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The impact of breastfeeding on the development of allergic diseases in children

Ozodbekova Sitora

Medical School Student, Kimyo International University in Tashkent,
Tashkent, Uzbekistan

Tashmatova Gulnoza

Associate of Professor, PhD, Department of children's diseases of
Tashkent medical academy, Tashkent, Uzbekistan

Abstract: A study conducted from January 2024 to January 2025 at the Tashkent Medical Academy and the 44th Family Polyclinic aimed to assess the impact of breastfeeding on the risk of allergic diseases in children and the mechanisms of its protective effects. A total of 187 children aged 0 to 3 years participated in the study. The primary assessment method was a survey of mothers, along with an analysis of clinical data, including skin manifestations, respiratory symptoms, and food intolerance. Children with identified neurological disorders, congenital anomalies, and severe somatic diseases were excluded from the study. The results showed that breastfeeding for six months or more significantly reduces the risk of developing allergies ($p < 0.05$). The prevalence of atopic dermatitis among breastfed children was 12.4%, whereas among formula-fed children, it reached 34.7%. A similar trend was observed for respiratory allergies: 9.8% in breastfed children versus 27.3% in formula-fed children. A correlation was found between the duration of breastfeeding and a reduction in skin allergies ($r = -0.42$, $p < 0.01$) as well as food intolerance ($r = -0.36$, $p < 0.05$). Additionally, children who were breastfed for more than 12 months had lower IgE levels ($p < 0.05$), indicating a stronger immune defense. Conclusion. Breastfeeding, particularly for six months or longer, has a pronounced protective effect, reducing the risk of allergic diseases, including skin, respiratory, and food allergies. These findings confirm the importance of natural breastfeeding as an effective allergy prevention strategy in early childhood.

Keywords: Breastfeeding, allergic diseases, survey, immune protection.

Introduction: The health of mothers and children, as well as the improvement of pediatric care worldwide, remains a top priority in healthcare. It is recognized that maternal and child health indicators should be used as criteria for assessing a society's socio-economic development. A multifactorial approach is crucial, focusing on proper nutrition, physical development, intellectual potential, and overall health throughout life [1,2,5].

Breastfeeding is an integral part of the reproductive cycle, a cornerstone of child survival, nutrition, and development, and a determinant of maternal health in both the short and long term. It is also one of the fundamental components of neonatal care and quality medical assistance[3,4]. Children who are exclusively breastfed for the first six months have lower rates of infectious and non-infectious diseases, lower mortality rates, and higher intelligence levels compared to those who receive breast milk for a shorter duration or not at all. These health disparities persist throughout life [6,7].

To assess the impact of breastfeeding on the risk of developing allergic diseases in children and to investigate its protective mechanisms.

METHODS

The study was conducted from January 2024 to January 2025 at the Tashkent Medical Academy and the 44th Family Polyclinic. A total of 187 children aged 0 to 3 years participated. The study utilized a survey method for breastfeeding mothers to evaluate the influence of breastfeeding on allergy development. Children's allergic conditions were assessed based on clinical data, history of diathesis, and anamnesis. Additionally, an allergy status assessment scale was used to measure the severity of skin manifestations, frequency of respiratory symptoms, and presence of food intolerance.

Children with diagnosed neurological disorders, congenital anomalies, and severe somatic diseases that could influence allergic pathology development were excluded from the study.

RESULTS AND DISCUSSION

According to the survey data, 132 children (70.6%) were exclusively breastfed for the first six months, while 55 children (29.4%) received mixed or formula feeding. Among exclusively breastfed children, allergic diseases were recorded in 14.4% of cases. In contrast, the prevalence was 36.3% in the mixed or formula-fed group. The frequency of diathesis among breastfed

children was 10.6%, compared to 28.1% in non-breastfed children. Respiratory allergic manifestations (such as bronchial asthma and allergic rhinitis) were found in 8.3% of breastfed children and 22.7% of formula-fed children. Food intolerance was observed in 12.1% of breastfed children and in 31.8% of formula-fed children. Data analysis indicated that children who were exclusively breastfed for the first six months had a significantly lower risk of developing allergic diseases than those who received mixed or formula feeding ($p<0.05$). The prevalence of atopic dermatitis among exclusively breastfed children was 12.4%, while it was 34.7% among formula-fed children. The development of respiratory allergic symptoms (allergic rhinitis, bronchial asthma) was observed in 9.8% of breastfed children and in 27.3% of formula-fed children. It was found that the duration of breastfeeding correlated with a lower frequency of skin allergy manifestations ($r=-0.42$, $p<0.01$) and a reduction in cases of food intolerance ($r=-0.36$, $p<0.05$). Further analysis showed that children who were breastfed for more than 12 months had significantly lower serum IgE levels ($p<0.05$), confirming the protective effect of breastfeeding against sensitization.

CONCLUSION

The study results confirm that breastfeeding has a protective effect against the development of allergic diseases in children. Exclusively breastfed children during the first six months of life had lower rates of skin allergies, respiratory diseases, and food intolerance. These findings emphasize the importance of promoting breastfeeding as a strategy for preventing allergic diseases in young children.

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