Allergies and Their Effects on medical Students of Basra University

Maysaloon A. AL-Sadoon[(1)],Zaid S. Muhbes[(2)],Ahmed H. Abdul-Mohsin[(2)], Mustafa A.Adnan[(2)]

Abstract- This research was undertaken among undergraduate students at Basra University , Iraq. A self-administered questionnaire served as the , primary research instrument for collection of data. SPSS version 19 was used to collect and analyze demographics and allergy attributes. Descriptive statistics and inferential statistics were applied to the data. A total of 350 students (41.2% males and 58.8% females) participated in the study. 73questionnaires out of 350 were incomplete and unsuitable for analysis; remaining 277 were assessed. Majority of medical students complained about symptoms of different allergies; 55.6% of them were allergic to dust, 26% to pollen, 18.1% to food, 10.5% to drugs and 7.6% to other entities. Allergic dermatitis whitish discoloration, burning, erythema, eczema interfered with day-to-day activities – social activities, extracurricular tasks, academic performance, and college attendance amongst 13 (4.7%), 23 (8.3%), 20 (7.2%), and 61 (22%) students, respectively. Prevalence of allergies in family history

IJSER

was strongly correlated with allergic dermatitis and allergic rhinitis . For 154 among 277 students (55.6%), dust served as the predominant allergy trigger. Allergies related to pollen, drugs and food were less common. Gender-based allergy distribution showed female preponderance in all allergy types. Students suffering from allergies reported their intercession with day-to-day activities.

key words: Allergy, Allergic dermatitis , Allergic rhinitis, Immune response.

(1) University of Basra, College of medicine, Microbiology department.

(2) University of Basra, College of medicine.

IJSER

.---------- ♦ ----------

1. INTRODUCTION:

During college years, allergies can negatively influence life quality on account of interference with day-to- day activities including college attendance, sleep schedules, extracurricular tasks and academic performance [1]. Allergy is characterized by an overreaction of the human immune system to a foreign substance / allergen . A person develops an allergic reaction

when the immune system cannot tell the good from the bad and releases a type of chemical called histamine to attack the harmless substance as if it were a threat [2]. The risk factors ascribed to the rising prevalence of allergies ranged from sizeable environmental changes to genetic factors [3]. All organisms come in contact with the foreign materials living as well as non-living, namely viruses, rickettsia, bacteria, protozoan, fungi, worms, arthropods, dust, pollen grains etc.[4-5]. In order to maintain homoeostasis and survive, the organisms have evolved a variety of defense mechanisms against the disease causing foreign molecules. One such reaction of the body against foreign molecules is referred as Allergy [2]. Research studies reveal a higher existence of allergies in urban and industrialized regions relative to their rural counterparts [1,6]. Epidemiological studies on various region of the world have discovered considerable discrepancies in existence of asthma and even other allergic disorders, in addition to variations in plausible risk factors [7-9]. Since the Basra geographical zone has a dry climate, is surrounded by agricultural land and has a large number of allergens recorded in the area, we decided to investigate the prevalence of allergies in this city. Delayed diagnosis by physicians and social stigmatization by the general public may be contributing to difficulties in daily tackling of these life-threatening allergic reactions.

IJSER

2. Material and Methods

Data was collected from students using a standardized self - administered questionnaire (supplementary material), and explained the study's purpose to respondents and obtained written consent for the questionnaire to be filled anonymously and returned within an hour. This survey was undertaken over a 3-months timespan (March 2017- May 2017) amidst undergraduate students at the Medicine Colleges of the Basra University. All students ready and keen on participation were included in this research study; students who were unwilling to partake the questionnaire and students absent through the administration of the questionnaire were not included in the study. Data collection was undertaken via a self-administered pilot tested questionnaire, segregated into the following domains: demographic characteristics (gender, allergy attributes, and family history of prevalent allergies). Undergraduate students were handed copies of the self- administered questionnaire in their break time. Slight modifications were made to the format and wording of the questionnaire, basis the results of the pilot study. SPSS 19 was used to conduct descriptive analysis on the collected data. Assessment of correlation between allergies and variables like gender , age, allergy attributes and family history of prevalent allergies was done through chi-squared testing.

IJSER

3. Results

A total of 350 students were participated in this study 73 uncompleted and 277 were analyzed as illustrated in Table -1.

Table-1: Distribution of Medical Students According to The Gender

Gender	No.	%
Male	114	41.2
Female	163	58.8
Total	277	

IJSER

Most of medical students complained of symptoms of different allergies (55.6%) of them had allergic of dust, pollen (26%),food(18.1%),drugs (10.5%),others(7.6%)as illustrated in table 2

allergic disorders	Absent	Present	%	Male	%	Female	%
Dust	123	154	55.6	58	37.7	96	62.3
Pollen	205	72	26	31	43.1	41	56.9
Food	227	50	18.1	13	26	37	74
Drugs	248	29	10.5	11	37.9	18	62.1
Others	256	21	7.6	9	42.9	12	57.1
Chi squares =8.231547						Sig= NS	

Table2: Distribution of allergic disorders among medical students college.

IJSER

The 277 participants differ in the presentations of types of allergy. The maximum number of participants has allergic reaction in the form of allergic dermatitis,103 (37.2%) followed by rhinitis 55 (19.9%); and allergic conjunctivitis 45 (16.2%).

Family history of allergies was strongly attributed with occurrence of allergic rhinitis and allergic

Dermatitis. Among those students with a family history 34 (61.8%) of them had allergic rhinitis followed by allergies dermatitis 58(56.3) and allergic conjunctivitis 23 (51.1) . Allergic

disorders among the students have been illustrated in Table (3)

Table3: Distribution of individuals in allergic subgroups based on the family history

IJSER

Allergen	No. of individuals Showing Sensitivity to a Specific Allergen	%	Family History			
			Negative FH	%	Positive FH	%
Allergies Dermatitis	103	37.2	45	43.7	58	56.3
Allergies Rhinitis	55	19.9	21	38.2	34	61.8
Allergies conjunctivitis	45	16.2	22	48.9	23	51.1
Chi squares= 30.51869895					Sig=0.05	

Skin Allergies	Absent	Present	%	Male	%	Female	%
Whitish Discoloration	264	13	4.7	8	61.5	5	38.5
Burning	254	23	8.3	11	47.8	12	52.2
Erythema	227	20	7.2	5	25	15	75
Eczema	216	61	22	25	41	36	59
Drying	245	32	11.6	13	40.6	19	59.4
Edema	267	10	3.6	3	30	7	70
Chi squares =41.59313					Sig=0.05		

Respiratory Allergies	Absent	Present	%	Male	%	Female	%

Table4: Distribution of Skin Allergies

Upper Airway Irritation	213	64	23.1	30	46.9	34	53.1
Lower Respiratory	261	16	5.8	7	43.8	9	56.2
Bronchial Asthma	267	10	3.6	4	40	6	60
Exacerbation of preexisting Bronchial Asthma	264	13	4.7	6	46.2	7	53.8
Chi squares =1.161666			Sig= NS				

GIT Disorder	Absent	Present		Male	%	Female	%

IJSER

Table5:Distribution of Respiratory Allergies

Table 6 Distribution of GIT Disorder:

Nausea	225	52	18.8	21	40.4	31	59.6
Vomiting	249	28	10.1	13	46.4	15	53.6
Severe Abdominal Pain	265	12	4.3	6	50	6	50
GIT Hemorrhage	272	5	1,8	2	40	3	60
Chi squares =2.861335				Sig= NS			

Allergic dermatitis whitish discoloration, burning, erythema, eczema interfered with day- to -day activities - social and extracurricular activities, academic performance, and college attendance amongst 13 (4.7%), 23 (8.3%), 20 (7.2%), and 61 (22%) students, respectively, as illustrated in Table 4. Allergic conjunctivitis, allergic dermatitis, and their intercession with day- to -day activities were discovered to be of statistical significance (0.05) (0.01). Most participants suffered from multiple coexistent allergies . Most prevalent allergies in participants were allergic dermatitis (103 (37.2%)), and eczema (61 (22%)) then allergic Rhinitis (55 (19.9 %)). Students suffering from allergies reported intercession with their day- to -day activities, academics, and social activities and extracurricular tasks.

IJSER

4. Discussion:

Prevalence of eczema, allergic dermatitis and allergic rhinitis were found to be 22%, 37.2% and 19.9%, respectively. Majority of participants suffered from multiple coexistent allergies. Amidst these, allergic dermatitis coexisting with rhinitis was most prevalence deciphered by another study focusing on Bangkok. Eczema prevalence among undergraduate student participants was 22%. Eczema predominance was found to be 9.4% in the Bangkok study and 12.8% in Lebanon [10,11]. The greatest predominance of cutaneous allergy in the Middle East was discovered in Tehran, at 35.8% [12]. Influence of allergies on individual life quality and its restrictive impact on daily activities is usually ignored. In case of allergies eczema, results suggest that dust serves a crucial role in worsening of allergic symptoms. Similar observations were recorded by another study [13]. People in modern societies spend the majority of their time in indoor environments, including homes, workplaces, college, and public spaces. Therefore, indoor environmental quality has a significant impact on public health and well-being. Exposure or sensitization to indoor pollutants, including cigarette smoke was common with pollen and dust mites serving as probable triggers (*Hersoug et al*. 2010)[14]. In terms of prevalence of allergies, female students constituted a majority amongst individuals suffering from allergies. The commonest allergy trigger across allergic rhinitis, dermatitis and all other

IJSER

allergy types was dust. *Bener et al.* reported the same conclusion earlier [15]. Simple health education can remedy the situation, with knowledge about washing one's bedding and nightwear in warm water, encasing of pillows and mattresses in cases that are dust mite-proof, utilization of washable curtains and blinds, and regular inspection of air conditioning units for possible contamination and pests, lessening the onset of allergies [16]. In this research study, Symptoms of allergic rhinitis was found to be approximately 19.9%, comparable to the reports from Asia where prevalence ranged from 23.6% to 38% [17,18] . Influence of allergies on individual life quality and its restrictive impact on daily activities is usually ignored. Our study showed that allergies restricted day-to-day student activities. Early allergen identification, and their subsequent avoidance, constitutes the main measure for reduction of allergic occurrences. Educating and raising awareness about allergic and respiratory ailments, especially amidst students would enable them to identify allergens and take measures of caution. Strength of this study is the high rate of respon- siveness among students.

An allergist with advanced training and sufficient experience can facilitate diagnosis of allergic conditions and prescribe suitable treatment and management plans to limit allergic influence on day-to-day activities.

IJSER

5.Conclusions:

The predominant allergies discovered were allergic dermatitis along with allergic rhinitis . Appropriate preventive strategies can lessen influence of allergies

6. Acknowledgements:

I wish to thank all the medical students who participated in the study and enthusiastically filled the question-naire

IJSER

7.References

1. L. Braback, A. Hjern, and F. Rasmussen, "Trends in asthma, allergic rhinitis and eczema among Swedish conscripts from farming and non-farming environments. A nationwide study over three decades," Clinical and Experimental Allergy, vol. 34, no. 1, pp. 38–43, 2004.
2. Kamal Mehta, " Study of Prevalence of Allergy among College," International Journal of Science and Research (IJSR), Vol. 4 ,pp1189-93,2015.

3. S. Alsowaidi, A. Abdulle, R. Bernsen, and T. Zuberbier, “Allergic rhinitis and asthma: a large cross-sectional study in the United Arab Emirates,” International Archives of Allergy and Immunology, vol. 153, no. 3, pp. 274-279, 2010.

4. Bisgaard H, Hermansen MN, Buchvald F, Loland L, Halkjaer LB, et al. (2007) Childhood asthma after bacterial colonization of the airway in neonates. N Engl J Med 357: 1487–1495.

5. Kraft M (2000) The role of bacterial infections in asthma. Clin Chest Med 21: 301–313.

6. L. Von Hertzen and T. Haahtela, “Disconnection of man and the soil: reason for the asthma and atopy epidemic?” Journal of Allergy and Clinical Immunology, vol. 117, no. 2, pp. 334-344,2006.

7. Halken S. "Prevention of allergic disease in childhood: clinical and epidemiological aspects of primary and secondary allergy prevention. "Pediatr Allergy Immunol. Vol.15,pp. 9-32. 2004.

8. T.-N. Wang, W. Chiang, H.-I. Tseng et al., “The polymorphisms of Eotaxin 1 and CCR3 genes influence on serum IgE, Eotaxin levels and mild asthmatic children in Taiwan,” Allergy, vol. 62,no. 10, pp. 1125-1130, 2007.

9. Motta AC, Marliere M, Peltre G, Sterenberg PA, Lacroix G: Traffic-related air pollutants induce the release of allergen-containing cytoplasmic granules from

IJSER

grass pollen. Int Arch Allergy Immunol. Vol.139,pp. 294-298, 2006.

10. P. Vichyanond, S. Sunthornchart, V. Singhirannusorn, S. Ruan-grat, S. Kaewsomboon, and N. Visitsunthorn, "Prevalence of asthma, allergic rhinitis and eczema among university students in Bangkok," Respiratory Medicine, vol. 96, no. 1, pp. 34-38,2002.
11. U. Musharrafieh, B. Al-Sahab, F. Zaitoun, M. A. El-Hajj, F.Ramadan, and H. Tamim, "Prevalence of asthma, allergic rhinitis and eczema among lebanese adolescents," Journal of Asthma, vol. 46, no. 4, pp. 382-387, 2009.
12. G. B. Mirsaeid, S. H. Sharifi, K. Goodarzipoor et al. Theprevalence of Asthma among the students (7-18 years old) in Tehran during 2002-2003," Iranian Journal of Allergy, Asthma and Immunology, vol. 3, pp. 89-92, 2004.
13. S. Alsowaidi, A. Abdulle, A. Shehab, T. Zuberbier, and R.Bernsen, "Allergic rhinitis: prevalence and possible risk factors in a Gulf Arab population," Allergy, vol. 65, pp. 208-212, 2010.
14. L Hersoug, LH Lise, S Torben, M Flemming, L Allan. "Indoor exposure to environmental cigarette smoke, but not other inhaled particulates associates with respiratory symptoms and diminished lung function in adults". Respirology 15:993-1000. 2010.

IJSER

15. A. Bener, W. Safa, S. Abdulhalik, and G.-G. Lestringant, “An analysis of skin prick test reactions in asthmatics in a hot cli-mate and desert environment,” Allergie et Immunologie, vol. 34, no. 8, pp. 281-286, 2002.1

16. A. Sheikh and B. Hurwitz, “House dust mite avoidance mea-sures for perennial allergic rhinitis: a systematic review of effi-cacy,” British Journal of General Practice, vol. 53, no. 489, pp.318-322, 2003.

17. Zhang Y, Zhang L. Prevalence of allergic rhinitis in china. Allergy Asthma Immunol Res. 2014; 6:105–113.

18. Sonomjamts M, Dashdemberel S, Logii N, Nakae K, Chigusa Y, Ohhira S, et al. Prevalence of asthma and allergic rhinitis among adult population in ulaanbaatar, mongolia. Asia Pac Allergy. 2014; 4:25–31.

IJSER