Food Allergy and Complementary Feeding

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Complementary feeding refers to the process of weaning from breast milk or formula, beginning with the introduction of first foods (beikost) around 4–6 months of age, to the adoption of the family diet by ~18 months of age.

Atopic diseases have increased rapidly and in correlation with Westernized lifestyle, strongly implicating environmental factors. Clinical food allergy, sensitization to foods (positive skin or serum testing), and atopic dermatitis are typically recognized within the first 1–3 years of life. A few foods (milk, egg, wheat, peanut, soy, fish) account for a large percentage of food allergy in young children.

Some influential early studies found evidence that delaying introduction of more allergenic foods was protective against possible food allergy and/or atopic dermatitis at an early age [1], and several groups endorsed conservative recommendations or policy statements with respect to the introduction of some foods [2].

Despite these recommendations, the prevalence of food allergy, sensitization and atopic dermatitis has continued to increase faster than that of other atopic disease (e.g. asthma, allergic rhinitis). In addition, the preponderance of data available now fail to show clear risk reductions for these outcomes by delaying the introduction of foods [3], and some suggest the opposite: that delayed introduction may enhance risk of food allergy or sensitization [4]. However, the data are still limited and sometimes conflicting, and clinical outcomes, such as food allergy, are often only partially characterized by measuring sensitization.

In order to relate this literature to the questions that are most often posed by patients and their families, it may be helpful to separately evaluate what is known about the effects of complementary feeding on clinical outcomes in high- or low-risk infants, understanding that there is overlap, but not tight correspondence, between these outcomes. Those outcomes that are of most interest to patients are clinical food
allergy (IgE mediated or non-IgE mediated), atopic dermatitis and the course of preexisting allergy. Allergic sensitization (positive skin prick of serum IgE test) is not a clinically relevant outcome per se and should be rigorously corroborated with the clinical history and/or ingestion challenges and periodically reassessed.

As the available data are often insufficient for making truly evidence-based recommendations, we must design studies to address those gaps, and meanwhile cautiously use what information we can deduce from other contexts including generalizing information from studies of specific allergens, immunotherapy trials, animal models of mucosal immunity, etc.

We can think about the potential role of complementary feeding influencing sensitization, clinical allergy (including the overlap with atopic eczema) and the resolution of those conditions once established (fig. 1). Allergic sensitization refers to the documentation of allergen-specific IgE, either by in vivo percutaneous prick testing or detection in serum by use of an in vitro solid phase binding assay. It is important that this be understood as much more common than and distinct from clinical disease. There are conflicting data suggesting that delaying complementary feeding may reduce the incidence of sensitization to foods early in life, but longer term studies have not shown a persistent effect. A subset of children with atopic eczema have food allergy, and some may have disease that is driven by food allergen, though this degree of discrimination has not been made in the majority of studies addressing the role of food introduction. Similar to reported food allergy, some studies have reported higher rates of disease with earlier
(<4 months) exposure to solid foods, but protection from delayed exposures has not been found in children >2 years, and some studies have found protective effects of introducing even highly allergenic foods during infancy (e.g. fish and peanut) [4]. Finally, studies of oral exposure to allergen in children with confirmed food allergy have been outside the time frame of complementary feeding, but seem to reinforce the theme that in forms and doses that are tolerated without immediate symptoms oral exposure tends to be tolerogenic [5].

References


