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Commentary

Detecting Food Allergies in People with Atopic Dermatitis

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DESCRIPTION

According to the birth cohort research, Canada Healthy Baby Longitudinal Development, sensitization and Atopic Dermatitis (AD) at 1 year of age were significant risk factors for FA at the age of 3 years. Even momentary neonatal skin barrier disruption was linked to FA at the age of two. The development of FA is particularly linked to early-onset AD, according to a recent systematic study. These results were underlined by a sizable population-based study (HealthNuts), which found that 1 in 5 Australian children with AD also had FA, compared to 1 in 20 infants without AD. Egg and peanut allergies were 6 and 11 times more prevalent in AD patients, respectively. There are connections between AD and food allergen sensitivity, according to numerous population-based research (ie, the presence of food-specific IgE). At 3 months old, food sensitivity in newborns with AD is up to 6 times more than in healthy controls. Additionally, compared to the 0.1% to 6% FA prevalence in the general population, up to 53% of children with AD had positive food-specific Immunoglobulin E (sIgE) and/or Skin Prick Tests (SPTs), with up to 15% showing symptoms of FA on an oral meal challenge.

One key way to become sensitive to food allergies is by cutaneous exposure to food through a compromised skin barrier. The epidermis acts as a crucial barrier to the outside world, preventing water loss and the entry of allergens and pathogenic pathogens. By making it easier for allergens to be absorbed, a leaky skin barrier may encourage allergy sensitization. When epidermal Langerhans cells catch and process allergens, they go to draining lymph nodes where they may interact with naive T cells to boost helper T cell type 2 (Th2) immunity, which results in allergies. It is thought that absorbing allergens through the damaged skin barrier caused by AD causes a Th2 response, IgE class change, and clinical Food Allergies (FA). Local dendritic (Langerhans) cells absorb food allergens that penetrate the stratum corneum and go to nearby lymph nodes to trigger a Th2 immune response. Studies on mice demonstrated that after cutaneous application of food allergens, innate immune cells (eosinophils and basophils) build up in the skin as a result of excessive thymic stromal lymphopoietin production. Basophil and eosinophil-produced interleukin 4 encourages dendritic cell activation and food antigen presentation to naive T cells, resulting in Th2 polarization and intestinal IgE-mediated FA in mice. Furthermore, after being exposed to food allergens, mice with epicutaneous food allergy sensitization exhibit intestine mast cell proliferation and anaphylaxis.

Epicutaneous sensitization was shown in clinical tests following the application of peanut oil to eczematous skin, and peanut sensitization is linked to ambient exposure to peanuts. Also, it was proposed that exposure to hydrolyzed wheat protein in facial cleansers may increase the likelihood of developing a certain phenotype of wheat allergy. On the other hand, eating allergens increases tolerance in most cases.

The majority of foods that cause AD are often common dietary allergies. The most often reported food allergies in newborns were eggs, followed by cow's milk, peanuts, and soy. Eggs, cow's milk, and peanuts were once again the three foods most frequently consumed by kids, followed by soy, wheat, tree nuts, fish, and shellfish. Peanuts were most popular among older kids and adults, followed by tree nuts, fish, and shellfish. It's critical to differentiate between rapid hypersensitivity reactions, which can cause anaphylaxis and be fatal, and delayed reactions, which can aggravate eczema. Moreover, reactions can be mixed, resulting in both a worsening of eczema and some acute symptoms.

The removal of pertinent food allergens ought to reduce AD symptoms, but it must be led by accurate allergy testing and a determination of its clinical relevance. Because to their complexity in interpretation, IgE panels for food allergies are discouraged in the primary care environment. Empiric food avoidance is discouraged in AD due to the possibility of worsening FA and dietary problems.

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