

To Assess the Quality of Life in Patients Suffering from Allergic Rhinitis

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Abstract: *Background:* Allergic Rhinitis (AR) associated with impairments in patients day-to-day functioning at home and work is a global health problem. It's associated with sleep disorders, emotional problems, impairment in activities, and social functioning. However, it's not known to what extent quality of life (QOL) scores, work impairment, or sleep is altered in Indian setup hence, this study was designed to assess the quality of life of patients suffering from allergic rhinitis.

Methodology: This prospective, observational, cross sectional study was conducted on patients suffering from allergic rhinitis visiting the out patients department. The patients who gave written informed consent were divided into two groups based on gender, Group 1 was males and Group 2 was females. A detailed history was taken and participants underwent thorough medical examination, followed by assessment on Rhino conjunctivitis Quality of Life Questionnaire (RQLQ) and WHOQOL – Bref scores.

Results: A total of 87 patients were screened of which 40 patients were enrolled in study. The average age of patients in the study was 28.08±10.01, a total of 26 males and 14 females completed the study. There were significantly worse non nose/eyes symptoms scores, practical problems, and emotional scores in patients in Group 2 as compared to Group 1. Group 1 had better aspect of sleep, nasal symptoms, and eyes symptoms as compared to Group 2. Whereas, Group2 had better aspect of activities score as compared to Group 1.

Conclusion: To conclude both groups had compromised quality of life, with females being more affected as compared to males

Keywords: Allergic rhinitis, quality of life, social, emotional, psychological.

INTRODUCTION

Allergic rhinitis (AR) is a major illness and disability worldwide, emerging as a global health problem and affects approximately 40 million people in the United States of America (USA) [1, 2]. There has been an increase in the overall prevalence of AR since the early 1980s across all age, sex, and racial groups and is accounted as one of the most common chronic diseases among all age groups in the USA [1, 3].

The symptoms of allergic rhinitis are mainly nasal with complaints of rhinorrhea, nasal congestion, and sneezing [2, 4]. The patients also tends to experience

non-nasal symptoms which are troublesome, including headache, thirst, and disturbed sleep with fatigue, mood changes, depression, anxiety and impairments of work, school performance, and cognitive function [2, 4].

Only 12.4% of patients consult a physician, and instead choose to self-treat with home remedies and over-the-counter (OTC) medications; although they experience unpleasant symptoms with allergic rhinitis, they do not seek medical advice and [5, 6]. Increases in direct and in direct cost is associated with lack of treatment, under treatment, or non adherence. The direct, indirect, and hidden cost associated with allergic rhinitis is expensive as well as debilitating [5]. Reinforcement is needed for patient education and for physicians to implement existing evidence-based guidelines for prevention and treatment [5]. The total estimated cost of allergic rhinitis was between 1.2 and

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1.5 billion dollars in 1994 [7] with more than 6 million missed work days, 2 million missed school days, and 28 million reduced-activity days [5]. Almost half of patients experience symptoms for more than 4 months in a year and one-fifth have symptoms for at least 9 months per year [5].

It's recognized that AR frequently has substantial impairment in adults and children; and a significant impact on QOL from 1990's [8]. The finding of a direct relationship between AR symptoms and cognitive functioning strongly suggests implications of AR daily life functioning, safety and workplace productivity. As compared to general population, more people with AR complain of difficulty getting to sleep, waking up during the night, lack of a good night's sleep, or a combination of these, as a result of their nasal symptoms. More than half of individuals with AR describe their symptoms as impacting daily life a lot or to a moderate degree and report that their health limits them from doing well at work compared with adults without nasal allergies, and their estimated productivity drops by an average of 20% on days when their nasal symptoms are at their worst as driving a car or operating machinery. Allergic rhinitis has been described as a disease that "may appear quite bearable to the non sufferer" [9].

There have been reports of problems with social activities, difficulties with daily activities, and decreased feelings of mental well-being than people without AR in a study evaluating the impact of AR and asthma on QOL [4].

There is a disconnect between clinicians' perceptions of AR as a chronic but non serious medical condition that causes a limited range of symptoms and patients' perceptions of it as a limiting and disabling presence in their lives [10] and has a substantial impact on public health and the economy. Hence we designed this study to assess the quality of life of patients suffering from allergic rhinitis.

MATERIALS AND METHODS

This prospective, observational, cross sectional study was conducted on patients visiting the Department of Otorhinolaryngology, Gian Sagar Medical College and Hospital, Patiala, India for 2 months between April 2013 to August 2013. Patients suffering from allergic rhinitis were recruited in the study. The study was approved by the Institutional Ethics Committee and only those patients were recruited those who gave written informed consent.

Patients between the age group of 18-55 years with a history of allergic rhinitis and were otherwise healthy were included in the study. Patients with history of chronic nasal or upper respiratory tract symptoms or disorders other than allergic rhinitis, chronic sinusitis or severe asthma, a nasal condition likely to affect the outcome of the study and currently taking regular medication, whether prescribed or not, including corticosteroids, vitamins, macrolides, anti-fungal agents and herbal remedies were excluded from the study. All the pregnant or lactating females and those desirous of having children were excluded from the study.

The participants were divided into two groups based on the gender, Group 1 consisted of Males and Group 2 consisted of females. The participants underwent a thorough medical examination and detailed history was taken.

Parameters

Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ): was monitored in all the patients enrolled in the study. RQLQ has been developed to measure the functional problems (physical, emotional, social and occupational) that are most troublesome to adults with seasonal or perennial rhinoconjunctivitis of allergic or non-allergic origin. RQLQ captures all problems that are experienced due to symptoms pertaining to nose. It has 28 questions with 7 domains (activity limitation, sleep problems, nose symptoms, eye symptoms, non-nose/eye symptoms, practical problems and emotional function). There are 'patient-specific' questions in the activity domain which allow patients to select 3 activities due to rhinoconjunctivitis in which they are most limited. Patients recall the previous weeks symptoms and how bothered they have been to respond to each question on a 7-point scale (0=not impaired at all-6= severely impaired). The overall RQLQ score is the mean of all 28 responses and the individual domain scores are the mean of the items, a higher scores representing compromised quality of life [11].

The WHOQOL – Bref: was monitored in all the patients enrolled in the study. This is a 26-item self-administered questionnaire, is a short version of WHOQOL -100 scales. It was analyzed from perspective of six domains (physical health, psychological health, level of independence, social relationships, environment, & spiritual) or four domains (physical health, psychological health, social relations, and environment) [12].

Four domains for WHOQOL-BREF, based on its 26 items are: domain 1, physical health, is on activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity. Domain 2, psychological health, includes bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality, religion, personal beliefs, thinking, learning, memory, and concentration. Domain 3, social relationships, covers personal relationships, social support, and sexual activity. Domain 4, environment, assesses financial resources, freedom, physical safety and security, health and social care (accessibility and quality), home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities, physical environment (pollution, noise, traffic, and climate), and transport. The raw score of each domain is then transferred to standardized score of 0 to 100, so as to maintain uniformity in scores. Higher scores is interpreted as better quality of life of patients. The QOL index of each domain and their associations with demographic factors were assessed [13-15].

Statistical Analysis

The data was tabulated as mean ± standard deviation (SD). Results were analyzed using appropriate non parametric tests (Mann Whitney Test), and parametric tests (two tailed student t-test). A p<0.05 was considered statistically significant.

RESULTS

A total of 87 patients were screened for the study, 17 males and 21 females did not give there written

informed consent and hence were excluded from the study. Another 9 patients (7 females and 2 males) were taking corticosteroids and hence were excluded from the study. A total of 40 patients gave written informed consent and were enrolled in the study. The average age of patients in the study was 28.08±10.01, a total of 26 males and 14 females completed the study and were divided into Group 1 and Group 2, respectively. Group 2 participants had a slightly higher age (30.71±11.83 vs. 26.65±8.81) as compare to Group1 though it was not statistically (p>0.05) significant.

RQLQ Scores

The RQLQ Scores in both groups are shown in Figure 1. Scoring included transformation of raw scores for each subscale to mean scores and a higher scores representing compromised quality of life. There were significantly worse non nose/eyes symptoms scores (1.04±0.52 vs. 0.78±0.28); practical problems (2.06±0.32 vs. 1.76±0.36); and emotional scores (0.79±0.31 vs. 0.43±0.24) in patients in Group 2 as compared to Group 1. The Group1 had better aspect of sleep (1.40±0.48 vs. 1.45±0.65), nasal symptoms (2.89±0.31 vs. 2.97±0.17), and eyes symptoms (2.85±0.25 vs. 2.88±0.15) as compared to Group2 although it was not statistically significant, whereas, Group2 had better aspect of activities score (1.9±0.54 vs. 1.97±0.63) as compared to Group 1.

WHO-QOL Bref Scores

WHO-QOL bref scores are shown in Figure 2. The higher scores meant better quality of life of patients. Group 1 had significantly (p<0.05) higher scores in

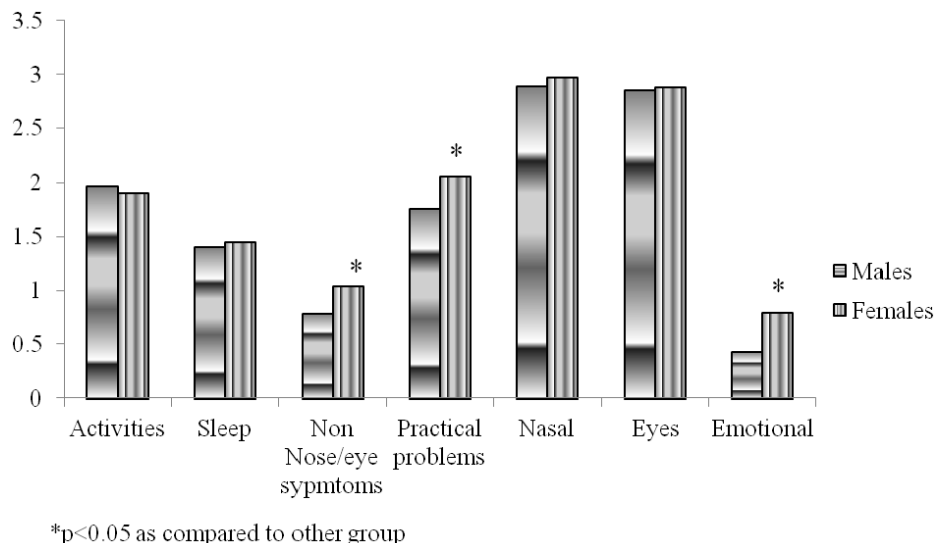


Figure 1: RQLQ Scores in both groups.

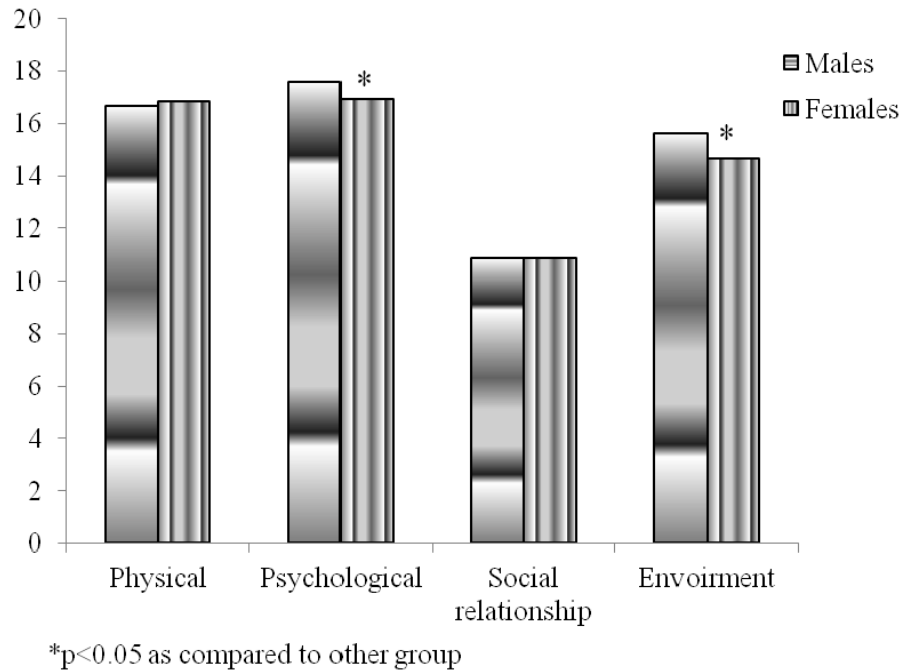


Figure 2: WHO-QOL Bref Scores in both groups.

psychological (17.57 ± 1.07 vs. 16.93 ± 0.73), and environment (15.62 ± 0.64 vs. 14.64 ± 0.63) as compared to Group 2. Group 2 had higher scores in physical health (16.86 ± 1.03 vs. 16.65 ± 1.23) but it was not statistically significant. The social relationship scores (10.85 ± 0.73 vs. 10.86 ± 0.86) were comparable in both groups.

DISCUSSION

Allergic Rhinitis (AR) is a common global health problem affecting approximately one quarter of world population. Allergic Rhinitis and its Impact on Asthma (ARIA) have classified allergic rhinitis as intermittent and persistent; they represent different stratum of disease and graded as mild/moderate/ severe allergic rhinitis. It is made up of more than the classic symptoms of sneezing, rhinorrhea, and nasal obstruction. Allergic rhinitis is associated with impairments in patients functioning in day-to-day life at home, work, and school associated with sleep disorders, emotional problems, impairment in activities, and social functioning [16].

The present study was undertaken to assess the health related quality of life in patients suffering from allergic rhinitis in males and females. The QOL was slightly impaired in both groups as evident by low scores of RQLQ and high scores of WHO-QOL Bref Scores. There were significantly worse non nose/eyes symptoms scores; practical problems; and emotional

scores in patients in Group 2 as compared to group 1 as evident by RQLQ scores. The Group1 had better aspect of sleep, nasal symptoms, and eyes symptoms as compared to Group2 in RQLQ scores. Group 1 had significantly higher scores in psychological, and environment as compared to Group 2. Group 2 had higher scores in physical health but it was not statistically significant.

A study done to see the effects of allergic rhinitis using ARIA definitions to determine severity and duration demonstrated that approximately 90% of patients with allergic rhinitis consulting general practitioners had moderate/severe symptoms that impaired daily activities, sleep, and work; are similar to our study were it was demonstrated that psychological and non nose/eye symptoms were of major concern although we had significant difference in males and females [16].

Another study done in two French centers participating in the European Community Respiratory Health Survey of young adults showed that both asthma and allergic rhinitis were associated with impairment in quality of life. Although patients with both asthma and allergic rhinitis experienced more physical limitations than patients with allergic rhinitis alone, but no difference was found between these two groups for concepts related to social/mental health. The results are similar to our study where it was demonstrated that

patients with allergic rhinitis had compromised QOL, though we did not include patients with asthma [4].

Another population based study showed that the physical QOL of subjects with asthma was lower regardless of a previous history of non infectious rhinitis compared to controls. A positive history of non infectious rhinitis in asthma was however associated with a poorer mental QOL. The results are different from our study as we did not enrol patients who had asthma, we restricted ourselves to patients suffering from allergic rhinitis and these patients had compromised QOL [17].

A study assessing the extent to which treating persistent allergic rhinitis with montelukast, desloratadine, and levocetirizine alone or in combination improved quality of life showed that these interventions significantly improved quality of life and combination gave additional benefits in comparison to each agent alone. The results of this study are similar to our study where it was found that QOL was compromised at baseline, but as no intervention was given in our study as we were studying the impact of allergic rhinitis on QOL [18].

There are certain limitation in our study firstly the sample size could have been larger but, the duration of study was only two months hence we tried to include patients who fulfilled the eligibility criteria. Secondly, a comparison with the intervention arm could be done, but any intervention could have prolonged the duration of study and we would not have been able to complete the study in the allotted 2 months.

CONCLUSION

To conclude it was observed in our study that both groups had compromised quality of life, there were significantly worse non nose/eyes symptoms scores; practical problems; and emotional scores in patients in Group 2 as compared to group 1 as evident by RQLQ scores. The Group1 had better aspect of sleep, nasal symptoms, and eyes symptoms as compared to Group2 in RQLQ scores. Group 1 had significantly higher scores in psychological, and environment as compared to Group 2. Group 2 had higher scores in physical health but it was not statistically significant.

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