

EDITORIAL

Clinical & Experimental Allergy

Diagnosing food allergy in children is a challenge

This editorial discusses the findings of the paper in this issue by E Schnabel et al. [5]

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Food allergy (FA) is one of the most common chronic diseases in childhood. Approximately 6–8% of all children are affected in the western world. In order to obtain reliable data on prevalence, population-based data are needed, but so far there are only a few studies with this design in this area [1, 2]. There are different reasons for this. Gold standard for diagnosing FA is a positive food challenge, preferably double-blinded. This is a very expensive method due to the need for highly trained medical personnel, access to emergency medical treatment and the time consuming nature of the process. Including this procedure in large population-based studies would be very costly. However, there is an ongoing multi-centre birth cohort study within the EuroPrevall project where this will be evaluated [3] and the results from that study will be utterly interesting.

Another problem is that there is a large discrepancy between reported and perceived FA. The prevalence of perceived FA has been found to be up to 20–35% [2, 4]. It is easy to imagine that this discrepancy presents a clinical dilemma as well as an obstacle in research. In the study by Schnabel et al. [5] published in this issue of *Clinical and Experimental Allergy*, approximately 4% of all children older than 2 years had doctor-diagnosed food allergy (DDFA). In a study by Venter et al. [6] on 6-year olds with reported FA (12%) only 2% could be verified as food allergic with a food challenge. Similar figures have been presented in other studies [7]. Probably, there is also a discrepancy between doctor's diagnosis of FA and true FA. This implies that sensitization alone is not enough for a reliable diagnosis. However, sensitization to food-specific allergens is known to be highly associated to FA [8]. Unfortunately, such sensitization is very common among children where no FA is suspected. Most children with low

levels of food-specific IgE have no clinical FA [9, 10]. This makes diagnosing FA and establishing reliable data on prevalence of FA in children even more difficult. Measuring levels of food-specific IgE gives more information of prevalence of FA. Cut-off IgE levels above which there is a $\geq 95\%$ probability for FA has been suggested for some food items. However, these levels varies depending on the age of the child, how the outcome of the challenge is evaluated (fast reactions only or late-phase reactions also included), if the food used in the challenge is fresh or processed, etc. [8, 11–13]. Nevertheless, these studies have added important knowledge and have made it possible to somewhat reduce the need for food challenges.

Defining phenotypes with different risk/probability for FA can add valuable information in a research setting if not on an individual level. In the study by Schnabel et al. different phenotypes defined as children with early onset (at 2 years), late onset (at 6 years) or persistent (at 2 and 6 years) sensitization to food-specific allergens were investigated. The association between DDFA at 6 years of age and these different phenotypes were analysed. Among children with early onset sensitization or persistent sensitization DDFA was four to six times as common as compared with children without any sensitization. Children with late onset sensitization did not have DDFA more often than children without sensitization. Other studies have shown that early and/or persistent sensitization to food increases the risk for asthma, atopic dermatitis and/or allergic rhinitis later in life [14], but rather few has shown the association between sensitization to food and later FA. In one study this association was examined, and food hypersensitivity was five to 12 times as common at four and/or eight years of age as compared with children with no sensitization to food [1]. However, the diagnosis in this study was not verified with challenges.

It is very important to properly identify those at risk for food-allergic reactions, but it is as important to identify children with sensitization without clinical allergy. FA negatively affects the health-related quality of life and the

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diagnosis should not be given on positive test results alone unless there is a very convincing story on severe food-related reactions [15, 16]. Food challenges can in most countries not be performed on all children with suspected FA due to limited resources. Thus, we need to increase our knowledge on the association between levels of IgE, sensitization in different periods of life and symptoms in order to diagnose FA correctly, but the need for new markers of FA is also highly desirable. The introduction of allergen components in clinical practice is promising and will probably be developed much further, and promising studies on other test methods are also in pipeline [17, 18]. Hopefully, diagnosing and phenotyping children with FA will probably be easier in the future!

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