



## CLINICAL MANIFESTATIONS OF GASTROINTESTINAL FOOD ALLERGY

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### ABSTRACT

*This article is written about gastrointestinal food allergies in children. Gastrointestinal food allergy is caused by the development of allergic inflammation in the mucosa of the gastrointestinal tract, the mechanisms of which are both immunoglobulin-E (IgE)-mediated (oral allergic syndrome, immediate gastrointestinal hypersensitivity) and non-IgE-mediated (protein-induced hypersensitivity).*

Gastrointestinal manifestations of food allergy are also combined with symptoms of atopic diseases, more often with atopic dermatitis, urticaria and angioedema.

Clinical manifestations of allergic lesions of the gastrointestinal tract are diverse and non-specific. Common signs of gastrointestinal allergies include: vomiting (occurs from a few minutes to 4-6 hours after eating); colic (immediately or a few hours after eating) constipation; diarrhea; refusal of food (from a specific product or in general from eating); abdominal pain; flatulence, the presence of mucus and eosinophils in the stool; loss of appetite, headache. Given the non-specificity of the clinical manifestations of gastrointestinal food allergy, differential diagnosis should be carried out with diseases such as diseases and abnormalities in the development of the digestive system, mental and metabolic disorders, intoxication, infectious diseases, pancreatic endocrine insufficiency, celiac disease, cystic fibrosis, immunodeficiencies, disaccharidase deficiency, side effects. drug action, endocrine pathology, irritable bowel syndrome. Existing methods for diagnosing gastrointestinal allergy are limited and imperfect, which requires further scientific research and research aimed at timely detection of this pathology, prevention of occurrence in genetically predisposed children, development of optimal diagnostic algorithms, prevention of the progression of clinical manifestations, the choice of individual diet therapy and adequate drug treatment. The literature review presents modern views on the diagnosis of gastrointestinal food allergy in children. Clinical manifestations and diagnostic approaches to certain types of gastrointestinal allergy are considered depending on the mechanism of their occurrence.

Acute intestinal infections (AII) remain the most common diseases in childhood. According to the World Health Organization (WHO), 2.5 billion cases of diarrheal diseases are registered annually in the world, up to 70% of cases are children under the age of 14 [1,4]. In 2008, AII caused 15% of all deaths in children in the first 5 years of life on the planet, second



only to acute pneumonia (18%) [6]. In the Russian Federation in recent decades, there has been a steady upward trend in the incidence of acute intestinal infections with an average annual growth rate of 6-7% [11, 13]. According to Rospotrebnadzor, in 2011, 782,000 AII diseases of established and unknown etiology were registered, of which 79.6% in the age structure of cases were children under 17 years of age.

The high frequency of severe forms and unfavorable course of acute intestinal infections in children of different age groups, as well as prolonged post-infection bacterio- and virus shedding [9, 11, 12, 18, 19], remains an urgent problem in practical healthcare. The reasons for this are violations of the nutritional status, anomalies of the constitution, acute and chronic foci of infection (adenoiditis, tonsillitis, bronchitis, SARS), anemia, organic damage to the central nervous system, impaired microbiocenosis, minor forms of immunodeficiency, functional disorders of the gastrointestinal tract [14], and allergic pathology.

The role of allergic pathology in childhood has increased significantly in recent decades [12, 25, 29]. According to the results of epidemiological studies conducted abroad, the most common allergic disease among children is atopic dermatitis (AD), the frequency of which ranges from 15 to 30% [21]. In the Russian Federation, the frequency of AD in different regions ranges from 10 to 37%, and in children of the first year of life it is up to 38% [5, 12, 14, 18].

Atopic dermatitis is a multifactorial disease based on a genetic predisposition, a complex immunopathological mechanism of development, in which disturbances are noted in both innate and adaptive immunity [3, 10, 15, 17]. In children with AD, neuroendocrine disorders, metabolic disorders, and dysfunction of the digestive organs are recorded [9, 10, 14], which supports the chronic course of the disease.

The problem of the joint course of two pathological conditions that are so common is relevant, because immune imbalance and disorders of the microbiocenosis of the gastrointestinal tract resulting from such a combination can lead to both a change in clinical manifestations and low efficiency of traditional treatment [19].

To date, the immunological aspects of the development of AEI against the background of concomitant allergic pathology remain unexplored, while the presence of immune disorders inherent in the allergic process itself and changes in immune homeostasis that occur under the influence of bacterial and viral agents should be taken into account [10, 17]. The mechanisms of cytokine regulation under the influence of infectious antigens are not fully disclosed. In children with AEI, the level of the main pro- and anti-inflammatory cytokines is actively studied [10, 17, 19], while the effect of background allergic pathology on the production of key immune mediators is practically not studied.

The influence of morphofunctional and microecological disorders of the gastrointestinal tract in allergic diseases on the course of acute intestinal infections, as well as the possibility of manifestation of allergic lesions of the digestive tract under the guise of "acute infectious gastroenteritis/gastroenterocolitis", remains unexplored [3, 10, 15, 22].

In practical healthcare, there are still no coordinated approaches to the treatment of this category of patients. Attempts have been made to introduce probiotics and enterosorbents into complex treatment, but work in this area is rare. It requires the development of tactics of antihistamine therapy in the treatment regimens for acute intestinal infections in children



with AD. The issues of rehabilitation of children with AD who underwent acute intestinal infections require special consideration. Taking into account the high frequency of post-infectious intestinal dysfunction and microflora disorders, a promising approach in the timely correction of these disorders, improving the quality of life and ensuring a favorable outcome of the disease, is the use of biocenosis-correcting technologies, in particular, modern probiotic foods [3, 6, 9].

New data were obtained on the frequency of allergic diseases in the structure of concomitant somatic pathology in children with acute intestinal infections. The possibility of manifestation of an allergic lesion of the gastrointestinal tract in AD under the guise of AEI was established and a tactic of differential diagnostic search was proposed.

For the first time, the influence of AD on the clinical features, course, and outcomes of acute intestinal infections in children was studied. A high frequency of undulating and protracted course of AII was shown; the prevalence of moderate and severe forms, the greater severity of symptoms (intoxication, exsiccosis, diarrheal syndrome) and the duration of clinical manifestations, the persistence of gastrointestinal disorders, secondary disaccharidase deficiency and dysbiosis in the period of convalescence.

New data on the state of cellular and humoral immunity, phagocytic system, mucosal immunity system of the gastrointestinal tract in children in different periods of acute intestinal infection, with different immunopathogenetic variants of AD were obtained. It has been shown that acute intestinal infections occurring against the background of AD are characterized by impaired immunoregulatory mechanisms, the severity and direction of which depend on the type of pathogen and the severity of the disease. It has been established that the immunopathogenetic factors of the unfavorable course of AII in children with AD are an imbalance in the quantitative parameters of cellular immunity with an increase in the ratio of CD4<sup>+</sup> and CO8<sup>+</sup> cells; serum IFN- $\gamma$  deficiency; high serum level of IgE, decrease in factors of local protection of the gastrointestinal tract, in particular free and secretory IgA [7, 18, 19, 21].

For the first time, differences in the patterns of cytokine regulation of the immune response in AII against the background of atopy and without concomitant allergic pathology were revealed. It has been shown that in AII of viral etiology in patients with AD, the Th2-type of immune response dominates, which is expressed in a significant increase in the level of IL-4 with a simultaneous deficiency of IFN- $\gamma$ , while in patients without allergic pathology, a balanced Th1 / Th2 - and immune response is noted.

Based on the first assessment of allergological parameters (the level of general and specific IgE antibodies to opportunistic microorganisms) in the dynamics of AII, data were obtained demonstrating their multidirectional nature: an increase in sensitization after AII of viral etiology, and a tendency to decrease in IgE levels in convalescents bacterial OKI. For the first time, the negative impact of AD on the depth and persistence of microecological disorders in the gastrointestinal tract in intestinal infections in children was shown. It has been established that their severity directly correlates with the severity of atopic dermatitis. At the same time, the frequency of self-stopping of disorders of the microbiocenosis of the gastrointestinal tract that occurs during acute intestinal infections in atopic children does not exceed 5.2%.



For the first time, a pathogenetic substantiation was given and a comparative assessment of the effectiveness of modern enterosorbents, probiotics and antihistamines in AEI in children with AD was carried out. The tactics of therapy and rehabilitation of these patients have been developed. Clinical and laboratory features of acute intestinal infections in children with concomitant AD have been identified, allowing practitioners to predict the course of infection and timely adjust therapy.

A set of clinical and laboratory indicators for the differential diagnosis of acute intestinal infections and the manifestation of gastrointestinal food allergy in children of the first year is proposed.

The identified features of the immune response in acute intestinal infections of various etiologies against the background of AD increase the possibility of assessing the severity of the course and prognosis of the disease. For this, it is recommended to monitor pro-inflammatory (IFN- $\gamma$ , IL-1(3) and anti-inflammatory (IL-4) cytokines, lymphocytic index (IFN- $\gamma$ /IL-4), serum level of total IgE, secretory IgA and free IgE in the coprofiltrate[23].

Based on the new data obtained on the effectiveness of modern enterosorbents, probiotics, antihistamines, recommendations have been developed to optimize their use for the treatment of children with AII with AD, which improves the prognosis and outcomes of AEI in this category of patients.

A set of rehabilitation measures has been proposed, including the use of second-generation antihistamines, probiotics and functional foods, aimed at correcting post-infectious functional disorders of the gastrointestinal tract and dysbiosis, reducing the level of sensitization and progression of AD.

## References:

1. Abdukadirova, L. K., Jalolov, N. N., Nozimjonova, M. N., & Narzullayeva, U. S. (2022). EVALUATION OF PRACTICAL NUTRITION OF PATIENTS WITH CHRONIC HEPATITIS.
2. Abduraimovna, A. D., Turg'unboyevna, Y. N., & Rustamovna, Q. S. (2023). QIZLARNI OILA VA JAMIYATDA O 'ZO 'RNINI TOPISHDA PSIXOLOGIK KO 'NIKMA VA MA'NAVIY YETUKLIKNI SHAKLLANTIRISH. *Scientific Impulse*, 1(7), 310-313.
3. Akhmadalievna, N. O., Imamova, A. O., Niyazova, O. A., Muratbayeva, A. P., & Umarov, B. A. (2023). HYGIENIC CHARACTERISTICS OF HARMFUL FACTORS OF WORKING CONDITIONS OF INFECTIOUS DISEASES DOCTORS.
4. Axmadaliyeva, N., Imamova, A., Nigmatullayeva, D., Jalolov, N., & Niyazova, O. (2022). Maktabgacha yoshdagi bolalarda sog 'lom turmush tarzini shakllantirishning dasturiy platformasi.
5. Jalolov, N. (2018). Сурункали гепатитларда маҳаллий дуккакли маҳсулотлар асосидаги диетотерапияни клиник–иммунологик самарадорлигини ўрганиш.
6. DS, K. S. R. X. (2022, May). PREVALENCE OF ALLERGIC DISEASES IN CHILDREN UNDER HOT CLIMATIC CONDITIONS. Materials of International Scientific-Practical Conference.«Only English: Topical Issues of Healthcare».



7. Imamova, A. O., & Soliyeva, L. O. (2022). *Hygienic assessment of children's health in the orphanage* (Doctoral dissertation, «ОБРАЗОВАНИЕ И НАУКА В XXI ВЕКЕ» Xalqaro ilmiy jurnal).
8. Jalolov, N. N., & Imamova, A. O. (2023). THE ROLE OF NUTRITION IN THE MANAGEMENT OF CHRONIC HEPATITIS. *European International Journal of Multidisciplinary Research and Management Studies*, 3(02), 28-34.
9. Jalolov, N. N., Mukhammadzokirov, S. S., Mirsagatova, M. R., & Sulstonov, E. Y. (2023). Yumshoq toqimalar va suyaklarning xavfli osmalarida MR-tomografiya yordamida radiologic diagnostikaning multimodal nur tekshirish usullari samaradorligini baholashni dasturlash.
10. Jalolov, N. N., Sobirov, O. G., Kabilzhonova, S. R., & Imamova, A. O. (2023). THE ROLE OF A HEALTHY LIFESTYLE IN THE PREVENTION OF MYOCARDIAL INFARCTION.
11. Kobiljonova, S. R. (2023). PRINCIPLES OF DIAGNOSIS AND TREATMENT OF ACUTE PURULENT-DESTRUCTIVE LUNG DISEASES.
12. Kobiljonova, S. R., Jalolov, N. N., Sharipova, S. A., & Mirsagatova, M. R. (2022). COMBINED SKIN AND RESPIRATORY MANIFESTATIONS OF FOOD ALLERGY IN CHILDREN.
13. Jalolov, N. (2022, April). Homiladorlik davrida to'g'ri ovqatlanishning o'ziga xos tomonlari. Formation of psychology and pedagogy as interdisciplinary. International scientific-online conference.
14. Kobiljonova, S. R., Jalolov, N. N., Sharipova, S. A., & Mirsagatova, M. R. (2022). SPECTRUM OF CAUSE-SIGNIFICANT ALLERGENS CAUSING POLYNOSIS IN CHILDREN.
15. Jalolov, N., & Parpiboeva, D. A. (2017). Лечебное питание при хронических заболеваниях печени.
16. Mirsagatova, M. R., & Obloqulov, A. G. (2023). DISEASES OF THE GASTROINTESTINAL TRACT AGAINST THE BACKGROUND OF FOOD ALLERGIES IN CHILDREN OF EARLY AND PRESCHOOL AGE. INTERNATIONAL CONFERENCE ON HIGHER EDUCATION TEACHING.
17. Mirsagatova, M. R., & Sulstonov, E. E. (2023). Features of the Microflora of the Gastrointestinal Tract in Chronic Inflammatory Diseases of the Upper Digestive Organs in Children. *World of Science: Journal on Modern Research Methodologies*, 2(2), 93-98.
18. Jalolov, N. N. (2023, April). МИОКАРД ИНФАРКТИ ПРОФИЛАКТИКАСИДА SOG'LOM TURMUSH TARZINING O'RNI. In *E Conference Zone* (pp. 1-5).
19. Qizi, A. M. X., & O'G'li, J. N. N. (2023). Jismoniy faollik orqali stressni boshqarish. *Ta'lim fidoyilari*, 13(1), 19-20.
20. Rihsitillaevna, M. M., Rustamovna, K. S., & Nodir o'g'li, J. N. (2023). CONSEQUENCES OF HYGIENIC POLLUTION FACTORS. *Spectrum Journal of Innovation, Reforms and Development*, 14, 38-42.
21. Jalolov, N. (2022). Maktabgacha yoshdagi bolalarda sog 'lom turmush tarzini shakllantirishning dasturiy platformasi.
22. Jalolov, N. (2022). Особенности спортивного питания.
23. Sadullayeva, X. A., Salomova, F. I., & Sulstonov, E. Y. (2023). OCHIQ SUV HAVZALARI MUHOFAZALASH OB'EKTI SIFATIDA. V MEЖДУНАРОДНАЯ НАУЧНО-ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ «СОВРЕМЕННЫЕ ДОСТИЖЕНИЯ И ПЕРСПЕКТИВЫ РАЗВИТИЯ ОХРАНЫ ЗДОРОВЬЯ НАСЕЛЕНИЯ».



24. Salomova, F. I., Akhmadalieva, N. O., Sadullayeva Kh, A., Imamova, A. O., & Nigmatullayeva, D. Z. (2023). Hygienic characteristics of the social portrait, conditions and lifestyle of infectious diseases doctors.
25. Jalolov, N., & Solihov, M. (2017). Сурункали жигар касалликларида ҳаққоний овқатланиш ҳолатини ўрганиш.
26. Salomova, F. I., Mirrahimova, M. X., Sadullayeva, X. A., & Kobiljonova, S. R. (2022, November). Prediction and prevention of food allergies in children. Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan тезис Bet 81.
27. Salomova, F. I., Rakhimov, B. B., Jalolov, N. N., Sultonov, E. Y., & Oblakulov, A. G. (2023). ATMOSPHERIC AIR OF THE CITY OF NAVOI: QUALITY ASSESSMENT. *British Journal of Global Ecology and Sustainable Development*, 15, 121-125.
28. Shaikh, A. A., & Maner, S. S. (2023). THE RISK OF NON-COMMUNICABLE DISEASES (NCDS) IN RELATION TO DIETARY HABITS AMONG MEDICAL STUDENTS AT TASHKENT MEDICAL ACADEMY, UZBEKISTAN. ACADEMIC INTERNATIONAL CONFERENCE ON MULTI-DISCIPLINARY STUDIES AND EDUCATION.
29. Jalolov, N. N., Imamova, A. O., & Sultonov, E. Y. (2023). Proper nutrition of athletes, martial arts.
30. Sultonov, E. Y., Sariullayeva, X. A., Salomova, F. I., & Mirsagatova, M. R. (2023). Ochiq suv havzalari suv namunalari tahlili. Здоровый образ жизни международная научно-практическая конференция.
31. Zokirkhodjayev, S. Y., Jalolov, N. N., Ibragimova, M. M., & Makhmudova, I. A. (2019). THE USE OF LOCAL LEGUMES IN THE DIET THERAPY OF CHRONIC HEPATITIS. *Toshkent tibbiyot akademiyasi axborotnomasi*, (1), 64-68.
32. Ахмадалиева, Н. О., Сайдиқаримова, И. Т., Нигматуллаева, Д. Ж., & Махкамова, Д. М. (2022). Определение степени удовлетворенности условиями труда учителей начальных классов общеобразовательных школ.
33. Жалолов, Н. Н., Нуриддинова, З. И., Кобилжонова, Ш. Р., & Имамова, А. О. (2022). Главные факторы развития избыточного веса и ожирения у детей (Doctoral dissertation, O 'zbekiston Respublikasi Sog 'liqni Saqlash vazirligi, Toshkent tibbiyot akademiyasi, Koryo universiteti "Atrof muhit muhofazasining dolzarb muammolari va inson salomatligi" xalqaro ishtirok bilan Respublika 9-ilmiy-amaliy anjumani materiallari to 'plami 153 bet).
34. Закирходжаев, Ш. Я., Жалолов, Н. Н., Абдукадилова, Л. К., & Мирсагатова, М. Р. (2023). ЗНАЧЕНИЕ ПИТАНИЯ ПРИ ХРОНИЧЕСКИХ ГЕПАТИАХ.
35. Зокирходжаев, Ш. Я., Жалолов, Н. Н., Ибрагимова, М. М., & Махмудова, И. А. (2019). Сурункали гепатитлар парҳезтерапиясида маҳаллий дуккакли махсулотларни қўллаш.
36. Кобилжонова, Ш. Р., & Садуллаева, Х. А. (2021). IMPACTS OF THE ENVIRONMENT ON HUMAN HEALTH.
37. Кобилжонова, Ш. Р., Миррахимова, М. Х., & Садуллаева, Х. А. (2022). Значение экологических факторов при бронхиальной астме у детей.



38. Кобилжонова, Ш. Р., Миррахимова, М. Х., & Садуллаева, Х. А. (2022). Распространенность и факторы риска бронхиальной астмы у детей.
39. Нигматуллаева, Д. Ж. (2018). Исследование функционального состояния зрительного и слухового анализаторов у работников умственного труда. In *ADVANCED SCIENCE* (pp. 218-220).
40. Саломова, Ф. И., Шеркушева, Г. Ф., Салуллаева, Х. А., Султанов, Э. Ё., & Облокулов, Л. Г. (2023). Загрязнение атмосферного воздуха города алмалык.
41. Саломова, Ф., Хакимова, Д., & Ярмухамедова, Н. (2021). Характеристика образа жизни и функционального состояния сердечно-сосудистой системы подростков. *InterConf*, 853-865.
42. Хакимова, Д. С. (2019). Гигиенические особенности организации трудового процесса при производстве эмалей. *Молодой ученый*, (44), 149-152.
43. Шеркўзиева, Г. Ф., Саломова, Ф. И., & Кобилжонова, Ш. Р. (2023). Ичимлик сувини микробиологик кўрсаткичларини текшириш натижалари.