IMMUNOLOGICAL AND ALLERGIC REACTIONS ASSOCIATED WITH HELMINTH INFECTIONS IN PRESCHOOL CHILDREN IN KHOREZM REGION

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ABSTRACT

Helminth infections are common among preschool-aged children and can significantly affect the immune system. These infections may alter immunological responses, increase susceptibility to allergic diseases, and contribute to chronic inflammation. In the Khorezm region, the relationship between helminth infections and allergic or immunological reactions in young children is not well-documented.

Relevance. Helminth infections are common among preschool-aged children and can significantly affect the immune system. These infections may alter immunological responses, increase susceptibility to allergic diseases, and contribute to chronic inflammation. In the Khorezm region, the relationship between helminth infections and allergic or immunological reactions in young children is not well-documented.

Objective. To investigate the immunological and allergic responses associated with helminth infections among preschool children in the Khorezm region.

Materials and Methods. A cross-sectional study was conducted on 120 preschool children aged 3–6 years in urban and rural areas of Khorezm. Stool examinations were performed to identify helminth infections using direct smear and Kato-Katz techniques. Blood samples were analyzed for immunological parameters including total IgE, eosinophil counts, and cytokine profiles (IL-4, IL-10, IFN-γ). Allergic manifestations were recorded using standardized questionnaires, focusing on atopic dermatitis, wheezing, and recurrent rhinitis.

Results. Helminth infections were detected in 30% of the participants. Children with helminth infections exhibited significantly higher total IgE levels (mean 310 ± 45 IU/mL vs. 180 ± 32 IU/mL, $p < 0.01$) and elevated eosinophil counts ($p < 0.01$). IL-4 and IL-10 concentrations were significantly increased, indicating a Th2-skewed immune response. Allergic symptoms were more frequent in infected children, with atopic dermatitis observed in 18%, recurrent wheezing in 12%, and rhinitis in 20% of cases.

Discussion. The study demonstrates a clear association between helminth infections and altered immune responses in preschool children, with a tendency towards Th2-mediated immunity and increased allergic manifestations. These findings suggest that parasitic infections may contribute to the development or exacerbation of allergic diseases in early childhood.

Conclusion. Helminth infections in preschool children in Khorezm are associated with immunological changes and increased allergic manifestations. Early detection, effective deworming programs, and monitoring of allergic conditions are essential to improve child health outcomes in the region.

References:

1.Davlatjonova, N. (2026, February). MODERN CLINICAL AND LABORATORY INDICATORS OF TRANSIENT PNEUMONIA IN CHILDREN. In International Conference on Health & Technology (Vol. 2, No. 2, pp. 54-55).
2.Matyakubova, Y. (2026, March). DEVELOPMENT OF ALLERGIC REACTIONS AND ATOPIC DISEASES IN CHILDREN WITH HELMINTH INFECTIONS. In International Conference on Medicine & Agriculture (Vol. 2, No. 3, pp. 48-50).
3.Матякубова, Ю. Р. (2025). ХОРАЗМ ВИЛОЯТИДА ЯШОВЧИ БОЛАЛАРДА ГЕЛЬМЕНТОЗНИНГ ОЛДИНИ ОЛИШ ВА ДАВОЛАШНИНГ ТИББИЙ-ИЖТИМОИЙ ЖИХАТЛАРИ. SOUTH ARAL SEA MEDICAL JOURNAL, 1(4), 188-194.
4.Davlatjonova, N. (2026, February). INTEGRATED ASSESSMENT OF NUTRITION HABITS AND CHRONIC DISEASE RISK IN PRESCHOOL CHILDREN. In International Conference on Health & Technology (Vol. 2, No. 2, pp. 203-205).
5.Matyakubova, Y. (2026, February). PREVENTION OF HELMINTOSES IN PRESCHOOL CHILDREN AND EFFECTIVENESS OF PROPHYLAXIS MEASURES. In International Conference on Medicine & Agriculture (Vol. 2, No. 2, pp. 56-58).
6.Matyakubova, Y. (2026, February). ETIOLOGY AND DIAGNOSTIC APPROACHES OF CHRONIC COUGH SYNDROME IN CHILDREN. In International Conference on Medicine & Agriculture (Vol. 2, No. 2, pp. 15-17).
7.Sharipova, S. (2026, February). PROGNOSTIC FACTORS RELATED TO THE CLINICAL COURSE AND SEVERITY OF PNEUMONIA IN CHILDREN. In International Conference on Health & Technology (Vol. 2, No. 2, pp. 200-202).
8.Matyakubova, Y. (2026, February). CLINICAL MANIFESTATIONS, LABORATORY FINDINGS, AND TREATMENT OUTCOMES OF HELMINTHIASIS IN CHILDREN. In International Conference on Medicine & Agriculture (Vol. 2, No. 2, pp. 59-61).
9.Шарипова, С. (2025). НЕОНАТАЛ ДАВРИДАГИ ЧЎЗИЛГАН САРИҚЛИКНИ ЧАҚАЛОҚЛАРНИНГ ПСИХОМОТОР РИВОЖЛАНИШИГА ТАЪСИРИ. SOUTH ARAL SEA MEDICAL JOURNAL, 1(4), 207-213.
10.Bakhtiyorovich, R. I., & Hayitboy o‘g‘li, D. S. (2026). Diagnosis and Treatment of Gastroschisis in Newborns. Spanish Journal of Innovation and Integrity, 50, 83-85.
11.Sharipova, S. (2026, February). COMBINATION OF GLOMERULONEPHRITIS AND NEPHROTIC SYNDROME IN CHILDREN: CLINICAL AND LABORATORY ANALYSIS. In International Conference on Health & Technology (Vol. 2, No. 2, pp. 52-53).
12.Атажанов, Х. П., & Оллаберганова, Ш. М. (2025). ОСОБЕННОСТИ ТЕЧЕНИЯ НОЗОКОМИАЛЬНОГО СЕПСИСА У ДЕТЕЙ. Жоурнал оф Мултидиссиплинарй Инноватион ин Ссиенсе анд эдусатион, 1(3), 123-126.
13.Узакова, Ш. Б., Шамсиев, Ф. М., Мусажанова, Р. А., Абдуллаева, М. К., & Атажанов, Х. П. (2021). МИКРОБИОМ ДЫХАТЕЛЬНОГО ТРАКТА У ДЕТЕЙ С МУКОВИСЦИДОЗОМ. ПЕДИАТРИЯ САНКТ-ПЕТЕРБУРГА: ОПЫТ, ИННОВАЦИИ, ДОСТИЖЕНИЯ, 236.

14.Шамсиев, Ф. М., Ахмедова, Д. И., Узакова, Ш. Б., Иномов, Б. Н., & Атажанов, Х. П. (2024). ФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ И МАРКЕРЫ ВОСПАЛИТЕЛЬНОГО ПРОЦЕССА У ДЕТЕЙ С МУКОВИСЦИДОЗОМ В РЕГИОНЕ ПРИАРАЛЬЯ. Science and innovation, 3(Special Issue 44), 171-177.
15.Atajanov, K. P., Ollaberganova, S. M., & Masharipova, K. Q. (2025, December). ULTRASONIC DIAGNOSIS OF COMPLICATED PNEUMONIA IN CHILDREN. In International Conference on Medicine & Agriculture (Vol. 1, No. 3, pp. 21-23).