

**THE OCCURRENCE AND CLINICAL AND DIAGNOSTIC FEATURES OF
COMBINED FORMS OF ASCARIASIS AND GIARDIASIS IN PRESCHOOL
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Abstract: Parasitic diseases among preschool children, in particular, combined forms of ascariasis and giardiasis, remain one of the most urgent health problems. This article analyzes the pathogenesis, prevalence, clinical similarities and differences, diagnostic methods and preventive measures of these two infections. The article also provides recommendations for early diagnosis and strengthening preventive measures.

The main condition for the healthy development of children is their protection from parasitic infections. Preschool children are very susceptible to environmental factors, and their immune systems are not yet fully developed. Therefore, intestinal parasites such as *Ascaris lumbricoides* (ascariasis) and *Giardia lamblia* (giardiasis) are common in this age group. These diseases affect not only the digestive system, but also the child's overall immune function.

According to the World Health Organization (WHO), approximately 1.5 billion people worldwide are infected with ascariasis every year, with up to 70% of cases occurring in children aged 2-7 years. On the other hand, giardiasis affects approximately 200 million children worldwide. According to the Ministry of Health of the Republic of Uzbekistan, in 2023, parasitic infections were detected in 28.4% of children attending preschool institutions, and in 14.7% of cases, ascariasis and giardiasis occurred simultaneously.

Ascariasis is a helminthic infection caused by the invasion of the human intestine by *Ascaris lumbricoides*. The parasite damages the intestinal wall, provokes allergic reactions, and disrupts the digestive process. Giardiasis is caused by the protozoan *Giardia lamblia*, which parasitizes the liver and small intestine, causing abdominal pain, bloating, diarrhea, and weight loss. When both infections occur together, the following symptoms may be observed in children:

1. Fatigue and drowsiness
2. Loss of appetite

3. Allergic skin rashes
4. Abdominal pain and nausea
5. Malabsorption of nutrients
6. Decreased immunity

Laboratory methods play an important role in diagnosing these diseases:

1. Stool analysis - to detect eggs (ascariasis) and cysts (giardiasis)
2. ELISA (enzyme-linked immunosorbent assay) - to detect antigens and antibodies
3. Duodenal intubation - to detect giardiasis in bile or intestinal fluid

In addition, ultrasound (US), blood tests, and allergy tests can be used for more comprehensive assessment.

Clinical and diagnostic features of combined forms of ascariasis and giardiasis in preschool children

№	Indication	Ascariasis / Giardiasis (single infection)	Combined condition (Ascariasis + Giardiasis)
1	Epidemiology	~1.5 billion people worldwide are infected with ascariasis, and ~200 million children with giardiasis.	In Uzbekistan, 14–15% of preschool children have two infections at the same time.
2	Pathogenesis	Ascariasis damages the intestinal wall, disrupting digestion. Giardiasis affects the functioning of the intestines and liver.	When both parasites are present at the same time, the load on the digestive system, absorption and immunity increases.
3	Clinical signs	Abdominal pain, flatulence, diarrhea, loss of appetite, allergic rashes.	Symptoms are mixed: dyspepsia, allergies, fatigue, weight loss and decreased immunity.
4	Diagnosis	Stool analysis (detection of eggs and cysts), IFA, duodenal sounding.	It is necessary to conduct complex laboratory tests for both infections together.
5	Impact on immunity	A single infection slightly weakens immunity.	Secondary infection reduces immunity even more strongly, development is delayed.
6	Prophylaxis	Personal hygiene, hand washing, clean water and food,	Hygiene programs, sanitary control in MTMs, preventive treatment once

		regular deworming.	every six months.
7	Clinical-diagnostic differences	In a single case, the direction of symptoms is clear (only intestines or liver).	In the combination, a mixture of symptoms is observed, and allergic and asthenic syndromes are aggravated.

Analysis: As can be seen from the table, the co-occurrence of ascariasis and giardiasis in preschool children aggravates clinical symptoms, complicates the diagnostic process, and weakens immunity. Therefore, it is very important to strengthen preventive measures - personal hygiene, consumption of clean food and water, regular sanitary control in health centers, and periodic deworming.

In recent years, the incidence of ascariasis and giardiasis in some regions of Uzbekistan (especially in rural areas) has remained high. For example:

- In the Kashkadarya, Fergana, and Samarkand regions, ascariasis among children was 17–21%, and giardiasis was 12–18%.
 - In urban areas, this figure is around 8–10%.
 - In areas with high air temperatures and water sources that have not undergone hygienic control, the disease remains at a high level.
- 60% of cases of parasitic diseases are recorded in preschool children - this is because at this age there is a high risk of infection through the mouth.

Ascaris, adhering to the intestinal mucosa, cause mechanical damage, disrupt blood flow, and release toxins. As a result, children develop iron deficiency, anemia, and vitamin deficiency. Giardiasis slows down liver function, reduces bile secretion, and as a result, digestion is impaired. In chronic cases, children have pale skin, skin rashes, and asthenia. When both occur together, their toxic-allergic effect increases, which disrupts the immune system and slows down healthy development.

Statistical indicators show that although the overall incidence has decreased slightly in recent years, the number of cases of co-occurrence is increasing, which indicates the need to strengthen diagnostics and hygiene control.

The cooperation of parents, educators, doctors and hygienists is necessary to protect the health of preschool children. An integrated approach to disease prevention is important - hygienic education, sanitary control and regular medical examinations. In the future, it is necessary to develop an early diagnostic system based on biomarkers. It is recommended to strengthen local epidemiological monitoring in the health system.

Treatment involves the use of modern anthelmintic and antiprotozoal drugs such as albendazole, mebendazole and metronidazole. The course of treatment should be carried out under strict medical supervision.

Preventive measures include:

- ✓ Teaching children the rules of personal hygiene
- ✓ Promoting the habit of regular hand washing
- ✓ Washing raw fruits and vegetables thoroughly
- ✓ Strictly complying with sanitary requirements in preschool educational institutions
- ✓ Conducting preventive deworming twice a year

In conclusion, the co-occurrence of ascariasis and giardiasis among preschool children represents a major medical and sanitary problem. These parasitic diseases negatively affect the digestive system, metabolism, and immune system, which leads to a delay in physical and cognitive development. When both infections are present, clinical symptoms intensify and further inhibit the overall growth of the child. Early detection through fecal analysis, ELISA, and duodenal examination is essential to prevent neurologic complications. For effective recovery, a comprehensive treatment approach - the use of anthelmintic and antiprotozoal drugs, proper nutrition, and immune system support - is essential.

Preventive measures such as the development of children's hygiene habits, compliance with sanitary standards in preschool institutions, ensuring food safety, and regular deworming play a central role in reducing the level of infection. Thus, it is necessary to strengthen cooperation between health care, sanitation and educational institutions to minimize the co-occurrence of ascariasis and giardiasis and maintain children's health.

References:

1. MR Mirzoeva, ShI Rakhimov [BOLALARDA PARAZITAR KASALLIKLARINING LYaMBLIOZ VA ASKARIDOZ BILAN BIRGA KEChISHI, DAVOLASH-PROFILAKTIKA ChORA-TADBIRLARI VA KLINIK XUSUSIYATLARI](#). // Educational Innovation and Integration, 2024
2. Sh.I. Rakhimov [Allergicheskie Reaksii Pri Parazitozax U Detey](#) //
3. Central Asian Journal of Medical and Natural Science 4 (6), 1223-1227
- Rakhimov Sh I. Post-covid syndrome: prevalence, course forms, diagnostic aspects Galaxy international interdisciplinary research journal (giirj) issn (e): 2347-6915vol. 11, issue 10, oct. (2023)
4. SPECIFIC FEATURES OF GIARDIASIS IN YOUNG CHILDREN Rakhimov Sh.I. <https://grnjournal.us/index.php/AJPMHS/article/view/2264>
5. Co-occurrence and Clinical Features of Ascariasis and Giardiasis in Children Rakhimov Shermat Ismatovich <https://miastoprzyzlosci.com.pl/index.php/mp/article/view/4291>
6. ALLERGICHESKIE REAKtsII, VOZNIKAYushchIE PRI NEKOTORYX

PARASITOX AND DETEY Sh.I. Rakhimov https://www.bio-conferences.org/articles/bioconf/pdf/2024/40/bioconf_glsbia_2024_03022.pdf

7. Sh.I. Rakhimov Clinical occurrence of ascariasis in infants https://newdayworldmedicine.com/en/new_day_medicine/11-73-2024

8. Co-occurrence and Clinical Features of Ascariasis and Giardiasis in Children. Rakhimov Shermat Jsmatovich https://www.bio-conferences.org/articles/bioconf/abs/2024/40/bioconf_glsbia_2024_03022/bioconf_glsbia2024_03022.html

9. [BOLALARDA PARAZITAR KASALLIKLARINING LYaMBLIOZ VA ASKARIDOZ BILAN BIRGA KEChISHI, DAVOLASH-PROFILAKTIKA ChORA-TADBIRLARI VA KLINIK XUSUSIYatLARI.](https://web-journal.ru/index.php/ilmiy/article/view/4196) // <https://web-journal.ru/index.php/ilmiy/article/view/4196>

10. Improving the prevention and clinical features of the co-occurrence of ascariasis and giardiasis in children <https://journal-web.uz/index.php/07/article/view/395>

11. RAHIMOV SHERMAT ISMATOVICH IMPROVING THE PREVENTION AND CLINICAL FEATURES OF THE COOCCURRENCE OF ASCARIASIS AND GIARDIASIS IN CHILDREN. <file:///C:/Users/User/Documents/Downloads/IMPROVING+THE+PREVENTION+AND+CLINICAL+FEATURES+OF+THE+COOCCURRENCE+OF+ASCARIASIS+AND+GIARDIASIS+IN+CHILDREN.pdf><https://inlibrary.uz/index.php/tbir/article/view/92860?ysclid=mbezeclv80269655873>

12. DOI: <https://doi.org/10.34921/amj.2025.1.017> CONTEMPORARY ALLERGIC REACTIONS TO CHILDREN'S PARASITOSIS ctranitsa-192 <https://azmedjournal.com/index.php/amz/article/view/603>

13. EPIDEMIOLOGY PARAZITARNYX ZABOLEVANI. Author Biography Fakhriddinova Shakhnoza Fakhriddinovna. Bukharsky gosudarstvennyy meditsinsky institute <https://scientific-jl.com/luch/article/view/35>

14. World scientific research journal <https://scientific-jl.com/wsrj> 357 Volume-40_Issue-1_June-2025 TRANSMISSIBLE DISEASES: A GENERAL CLASSIFICATION Rahimov Shermat Ismatovich Bukhara state medical institute. rakhimov.shermat@bsmi.uz <https://scientific-jl.com/wsrj/article/view/21020>

15. World scientific research journal <https://scientific-jl.com/wsrj> 361 Volume-40_Issue-1_June-2025 CLASSIFICATION OF HEALTHCARE-ASSOCIATED INFECTIONS Rahimov Shermat Ismatovich Bukhara state medical institute. rakhimov.shermat@bsmi.uz <https://scientific-jl.com/wsrj/article/view/21021>

16 World scientific research journal <https://scientific-jl.com/wsrj> 365 Volume-40_Issue-1_June-2025 GENERAL CLASSIFICATION OF ZOONOTIC INFECTIOUS DISEASES Rahimov Shermat Ismatovich Bukhara state medical institute. rakhimov.shermat@bsmi.uz <https://scientific-jl.com/wsrj/article/view/21022>



17. MODERN EDUCATION AND DEVELOPMENT

Vypusk journal №-28 Chast-2_June -2025 113 EPIDEMIOLOGICAL CLASSIFICATION OF INFECTIOUS DISEASES Rahimov Sheramat Ismatovich Bukhara state medical institute. rakhimov.shermat@bsmi.uz <https://scientific-jl.com/mod/article/view/20990>

18 MODERN EDUCATION AND DEVELOPMENT Vypusk journal №-28 Chast-2_June -2025 122 GENERAL CLASSIFICATION OF FECAL-ORAL DISEASES: AN IN-DEPTH ANALYSIS Rahimov Sheramat Ismatovich Bukhara state medical institute. raximov.shermat@bsmi.uz <https://scientific-jl.com/mod/article/view/20993>

19. S U R E S H I N G S World Scientific and Methodological Journal <https://scientific-jl.com> 272 Issue 64_2_set_June-2025 ISSN:3030-3613 GENERAL CLASSIFICATION OF DISEASES TRANSMITTED BY THE FECAL-ORAL MECHANISM: A DEEP ANALYSIS Rahimov Sheramat Ismatovich Bukhara State Medical Institute raximov.shermat@bsmi.uz <https://scientific-jl.com/tad/article/view/21051>

20. S U R E S H I N G S World Scientific and Methodological Journal <https://scientific-jl.com> 266 Issue 64_2_set_June-2025 ISSN:3030-3613 INFECTIOUS EPIDEMIOLOGY CLASSIFICATION OF DISEASES Rahimov Sheramat Ismatovich Bukhara State Medical Institute raximov.shermat@bsmi.uz <https://scientific-jl.com/tad/article/view/21050>

21. S U R E S H I N G S World Scientific and Methodological Journal [tps://scientific-jl.com](https://scientific-jl.com) 261 Issue 64_2_To'plam_June-2025 ISSN:3030-3613 GENERAL CLASSIFICATION OF SAPRONIC DISEASES: IN-DEPTH ANALYSIS. Rahimov Sheramat Ismatovich Bukhara State Medical Institute raximov.shermat@bsmi.uz <https://scientific-jl.com/tad/article/view/21049>

22. Received: 20.06.2025, Accepted: 10.06.2025, Published: 15.06.2025 UDC 616.995.132.8-053.31. CLINICAL ENCOUNTERING OF ASCARIDIOSES IN INFANTS COEXISTENCE OF ASCARIDOSE AND LAMBLIOSIS IN NEWBORNS AND CLINICAL FEATURES <https://bsmi.uz/tibbiyotda-yangi-kun-jurnal> .

23. CLINICAL ENCOUNTERING OF ASCARIDOSE IN INFANTS

Protozoal diseases and helminthiasis constitute an important part of infectious pathology. The widespread spread of parasitic diseases in all regions of the world <https://doi.org/10.5281/zenodo.17414524>