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RESEARCH ARTICLE

PROFILE AND DEMOGRAPHIC FACTORS IN ALLERGIC RHINITIS PATIENTS: A CLINICAL STUDY

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ABSTRACT

Allergic Rhinitis (AR) represents a global health problem. It is an extremely common disease worldwide, affecting 10 to 25% of the population. AR constitutes approximately 55% of all allergies seen in India. However, in India, AR still does not receive the attention it deserves by both patients, as well as, clinicians. This hospital based cross sectional retrospective study was done on 2525 patients who had attended E.N.T. OPD at a tertiary care hospital of Central India, with aim to study clinical profile and demographic factors of allergic rhinitis. Majority (72%) of the subjects were suffering from seasonal allergic rhinitis and 28% from perennial allergic rhinitis. Majority of the subjects (62%) belonged to low income category, followed by Middle income category (25.6%), and rest were upper income category (12.4%). The study reveals most common symptom in seasonal allergic rhinitis is nasal obstruction (p=0.0001) and in perennial allergic rhinitis is sneezing (p=0.18) and rhinorrhea (p=0.01) and these results are statistically significant. The symptom of rhinorrhoea was frequently seen in allergic rhinitis patients. Also nasal obstruction was distinct feature which could easily show the presence of allergic rhinitis. It was found that sign of transverse crease can also help us to find cases of perennial allergic rhinitis. Allergic shiners and allergic salute were also mostly seen in patients of allergic rhinitis which can also help us to distinguish cases of various type of rhinitis. The disease was more commonly found in younger age group and low income category.

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INTRODUCTION

Allergic Rhinitis (AR) represents a global health problem. It is an extremely common disease worldwide, affecting 10 to 25% of the population. However, this figure probably underestimates the prevalence of the disease, as many patients do not recognize rhinitis as a disease and therefore, do not consult a physician (International Rhinitis Management Working Group, 1994). An increasing prevalence of AR over the last decades has been recognized (Aberg *et al*., 1996; Ciprandi, 1996). AR has been identified as one of the top ten reasons for visits to primary care clinics (Gregory *et al*., 1999). Basically AR is a symptomatic disorder of the nose, induced after allergen exposure by an immunoglobulin E (Ig E)-mediated inflammation of the membranes lining the nose (Bousquet, 2001). It is characterized by nasal congestion, rhinorrhea, sneezing, itching of nose and/or postnasal drainage (Bousquet, 2001). Other conditions associated with AR are asthma, sinusitis, otitis media, nasal polyposis, lower respiratory tract- infection and dental malocclusion (Spector, 1997). Risk factors for AR are well-identified. Indoor and outdoor allergens as well as occupational agents cause rhinitis and other allergic diseases diseases (Bousquet *et al*., 2008).

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AR constitutes approximately 55% of all allergies seen in India (Justo Padilla, 2013). However, in India, AR still does not receive the attention it deserves by both patients, as well as, clinicians (Braback *et al.,* 2005). Moreover, literature in India is scarce, regarding the clinical characteristics of the patients with AR, according to the recent classification. The present study was hence, conducted with the aim to identify the demographic and clinical profile of the patients with AR and to find the association of predominant disease symptoms with common allergens, type and severity of the disease and other co-morbidities.

MATERIALS AND METHODS

Data for this study was collected from patients attending E.N.T OPD at a tertiary care hospital of Central India over a period of five years from January 2010 to December 2015. The study sample size was 2525 cases and is hospital based cross sectional retrospective study.

Inclusion criteria

- All cases of allergic rhinitis in OPD patients of tertiary care hospital

Table 1. Distribution of study subject on the basis of income

Income	Male	Female	Total
Upper	263 (10.4%)	51 (2%)	314 (12.4%)
Middle	490 (19.4%)	156 (6.2%)	646 (25.6%)
Low	1192 (47.2%)	373 (14.8%)	1565 (62.0%)
Total	1945 (77.0%)	580 (23%)	2525 (100.0%)

Table 2. Symptoms among Perennial and seasonal allergic rhinitis cases

Symptoms	Perennial(n=1005)	Seasonal(n=1520)	Grand Total (n=2525)	P – value#
Sneezing	591 (58.79%)	793 (52.16%)	1384 (54.80%)	0.18
Rhinorrhoea	591 (58.79%)	722 (47.51%)	1313 (52.00%)	0.01*
Nasal discharge	480 (47.74%)	833 (54.82%)	1313 (52.00%)	0.14
nasal obstruction	394 (39.20%)	848 (55.81%)	1242 (49.20%)	0.0001*
head ache	540 (53.77%)	783 (51.50%)	1323 (52.40%)	0.68
itching nose	277 (27.64%)	475 (31.23%)	752 (29.80%)	0.45
itching eyes	414 (41.21%)	636 (41.86%)	1050 (41.60%)	0.95
smell disturbance	414 (41.21%)	717 (47.18%)	1131 (44.80%)	0.22

*significant, # chi-square test

Table 3. Sign among Perennial and seasonal allergic rhinitis cases

Sign	Perennial(n=1005)	Seasonal(n=1520)	Grand Total (n=2525)	P – value#
Bluish pale nasal mucosa	414 (41.21%)	626 (41.20%)	1040 (41.20%)	0.92
Bluish edematous turbinates	470 (46.73%)	747 (49.17%)	1217 (48.20%)	0.65
thickened nasal septum	368 (36.68%)	596 (39.20%)	964 (38.20%)	0.63
High arched palate	354 (35.18%)	616 (40.53%)	970 (38.40%)	0.27
Allergic shiners	379 (37.69%)	550 (36.21%)	929 (36.80%)	0.81
Allergic salute	358 (35.68%)	561 (36.88%)	919 (36.40%)	0.85
Transverse crease	450 (44.72%)	530 (34.88%)	980 (38.80%)	0.03*
Conjuctival congestion	354 (35.18%)	555 (36.54%)	909 (36.00%)	0.83

*significant, # chi-square test

Table 4. Investigational findings among Perennial and seasonal allergic rhinitis cases

Investigation	Perennial(n=1005)	Seasonal(n=1520)	Grand Total (n=2525)	P – value#
X-ray paranasal sinuses(WNL)	621 (61.81%)	969 (63.79%)	1590 (63.00%)	0.72
Nasal endoscopy(WNL)	369 (36.68%)	656 (43.19%)	1025 (40.60%)	0.17
Eosinophilia present	666 (66.4%)	980 (64.5%)	1646 (65.2%)	0.73

chi-square test

Exclusion Criteria

- All patients who underwent some nasal surgeries.
- All patients of nasal polyps, nasal mass.
- All patients with history of trauma.

Data Analysis

- All statistical analysis was carried out using SPSS & appropriate statistical tools will be applied wherever required.

RESULTS

The study reveals most common symptom in seasonal allergic rhinitis is nasal obstruction (p=0.0001) and in perennial allergic rhinitis is sneezing (p=0.18) and rhinorrhea (p=0.01) and these results are statistically significant. The study table reveals most common sign among all allergic rhinitis patients are bluish edematous turbinates (p=0.65) and there was statistically significant in transverse crease (p=0.03) which was more associated with seasonal rhinitis patients. The study reveals most consistent investigation among all allergic rhinitis patients was presence of eosinophilia (p=0.73) which is statistically significant.

DISCUSSION

Majority of the subjects i.e (62%) belonged to low income category, followed by Middle income category 128 (25.6%), nd rest were upper income category i.e. 62 (12.4%), which reflects on the income group of the population attending our out patients department. According to study conducted by L. Braback (Braback *et al*., 2005) low socioeconomic status was related to reduced risk of asthma with allergic rhinitis in earliest cohort study (0.72, 95%) but slightly increased risk in most recent cohort study (1.07, 95%). In our study there is no significant association of examinational findings between seasonal and perennial allergic rhinitis in contrast to study conducted by Robert A Nathan where more affective diagnosis was made by self reporting and examination conducted by physician rather than investigative procedures like x-rays, nasal endoscopy and eosinophilic count (Nathan, 1997). In our study, rhinorrhea was significantly higher in perennial rhinitis cases, whereas, nasal obstruction was significantly higher in seasonal cases. This result was comparable to those found by Bauchau *et al* in which mean score of rhinorrhoea intermittent (N=287) was 1.78 and persistent (N=119) was 2.04 (Bauchau, 2005). In our study signs of allergic rhinitis and type of allergic rhinitis were not significantly associated with perennial and seasonal allergic rhinitis except transverse crease which was significantly higher in perennial rhinitis cases. In other study by Justo Padilla *et al* there was highly significant association between signs of allergic rhinitis and presence of allergic rhinitis seen in 256 asthmatic children (Justo Padilla, 2013).

Conclusion

Allergic rhinitis is the commonest immunologic disease and is the commonest chronic disease experienced by humans. In our study symptom of rhinorrhoea was frequently seen in allergic rhinitis patients, which would help us to diagnose seasonal and

perennial outcome. Also nasal obstruction was distinct feature which could easily show the presence of allergic rhinitis. It was found in this study that sign of transverse crease can also help us to find cases of perennial allergic rhinitis. Allergic shiners and allergic salute were also mostly seen in patients of allergic rhinitis which can also help us to distinguish cases of various type of rhinitis. Nasal endoscopy and eosinophilic counts were useful investigations; these were easy and cost effective means to distinguish the disease. Hence outcome of these investigations was useful. In our study we found the disease to be more common in younger age group and low income category. Majority of the subjects suffered from seasonal allergic rhinitis.

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