data including name, age, gender, symptoms of allergic rhinitis, clinical manifestations, questionnaire scores on allergic rhinitis.

Results: From 60 patients, numbers of male and female in the subjects' general characteristics were mostly women (55%) with the highest range of age in the 18-34 age group (36.6%), followed by 35-qwsa 49 age group (30%). A majority of the subjects were school/ college students (33.3%) and private employee (30%). In this study, the most sufferers were moderate to severe persistent allergic rhinitis, namely 47 people (78.3%), followed by mild intermittent 12 people (20%). Allergic shiner is the result of inspection of the most common signs of allergy on the face found in this study (83.3%), while allergic creases were only found in 2 respondents (3.3%). The most common symptoms are: nasal obstruction of 52 people (86.6%), followed by rhinorrhea with 46 people (76.6%). Most of the study subjects present with comorbidity (100%) with rhinosinusitis as the highest frequency (55%).

Conclusion: This research is allergic rhinitis patients, in particular the Sub-Allergy Immunology at with the hope that the treatment management algorithm is appropriate and provides clinical improvement in both signs and symptoms of rhinitis patients.

Keywords: Allergic Rinitis, Manifestation of Allergic Rhinitis

INTRODUCTION

Allergic rhinitis, or allergic rhinosinusitis, is characterized by inflammation of the nasal mucosa leading to paroxysms of sneezing, rhinorrhea, and nasal obstruction, often accompanied by itching of the eyes, nose, and palate [1]. Postnasal drip, cough, irritability, and fatigue are other common symptoms [2-4]. Every time the triggering allergen is found, the clinical symptoms reappear. Currently, 5-50% of people worldwide suffer from allergic rhinitis, which is a global health problem. It is known that the incidence of allergic rhinitis in adults in Europe ranges from 17% to 28.5%. In addition, new research shows that the prevalence of allergic rhinitis has increased, especially in countries where prevalence rates were previously low. In Indonesia alone, 40% of children and 10% to 30% of adults suffer from allergic rhinitis, and this condition most often attacks those aged between 15 and 30 years [5,6] Some investigators prefer the term "rhinosinusitis" to the separate terms "rhinitis" and "sinusitis." This is because the nose and sinus mucosa are contiguous, rhinitis and

sinusitis frequently occur together, rhinitis commonly leads to sinusitis, and nasal symptoms are common with sinusitis. However, within this topic review, rhinitis and sinusitis are referred to separately given that management issues may differ for each condition, and detailed reviews of acute and chronic sinusitis are presented elsewhere. (See "Acute sinusitis and rhinosinusitis in adults: Clinical manifestations and diagnosis" and "Chronic rhinosinusitis: Clinical manifestations, pathophysiology, and diagnosis" and "Uncomplicated acute sinusitis and rhinosinusitis in adults: Treatment".) The prevalence of allergic rhinitis in school-aged children in Western Europe has doubled. The prevalence of seasonal and perennial allergic rhinitis in the USA has increased to 14.2%, highest at ages 18-34 years and 35-49 years [7]. Quantitative diagnostic criteria in the form of a scoring system for the diagnosis of allergic rhinitis is the Score for Allergic Rhinitis (SFAR) questionnaire. To collect relevant data for allergic rhinitis studies, this scoring system was also designed to divide cases based on their diversity, including the type of allergen that triggers the condition, season, and other factors [7]. The clinical manifestations, epidemiology, and diagnosis of allergic rhinitis are presented in this topic review. The pathogenesis and treatment of this condition are discussed separately. (See "Pathogenesis of allergic rhinitis (rhinosinusitis)" and "Pharmacotherapy of allergic rhinitis".)

METHODS & MATERIALS

This research is descriptive type with a cross-sectional study was carried out at Dept. of ENT, BSMMU, Dhaka, Bangladesh from July 2022 to August 2023. Total 60 patients included in our study. The highest range of age in the 18-49 years. Inclusion Criteria Age ≤ 60 years, allergic rhinitis patients seeking treatment for the first time, willing to take part in the study. Exclusion Criteria Sufferers of nasal tumors, history of rhinoplasty, currently in a state of acute infection. The sampling technique in this research was sequential (consecutive sampling). The type of data used is primary data including name, age, gender, symptoms of allergic rhinitis, clinical manifestations, questionnaire scores on allergic rhinitis.

Data Collection Process: Looking for research samples, namely allergic rhinitis patients seeking treatment at BSMMU, explaining the research procedures to be carried out as well as providing informed consent, carrying out an anterior rhinoscopic nasal examination, classifying allergic rhinitis based on complaints, using the Score Questionnaire on allergic rhinitis, classifying manifestations clinical course of allergic rhinitis.

Statistical analysis

Comparisons between the previous classification and the ARIA classification were analyzed by chi-square tests and the AR symptoms and laboratory tests were compared among groups through the ANOVA method. Statistical analysis was performed with SPSS (version 12.0, SPSS Inc, Chicago, IL, USA) and statistical significance was set when P values were less than 0.05.

RESULTS

Table 1: Subject general characteristic

Variable	n	%
Gender		
Female	33	55
Male	27	45
Age, range		
≤ 17 years old	6	10
18 - 34	22	36.6
35 - 49	18	30
50 - 60	14	23.3

From 60 patients, numbers of male and female in the subjects' general characteristics were mostly women (55%) with the highest range of age in the 18-34 age group (36.6%), followed by 35-49 age group (30%) (Table 1).

Table 2: Characteristics of respondents based on occupation

Occupation	n	%
Civil Servant	15	25
Private Employee	18	30
Student/College Student	20	33.3
House Wife	7	11.7
Others	0	0

A majority of the subjects were school/college students (33.3%) and private employee (30%). Rinosinusiitis was most prevalent comorbidity with the frequency 51.6% (Table 2). The least prevalence comorbidity was dermatitis atophy (5%) and nasal polip (3.3%).

Table 3: Characteristics of respondents who having allergic rhinitis

Variable	n	AR Patients	%
Classification			
Intermitent	12		20
Persistent	48		80
Nature of symptoms			
Mild Intermitent	10		20
Moderate Severe Persistent	48		80
Sign Allergic			
Allergic Shiners	50		83.3
Allergic Crease	2		3.3
Allergic Salute	0		0
Score For Allergic Rhinitis			
≥ 7	60		100
< 7	0		0
Clinical Manifestations			
Nasal Obstruction	52		86.6
Nasal Itch	32		53.3
Rhinorhea	46		76.6
Sneezing	22		36.6

DISCUSSION

AR is characterized by the presence of nasal and non-nasal symptoms. Nasal symptoms include anterior or posterior rhinorrhea, sneezing, nasal blockage and/or itching of the nose [8]. These symptoms may persist for hours after allergic reaction upon the exposure of allergens that cause mucosal inflammation [9]. In consequences, the mucosa is rendered more reactive to the triggering allergen as well as to other allergens and to non-allergenic stimuli (e.g., strong odors and other irritants). Non-nasal symptoms are characterized by ocular symptoms such as allergic rhino conjunctivitis (i.e., itching and redness of the eyes and tearing) which frequently occurs in AR patients [10]. Other symptoms include itching of the palate, postnasal drip and cough. This high prevalence among women is thought to be caused by hormonal differences between the two sexes, where estrogen is known to have anti-inflammatory properties, thereby triggering Atopy [11]. The occupational distribution is also similar, with the highest being school students (33.3%) and the second largest private sector workers (30%). Allergic rhinitis is known to attack school-aged children and cause learning disabilities [5]. Subjects were mostly aged 18-34 years (36.6%) and the trend decreased with age. Previous research shows a decrease in atopy with increasing age, it is thought that this phenomenon is caused by a decrease in the concentration of allergen-specific IgE [12]. In this study, the majority of sufferers were moderate to severe persistent allergic rhinitis, namely 47 people (78.3%), followed by intermittent mild allergic rhinitis 142 people (20%). The results of this study are consistent with the findings of Moeis [13] and Alexandropoulos [14]. They found that the majority of patients consistently had moderate to severe levels of persistent severity. Allergic rhinitis represents a common pediatric problem where approximately 40% of pediatric AR patients develop symptoms as early as age 6 years old and increase with age [15-17]. In this study, the most common symptoms were found, namely: nasal congestion in 52 people (86.6%), followed by rhinorrhea in 52 people (77.6%). According to Cruz *et al* reported that the epithelium is unable to compensate for water loss due to CDA in the nasal mucosa, thus causing clinical effects. The release of arachidonic acid metabolites, especially 15-hydroxy-icosatetraenoid, in epithelial cells due to hypertonic stimulation activates sensory nerve endings and causes symptoms [18]. A study in Spain conducted by Colas *et al*. [19]. Found that sneezing was the main symptom in allergic rhinitis without sleep disorders, while nasal congestion, runny nose and itchy nose were the main symptoms in people with sleep disorders. Most subjects had comorbidities (100%) and rhinosinusitis (55%). This is in accordance with previous research which found that rhinosinusitis was the most common comorbidity in allergic rhinitis patients. The presence of comorbidities can influence treatment results, because most comorbidities have the same pathophysiology as allergic rhinitis [20]. Diagnosis of AR in pediatrics includes complete history taking, physical examinations (e.g., nose, oropharynx, tympanic membranes, and eyes) as well as differential diagnosis based on the clinical symptoms suggestive of AR but not evidence of systemic atopy [21]. A very young child with persistent nasal symptoms should be considered as having other disorders that can mimic AR [22]. On the other hand, older children may present with other disorders including acute infectious rhinitis, chronic non-allergic rhinitis, chronic rhinosinusitis, rhinitis medicamentosa, rhinitis due to systemic medications, atrophic rhinitis, rhinitis associated with hormonal changes, unilateral rhinitis or nasal polyps and rhinitis with immunologic disorders. Descriptions on each of these specific disorders [22] and differential diagnosis based on age [23] have been discussed in the cited references.

CONCLUSION

This research is allergic rhinitis patients, in particular the Sub- Allergy Immunology at with the hope that the treatment management algorithm is appropriate and provides clinical improvement in both signs and symptoms of rhinitis patients.

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