Food Allergy of Infancy (FAI): Prevalence and Clinical Courses

Pipop Jirapinyo, M.D.

Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

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Food allergy of infancy (FAI) is a newly established disease by our group. It is a unique chronic disease of infancy which develops during very early in life and resolves itself when the affected infants are 2-3 years of age. The most common term that we are familiar with the disease is cow's milk protein allergy (CMA). After decades of studies in CMA in infants, we feel that using the term FAI may be more appropriate than CMA.

Nowadays, quite a large number of parents whose babies are affected by FAI seek consultancy in our unit. Several cases of FAI are referred to us by general pediatricians. This may be because pediatricians are more aware of the disease. Some parents concern about their babies' symptoms and suspect that their babies might have CMA. Then they bring their babies directly to us for diagnosis of CMA. One factor that causes more prevalence of FAI is allergic disease in one or both of the parents. Since adults in urban areas have a higher prevalence of allergic diseases these days. It is notable that if one or both of the parents has a history of allergic diseases, the prevalence of FAI in their children will be higher than those of general population.

The term "FAI" is used instead of cow's milk protein allergy because most of the affected infants will be also allergic to one or more foods. Therefore using this term is likewise for another propose of warning physicians and parents to think about other food proteins which these infants may be allergic to. Moreover, the age of the infant starting to be allergic to other foods may be at not the same time as they start to be allergic to cow's milk. The infants may develop allergy to other foods during their late infancy period which they are not allergic to during their early infancy period.

Generally, it is noted that the prevalence of CMA worldwide is about 2-3% of the infants.[1] However when food protein allergy is included, the prevalence of FAI is as high as 4% of the infants and is increasing from the previous study.[2] Each year, there are 800,000 newly-born infants in Thailand. Then, there will be 30,000 infants who will be affected by FAI. FAI, thus, is the most common chronic disease of infancy.

FAI has a different clinical course from food allergy in other age groups. Allergy to food protein in general once it is established, will be sustained throughout the whole life of the affected children. In contrast, FAI will start during early infancy period. All infants will be allergic to cow's milk protein in infant formulas with or without other food allergy. Also uniquely, most of these infants with FAI will be tolerant to all of the allergic foods by the age of 5 years old, except those who are positive for milk-specific IgE.[3] IgE-mediated CMA often persists to school age and is a risk factor for other atopies. Non-IgE-mediated CMA, by contrast, is a benign infantile condition.

Infants who are exclusively breast-fed are not excluded from FAI. However, the prevalence of FAI in these infants may be lower than those who are fed solely with cow's milk infant formula. Immunological factors in breast milk as well as more probiotics in the infants' guts of the exclusively breast-fed infants may contribute to tolerance to food proteins. Once these infants terminate their breast feeding, FAI may occur.

There are 3 main systems in infants that are affected by FAI. Firstly and very commonly, the cutaneous system of the infants will be affected. They may present as recurrent urticaria or atopic dermatitis since very early in life. The extent of skin lesions vary from mild that may be unnoticed to very severe that cause infants much distress. Secondly, the respiratory system might be affected. The symptoms may also vary from mild to severe. Some symptoms are so severe that can cause upper or lower airway obstruction. Some infants may have constant secretions in their airways that can cause recurrent pneumonia. However, there are some infants who have mild respiratory symptoms which their parents may not notice. Lastly, the gastrointestinal system of these infants can be affected. Infantile colic, gastroesophageal reflux, chronic diarrhea, intermittent mucous bloody stool as well as constipation are gastrointestinal manifestations of FAI. There are some infants affected with this disease that do not exhibit one of the three systems mentioned above. The infants simply manifest as failure to thrive or may be diagnosed as anorexia of infancy. When an appropriate formula that is less aller-

gic is offered to them, their appetites resume and then thrive well. Also, some infants can be affected by two or three systems during the time their parents are seeking medical advice.

If FAI is not diagnosed in these infants, most of them will be treated symptomatically. However, these infants have to be treated repetitively for the symptoms until the FAI in the infants subsides. The medical costs for treating these infants are higher than changing to hypo-allergenic formulas. Additionally, a portion of these infants may need hospitalizations and some may succumb to death from the disease.

In conclusion, food allergy of infancy (FAI) is the most common chronic disease of infants. The infants affected with this disease will start with cow's milk allergy and then further develop other food protein allergies during late infancy. Most affected infants will be free of this disease by the age of 5 years old. The differences in duration for the disease among infants remain unknown. Since the prevalence of the disease is increasing nowadays, it is worthy for researchers to put more efforts to study this disease extensively.

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