



## STUDY OF AEROALLERGENS TRIGGERING ALLERGIC CONJUNCTIVITIS ALLERGIC RHINOCONJUNCTIVITIS IN DIYALA GOVERNORATE IN IRAQ

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### ABSTRACT

**Objective:-** the aim of the study is to determine the most common allergens triggering allergic conjunctivitis and rhinoconjunctivitis in Diyala Governorate. **Materials and methods:-** the study had include 474 patients (73 male and 401 female with allergic conjunctivitis and allergic rhino conjunctivitis attending private clinic (Dr. Adnan, Dr. Ahmed) from 2/1/2017 to 31/12/2017. Skin prick test were done for them and the results according to the reactivity were fixed. **Results:-** most common offending allergens were chaenopodenceae pollen 30.8%, Grasses mix 23.41%, cockroach 23.2% and lowest allergen was zea mays pollen (9.7%). **Conclusion:-** this study and other studies will definitely be helpful to determine the common allergens causing different allergic disease in Diyala governorate.

**KEYWORDS:** allergic conjunctivitis, allergic rhinoconjunctivitis, skin prick test, allergens.

### INTRODUCTION

Allergic rhinitis is symptomatic disorder of the nose, induced after allergen exposure by an IgE mediated inflammation of the nasal mucosa.<sup>[1]</sup> Symptoms of rhinitis include rhinorrhea, nasal obstruction, nasal itching and sneezing, reversible spontaneously or under treatment.<sup>[2]</sup> It is worldwide disease affecting at least 10-25% of the population.<sup>[1]</sup> In European countries the prevalence has been estimated from 17 to 29%.<sup>[3]</sup> An increasing prevalence of allergic rhinitis over the last decades has been recognized.<sup>[4]</sup>

Allergic rhinitis is not sever disease but it alters the patient social life, affecting school performance and work productivity.<sup>[5]</sup>

Guidelines for the diagnosis and treatment of allergic rhinitis have already been published.<sup>[6]</sup>

Aeroallergens are very often involved in the allergic rhinitis.<sup>[7]</sup>

The prevalence of allergic rhinitis may vary both within and between countries. This variation has been attributed to the overall aeroallergens burden.<sup>[8]</sup>

#### Allergic conjunctivitis

Allergic disease is common affecting 15% of world population, males are over represented in that number.<sup>[9]</sup>

Many of these patients also have eye disease seasonal (SAC) and perennial (PAC) allergic conjunctivitis are the most common forms of allergic conjunctivitis, SAC representing approximately half of the cases of ocular allergy.<sup>[10]</sup> Symptoms include itching, burning, watery or sometimes mild mucoid discharge and usually bilateral.<sup>[11]</sup>

#### Aeroallergens

Play a major role in the pathogens of respiratory allergic disease, particularly,<sup>[12,14]</sup>

### MATERIALS AND METHODS

The study was conducted in patients of allergic conjunctivitis and allergic rhinitis in private clinic (Dr. Adnan, Dr. Ahmed).

Allergy testing was performed during the period from 2/1/2017 to 31/12/2017, elderly, pregnant, lactating females, diabetic patients and children under 5 years old, also negative skin prick test were excluded from the study.

For conformation of the diagnosis clinical examination, history and slit Lamp was used.

**Skin sensitivity test and patients:-** Antigens were obtained from

(Immunoteck, Spain) company, number of allergens used was 7584 including positive and negative control for all the patients included in the study.

Before performing the skin prick test antihistamine, systemic steroid were stopped 10 days for antihistamine and 3 weeks for systemic steroid.

Only 2+,3+ and 4+ were labeled as markedly positive skin reaction.

The number of the patients included in the study was 474, 73 male and 401 female.

## RESULTS

The total number of the patients included in the study were 474, 73 male and 401 female, their ages were between 5-65 years (table 1).

**Table 1: Age and sex distribution.**

Age (years)	Number		Percentage (%)
5-10	m	31	6.54
	f	51	10.75
11-20	m	3	0.63
	f	69	14.55
21-30	m	9	1.89
	f	87	18.35
31-40	m	10	2.1
	f	96	20.25
41-50	m	5	1.05
	f	60	12.65
51-60	m	0	0.0
	f	34	7.17
760	m	10	2.1
	f	9	1.89
Total	474		100.0

m = male, f = female

**Table 3: Skin sensitivity reaction to allergens.**

No.	Allergen group	Allergens	No. of patient with +ve reaction	Percentage of with +vreaction
1	Mites	D. farinae	108	22.78
2		D. pteronyssinus	101	21.3
3	Fungi	Alter naria	96	20.25
4	Pollens	Chenopodacea	146	30.8
5		Olive tree	105	22.15
6		Grass mix	111	23.41
7		4- cereals	107	22.57
8		Bermuda	89	18.77
9		Mug wort	53	11.18
10		Zea mays	46	9.7
11		Saltwort	91	19.19
12	Animals products	Dog hair	57	12.02
13		Cat epithelia	75	15.82
14		Cock roach	110	23.2

D = dermatophagoides

In this study allergic rhinitis was found associated with allergic conjunctivitis that 86.91% of patients are allergic rhino conjunctivitis (412 patients) while 13.08% of the patients (62 patients) was allergic conjunctivitis (table 2).

**Table 2: Disease distribution of the patients.**

Disease	Number	Percentage
Allergic conjunctivitis	62	13.08
Allergic rhino conjunctivitis	412	86.91
Total	474	100.0

In this study 7584 skin test were performed by a total of 16 allergens (Mites, Fungi, Pollens, and Animal products) and the most common offending allergens were chenopodacea 30.8% Grasses mix 23.41%, cockroach 23.2% Derma to phagoidesfarinae 22.78%.

At the last group (animal products) cockroach was found the most commonly reactive allergen (23.2%).

## DISCUSSION

In this study the most common markedly positive skin reaction (2+ to 4+) were quite common for various allergens test and the most common offending allergens found in the study were chenopodacea pollen, Grasses pollen, cockroach products and then the other allergens (table 3).

From the first group (Mites) the most common is *Dermatophagoides farina* 22.87%.

In the second group (Fungi) *alternaria* was found 20.25%.

The third group (Pollens) chenopodecae was found the most common. positive reaction in the group (30.8%) it is also the most common positive allergen among all allergens used in the study. cereals 22.57% olive tree pollen 22.15%,

*Dermatophagoides pteronyssinus* 21.3% *Alternaria* 20.25%, Saltwort pollen 19.19%, Bermuda 18.77%, Cat epithelia 15.82%, dog hair 12.02%, Mug wort pollen 11.18%, *Zea mays* 9.7% (table 3).

Many studies were conducted in Iraq and showed variable results; Ameer AL-Niami,<sup>[15]</sup> study showed that house dust mite was of the highest markedly positive reactivity allergen.

In other studies conducted in Iraq by AL-Niami,<sup>[16]</sup> AL-Tae,<sup>[17]</sup> showed also that the mite was the first markedly positive allergen.

In Ankara, grass pollens were found to be the major allergens by skin test reactivity comparing to Seoul which weeds and trees were found as the major outdoor allergen; allergic reaction to indoor allergens were significantly higher in Seoul than in Ankara.<sup>[18]</sup>

## CONCLUSION

The present study and other studies will be helpful to identify the most common allergens triggering various allergic disease including allergic conjunctivitis and allergic rhinoconjunctivitis.

Pollens are the major aeroallergens provoking allergic conjunctivitis and rhinoconjunctivitis at Diyala governorate in Iraq.

Furthermore studies may also be helpful on controlling or avoiding allergens triggering allergic disease.

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