Research Paper

# A Study of Prevalence of Allergic Rhinitis with SFAR Score and its Clinical Profile

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**ABSTRACT**

**Background:** The prevalence of Allergic Rhinitis (AR) has increased recently. The symptoms of Allergic rhinitis hamper the daily activity of an individual causing difficulty in concentrating at work. Before treating the patient of AR thorough symptomatic assessment should be done so that there is a relief in symptoms of the patient and ability to carry out work is efficient. Symptomatic score for Allergic rhinitis (SFAR) questionnaire is a scoring tool that is cheap, accessible and efficient to assess AR symptoms and its severity. It can be easily carried out on OPD basis and a faster way to treat the patient efficiently early.

**Objective:** To study symptomatic presentation of allergic rhinitis using SFAR scoring.

**Design:** Prospective

**Period:** From February 2019 to February 2020

**Material and Methods:** All patients that presented to ENT Outpatient department with allergic rhinitis were evaluated and assessed on the basis of SFAR scoring.

**Result:** In the present study of 138 patients 72(52.17) % were females while 66 (47.83 %) were male. Majority of cases were from age group of 21-30 years .House wives were found to be most commonly affected. Maximum number of patients 70 (50.72 %) presented with moderate to severe AR.

**Conclusion:** The presentation and the severity of AR of the patient using easy and efficient SFAR scoring can help in symptom specific treatment of the AR that in turn will improve patient well being.

**Key Words:** Allergic Rhinitis, Intermittent, Persistent, SFAR.

## INTRODUCTION

Rhinitis can be broadly subdivided on the basis of etiological factor as allergic and non-allergic rhinitis (infectious, occupational, drug-induced, hormonal, irritant, tobacco, NARES, vasomotor).

Allergic rhinitis affects large number of people. The commonest type of rhinitis is allergic rhinitis with almost 10-20 percentage of population getting affected and rising trend of the disease among people.[1]

It is IgE mediated inflammation caused by inhaled allergens. It involves upper and lower respiratory tract mucosa as well as the conjunctiva. When an allergen present to the antigen presenting cell (dendritic cell) forming major histocompatibility complex (MHC-class II).The causes naive CD4 T cell to form activated allergen specific TH2 cell that secretes cytokines (IL-3,IL-4,IL-5 andIL-9). This causes activation of B-cell to release IgE to activate eosinophil, neutrophil and mast cell.

Nasal congestion, nasal itch, rhinorrhoea and sneezing are classic

symptoms due to inflammatory mediators like histamine, serine, proteases, heparin, leukotriene C4 prostaglandin D2, thromboxane and PAF.[2]

It can have early reaction (30 min) such as sneezing and rhinorrhoea or late reaction (6 Hrs) such as nasal obstruction. It can be subdivided as per the presentation as intermittent/persistent or mild/moderate/severe or seasonal/perennial. The Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines have classified "intermittent" allergic rhinitis as symptoms less than 4 days per week or for less than 4 consecutive weeks, and "persistent" allergic rhinitis as more than 4 days/week and for more than 4 consecutive weeks.[3]

The moderate/ severe variety is termed so if they significantly affect sleep or activities of daily living, and/or if they are considered bothersome and mild when patients have no impairment in sleep and are able to perform normal activities. Allergic rhinitis hampers daily activity of the individual, affecting physical, mental and social wellness .The questionnaire to diagnose AR in a population properly is SFAR questionnaire.[4]

| Scoring criterion | Score | Cumulative score |
|---|---|---|
| Nasal blocks | 1 | |
| Running nose | 1 | 2 |
| Sneezing | 1 | 3 |
| Perennial Cough | 1 | 4 |
| Seasonal/Perennial | 1 | 5 |
| Nasal symptoms with itchy-watery eyes | 2 | 7 |
| House Dust trigger nasal symptoms | 1 | 8 |
| Pollen trigger nasal symptoms | 1 | 9 |
| Perceived allergic status | 2 | 11 |
| Previous medical diagnosis of allergy | 2 | 13 |
| Previous positive tests of allergy | 1 | 14 |
| Family history of allergy | 2 | 16 |
| **Total score** | | **16** |

Specific allergic triggers can be diagnosed by Skin-prick testing. It involves pricking the skin through the drop of allergen e.g., pollen, animal dander on forearms or back. Early reaction (15–20 min) i.e. a wheal-and-flare response will occur if the test is positive. Other test such as Phadebas radioallergosorbent test (PhRAST) and radioallergosorbent tests (RASTs) measure specific IgE levels against particular allergens.[5] Therapeutic options are from simple avoidance measures and nasal saline irrigation to use of oral antihistamines, intranasal corticosteroids, combination intranasal corticosteroid/antihistamine sprays, leukotriene receptor antagonists (LTRAs), and allergen immunotherapy.[6]

However, Intranasal corticosteroids like fluticasone furoate, beclomethasone, fluticasone propionate, triamcinolone acetonide , mometasone furoate , ciclesonide and budesonide and Second-generation oral antihistamines like fexofenadine, loratadine, cetirizine, desloratadine) are the mainstay of treatment.[2]

## MATERIALS AND METHODS

The present study was done on 627 cases between February 2019 to February 2020. All the patients and their attendants irrespective age and sex who attended ENT OPD, PMCH, Udaipur were taken for the study. Detailed history and extensive clinical examination was done to evaluate the patients. The detailed questionnaires were given to them and were asked to return it after filling it.

The patients were assessed on the basis of SFAR scoring. Also the patients were categorised on the basis of the symptoms presented as mild, moderate/severe as per ARIA guidelines.

## Results

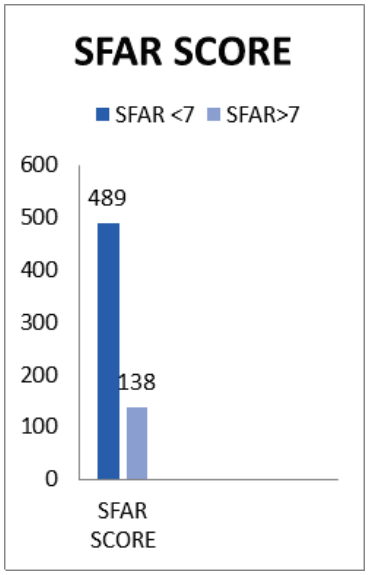


Figure 1- As per SFAR Score

In present study females were 72 (52.17) % while male were 66 (47.83) %.
The male to female ratio was 1.09:1 (Figure 2).

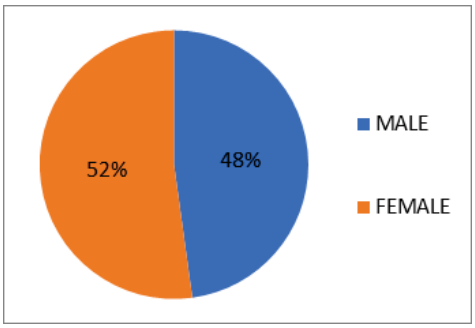


Figure 2 - As per Gender Distribution

The most common age group found to be affected was 21-30 years with 80 (56.9 %) patients. Youngest patient was 10 years old while oldest was 65 years old.

As per occupation of patients maximum patients were housewives 68 (49.27 %), farmers 44 (31.90%) miscellaneous 20 (14.49 %), business and clerk each had 3 patients (2.17%). (Figure 3)

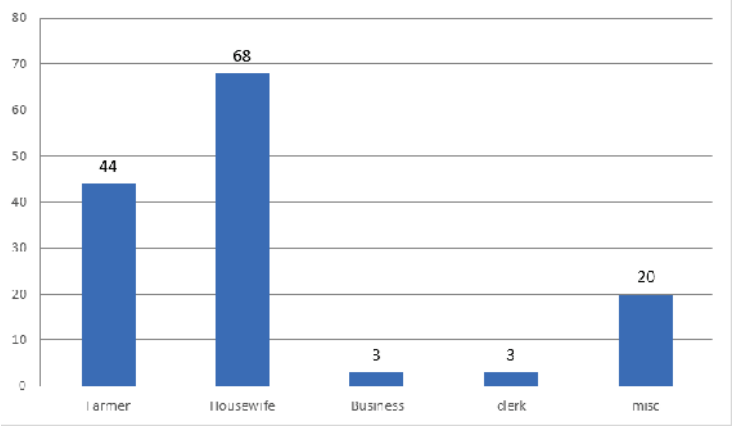


Figure 3 - As per Occupation

(X Axis: Occupation, Y Axis: Number of patients)

It was found that patient had more nasal complaints with sneezing 60 (44.2 %) nasal blockage 44 (31.8 %), running nose 30 (21.7 %) as compared to rest other symptoms.

The most common etiology was found to be household dust.

The mild AR was present in 42 (30.43 %) patients; moderate to severe AR was present in 96 (69.57 %) patients (Figure 4)

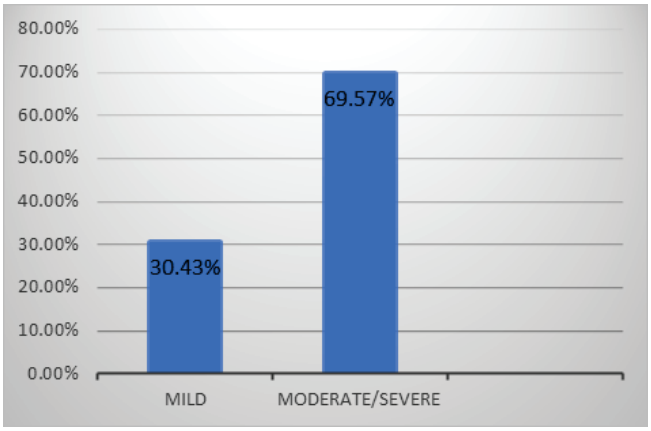


Figure 4 – As per Severity of AR

(X Axis represents severity of AR; Y Axis represents percentage of patients)

The persistent AR was seen in 56 (40.58%) and intermittent AR was seen in 82 (59.42%). (Figure 5)

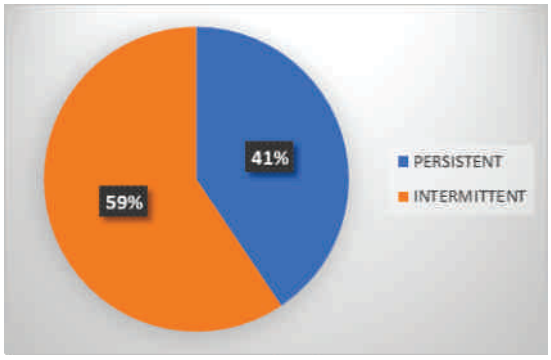


Figure 5 – As per Seasonal Variation

## DISCUSSION

In present study the prevalence of AR was found to be 22 % using SFAR score. The studies done in other countries like Taiwan showed prevalence of 26.3 % [7].

In present study females were found to be predominant which is in accordance with previous study.[8]

Household dust, exposure to cold air, morning hours, history of smoking, presence of pets at home, family history of Allergic rhinitis were found to be the most commonly identified trigger factors. House dust-mite is the commonest allergen and the patients of allergic rhinitis are more prone to it.[9]

The commonest age group was found to be 21-30 year in our study. The past study [10] shows the similar findings and study done by Novina et al [9] showed slight different data with 23-34 years as more common age group. This difference might be because of prevalence of different weather conditions at various places in countries. The ecological diversities, status of living, socioeconomic factors, difference in population size contributes to range of diseases from low to high prevalence. This constitutes the loss of working hours for adults & loss of school days for children. The work efficiency is affected and leads to economic burden. Also this can lead to change in jobs and places for some people. Among the school going children there is increase in prevalence in AR rates .[11]

The prevalence of allergic rhinitis was found to be more in urban area 91 (65.94 %) as compared to rural areas 47 (34.06 %). The people living in urban areas have smaller families, different diet and lifestyle as compared to rural people. Also the consumption of antibiotics for minor ailments seems to be more in urban people which affects the existing healthy microorganisms of body and alters the natural flora. [12]The people exposed to farming develop a protective shield from several allergic diseases.

The number of patients as per severity of allergic rhinitis was more in moderate to severe variety followed by mild variety. Least cases were seen in severe rhinitis as compared to previous study done by Lee JE et al [13] The presence of variety of allergens in different parts of countries and in different parts of same country is considered to be responsible for varied presentation of allergic rhinitis. The patients with moderate to severe had history of treatment received prior before proper diagnosis as compared to patients with mild symptoms.

In present study the prevalence of intermittent AR cases was found to be predominant as compared to persistent cases. The studies done in past showed result of 62.8 % of intermittent cases. [14]

The treatment of allergic rhinitis varies from avoidance of exposure to allergens, identification of possible allergens, preventing allergy and symptomatic treatment by drugs.[15]

## CONCLUSION

This study helped us in establishing that SFAR Score is a cost effective and convenient method to diagnose allergic rhinitis even in remote areas.

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