THE KEY DETERMINANTS OF ALLERGIC STOMATITIS IN PEDIATRIC PATIENTS

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Abstract*. The rapid expansion of the food, chemical-physical, and household industries, there has been a parallel significant increase in the prevalence of allergic diseases. Food allergy is among the most common forms, and allergic stomatitis is frequently observed in young children within this context. This article investigates the etiological factors of food allergy and allergic stomatitis in pediatric populations.*

Objective*. The aim is to identify the primary factors contributing to the development of allergic stomatitis in children.*

Materials and Methods*. The study cohort comprised 26 children aged 6 months to 3 years with confirmed diagnoses of atopic dermatitis and food allergy, all of whom reported allergic reactions following the ingestion of specific foods. Diagnoses were established using parental questionnaires, skin prick testing with allergens, and molecular allergy diagnostics via the ALEX2 allergy chip.*

Results*. Analysis of sensitization frequencies to food allergens in children with an atopic phenotype indicated the highest reactivity to cow's milk proteins (69%), wheat (65.4%), soy (57%), and hen's egg (50%). Elevated rates were also observed for peanut (46%) and fish (42%). Sensitization to walnut was less frequent (23%), and the lowest rates were associated with seafood allergens (15%).*

Conclusion*. A substantial proportion of patients exhibited seasonal allergy manifestations and cross-reactivity to plant-derived products. Sensitization was most frequently identified for cow's milk proteins, hen's egg, and wheat. However, clinically confirmed sensitization with symptom development occurred at approximately half the rate of overall detected sensitization.*

Keywords*: allergic stomatitis; atopic dermatitis; molecular allergy diagnosis; hypersensitivity; food allergy.*

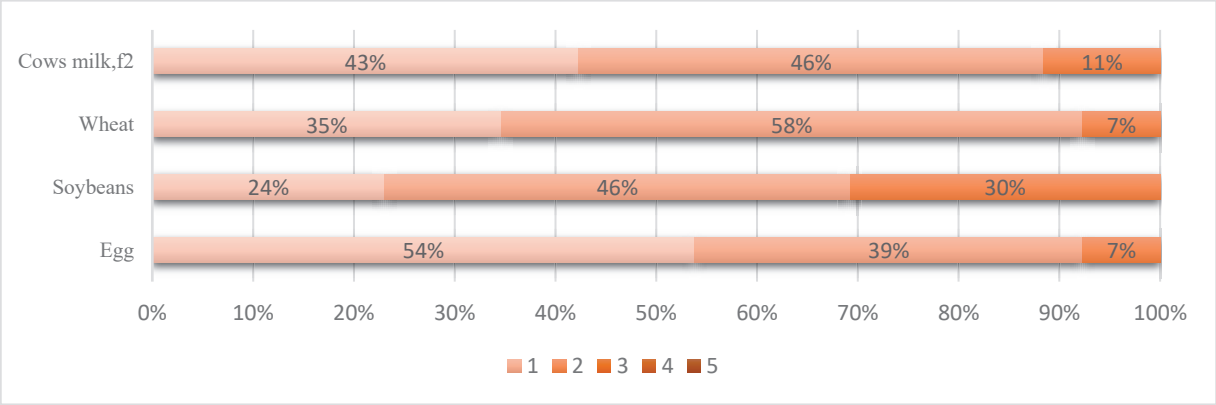
Introduction. The prevalence of allergy illnesses is rapidly rising in the modern world. Approximately 3% of people have food allergies on average, according to several research [1, 6]. WHO figures, however, indicate that this percentage is between 30 and 40 percent worldwide [2, 7]. The primary food allergies are eggs (32.5%), milk (27.6%), and wheat (33.5%), per the findings of Kumagai et al. [3]. Papachristow et al.'s research findings [4] allowed for the expansion of the list of products with a high potential for causing allergies. These include cereals and potatoes, vegetables, fruits and fruit juices, legumes and peas, milk (including infant formula), fermented dairy products, vegetable products (vegetable milk, yogurt, and cheese), eggs, meat, fish, and seafood, pickles, pastries, pizza, traditional flour dishes, confectionery, and homemade sweets. Food allergies typically arise in conjunction with atopic dermatitis [5], and one of its clinical signs may be allergic stomatitis. A type I and type IV hypersensitivity reaction, allergic stomatitis is brought on by contact to foreign substances such as medications, foodstuffs, and dental materials [8,9,10]. Crustaceans, citrus fruits, chocolate, and medications were also listed as products with a high possibility for allergies in the Langlais research [9]. Eggs, fish, milk, almonds, chocolate, and spices were the primary dietary allergens in the research, according to Murphy and Nelson [11, 12].

Objective. To identify the primary factors contributing to the development of allergic stomatitis in children diagnosed with atopic dermatitis and food allergies.

Material and methods. The Republican Specialized Scientific and Practical Medical Center of Allergology and Clinical Immunology was the site of this investigation. 26 children between the ages of 6 months and 3

years who had been diagnosed with food allergies (n = 15) and atopic dermatitis (n = 11) were included in the study. A questionnaire from the parents, a prick test using allergens, molecular allergy diagnostics -ALEX2, and an Excel analysis of the data were used to diagnose atopic dermatitis and food allergies. After the child's legal representative signed a written informed permission form for the assessment, the study participants were chosen. Following a dental examination, the diagnosis of allergic stomatitis was made using the information gathered.

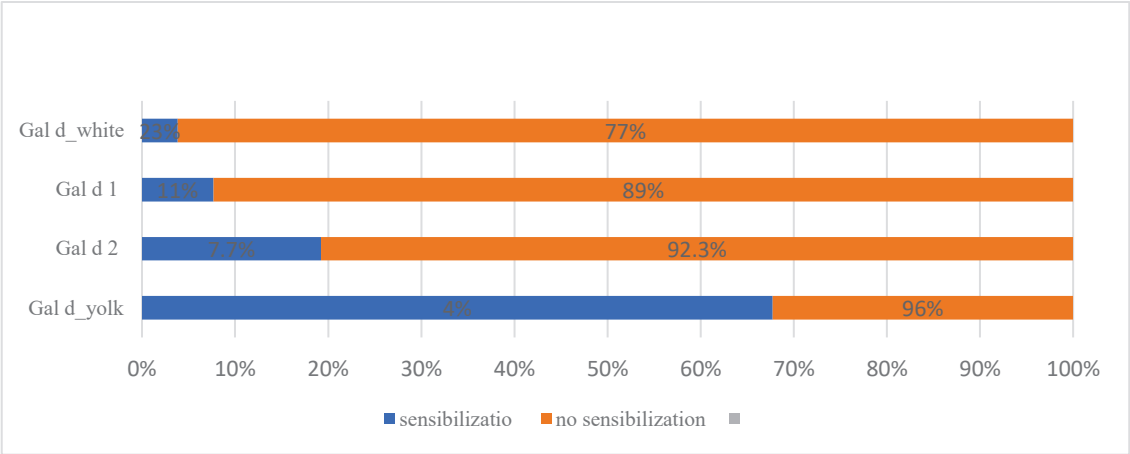
Results and discussion. Of the 26 children examined (20 girls and 6 boys), 11 (43%) had atopic dermatitis, and 15 (57%) had food allergies. Upon examination of the oral cavity, signs of allergic stomatitis, such as hyperemia, angioedema, itching, and small papules on the cheek mucosa, were detected in 15 children (58%). The results of skin screening also confirmed sensitization to allergens. According to the results of pre–testing, cow's milk showed the highest level - 69.2% (n=18).



Puc.1. **Frequency of sensitization to food allergen extracts (n = 26)**

The data obtained showed that 54% of children (n=26) had sensitization to egg components. Of the protein allergens of chicken eggs, Gal d_yolk and Gal d2 were the most significant. Heat - resistant component Gal d 1, 2 (14.2%) were sensitized.

The maximum level of SiGe was detected in relation to the wheat allergocomponent Tri a 14 (58%). The data of the molecular test for soy and beans revealed the following indicators: soy allergy components Gly m 4 and pea Pis s were found in 30% of children and showed a high concentration of IgE. levels.



Puc. 2. **Indicators of sensitization to chicken egg allergens**

46% of children were also sensitized to cow's milk. Most often, high sensitization was to the milk whey protein α-lactalbumin Bos d 4. The next place was occupied by the allergenic component casein Bos d 8.

As for the components of fish and peanuts, Sal s and Ara h8 molecules dominated over other allergenic components and showed 45% and 66%.

According to a study on the prevalence of food allergy sensitization in kids with an atopic phenotype, the most noticeable reactivity was found to cow's milk proteins (69%), wheat (65.4%), soy (57%) and chicken eggs (50%). Additionally, quite high rates were observed for fish (42%), and peanuts (46%). The lowest frequency was linked to seafood allergies (15%), while sensitivity to walnuts was reported less frequently (23%).

Conclusion. Sensitization to at least one food allergy was present in the majority of the children who were part of the study. Sensitization was most frequently observed to the proteins of cow's milk, chicken eggs, and wheat since a sizable portion of the patients displayed cross-reactivity to plant products and seasonal allergies. However, compared to the overall detectable sensitization, clinically verified sensitization with symptom onset was about twice as common. It should be noted that the frequency of clinically proven cases of food allergies was many times lower than the prevalence of food allergies as reported by the parents' survey.

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