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RESEARCH LETTER

Anaphylaxis caused by honey ingestion in an infant

To the Editor,

Anaphylaxis is an emergency state and its prevalence has been increasing during childhood, especially in industrialised countries. The most common causes of anaphylaxis are foods, drugs and hymenoptera venom in children.¹ Anaphylaxis caused by honey is a very rare condition. We reported a case of an infant with anaphylaxis occurred by ingestion of honey.

A 14-month-old boy presented with anaphylaxis after honey ingestion. He was given as much as one teaspoon of honey for several times until he was six months old. When he was 14 months old, his mother gave him approximately five teaspoons of honey. After five minutes, his lips were swollen and within 10 minutes urticaria, angio-oedema, cough and wheezing occurred. He was taken to a primary medical centre immediately. Systemic corticosteroid and antihistamines were administered. He was referred to an allergy centre for further evaluation.

He came to our hospital one week after the anaphylactic reaction. His physical examination and routine laboratory analyses were normal at admission. Previous history revealed that he had had acute urticaria when he was six months old without any identified aetiology which resolved spontaneously in a few days. His mother and grandfather both have perennial allergic rhinitis, asthma, and house dust mite sensitivity. Specific IgE against *Apis mellifera*, *Vespula* species, common food and inhalant allergens were normal. Five weeks after anaphylaxis, prick-to-prick skin test was performed for the honey that was eaten and for another two species which are frequently consumed in our country. Honey which was eaten was found positive, flower honey was negative, and honey composed of mixed flower and pine honey was weak positive. Skin prick tests with common pollens and pinus pollen were also negative. His parents were informed about honey allergy and the importance of honey avoidance. Epinephrine otinjection kit 0.15 mg was prescribed and parents were educated for its usage.

Food allergy is a common disease affecting children more than adults. Allergic food reactions typically develop in early childhood.² Most allergic food reactions are immunoglobulin (Ig) E-mediated and involving the skin, gastrointestinal

(GI) and respiratory systems. These reactions range from mild skin symptoms to severe anaphylactic reactions. Cow's milk, hen's egg, peanuts, tree nuts, and sesame seeds account for most food-induced allergic reactions in young children.³ Honey contains a large number of components derived from bees, such as gland secretions and wax, as well as from substances related to their foraging activity such as flower nectar and pollens.⁴ Only case reports and case series of honey allergy with limited number of patients have been reported in adults. Anaphylaxis caused by honey ingestion has been reported in patients who have suffered from allergic rhinitis or bee venom hypersensitivity.⁵ In these cases, anaphylactic reaction was developed by honey ingestion obtained from bees foraging on flowers of which these cases were also sensitised to their pollens.^{6,7} On the other hand, in a study including individuals sensitised to *artemisia* (mugwort- in compositae family), food hypersensitivity rate was found to be 23.7% and 60% of these cases who were sensitive to food and *artemisia* pollen were also sensitive to honey.⁸ In another study including five cases which were described as allergic to honey, four of them had negative prick-to-prick test with honey and skin prick test with pollens. It is suggested that some reactions caused by honey might be due to intolerance or non IgE-hypersensitivity especially in non-atopic people.⁹ For the diagnosis of food allergy, obtaining a proper history is critical. In addition, several in vitro and in vivo measurements are available. The gold standard test is still a standardised oral provocation or food challenge test.² In our case, specific IgE against bee venoms (*apis mellifera*, *vespula* species), common food antigens (milk, egg, soy bean, wheat, fish and peanut) and inhalant allergens (including pollens of grass, trees) were negative. Prick-to-prick test was performed for different honey species including honey eaten by our patient. Only the test performed with the honey eaten by him was positive, consisting of pine honey. One of the honey species was weak positive and the other was negative. The latter was flower honey. Honey causing weak skin test positivity was composed of pine and flower honey mixture. Skin prick test was negative for pollens including *Artemisia*, pine, and grass. We could not perform oral challenge to confirm the diagnosis considering the life threatening food reaction history.

Tolerance is commonly seen in food allergic infants. Food allergies that are often outgrown are milk, soy, wheat and egg. Tolerance for other foods such as fish, peanut, nuts

e.g. is uncommon.² Honey allergy in infancy has not been reported, so development of tolerance to honey is as yet unknown.

Only a few adult cases have been reported about anaphylaxis occurred by honey. We could not find any sensitivity to pollens and bee venoms in our patient. To the best of our knowledge this is the first infant who had anaphylaxis caused by honey in the literature.

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