

Original article

Prevalence of Food Allergy in Children: A Cross Sectional Study

Khayriyah Albahi*¹, Esra Oun

Therapeutical Nutrition Department, College of Health Sciences, Zawia University, Libya

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Corresponding Email. k.albahi@zu.edu.ly

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ABSTRACT

Aims. The aim of this study was to identify the most common food allergens among children in the Al Ajeilat city, Libya. **Methods.** A prospective three centers cross-sectional study was conducted on 230 Libyan children with food allergy diagnosed by a doctor, and their ages ranged from 4 months to 14 years. **Results.** The results showed that the most common food allergens were fruits, with a percentage of 33%, followed by eggs and cow's milk at 13.9%, then wheat soybeans fish nuts tomatoes at 12%, 7.8%, 6.9%, 6%. **Conclusion.** Our results showed that fruits, cow's milk, and egg were most common food allergens in children in the Al-Ajeilat city, Libya. Most of the patients were found to be poly-sensitized. Food allergy remains an important health concern due to increasing prevalence worldwide.

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INTRODUCTION

Food allergy (FA) represents an abnormal reaction of the immune system to specific food protein antigen [1], which causes the appearance of allergy symptoms that vary from just a skin rash to a serious condition that may lead to death [2]. Several recent studies have shown a significant increase in the prevalence of food allergy disease in many countries [3,4,5], where the prevalence of food allergy in children reached 10% [6], and although any type of food may cause allergic reactions to Most food allergies result from eight types of food: cow's milk, peanuts, wheat, fish, tree nuts, shellfish, soybeans, and eggs [7]. Food habits can affect the order of the allergen from one country to another. For example, peanut allergy is very common in the United Kingdom [8], but it is very rare in Italy [9], Food allergies are more common in children than in adults. Fortunately, most types of food allergies disappear with age, but allergies to peanuts, tree nuts, fish and seafood usually remain for life [10]. Although food allergy is considered a health problem, studies on its prevalence and the most common food cause are very few in Libya. To our knowledge, this is the first study to identify the most common food allergens in the Al-Ajeilat city, Libya.

METHODS

Study design and setting

This was a prospective three center cohort study of two hundred and thirty Libyan children from the Al-Ajeilat city with food allergy diagnosed using IgE test and skin prick test (SPT), in the period between February 2021 and May 2022. The mean age of participants ranged between 4 months to 14 years. The cases were diagnosed by Al-Yusr Medical Center, Al-Raya Al-Bayda Clinic, and Al-Ajeilat Shelter Clinic in the Al-Ajeilat city Libya, which is one of the cities of the western region, about 80 km from the capital, Tripoli, with a population of approximately 138,751.

Information about patients, namely age, sex, history of the disease, and family history of the disease were collected from the records of patients in the clinics mentioned in the research, and the names of patients were withheld by the clinics to respect the privacy of patients.

Statistical Analysis

The results of the study were analyzed using Microsoft Excel 2010. Categorical variables were reported as number and percentages.

RESULTS

The results of this study showed that the most common types of food allergens in children are fruits, with a percentage of up to 33%, most notably bananas and apples by 30.6%, 26.3%, respectively, then pineapple, cherries, grapes, strawberries and kiwis by 14.4%, 13.1%, 7.8%, 3.9 % respectively. As shown in Table 1.

Table 1. The most allergenic fruits in the study population

Fruits	76 (33%)
Banana	23(30.6%)
Apple	20 (26.3%)
Pineapple	11 (14.4%)
Cherry	10 (13.1%)
Grape	6 (7.8%)
Peach	3 (3.9%)
Strawberry	3 (3.9%)

Eggs and cow's milk were both the second on the list at 13.9%, followed by wheat at 12%, while soybeans ranked fourth with 7.8%, and fish with 6.9%. Nuts and tomatoes ranked sixth on the list with 6%, as shown in the table 2.

Table 2. Types of food allergens in children with [FA].

Food	230 (100%)
Fruits	76 (33%)
Eggs	32 (13.9%)
Cow milk	32 (13.9%)
Wheat	28 (12%)
Soybeans	18 (7.8%)
Fish	16 (6.9%)
Nuts	14 (6%)
Tomatoes	14 (6%)

The results showed that allergies to fruits, cow's milk, eggs and tomatoes were more common in the pre-school age group. As for the age group from 4 months to two years, it was more likely to be allergic to bananas, while allergy to apples was more prevalent in the age group from 6 months to 5 years. As for the sensitivity to pineapple, it was prevalent from the age of one year and above, and no case was diagnosed at the age of months, other than the rest of the fruits.

The percentage of females was 56%, while the percentage of males was 43%. The most common symptoms were skin symptoms by up to 73% of the study sample, and the percentage of children who suffered from hypersensitivity was 4%. The results showed that most of the children in this study had multiple sensitivities to more than one type of allergen. As for the family history of the disease, 60% of the children had a positive history of the disease.

DISCUSSION

This is the first study in the Al-Ajeilat city, Libya, to find out the most common food allergens in children. Fruits ranked first as the highest food allergen with a rate of 33%, and this corresponds to a study conducted in Lebanon [11] and a study in the United Arab Emirates [12], plant allergies are the most common in the Mediterranean area [13]. Apple allergy is a common allergy in many European countries [14] and South American countries [15] and egg slurry and cow's milk second

by 14%, and this is similar to studies in Saudi Arabia, Kuwait and Lebanon [11, 16, 17], and in general cow's milk and eggs are among the most common allergens Common in pre-school children in most countries [18,19,20]. Skin symptoms were the most common in this study and this is consistent with many previous studies [21].

In the current study, the percentage of females was higher than males, and this corresponds to [22] and this may be due to the antibodies in males are higher than in females [23].

CONCLUSION

The most common food allergens in children in the Al-Ajeilat city, Libya, are fruits, eggs, cow's milk, wheat, soybeans, fish, nuts and tomatoes.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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