Food Allergens as the Possible Cause of Asthma and Anaphylaxis

It is now generally accepted that the incidence of allergic disorders including asthma and Japanese cedar pollinosis has dramatically increased during the last 3 decades to become a major public health concern (1). Although accurate epidemiological data are not available in Japan, food allergy seems to be also much more common here at present than expected. It is reported in the United States that about 6–8% of infants under the age of 2 years and about 1.5% of adults are allergic to foods (2).

A food allergic reaction is presumed to be the result of abnormal immunological responses consisting both of immunoglobulin E (IgE)-mediated and non-IgE-mediated responses, after the ingestion of a relevant food. The representative symptoms of food allergy are “oral allergy syndrome” with oral and perioral itching and rash, gastrointestinal symptoms involving nausea, vomiting and diarrhea, and dermatological manifestations such as urticaria and eczema. However, some patients exhibit more severe symptoms, namely systemic anaphylaxis (3). Food-induced anaphylaxis, either through an exercise-dependent pathway or not, is often difficult to diagnose due to the lack of skin manifestations, an indicator of early diagnosis of anaphylaxis, is found in about 50% of such patients. This form of anaphylaxis is much more common than previously reported in the United States, since it is described that food allergy is apparently the cause of 33% of emergency room visits for the treatment of anaphylaxis and is the most frequent single cause for such visits (2).

Food allergens can also induce asthmatic symptoms in some patients. For example based on a survey of both children and adults, Onorato and colleagues reported that in 25 patients suspected of having food-induced symptoms, 6 patients were found to have wheezing provoked by the blinded food challenge (4). In this respect, children were more sensitive to foods than adults and all asthmatic subjects with food allergy had atopic dermatitis or a history of eczema. In Japan, the incidence of food-induced asthma seems to be similar to that in the United States, since Baba reported that 26.4% of 341 food-sensitive subjects have manifested respiratory symptoms. The main cause of respiratory symptoms are hen’s egg and cow’s milk, and these food allergens mainly affect children under the age of 6 years. Out of 90 cases described, only 1 patient was sensitive to rice and 2 patients to wheat (5). It is reasonable subsequently to address that grain-induced asthma is quite rare in clinical situations, however such a rare case aged 43 years old is reported in this issue, as confirmed by the elimination diet and the following food challenge (6).

The only proven treatment for food allergy is strict elimination of the relevant offending allergen(s). It should be noted here, however, that an elimination diet may lead to unwanted side effects such as malnutrition and eating disorders (3). But if successful, the food-induced symptoms will certainly disappear, and it can be assumed that symptomatic reactivity is lost over time, as is evident in this case report of Arai and colleagues (6). In connection to this, it is described that approximately one-third of children and adults lose their clinical reactivity after 1–2 years of allergen avoidance (3).

In any event, this case report warns us that we should pay much more attention to food allergens as the possible and hidden cause of asthma (and also anaphylaxis), even in adult allergic subjects. One should quite carefully consider medical history and perform various laboratory studies including skin prick testing, IgE CAP RAST and related examinations, basophil histamine release, etc. However, it should be emphasized finally that the definite identification of the offending allergen(s) can be obtained only from food challenge, hopefully carried in a double-blind and placebo-controlled manner.

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See also p 98.

References