

COVID-19 and food allergy in children

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Summary. In children with food allergy the visits should be limited to those that are unequivocally needed on clinical basis. Food challenge can be performed in selected situations, taking a more detailed history to make sure that patients provide whatever information we need. The maintenance of a safe diet can be hampered by several factors. Nutritional supplementation may be necessary. (www.actabiomedica.it)

Key words: COVID-19, food allergy, children, food challenge, oral immunotherapy

Patients with food allergies are generally healthy, except for concomitant comorbidities. To reduce patients' exposure during a pandemic, follow-up visits should be postponed, unless new clinical events such as serious systemic reactions, suggesting a new food allergy, are reported. Any new referral for the purpose of an elimination diet trial may be delayed, unless an IgE-mediated reaction, FPIES or eosinophilic esophagitis are suspected. More attention and priority should be given to patients suffering from recurrent idiopathic anaphylaxis. In a setting of a pandemic, unless there is a critical nutritional need for introduction of a key nutrient, such as in the case of infants and children with suspicions of cow's milk allergy, it is likely that all food challenges would be deferred (1).

A challenge should also be considered when a child is suspected of not tolerating the substitute milk or whenever an allergy misdiagnosis, resulting in an unnecessary elimination diet, is strongly suspected (2).

In all will other situations, such as in cases of uncertain symptomatic ingestion, the elimination diet prescribed for eczema and eosinophilic esophagitis can be followed, the reintroduction of food may be delayed and tele-health services may be implemented, as an alternative option to face-to-face visits for the evaluation of these patients (1).

In children with food allergies (FA), the avoidance of the culprit food currently represents the mainstay of treatment. The choice of "safe" foods is crucial for allergic children and their families (2,3). However, this may be challenging during a pandemic, when people may have difficulty accessing specialist allergy products, because of high demand in shops or low income due to the pandemic itself. Thus, it can become difficult to find safe products for children allergic to one or more foods. The difficulty in finding products already consumed and tolerated can have a twofold effect: a) the risk of buying new, unknown products that

may be unsafe; b) the risk of not correctly reading the labels of the products purchased.

These effects increase the potential risk of exposure to the allergen and any anaphylactic reactions. For this reason, it is of extreme importance that patients have an updated action plan to be able to promptly recognize and treat anaphylaxis and always carry auto-injectable adrenaline (2,4).

In general, an avoidance diet can lead to nutritional deficiencies which can also depend on the age of the child and the food/foods that are eliminated (5). Nutritional deficiencies may particularly occur with micronutrients (trace elements, vitamins and minerals), that are essential to guarantee the immunological mechanisms involved in the response to the infections (6,7).

Infectious diseases can also lead to a greater deficiency of vitamin A, decreasing its absorption and increasing its excretion. All this can have negative effects both on innate immunity and on adaptive immunity. The most recent evidence underlines the role of vitamin D in the possible prevention of respiratory infections and of vitamin C in reducing the duration of upper respiratory infections, generally of viral origin (8,9).

A pandemic can lead to interrupted shopping habits. Lack of access to items essential for a balanced diet can result in an inadequate nutrient intake, that is critical to the functioning of the immune system.

Parents should try to ensure that the child/adolescent suffering from food allergies consumes a well-balanced and varied diet, with adequate portions of fruit and vegetables, rich in micronutrients and vitamins. On an individual basis, depending on the food or groups of foods excluded from the diet, vitamins and/or mineral supplements may be considered (e.g. calcium and vitamin D in children with cow's milk protein intolerance). Recent studies recommend regular intake, especially in pre-schoolers. In particular, a supplementation of Vitamin D at a dose of 600-1000 IU/day is advisable during a pandemic, that requires staying at home with a consequent reduction in exposure to sunlight. More generous dosages would be appropriate in the presence of risk factors, such as obesity, anti-epileptic therapy and dark skin.

In general, allergic patients should be regularly re-evaluated and the diet tailored to a specific individual's nutritional needs. However, monitoring a short or

long-term elimination diet in infants and children may be particularly challenging during a pandemic.

To reduce patient exposure, clinicians should improve tele-health medicine by providing periodic medical consultations by phone, video calls or email correspondence, whenever possible.

Patients affected by some kind of food allergy (e.g. peanut allergy) may benefit from oral Immunotherapy (OIT) (10). OIT requires many in-hospital visits for a gradual increase of allergen dose ingestion. During pandemic, Initiation of OIT should be postponed. If a patient is undergoing OIT it is advisable to keep the same daily dose of allergen at home until new medical indications are given (1).

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