



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

Available online at: <http://www.iajps.com>

Research Article

FREQUENCY AND DETERMINANTS OF ALLERGIC RHINITIS IN PATIENTS VISITING ENT DEPARTMENT OF JHL, LAHORE

¹Dr. Ammarah Azam, ²Syeda Lareb Zehra, ³Dr. Humera Karim

¹BVH, Bahawalpur, ²Ghulam Muhammad Mahar Medical College Sukkur, ³WMO Surgimed Hospital, Lahore

Article Received: January 2019

Accepted: February 2019

Published: March 2019

Abstract:

The study was aimed to find out the frequency of Allergic Rhinitis in patients visiting the OPD of ENT department of Jinnah Hospital, Lahore and associated risk factors.

***Materials and methods:** The study was conducted in OPD of ENT department of Jinnah Hospital, Lahore and included all the subjects who visited during April 23 – May 6 2018 except those who were not willing to give consent. Duration of study was one month and the sample size was 200.*

***Results:** The sample size for our study was 200 among those, 96 (48%) were males & 104 (52%) were females & those having age less than 20 years were 36 (18%), those having age between 20-35 years were 73(36.5%), between 35-50 years were 57 (28.5%) & those more than 50 years were 34 (17%).63(31.5%) belonged to rural areas while 137(68.5%) were from urban areas.142(71%) had a problem of runny nose with watery eyes without flu & 58(29%) had no such problem.72(36%) were facing the problem at the time of survey while 128(64%) were not.109(54.5%)had a positive family history for this problem while 91(45.5) had no such history.113(56.5%) had seasonal variation of symptoms while 48(24%) had symptoms all the year.29(14.5%) had an increase in symptoms during spring season, 10(5%) during autumn, 62(31%) during winter & 11 (5.5%) during summer.56(28%)had episodes of attack in early morning, 49(24.5%) during daytime,22(11%) in evening, 25(12.5%) in late-night & 8(4%) had post coital episode.92(46%) had exposure to pollens while 108(54%) had no such exposure. 25(12.5%) had exposure to molds while 175(87.5%) did not have such exposure. 51(25.5%) were exposed to furred animals while 149(74.5%) were not. 120(60%) showed symptoms at dusty places while 80(40%) had no such symptoms. Out of 200 patients, 115(57.5%) were using medicine for allergic rhinitis.*

***Conclusion:** According to our study the frequency of Allergic Rhinitis was 36% in patients visiting OPD of ENT department of Jinnah Hospital, Lahore. Morning time and winter season were the most common trigger factors of AR. Family history of AR, exposure to animal dander, molds, pollens or dusty places, smoking and stress were the significant risk factors associated with AR prevalence in patients.*

***Key words:** Allergic rhinitis, prevalence, determinants.*

Corresponding author:

Dr. Ammarah Azam,
BVH, Bahawalpur.

QR code



Please cite this article in press Ammarah Azam et al., *Frequency And Determinants Of Allergic Rhinitis In Patients Visiting Ent Department Of Jhl, Lahore., Indo Am. J. P. Sci, 2019; 06(03).*

INTRODUCTION:

Allergic rhinitis (AR) is a diverse ailment that in spite of its high invasiveness is often undiagnosed. It is categorized by one or more indications including sneezing, itching, nasal congestion, nasal obstruction, nasal pruritis and rhinorrhea. Many contributory factors have been related to AR including pollens, dust mites and animal dander. [1]. It is classified into persistent and sporadic types on the basis of symptoms. ARIA classification includes mild, moderate and severe types. Severe type includes ocular symptoms. These symptoms occur in about 70% of AR patients depending on the allergen sensitization, sternness and extent of symptoms. [2] It is caused by IgE mediated reactions against gasped allergens and involving mucosal inflammation mediated by type 2 helper T cells. The incidence of sensitization to gasped allergens is more than 40% in US and Europe. The incidence of AR in United States is 15% on the basis of physician diagnosis and 30% on the basis of self-findings. [3] Allergic rhinitis affects between 10% to 30% population worldwide with sensitization to foreign proteins in about 40% population. [4] In Pakistan, its incidence is increasing day by day. In a survey, the frequency of wheezing was found to be 15.2% and of allergic rhinitis was 34.3% while the incidence of those having wheezing episodes as well as allergic rhinitis was 8%. [5].

MATERIALS AND METHODS:

The study was conducted at Jinnah Hospital, Lahore in OPD of the ENT department (a tertiary care hospital with 1100 beds). Duration of study was one month (April 15-May 15). Sample size is 200. It was nonrandom probability purposive sampling. Individuals visiting OPD of ENT department of Jinnah Hospital, Lahore during April 23 – May 6 2018. Were our inclusion criteria. Individuals who were not willing to give consent were our exclusion criteria. It was Cross sectional study. we collected data from 200 patients those fulfilling the inclusion criteria. After explaining the purpose of study, self-designed questionnaires were given to the subjects to be answered. In case of illiterate subjects, questionnaires were translated and filled in by the researchers. Data was entered and analyzed in IBM SPSS Statistics 21. Mean and standard deviation was calculated for numerical variables like age, persistence of symptoms. Frequency and percentages were calculated for nominal variables. Results are shown in the form of tables and charts.

RESULTS:

The sample size for our study was 200 patients presented in Department of Otorhinolaryngology Jinnah Hospital, Lahore. Among these, 96 (48%)

were males & 104 (52%) were females & those having age less than 20 years were 36 (18%), those having age between 20-35 years were 73(36.5%), between 35-50 years were 57 (28.5%) & those more than 50 years were 34 (17%). The education status showed that 29 (14.5%) were illiterate, 41 (20.5%) had primary education, 54(27%) had secondary education, 47(23.5%) had intermediate education, 25(12.5%) had higher education & 4(2%) had Islamic education.

16(8%) were unemployed, 3(1.5%) were farmers, 27(13.5%) were laborers, 5(2.5%) were businessmen, 59 (29.5%) were employees, 57 (28.5%) were housewives & 33 (16.5%) were students. 63 (31.5%) belonged to rural areas while 137(68.5%) were from urban areas. 142(71%) had a problem of runny nose with watery eyes & 58(29%) had no such problem. 72 (36%) were facing the problem at the time of survey while 128(64%) were not (27.5%) had no past history of attack while 86(43%) had history of less than 4 attacks & 59(29.5%) had more than 4 attacks. 109(54.5%) had a positive family history for this problem while 91(45.5%) had no such history. Among those having positive family history, 44(22%) had a positive paternal history & 36(18%) had maternal one & 30(15%) had a combined history.

Symptoms were troublesome to 85(42.5%) while 115(57.5%) had no trouble at all. Symptoms caused: disturbed sleep in 86(43%) while 114(57%) did not have any such disturbance, restricted daily activities in 45(22.5%) while 155(77.5%) were not affected at all, restricted participation to work in 74(37%) while 126(63%) had no such problem. 113(56.5%) had seasonal variation of symptoms while 48(24%) had symptoms all the year. 25.89% had an increase in symptoms during spring season, 8.93% during autumn, 55.86% during winter & 9.82% during summer .56(28%) had episodes of attack in early morning, 49(24.5%) during daytime, 22(11%) in evening, 25(12.5%) in late-night & 8(4%) had post coital episode.

Persistence of symptoms was less than 4 days in 105(52.5%) & greater than 4 days in 55(27.5%). 92(46%) had exposure to pollens while 108(54%) had no such exposure. 25(12.5%) had exposure to molds while 175(87.5%) did not have such exposure. 51(25.5%) were exposed to furred animals while 149(74.5%) were not. 120(60%) showed symptoms at dusty places while 80(40%) had no such symptoms. 28(14%) were cigarette smokers. 6(3%) smoked huqqah. 9(4.5) were users of pan, 1(5%) of gutka, 0(0%) of naswar ,153(76.5%) did not use any of such things while 3(1.5%) used others.

44(22%) had no stress, 71(35.5%) had a little, 65(32.5) had moderate stress while 20(10%) had severe stress. 136(68%) had allopathic treatment, 36(18%) homeopathic, 14(7%) ayurvedic & 14(7%) had other types of treatment. Out of 200 patients, 115(57.5%) were using medicine for allergic rhinitis

while 85(42.5%) used no medicines at all. 26(13%) used medicine regularly while 86(43%) used them on demand.

TABLES AND GRAPHS:

Crosstabulation of prevalence with stress level Crosstabulation of prevalence with sex of patient

		are you currently facing this problem?		Total
		yes	no	
sex of patient	male	32	64	96
	female	40	64	104
Total		72	128	200

Crosstabulation of prevalence with residency of patient

Count

		are you currently facing this problem?		Total
		yes	no	
residency of patient	rural	27	36	63
	urban	45	92	137
Total		72	128	200

Crosstabulation of prevalence with heredity

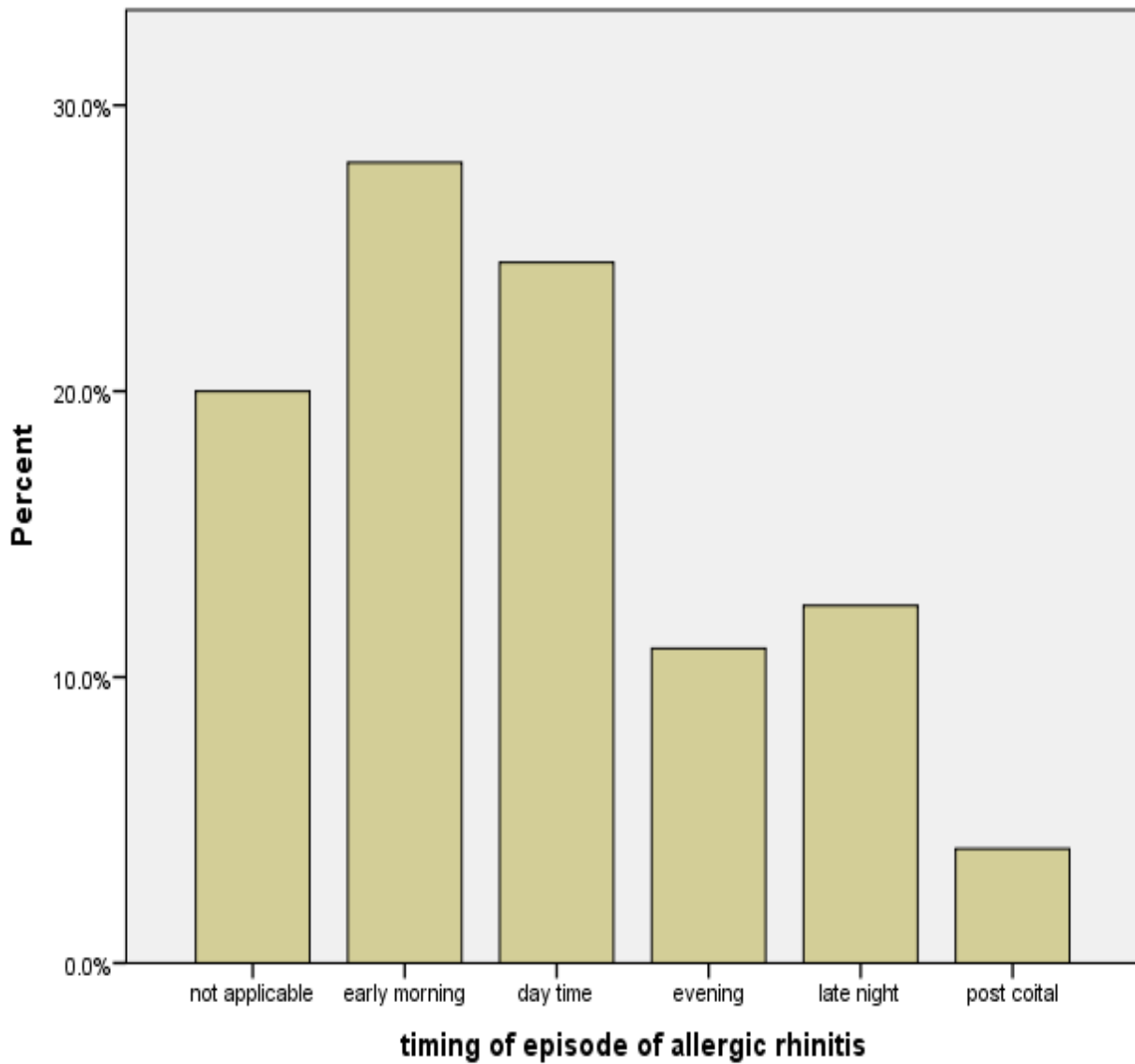
Count

		are you currently facing this problem?		Total
		yes	no	
does anyone else have this problem in your family?	yes	39	70	109
	no	33	58	91
Total		72	128	200

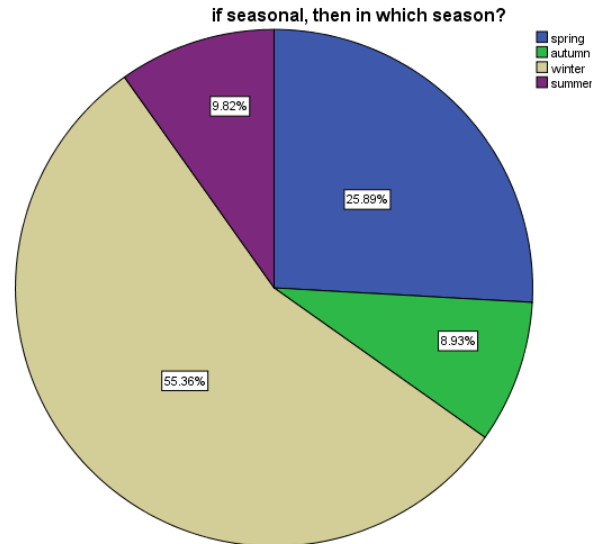
Crosstabulation of prevalence with smoking and use of other items

Count		are you currently facing this problem?		Total
		yes	no	
do you use any of the following items?	don't use such items	49	104	153
	cigarette	14	14	28
	huqqah	5	1	6
	pan	3	6	9
	Gutka	0	1	1
	others	1	2	3
Total		72	128	200

Histogram of timings of episodes of allergic rhinitis



Pie chart of variations of seasonal symptoms



DISCUSSION:

There is an increase in the prevalence of AR in both developed and developing countries in the last decades. [6] This study may be the first one which addresses the frequency and determinants of AR in OPD of the ENT department of Jinnah Hospital, Lahore. We used a questionnaire to interview patients. The current study reported that 36% patients presented with allergic rhinitis. The overall prevalence across Europe is about 23% (lowest in Italy and highest in Belgium) [7] 30% in Turkey, 9% in Middle East countries and 15% in UAE. [8]. In our study, there was no effect of gender noted on prevalence of AR same as reported in a study. [1] In this study, we found a higher prevalence of AR in urban areas which is similar to the largest epidemiological studies conducted in China. They had higher prevalence in urban areas. [9]. The development of AR entails a complex interaction between genetic predisposition and environmental exposure to different factors, of which the most important is the implicated allergens. There is a clear hereditary component in allergic rhinitis that has been well corroborated by segregation studies and investigations in twins. From the strictly genetic perspective, it is believed that the disease may be the result of the interaction of different genetic alterations, each of which would contribute a small defect. [10] From this point arises the importance of studying family history of AR. In our study we have studied family history as one of the important risk

factors for AR, 54% of our cases suffering from AR were having positive family history.

Cold air and cold weather are top inducing factors for AR in winter. The changes of temperature in cold weather affects stability of parasympathetic supply of the nose and the dry air increases the vascular stability of the nasal mucosa leading to the hypersensitivity. Cold weather related respiratory symptoms could be thought to reflect functional changes in the airways, occurring as a result of either cooling of the skin or through simultaneous cooling and drying of the nasal and airway mucosa on inhaling cold air. [11] This was consistent with our results. 55.36% of our cases had the attack in winter. The effects may be further intensified during exercise in the cold at high ventilation rates. [12] We have proved in our study that most of the cases had the attacks in early morning time due to the presence of cold air. Clinical manifestations of AR have many environmental triggers including pollens, molds, dust mites and animal dander. [1] Of these exposures, pollens have been overwhelmingly linked with the development and clinical expression of this disease. [13, 14] A study showed that AR symptoms were linked to exposure to pollens and also to furry animals and house dust. [15] In our research, we found that 40% patients having AR had exposure to pollens, 13.3% to molds, 24.4% to furred animals and 22.22% to dusty places.

The harmful effects of tobacco smoke on human health, including respiratory health, are extensive and well documented. In our study we found that smoking was associated with high prevalence of AR. Previous studies have presented conflicting results on the effects of smoking on the prevalence of allergic rhinitis [16-18]. Stress related hypothalamic pituitary adrenal axis reacts to psychological stressors and triggers a cortisol response, this may explain our data in which 35% of our cases were having moderate stress which may be related to the pathophysiology of AR development. This was also detected in a study done in Korea which showed the same results. [19]. In our study, 57.5% of cases took medication for allergic rhinitis. 43% of them only received it on demand, in contrast to a study which showed that only 12.3% of those having symptoms of AR take medicines for it in United States. [20]

CONCLUSION:

According to our study the frequency of Allergic Rhinitis was 36% in patients visiting OPD of ENT department of Jinnah Hospital, Lahore. Morning time and winter season were the most common trigger factors of AR. Family history of AR, exposure to animal dander, molds, pollens or dusty places, smoking and stress were the significant risk factors associated with AR prevalence in patients.

REFERENCES:

- Skoner DP. Allergic rhinitis: definition, epidemiology, pathophysiology, detection, and diagnosis. *Journal of allergy and clinical immunology*. 2001 Jul 1;108(1): S2-8.
- Bousquet PJ, Demoly P, Devillier P, Mesbah K, Bousquet J. Impact of allergic rhinitis symptoms on quality of life in primary care. *International archives of allergy and immunology*. 2013;160(4):393-400
- Wheatley LM, Togias A. Allergic rhinitis. *New England Journal of Medicine*. 2015 Jan 29;372(5):456-63
- World Health Organization. *White Book on Allergy 2011-2012 Executive Summary*. By Prof. Ruby Pawankar, MD, PhD, Prof. Giorgio Walker Canonica, MD, Prof. Stephen T. Holgate, BSc, MD, DSc, FMedSci and Prof. Richard F. Lockey, MD.
- Noori, Muhammad & Hasnain, Syed Mohammed & A. Waqar, M. (2007). Prevalence of allergies and asthma in Pakistan. *World Allergy Organization Journal*. &NA; S206-S207. 10.1097/01.WOX.0000301914.98916.8a.
- Schoenwetter WF. Allergic rhinitis: epidemiology and natural history. In *Allergy and asthma proceedings 2000 Jan 1* (Vol. 21, No. 1, pp. 1-6). OceanSide Publications, Inc.
- Bauchau V, Durham SR. Prevalence and rate of diagnosis of allergic rhinitis in Europe. *European Respiratory Journal*. 2004 Nov 1;24(5):758-64.
- Mahboub B, Al-Hammadi S, Prakash VP, Sulaiman N, Blaiss MS, Al Redha A, Vats DM. Prevalence and triggers of allergic rhinitis in the United Arab Emirates. *World Allergy Organization Journal*. 2014 Dec;7(1):1.
- Li CW, Chen DH, Zhong JT, Lin ZB, Peng H, Lu HG, Yang Y, Yin J, Li TY. Epidemiological characterization and risk factors of allergic rhinitis in the general population in Guangzhou City in China. *PloS one*. 2014 Dec 16;9(12):e114950.
- Davila I, Mullol J, Ferrer M, Bartra J, Del Cuvillo A, Montoro J, Jáuregui I, Sastre J, Valero A. Genetic aspects of allergic rhinitis. *J Investig Allergol Clin Immunol*. 2009 Jan 1;19(Suppl 1):25-31.
- Hyrkäs H, Jaakkola MS, Ikäheimo TM, Hugg TT, Jaakkola JJ. Asthma and allergic rhinitis increase respiratory symptoms in cold weather among young adults. *Respiratory medicine*. 2014 Jan 1;108(1):63-70.
- AlShehri SS, Abou-Elhamd K. Is Marriage a Risk Factor for Allergic Rhinitis. *Otolaryngol (Sunnyvale)*. 2016;6(267):2.
- Boulet LP, Turcotte H, Laprise C, Lavertu C, BEDARD PM, Lavoie A, Hebert J. Comparative degree and type of sensitization to common indoor and outdoor allergens in subjects with allergic rhinitis and/or asthma. *Clinical & Experimental Allergy*. 1997 Jan 1;27(1):52-9.
- Arshad SH, Tariq SM, Matthews S, Hakim E. Sensitization to common allergens and its association with allergic disorders at age 4 years: a whole population birth cohort study. *Pediatrics*. 2001 Aug 1;108(2):e33-.
- Linneberg A, Jørgensen T, Nielsen NH, Madsen F, Frølund L, Dirksen A. Increasing prevalence of allergic rhinitis symptoms in an adult Danish population. *Allergy*. 1999 Nov 1;54(11):1194-8.
- Konno S, Hizawa N, Fukutomi Y, Taniguchi M, Kawagishi Y, Okada C, Tanimoto Y, Takahashi K, Akasawa A, Akiyama K, Nishimura M. The prevalence of rhinitis and its association with smoking and obesity in a nationwide survey of Japanese adults. *Allergy*. 2012 May 1;67(5):653-60.
- Annesi-Maesano I, Orszyszczyn MP, Raheison C, Kopferschmitt C, Pauli G, Taytard A, Tunon de Lara M, Vervloet D, Charpin D. Increased

prevalence of asthma and allied diseases among active adolescent tobacco smokers after controlling for passive smoking exposure. A cause for concern?. *Clinical & Experimental Allergy*. 2004 Jul 1;34(7):1017-23.

18. Burr ML, Anderson HR, Austin JB, Harkins LS, Kaur B, Strachan DP, Warner JO. Respiratory symptoms and home environment in children: a national survey. *Thorax*. 1999 Jan 1;54(1):27-32.
19. Soo-Youn A, Choi HG, Kim SW, Park B, Lee JS, Jang JH, Sung MW. Analysis of various risk factors predisposing subjects to allergic rhinitis. *Asian Pacific journal of allergy and immunology*. 2015 Jun 1;33(2).
20. Malone DC, Lawson KA, Smith DH, Arrighi HM, Battista C. A cost of illness study of allergic rhinitis in the United States. *Journal of Allergy and Clinical Immunology*. 1997 Jan 1;99(1):22-7.