
Categorization of patients with allergic rhinitis: a comparative profile of “sneezers and runners” and “blockers”

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Background: The recent Allergic Rhinitis and Its Impact on Asthma (ARIA) workshop report classified patients into “sneezers and runners” and “blockers” and described a new disease severity categorization.

Objective: To sketch the profile of these 2 groups and to evaluate the relevance of categorization.

Methods: Patients were categorized as “sneezers and runners” (group 1) or “blockers” (group 2). The patients responded to a questionnaire that sought information on symptoms and associated factors. They were then categorized into seasonal allergic rhinitis (SAR) and perennial allergic rhinitis (PAR) groups and “intermittent” and “persistent” disease groups and compared.

Results: A total of 114 patients (72 in group 1 and 42 in group 2) participated in the study. The significant features in group 1 were age at onset younger than 20 years (90%); birth date between June and September (61%); family history of atopy (88%); itching of skin (26%), eye (43%), ears (43%), and throat and palate (67%); and aggravation with dust (93%). History of breathlessness (90%), mouth breathing (81%), loss of smell (36%), and prior nasal surgery (31%) were significant in group 2. Significantly more patients in group 1 had SAR (54%) and moderate-severe intermittent disease (60%), whereas group 2 had PAR (81%) and mild persistent (69%) disease ($P = .03$). Patients classified as having SAR had intermittent disease (40, 83%) ($P = .005$), and those with PAR had persistent disease (51, 76%) ($P < .001$). Sixteen patients (24%) classified as having PAR were in the intermittent category, whereas 7 (17%) classified as having SAR were in the persistent category.

Conclusions: This study demonstrated that the 2 groups had distinct clinical profiles and that it is important to categorize patients, according to the ARIA report, into intermittent and persistent allergic rhinitis groups.

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INTRODUCTION

Although a cause of significant and widespread morbidity, allergic rhinitis is often viewed, rather erroneously, as a trivial disease.¹ It is characterized by rhinorrhea, sneezing, itching of the nose, nasal obstruction, and/or postnasal drainage.² These symptoms may significantly affect the quality of life.³ However, all symptoms may not be present in every patient with allergic rhinitis. In 1979, Mygind,⁴ for the first time, categorized patients with perennial rhinitis into 2 groups according to their symptoms. Those who had sneezing and watery discharge as their most troublesome symptoms were classified as “sneezers,” whereas those with nasal blockage and mucus secretion as their main symptoms were described as “blockers.” In 1994, the International Consensus Report on Diagnosis and Management of Rhinitis⁵ acknowledged the division of patients into “sneezers and runners” and “blockers” and provided clinical features to distinguish the 2 entities. In the Allergic Rhinitis and Its Impact on Asthma (ARIA) workshop report,⁶ this subdivision was included in the diagnosis and evaluation of severity of rhinitis and was

advocated as an important part of clinical history. The report observed that patient with allergic rhinitis could be more commonly found in the “sneezers and runners” category. However, the epidemiologic evidence for such a subdivision is lacking in literature. A MEDLINE search of articles published since 1966 did not reveal any study that provided clinical and epidemiologic differences between these 2 subdivisions of allergic rhinitis.

Based on the time of occurrence of symptoms during the year, allergic rhinitis has been traditionally divided into seasonal allergic rhinitis (SAR) and perennial allergic rhinitis (PAR).^{2,5,7} The ARIA workshop report⁶ proposes to replace these divisions with the 2 new categories of intermittent and persistent allergic rhinitis based on number of days per week and number of weeks per year during which the patient is symptomatic. The report has emphasized the need for epidemiologic evidence to link allergic rhinitis with other atopic diseases such as asthma, allergic conjunctivitis, and eczema.⁶ It has also stressed the need for use of a new categorization for epidemiologic studies. The new classification, however, is not evidence based and lacks validation in daily practice.⁸ Studies have shown that standardization of diagnostic criteria is important for optimal treatment of patients with allergic rhinitis.^{8,9}

This study compares the clinical and epidemiologic profiles of 2 groups of patient with allergic rhinitis: “sneezers and runners” and “blockers.” The older classification of pa-

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tients into SAR and PAR groups is also compared with the new categories of intermittent and persistent disease proposed by the ARIA workshop report.⁶

MATERIALS AND METHODS

The study was conducted in newly referred, consecutive, adult patients with a clinical diagnosis of allergic rhinitis who presented to the outpatient department of the Vallabhbhai Patel Chest Institute, University of Delhi, Delhi, India. The diagnosis of allergic rhinitis was made according to the ARIA workshop report.⁶ The patients included in the study were between 18 and 50 years of age, had never smoked, and had been symptomatic for at least 1 year. None of them had any history of wheeze. They all had normal spirometry results, and there was no reversibility after inhalation of 200 μ g of salbutamol. All had a positive intradermal test result against at least 1 aeroallergen that was prevalent in the local environment. Patients with sinusitis, otitis media, or any other local and systemic disorder were excluded from the study. Patients who gave a history of use of oral corticosteroids and antihistaminic drugs within 1 month of the study period were also excluded from the study, as were pregnant and lactating women. None of these patients had ever used intranasal corticosteroid sprays before referral and inclusion in the study.

A thorough clinical examination of the upper and lower respiratory tracts was performed in all patients. According to the ARIA workshop report,⁶ on the basis of a questionnaire, the patients were divided into 2 groups. Those predominantly troubled by sneezing and rhinorrhea for most of the days in the week were designated as “sneezers and runners” (group 1). Patients who had constant nasal blockage, postnasal drip, and thick nasal mucous discharge with little or no sneezing as their predominant symptoms throughout the year were classified as “blockers” (group 2). Patients were initially subdivided, based on the time of occurrence of symptoms during the year, into a SAR group in whom the symptoms were episodic and limited to a specific season and a PAR group in whom symptoms were present throughout the year.^{2,5,7} Patients were also divided, according to the ARIA workshop report,⁶ into intermittent (symptoms present fewer than 4 days a week or for fewer than 4 weeks) and persistent (symptoms present more than 4 days a week or for more than 4 weeks) allergic rhinitis categories. On the basis of severity, the patients were classified into groups of mild (absence of sleep disturbances, impairment of daily activities, leisure, and/or sport, impairment of school or work, and troublesome symptoms) and moderate-severe (presence of 1 or more of these items) allergic rhinitis. All patients underwent hemography, spirometry, radiography of the chest and paranasal sinuses, and intradermal allergy testing. Nasal examination was performed in all patients by anterior rhinoscopy. Before the evaluation, the purpose of the study and the methods being used were explained in detail to the patients. A written informed consent for the study was also obtained from all the

patients. The study had the approval of the institutional ethics committee.

Study Design

The patients were categorized according to their symptoms and were asked to respond to a questionnaire that included information about the nature, pattern, and duration of symptoms, diurnal and seasonal variation, age at onset of disease, month of birth, birth order, and history of associated breathlessness. A history of eye, ear, throat, palate, and skin itching, a history of drug or food allergy, or a family history of atopy was elicited. Patients were questioned about exposure to environmental tobacco smoke and whether it had any effect on their symptoms. They were also asked whether there were any precipitating factors for their symptoms, such as dust and vehicular smoke. History of prior nasal surgical procedures, history of gastroesophageal reflux disease, and information about association of psychological factors, such as anxiety and depression, were sought.

Statistical Analysis

At the end of the study, the 2 groups, “sneezers and runners” and “blockers,” were compared using the χ^2 tests for their clinical and epidemiologic profile. In addition, using χ^2 tests, numbers of patients classified initially as having SAR and PAR were compared with the numbers of patients classified as having intermittent and persistent allergic rhinitis according to the ARIA workshop report.⁶

RESULTS

A total of 125 patients were included in the study. After initial inclusion, 11 patients did not report for recording of the questionnaire and were excluded from the study. Therefore, 114 patients completed the study protocol. Of the 114 patients (63 men and 51 women), 72 (63%) were categorized as group 1 and 42 (37%) as group 2. There were significantly more patients in the moderate-severe intermittent category in group 1 (26, 36%) ($P = .048$) and in the mild persistent category in group 2 (22, 52%) ($P = .03$).

The mean (SD) age of the patients was 25.7 (3.24) years, which was similar in both the groups (Table 1). However, the mean (SD) age at onset of disease was younger in patients in group 1 (15.4) years, and more patients in this group (65, 90%) had onset of symptoms before the age of 20 years ($P = .001$). More patients were the first born in the family (43, 38%). Of these, more first born were from group 1 (29, 40%) than group 2 (14, 33%). Almost half (55, 48%) of our patients were born between the months of June and September. Of these, significantly more patients were from group 1 (44, 61%) than group 2 (11, 26%) ($P = .03$).

A minimum of 3 aeroallergens were positive in all patients. Of these, 25 (22%) were positive against 3 aeroallergens, whereas 39 (34%), 26 (23%), and 24 (21%) were positive against 4, 5, and 6 aeroallergens, respectively. Seventy-nine patients (69%) were sensitive to pollens, which were significantly more in group 1 (61, 85%) ($P = .02$). In this group, among the pollens, weeds were positive in 49 patients (68%)

Table 1. Comparative Clinical Profile of “Sneezers and Runners” and “Blockers”*

Variable	“Sneezers and runners”	“Blockers”	Total
Total patients	72 (63)	42 (37)	114
Male	40 (56)	23 (55)	63 (55)
Female	32 (44)	19 (45)	51 (45)
Mean age, y	24.3	28.2	25.7
Mean age at onset, y	15.4	19.7	17
Age at onset of disease < 20 y	65 (90)†	19 (45)	84 (74)
First born	29 (40)	14 (33)	43 (38)
Born between June and September	44 (61)†	11 (26)	55 (48)
Family history of atopy	63 (88)†	18 (43)	81 (71)
Eye itching	65 (90)†	15 (36)	80 (70)
Throat and palate itching	48 (67)†	13 (31)	61 (54)
Ear itching	31 (43)†	7 (17)	38 (33)
Skin itching	19 (26)†	3 (7)	22 (19)
Breathlessness	35 (49)	38 (90)†	73 (64)
Mouth breathing	31 (43)	34 (81)†	65 (57)
Prior nasal surgery	6 (8)	13 (31)†	19 (17)
Loss of sense of smell	10 (14)	15 (36)†	25 (22)
Affected by dust	67 (93)†	20 (48)	87 (76)
Affected by vehicular smoke	62 (86)	31 (74)	93 (82)
Food or drug allergy	9 (13)	3 (7)	12 (11)
Exposure to ETS	30 (42)	21 (50)	51 (45)
Affected by ETS	24/30 (80)	15/21 (71)	39/51 (76)
GERD	24 (33)	19 (45)	43 (38)
Psychological factors	9 (21)	5 (7)	14 (12)

Abbreviations: ETS, environmental tobacco smoke; GERD, gastroesophageal reflux disease.

* Data are number (percentage) of patients unless otherwise indicated.

† $P < .05$.

($P = .03$), grasses in 51 patients (71%) ($P = .03$), and trees in 39 patients (54%) ($P = .04$). Group 2 had significantly more sensitization to fungi (26, 62%) and house dust mite (17, 40%) ($P = .04$). Sensitization to insects (75, 66%) ($P = .08$), kapok cotton (6, 5%) ($P = .13$), and wool (4, 3%) ($P = .16$) was more in group 1, but the difference was not statistically significant.

A history of breathlessness (38, 90%) ($P = .04$) and mouth breathing (34, 81%) ($P = .045$) was elicited in a significant number of patients in group 2. Twenty-five patients (22%) had a significant loss of smell, and significantly more patients who experienced this belonged to group 2 (15, 36%) ($P = .03$). Nineteen patients (17%) underwent nasal surgery for their symptoms. Of these, significantly more were from group 2 (13, 31%) ($P = .009$). A family history of atopy was elicited in 81 patients (71%), and of these, 63 patients (88%) were in group 1 ($P = .03$). A history of itching of eyes (65, 90%) ($P = .006$), throat and palate (48, 67%) ($P = .04$), ears (31, 43%) ($P = .04$), and skin (19, 26%) ($P = .03$) was present significantly more in group 1 compared with group 2. Significantly more patients in group 1 experienced aggravation of symptoms on exposure to dust (67, 93%) ($P = .04$). Aggravation of symptoms with vehicular smoke was more frequent in group 1 (62, 86%) than group 2, but the difference was not statistically significant ($P = .56$). An exposure to environmental tobacco smoke was seen in 51 patients (45%)

of whom 39 (76%) had aggravation of their symptoms on exposure. Psychological factors affected symptoms in 14 patients (12%) (Table 1).

As per the traditional classification, 47 patients (41%) were categorized as having SAR and 67 (59%) as having PAR. Significantly more patients with SAR were from group 1 (39, 54%) compared with group 2 (8, 19%) ($P = .002$). More patients with PAR were in group 2 (34, 81%) compared with group 1 (33, 46%), but the difference was not statistically significant ($P = .92$). When the patients were classified according to the ARIA workshop report,⁶ 56 (49%) were classified as having intermittent allergic rhinitis and 58 (51%) as having persistent allergic rhinitis. More patients in group 1 had intermittent disease, whereas more patients in group 2 had persistent disease (Table 2).

Patients who were initially classified as having SAR and PAR were also categorized according to the ARIA workshop report into intermittent and persistent disease groups. More patients classified initially as having SAR were categorized as having intermittent disease (40, 83%; $P = .005$), whereas more patients classified as having PAR belonged to the persistent disease category (51, 76%; $P = .006$). Sixteen patients (24%) who were initially classified as having PAR were placed in the intermittent disease category, whereas 7 patients (17%) classified as having SAR were placed in the persistent disease category.

Table 2. Division of "Sneezers and Runners" and "Blockers" According to the Allergic Rhinitis and Its Impact on Asthma Workshop Report⁶

Category	No. (%) of patients		
	"Sneezers and runners"	"Blockers"	Total
Intermittent	43 (60)	13 (31)	56 (49)
Mild intermittent	17 (24)	7 (17)	24 (21)
Moderate-severe intermittent	26 (36)*	6 (14)	32 (28)
Persistent	29 (40)	29 (69)	58 (51)
Mild persistent	17 (24)	22 (52)*	39 (34)
Moderate-severe persistent	12 (17)	7 (17)	19 (17)
Total	72 (63)	42 (37)	114

* $P < .05$.

DISCUSSION

The study categorized 114 patients with allergic rhinitis into "sneezers and runners" and "blockers." We also attempted to profile these 2 groups of patients. Almost two thirds of these patients were classified as "sneezers and runners." A significant number of them had an atopic family background, and in most of them symptoms commenced before the age of 20 years. Significantly, more were born between June and September and were sensitized to pollens, and in a significant number of these patients, the symptoms were aggravated on exposure to dust. Earlier studies¹⁰⁻¹³ have attempted to correlate the month of birth with skin test reactivity or the occurrence of atopic respiratory diseases, with conflicting results. Two of these studies^{10,11} showed significant correlation of occurrence of atopy with the month of birth. This was attributed to an increased prevalence of the sensitized aeroallergens during the month in which the patients were born. Heavy exposure to these aeroallergens, in particular pollens, during early months of infancy could increase the risk of atopy due to immaturity of the immune system.^{10,11} In our study too, significantly more patients in group 1, who were born between the months of June and September, were sensitized to pollens. However, some other studies^{12,13} were unable to establish any correlation of month of birth with allergic sensitization and manifestations of atopic diseases, including allergic rhinitis. A significant history of associated allergic manifestations, such as eye, ear, throat, palate, and skin itching, was a key feature of this group.

In contrast, "blockers" had a significant history of breathlessness and mouth breathing, were troubled by loss of smell, and also had a history of prior nasal surgical procedures without relief. Early identification of such patients assumes importance, since morbidity that results from unnecessary surgical procedures can be avoided. Further, because of associated breathlessness, these patients could be mistakenly diagnosed as having asthma, with the possibility of rhinitis being overlooked. It has also been postulated that chronic nasal obstruction and continuous post-

nasal drip that lead to mouth breathing may play an important role in the development of asthma.¹⁴ These patients could perhaps be at a greater risk of developing asthma. "Blockers" had significantly more sensitization to perennial allergens, such as fungi and house dust mite. This could lead to chronic persistent inflammation in these patients throughout the year even during symptom-free periods.¹⁵ On the basis of significant allergic history and positive skin test results for perennial allergens, patients in group 2 were clearly differentiated from nonallergic, non-infectious perennial rhinitis or vasomotor rhinitis.¹⁶ Vasomotor rhinitis, essentially a diagnosis of exclusion, is confirmed when the symptoms of rhinitis are attributed to nonallergic stimuli with negative skin test results for allergy.¹⁶

The recent ARIA report⁶ proposed the replacement of the older categorization in SAR and PAR with new subdivisions of intermittent and persistent rhinitis and, based on the severity of symptoms, into mild and moderate-severe categories. In our patients, more "sneezers and runners" were categorized as having SAR and classified into the moderate-severe intermittent disease group. However, a quarter of the patients, who were initially classified as having perennial disease were also placed in the intermittent category. "Blockers" had more perennial disease, and more than half were categorized into the mild persistent group according to their daily symptoms. Thus, these patients were better represented when they were classified according to the duration and severity of symptoms per the ARIA workshop report. In a recent self-administered, questionnaire-based study by Demoly et al,⁸ patients with allergic rhinitis described the duration of their symptoms by focusing on the number of days per week and consecutive weeks per year. These patients were also simultaneously classified into SAR and PAR groups by their treating physicians. It was observed that 43.7% of the patients classified by their physicians as having seasonal disease had persistent rhinitis, whereas 44.6% of the patients classified initially as having perennial disease had intermittent rhinitis. The authors hypothesized that classification of patients by defining the chronology and duration of symptoms according to ARIA workshop report may change daily physician practice.⁸

Intranasal corticosteroid sprays, which are the mainstay of therapy in the management of allergic rhinitis, are effective in relieving nasal symptoms.¹⁷ However, because "sneezers and runners" have significant associated allergic manifestations, these patients may possibly require oral antihistamines, in addition to nasal steroids, on a long-term basis for better control of their symptoms. This classification also underscores the importance of regular administration of intranasal corticosteroid sprays throughout the year in "blockers," since antihistaminics may not be effective in relieving persistent symptoms in these patients.

CONCLUSION

This study demonstrated that the 2 groups of patients with allergic rhinitis, “sneezers and runners” and “blockers,” had distinct clinical profiles. The data obtained from the study also underscore the importance of categorizing patients according to the recent ARIA workshop report into intermittent and persistent rhinitis groups. Considering this classification will help optimize treatment of patients with allergic rhinitis.

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