

## **Food allergies in Indian Children, Time to sensitize clinicians, Now!**

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Data is limited or scarce in Indian children on food allergies and their incidence in India. We set to find out the incidence, prevalence, presenting symptoms and the common food allergens in our single center prototype study. To prove the non-existence of data we searched Scientific databases<sup>1,2</sup>. Literature review in PubMed/Google scholar/med base using keywords “Food “ +“ allergy ”+”statistics “+ “children”+“SAARC countries” didn’t reveal any results. Most of the papers related to food allergy were from the Western countries or they were anecdotal Indian data.

The growing Indian population, increased usage of processed food, challenges posed by childhood obesity, reduced exposure to external triggers, rising cases of paediatric allergies makes it worthwhile to explore this rather grey area in India.

Food allergies will have to be checked comprehensively and various parameters need to be critically analysed before lab- diagnosing food allergy. Increasing awareness in clinician’s diagnosis about food allergy and its existence has made us review different studies which have been done in the past few decades. It is an interesting fact to find that there has been no data published in India on this subject and we have attempted to look at an epidemiological cross sectional data of all children who presented with symptoms suggestive of Food allergy, Food protein induced Enterocolitis colitis syndrome or any other related symptoms there in our tertiary centre hospital at Chennai, Tamilnadu, India.

Wheat, gluten, dairy, eggs, soy, tree nuts, peanuts, fish and shellfish are collectively known as “The Big Eight” that contribute to about 90% of all the food allergy reactions<sup>3</sup>.

Our primary goals were recognition of the incidence of food allergy in our hospital and to identify the commonest food allergen in our paediatric cohort. To identify the children who required further clinical/ laboratory diagnostic evaluation and dietary modifications, analyse the age, gender and geographical distribution of the study population.

A retrospective data analysis was done at Apollo Children's Hospital, Chennai over a period of four years (2016-2020). Children aged less than 16 years of age with symptoms and/or signs suggestive of suspected allergy (ex. chronic cough, cold, nasal stuffiness, rhinorrhoea, vomiting and loose stools) who underwent Phadiatop<sup>®</sup> were included in the study. Patients’ medical records were analysed for history, clinical features, Phadiatop<sup>®</sup> results, clinicians findings. Microsoft Excel<sup>®</sup> was used to compile collected data. Identification of the allergen, medical treatment given, supporting investigations if any, dietary modifications done and follow up plan were focussed upon.

Immuno CAP Phadiatop<sup>®</sup> /Phadiatop Infant<sup>®4</sup> is an allergy screening blood test which helps to distinguish between atopic and non-atopic disease. It has a very high sensitivity and specificity (> 90%) and considered better than total IgE level. IgE antibody development can be detected at an early stage, indicating sensitization, even before clinical symptoms have developed. Serum IgE levels explain the progression of the allergic disease and also the allergen load that together contribute to allergic symptom thereby providing clear directions for disease management.

Out of the 100 children who were studied, 69 were male and 31 were female, 48 were under 5 years, 34 were between 6-10 years, 18 of them were above 11 years. 73% tested positive on the Phadiatop and 27% tested negative. Majority of the children had their following symptoms as follows

| CLINICAL SYMPTOMS                            | NO. OF CHILDREN(n) |
|--|--------------------|
| Wheezing/nasal allergy/cough& cold           | 58                 |
| Vomiting/loose stoolsincl recurrent diarrhea | 22                 |
| Abdominal pain                               | 9                  |
| Skin rashes/ urticaria                       | 11                 |

It is interesting to note that our cohort presented to various specialists with their symptoms- 56 children to Allergy specialist and Immunologist, 18 to the Gastroenterologist, 6 to the pulmonologist and 20 to the General Paediatrician. Majority of children (41%) had dietary intervention as the main treatment, since our cohort's most common allergens were food allergens in the following order- Milk(50%), Wheat (25%), shrimp (12%), Egg protein (10%) and Peanut(3%).

Our study is a prototype study about the existence of food allergy in India. Since our hospital is the reflection of a cross section of the pan Indian population who are cared by us.

Demographical data shows that the children were from all parts of the country. Our data shows increased awareness in the clinician's diagnosis of food allergies. Out of the 100 patients we analysed, 73% had food allergy. Although our numbers are small, detailed analysis of our data and data from other centres collated will certainly increase our knowledge on both the existence, diagnosis, management, long term follow up of all children with food allergies. Further studies are indicated to assess the incidence and prevalence of food allergies in India. This small cohort analysis has shown that there are food allergies in Indian Children, Time to sensitize clinicians, Now!

#### **Conflicts of interest-None**

#### **References**

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