
Original Article

Prevalence of Psychological Stress in Allergic Rhinitis Patients Attending a Tertiary Care Hospital - A Cross Sectional Study

Venkateswarlu V¹, Rachna Reddy B², Harihar Ch³, Veena Kumari L⁴

¹Professor of ENT, Sri Padmavathi Medical College for Women, SVIMS, Tirupati

²Senior Resident in ENT, Malla Reddy Medical College for Women, Hyderabad

³Professor of Psychiatry, Katuri Medical College, Guntur

⁴Professor of Pathology, Malla Reddy Medical College for Women, Hyderabad

Corresponding Author:

Dr. V. Venkateswarlu

Email: vallamreddy.venkateswarlu@gmail.com

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ABSTRACT:

Background: Allergic Rhinitis (AR) is a common disorder in patients attending Otorhinolaryngology (ENT) department. It has considerable impact on the life of affected individual. Many studies have linked certain psychological disorders to AR.

Objective: To estimate the prevalence of psychological stress in AR patients and assess its relation to duration and severity of the disease.

Methods: This is a cross-sectional study of AR patients attending ENT OPD during 6 months period. AR patients were diagnosed and classified as per ARIA guidelines. Then they were subjected to standard psychiatric interview and their psychological stress was measured using Perceived Stress Scale (PSS).

Results: Of 1804 new patients attending ENT OPD, 58 were diagnosed as suffering from AR. Among them, 29 (50%) were found to have significant stress; 12(20.69%) have Anxiety Disorder and 3(5.17%) were found to have Depressive Disorder. Among AR patients, those with persistent moderate-severe type were found to have high prevalence rate which is statistically significant. There is no relation between intensity of symptoms and duration of illness to significant psychological stress in AR patients.

Conclusion: Patients with AR have significant psychological stress which should not be overlooked during treatment. It may be related to inherent pathological factors like IgE level, psychological and social factors rather than intensity and duration of illness.

Key Words: Allergic rhinitis; Psychological stress; Cross-sectional study.

INTRODUCTION:

Allergic Rhinitis (AR) is a common chronic inflammatory disease of upper respiratory tract affecting 10% to 20% of population¹. As per Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines, it is classified into intermittent or persistent types². AR has significant impact on the quality of life of affected individual besides the economic burden due to cost of the treatment³. Many epidemiological studies have established the association between psychiatric morbidity and atopic disorders⁴. Psychological factors influence initiation and duration of asthma in AR patients⁵. Studies also showed a relation between IgE level and psychological disorders like anxiety, depression, hypochondriasis etc.⁶

This study attempts to evaluate the prevalence of psychological stress in AR patients and elicit its relation to the severity and duration of the disease.

MATERIALS AND METHODS:

This is a cross-sectional study conducted on new patients attending ENT OPD of Malla Reddy Medical College for Women (MRMCW) Hospital, Hyderabad during 6 month period from November 2015 to April 2016. The study has

approval of Institutional Ethics Committee and informed consent was taken from all the patients involved in the study. For patients who are below 18 years of age, informed consent was taken from caregivers in addition. Patients with AR were diagnosed and classified as per ARIA guidelines.

Inclusion Criteria: AR patients who are above 12 years of age and who attended the hospital for the first time for this disease.

Exclusion Criteria: Those with past history of any psychiatric disorder and those AR patients with other concomitant ENT diseases.

All the patients with AR were subjected to standard psychiatric interview by a qualified psychiatrist and Absolute Eosinophilic Count (AEC) in peripheral venous blood was done for confirmation of diagnosis of AR. Psychological stress was measured using Cohens Perceived Stress (PSS) scale. Subjects who manifested significant perceived stress were administered Hamilton Anxiety Rating Scale or Hamilton Depression Rating Scale depending upon their mental status. AEC of > 440 cells/cu.mm was taken as diagnostic for AR. A score of ≥ 20 on PSS scale indicated significant psychological stress.

RESULTS:

A total of 2062 patients attended the ENT OPD of MRMCW hospital during 6 months period. Among them for 1804 subjects, it was their first visit to the hospital. In the group of new patients 748 (41.46%) were males; females were 1056 (58.54%). Allergic rhinitis was diagnosed in 58 patients of new comer group. Age range of AR patients is 12 to 85 years (Figure – 1). Mean age is 33.41 years. Female patients were 34 (58.62%) and males were 24 (41.37%). Table – 1 shows the classification of AR patients as per ARIA guidelines. In 58 patients with AR 29 (50%) were found to have significant psychological stress; Anxiety disorder was diagnosed in 12 (20.69%) and Depressive disorder was found in 3 (5.17%) [Table – 2] Figure 2 shows relation between time of onset of illness and number of patients with significant psychological stress.

Table 1: Distribution of study subjects as per age

Age group (years)	Number	Percentage
12-20	12	20.7
21-30	19	32.7
31-40	16	27.6
41-50	03	5.2
51-60	04	6.9
61-70	03	5.2
> 70	01	1.7
Total	58	100

Table 2: Classification of Allergic Rhinitis Patients

Intermittent Type		Persistent Type	
Mild	Moderate-Severe	Mild	Moderate-Severe
11	7	3	37
18.97%	12.06%	5.17%	63.79%

Table 3: Distribution of Allergic Rhinitis Patients with Psychological Distress

Significant psychological stress (PSS ≥ 20)	Anxiety disorder	Depressive disorder
29	12	3
50%	20.69%	5.17%

PSS – Perceived Stress Scale

Table 4: Severity of Anxiety Disorder in Allergic Rhinitis Patients

Mild (< 17)	Mild to moderate (18-24)	Moderate to severe (25-30)
2	7	3
16.67%	58.33%	25%

Table 5: Distributions of Allergic Rhinitis Patients with Significant Stress [PSS ≥ 20]

Intermittent Type		Persistent Type	
Mild	Moderate-Severe	Mild	Moderate-Severe
5	3	2	19
17.24%	10.34%	6.89%	65.52%

PSS – Perceived Stress Scale

DISCUSSION:

Allergic rhinitis is a chronic inflammatory disorder of nasal mucosa that occurs in susceptible patients on coming into contact with specific allergen. In the past AR was classified as seasonal when symptoms occur during a specific time of the year and as perennial when symptoms occur round the year. Recently the classification was changed to intermittent or persistent types depending upon the duration of the illness and mild or moderate-severe types depending upon severity as per ARIA guidelines ⁷. Intermittent type is caused by outdoor allergens such as pollens of trees, grass and weed plants as well as molds. Persistent type may be precipitated by house dust mites, cockroaches, animal proteins and fungi ⁸. The nose becomes sensitized on repeated exposure to the allergen. The allergic inflammatory exudate contains eosinophils, T. cells, mast cells and basophils which release several mediators of allergy. The typical symptoms are sneezing, runny or stuffy nose, watering of eyes and itchy nose, throat or skin ⁹. Sometimes typical attacks of asthma may occur.

AR impacts the quality of life of affected individual; causes absenteeism in schools and work places and leads to fall in productivity besides the economic burden due to cost of the treatment. Nasal obstruction with sleep disturbance will have psychological impact on the individual. Many epidemiological studies showed a relationship between allergy and psychological factors. The initiation and duration of asthma in AR patients are related to psychological factors. Many review studies show AR patients suffer from anxiety, depression, hypochondriasis, somatization, psych asthenia and social introversion There is a relationship between IgE level and psychological disorders. Depression and other psychological disorders are associated with higher IgE levels. ¹⁰ AR impacts the quality of life of the patients and impose heavy psychological burden on the patients and their families ¹¹. The symptom of nasal obstruction with sleep disturbance induces psychological distress.

In our study we found the disease is affecting relatively young individuals in productive age group mean age being 33.41 years. Among 1804 outpatients, 58 patients making a percentage of 3.21% were diagnosed with AR. This low percentage may be due to strict inclusion and exclusion criteria. Among AR patients, persistent moderate-severe type has higher prevalence of 63.79% which is statistically significant (p=0.00).

50% of AR patients scored ≥ 20 points on Cohens Perceived Stress (PSS) scale indicating significant psychological stress. 20.69% of AR patients were found suffering from Anxiety Disorder and 5.17% had Depressive Disorder with Hamiltons Anxiety Rating Scale and Hamiltons Depressive Rating Scale respectively. As per HAM – A scoring more number of patients were suffering from mild to moderate severe anxiety

[Table – 3]. A study by Mehrinejad SA et al compared the psychological traits of patients with various allergic diseases with healthy volunteers and found that allergic patients scored higher in psychopathological features than general population.¹⁰ Another study by Pasaoglu G et al, a case control study showed that there is significant anxiety, Sensitivity in social relationships, depression, obsessive – compulsive disorder and Hypochondriasis in the cases than control groups.¹² Significant psychological stress ($PSS \geq 20$) [Table 4] was statistically compared between intermittent and persistent types and also between mild and moderate-severe types of AR. X^2 calculated value is 0.8984, X^2 table value is 3.84. Then we compared X^2 calculated & table value which is not significant. So there is no significant relation between psychological stress and intensity of symptoms or duration of illness in AR patients. The same conclusion was drawn by Baybek S et al in their study.¹³

CONCLUSION:

Allergic rhinitis patients will have significant psychiatric morbidity in the form of perceived stress, anxiety and depression. These should be kept in mind by the ENT specialists while treating them and necessary psychiatric referral may be made. Duration of the illness and severity of the symptoms have no significant relation to psychological stress. The study is limited by the small size of sample. Further studies with large sample may be required to confirm the findings.

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