Study on Individuals Susceptible to Latex Products in Iraq

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Abstract

Latex allergy is an allergic reactions result from repeated contact or exposure to proteins of rubber latex which absorbed by mucus membranes of some susceptible individuals. The aim of the current work was to study prevalence rate of latex allergy especially among doctors and health-care staff. A cross-sectional study carried out during (2018-2021) included 352 individuals susceptible to latex within age groups (18-34) and (35-51). Out of 352 individuals susceptible to latex, females showed higher frequencies than males, 65.38% were doctors, 53.23% were health-care staff and 69.30% were patients. Age group (35-51) showed higher frequency among doctors 55.77% and health-care staff 70.97% while age group (18-34) frequency was higher among patients 57.89%. Cases with mild symptoms showed statistically significant higher frequencies than severe cases, 75% doctors, 80.11% health-care staff and 72.81% patients, (X^2=69.479, P < 0.00). Symptoms of itching throat was higher in (35-51) age group 27.75%. Itching at the site of contact and redness showed high frequencies in both age groups. Both males and females who have itchy throat, itching at the site of contact and redness showed high frequencies. Doctors who have itchy throat showed highest frequency 51.92%, followed by health-care staff 36.56% and patients 35.96%. Itching at the site of contact was higher among health-care staff 31.18%. Other symptoms did not showed high frequencies among the studied groups. Prevalence of females was higher than males, frequencies of health-care workers and doctors among Age group (35-51) were high. Cases with mild symptoms showed statistically significant higher frequencies than severe cases. The most shared symptoms were redness, itching and itchy throat. Each individual recommend to give full information including latex allergy if present before any surgery concerning latex allergy in order to replace latex medical devices by latex-free ones during the surgery or medical treatment. Further attention for using latex-free gloves for doctors and health-care staff who have latex allergy. It is very important to include skin patch test for latex allergy in our hospitals or health institutes.

Keywords: Latex allergy, Health-care staff , Hevea brasiliensis tree

1. Introduction

Latex is milky substance from Hevea brasiliensis tree, used in manufacturing gloves, condoms, balloons, and rubber bands [1]. The mass Production of adequately purified latex increases the risk of allergic reactions to that substance [2]. Latex allergy is an allergic reactions result from repeated contact or exposure to proteins of rubber latex which absorbed by mucus membranes of some susceptible individuals, triggering antibodies production against these proteins. In addition to antibody production a delayed type of cell-mediated hypersensitivity reaction have reported in recent years [3]. Studies showed that more than 17% of health care workers develop latex allergy [4, 5]. Many symptoms might produce after exposure to latex, including runny nose, sneezing, itchy throat and skin, wheezing, and in rare cases anaphylaxis and death. Children with spina bifida, workers in latex industry showed higher latex allergy than other [6]. Many studies showed that incidence of latex allergy in general population is low while the prevalence in dentists is higher and in children with congenital abnormalities, might recorded highest frequencies [6]. A study done in Turkey indicated that atopic hemodialysis patients are highly sensitize from latex products [7]. The incidence of latex allergy decreased in Germany after replacing powdered gloves by powder-free gloves [8]. Many studies indicated that individuals

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with allergy from certain foods, showed increased incidence of allergy to latex products. The aim of the current work was to study prevalence rate of latex allergy especially among doctors and health-care staff.

2. Method

A cross-sectional study carried out during (2018-2021) included 352 individuals susceptible to latex within age groups (18-34) and (35-51). Analysis of data and calculation of frequencies had done by using SPSS.

3. Results

Out of 352 individuals susceptible to latex, females showed higher frequencies than males, 65.38% were doctors, 53.23% were health-care staff and 69.30% were patients. Age group (35-51) showed higher frequency among doctors 55.77% and health-care staff 70.97% while age group (18-34) frequency was higher among patients 57.89%. Cases with mild symptoms showed statistically significant higher frequencies than severe cases, 75% doctors, 80.11% health-care staff and 72.81% patients (Table-1) ($X2=69.479$, $P < 0.00$). Symptoms of itching throat was higher in (35-51) age group 27.75%. Itching at the site of contact and redness showed high frequencies in both age groups. Both males and females who have itchy throat, itching at the site of contact and redness showed high frequencies. Doctors who have itchy throat showed highest frequency 51.92%, followed by health-care staff 36.56% and patients 35.96%. Itching at the site of contact was higher among health-care staff 31.18%. Other symptoms did not showed high frequencies among the studied groups (Table-2).

Table.1 Frequencies of Individuals susceptible to latex according to sex, age group and severity of symptoms

Individuals susceptible to latex N=352	Sex NO / %		Age group NO / %		Severity of symptoms NO / %	
	Male N=140	Female N=212	18-34 N=143	35-51 N=209	Mild* N=271	Severe N=81
Doctors* N= 52	18/ 34.62	34/ 65.38	23/ 44.23	29/ 55.77	39/ 75	13/ 25
Health-care* staff N=186	87/ 46,77	99/ 53.23	54/ 29.03	132/ 70.97	149/ 80.11	37/ 19.89
Patients* N= 114	35/ 30.70	79/ 69.30	66/ 57.89	48/ 42.11	83/ 72.81	31/ 27.19
*($X^2=69.479$, $P < 0.00$)						

Table.2 Distribution of individuals susceptible to latex according to symptoms

Cases susceptible to latex N= 352		Symptoms					
		Wheezing N/%	Itchy throat N/%	Itching at site of contact N/%	Redness	Tightness of throat N/%	Swollen rash N/%
Age group	≤ 35 N= 143	5/ 3.50	30/ 20.98	52/ 36.63	36/ 25.17	8/ 5.59	12/ 8.39
	>35 N= 209	9/ 4.31	58/ 27.75	68/ 32.54	62/ 29.67	3/ 1.44	9/ 4.31
Sex	Male N= 140	4/ 2.86	28/ 20	51/ 36.43	40/ 28.57	3/ 2.14	14/10
	Female N= 212	3/ 1.42	59/ 27.83	79/ 37.26	59/ 27.83	7/ 3.30	5/ 2.36
Cases	Doctors N=52	1/ 1.92	27/ 51.92	12/ 23.08	10/ 19.23	1/ 1.92	1/ 1.92
	Health-care staff N=186	7/ 3.76	68/ 36.56	58/ 31.18	29/ 15.59	11/ 5.91	13/ 6.99
	Patients N= 114	2/ 1.75	41/ 35.96	29/ 25.44	30/ 26.32	8/ 7.02	4/ 3.51

4. Discussion

Latex allergy have considered as important cause of anaphylaxis [9]. Many studies in the world showed increasing percentage of individuals susceptible to latex products [10, 11]. Prevalence of allergy to latex worldwide vary between (4.3-9.7) %, [12]. Using Immunotherapy specific to allergen can decrease symptoms and complains of those who have allergy [13]. Results of the studied individuals with latex allergy indicated that females showed higher frequencies. Most doctors and health-care staff were within age group (35-51) while most studied patients were within age group (18-34). Most cases showed statistically significant mild symptoms but might developed into severe anaphylaxis in repeated contact and exposure to latex and its products. Symptoms of itching throat was higher in age group (35-51) while both age groups showed nearly similar frequencies regarding to symptoms of itching at the site of contact and redness. Both males and females who have itchy throat, itching at the site of contact

and redness showed high frequencies. Doctors who have itchy throat showed highest frequency followed by health-care staff and patients. Itching at the site of contact was higher among health-care staff. Other symptoms did not showed high frequencies among the studied groups. Doctors and health-care staff exposed frequently to latex products through contact with devices and using gloves [14]. Many studies indicated that allergic reaction caused by using latex products range from mild to severe symptoms [15].

5. Conclusion

Prevalence of females was higher than males, frequencies of health-care workers and doctors among Age group (35-51) were high. Cases with mild symptoms showed statistically significant higher frequencies than severe cases. The most shared symptoms were redness, itching and itchy throat.

6. Recommendations

Each individual recommend to give full information including latex allergy if present before any surgery concerning latex allergy in order to replace latex medical devices by latex-free ones during the surgery or medical treatment. Further attention for using latex-free gloves for doctors and health-care staff who have latex allergy. It is very important to include skin patch test for latex allergy in our hospitals or health institutes.

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