

Food allergy pattern in Alappuzha

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Abstract:

Allergy to food items is often responsible for skin allergy like urticaria. Identifying the offending allergens and avoidance is important in the management of skin allergy. This study was conducted to identify the skin sensitivity to various food allergens in patients with skin allergy and to study the regional pattern of food allergy in Alappuzha District of Kerala. 146 atopic patients with complaints of skin allergy were selected for the study. Allergy testing with 30 food allergens were performed in the above patients by intradermal method. Most common offending allergens identified were wheat (24%), garlic (22.6%), potato (20.54), nuts (18.4%), ginger (16.4%), prawns (13%) and peas (12.3%).

Introduction:

Skin Allergy in the form of urticaria and atopic dermatitis are commonly encountered. Food allergy is often responsible for this clinical situation. Identifying the offending allergens and avoidance is one of the most important measures which may help in the management of skin allergy. Skin test is the most reliable method of identifying food allergens.

MATERIALS AND METHODS

Objectives:

This descriptive study was conducted at Alappuzha, a district of Kerala, India with the following objectives.

- 1) To study skin sensitivity to various food allergens in patients with skin allergy.
- 2) To identify the regional pattern of food allergy in Alappuzha District of Kerala

Inclusion criteria

146 atopic patients with complaints of skin allergy (urticaria or atopic dermatitis) were selected for the study. The atopic status were confirmed by doing serum IgE.

Serum IgE was estimated in all patients by fully automated Bi-directional Interfaced Chemo luminescent immunoassay method. Patients with serum total IgE levels more than 250 IU/ml were only selected for the study. (The normal value of IgE in adult is less than 158 IU/ml.)¹

Exclusion criteria

1. Patients with normal or mildly elevated serum Ig E levels (less than 250 IU/L).
2. Patients with age less than 15 and more than 60.
3. Patients with other causes of urticaria (eg. Malignancy, hereditary angioneurotic edema, etc).
4. Contact allergic dermatitis.
5. Patients with extensive eczema were not included, because of difficulty in doing skin testing in such patients.
6. Since the study was aimed to identify the regional pattern of food allergy, patients outside Alappuzha District of Kerala were excluded from the study.

Methodology

Allergy testing with 30 food allergens were performed in the above patients by intradermal method. List of the

allergens tested are given in table 1. Buffered saline was used as negative control and histamine as positive control. Skin testing and reading were conducted as per criteria laid by American Academy of Allergy Asthma and Immunology (AAAAI)². Patients were asked not to take antihistamines or steroids for prior 7 days of testing.

Results:

Total number of patients : 146

Sex distribution : Male -69 (47%), Female -77 (53%)

Age : ranged from 15 to 60 with an average of 36 years

Skin disease: Atopic dermatitis (eczema) - 32, Urticaria - 101, Mixed - 13

Serum IgE levels: The serum IgE values ranged from 254 IU/L to 8747 IU/L, with an average value of 1769 IU/l.

Pattern of allergy:

All the patients, except one were found to be allergic to at least one of the food allergens tested (145 out of 146, ie. 99.3%) 131 patients (89.7%) had allergy to more than one antigen. Only 14 patients were found to be allergic to a single food allergen. While 19 were allergic to two antigens, 16 were allergic to three allergens and the rest 96 patients (66%) were allergic to more than three antigens. One patient was found to be allergic to none of the allergens tested. None of the 146 patients developed any immediate or late complications following intradermal allergy testing.

Most common offending allergens were wheat (24%), garlic (22.6%), potato (20.54), nuts (18.4%), ginger (16.4%), prawns (13%) and peas (12.3%).

No relation could be established between age and sex of the patient and the number or variety of food allergens could be established.

Table 1: List of food allergens tested					
Sl No	Allergen	Number of patients found to be allergic	Sl No	Allergen	Number of patients found to be allergic
1	Apple	2	16	Haldi	10
2	Banana	3	17	Lemon	12
3	Black pepper	15	18	Mutton	13
4	Cashew nut	11	19	Mustard	11
5	Chicken	8	20	Milk	8
6	Coffee	3	21	Orange	8
7	Dal urud	2	22	Onion	9
8	Dal arhar	1	23	Prawn	19
9	Dal moong	1	24	Rice	8
10	Egg white	11	25	Tea	7
11	Fish	9	26	Tomato	4
12	Garlic	33	27	Potato	29
13	Ground nut	27	28	Wheat	35
14	Ginger	24	29	Beef	8
15	Gram	2	30	Pea	18

Discussion

Skin allergy is most often due to ingested food allergens. Detection of food allergens responsible for the disease helps in prescribing avoidance diet, which is an important step in the management of food allergy. Intradermal allergy testing is an efficient method of doing allergy testing.

Food allergy pattern varies regionally. In order of prevalence, the most common food allergens at all age in Western countries are citrus fruits, tomato, egg, strawberry, soy, wheat and fish³. It has been reported that common food allergens among Indians are cashew nut, coconut, wheat, fish (especially shellfish), peanut, milk, egg, meat, rice, etc⁴.

In this study, most common offending allergens were wheat, garlic, potato, nuts, ginger, prawns and peas. This pattern is somewhat different from the previous studies. Earlier studies have documented that allergy to spices are rare except for mustard and garlic. But in this study,

allergy to spices like pepper and ginger are also frequent. Unlike in the western population, allergy to citrus fruits like orange, lemon and tomato are not common in Kerala.

Conclusions:

1. Food allergy is common among patients with skin allergy (99.3%).
2. Intradermal skin testing is an efficient and safe method to identify food allergens.
3. Most patients with food allergy are allergic to multiple allergens (90%).
4. Most commonly encountered allergens, in the order of prevalence are wheat, garlic, potato, nuts, ginger, prawns and peas.
5. Allergy to spices is not rare as previously reported.
6. Allergy to citrus fruits is not as common as in Western population.
7. There is no apparent relation between age & sex of the patient with food allergy.

References

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