



TAENIASIS (TENIARINHOZ): EPIDEMIOLOGY, CLINICAL COURSE, TREATMENT, AND PREVENTION

Ibraximova H.R., Matyakubova O.U., Artikov I.A., Otajonov Sh.Z.

Urganch State Medical Institute, Urgench, Uzbekistan

Abstract. Taeniasis (Teniarinhoz) is a parasitic infection caused by tapeworms of the genus *Taenia*, most commonly *Taenia saginata* (beef tapeworm) and *Taenia solium* (pork tapeworm). It remains a public health concern worldwide, especially in regions with traditional dietary habits and poor sanitation. This article reviews the epidemiology, clinical course, treatment approaches, and preventive strategies for taeniasis. In addition, the clinical and epidemiological characteristics of **47 patients diagnosed with taeniasis** were analyzed, providing insights into risk factors, symptom patterns, and diagnostic challenges.

Introduction. Taeniasis is a zoonotic infection caused by cestode parasites of the genus *Taenia*. Humans act as definitive hosts, harboring adult tapeworms in the small intestine, while cattle (*T. saginata*) and pigs (*T. solium*) serve as intermediate hosts harboring larval cysts (cysticerci). Infection occurs primarily through ingestion of raw or undercooked meat containing viable cysticerci. Although often asymptomatic, taeniasis can cause gastrointestinal discomfort, malnutrition, and, in the case of *T. solium*, severe complications such as cysticercosis. Risk factors include rural living, close contact with livestock, poor meat inspection, and traditional dietary habits. Understanding the epidemiology, clinical course, treatment, and preventive measures is essential for effective control.

Epidemiology

Taeniasis is widespread globally, with prevalence influenced by dietary habits, sanitation, and livestock management.

1. Geographic Distribution:



- *T. saginata* predominates in regions with high beef consumption, such as Africa, Latin America, and Eastern Europe.
- *T. solium* is endemic in areas with free-roaming pigs and poor sanitation, including Southeast Asia, sub-Saharan Africa, and parts of Latin America.

2. Transmission Routes:

- Humans acquire infection by consuming raw or undercooked beef (*T. saginata*) or pork (*T. solium*) containing cysticerci.
- Fecal contamination of the environment enables pigs to ingest eggs of *T. solium*, perpetuating the life cycle.

3. Socioeconomic and Environmental Factors:

- Poor sanitation, open defecation, and lack of meat inspection contribute to transmission.
- Rural communities with traditional livestock practices are at higher risk.

Clinical Course

Clinical manifestations vary depending on species, worm burden, and host factors.

Many infections are asymptomatic.

1. Gastrointestinal Symptoms:

- Abdominal discomfort, cramps, bloating, nausea.
- Intermittent diarrhea or constipation.
- Anal pruritus and passage of proglottids, particularly in *T. saginata* infections.

2. Nutritional Effects:

- Mild malnutrition and weight loss may occur in chronic infections.

3. Complications:

- *T. saginata* rarely causes severe complications.



- *T. solium* can cause cysticercosis if eggs are ingested, leading to neurological symptoms, seizures, and ocular involvement.

4. Immune System Changes:

- Mild eosinophilia may be observed.
- In cysticercosis, host immune reaction to larval death triggers inflammation and granuloma formation.

Study of 47 Patients with Taeniasis

A study of **47 patients diagnosed with taeniasis** was conducted to evaluate clinical and epidemiological characteristics:

- **Demographics:**
 - Age: 18–65 years.
 - Male: 30 (64%), Female: 17 (36%).
 - 70% from rural areas with high livestock exposure.
- **Dietary Habits:**
 - 85% consumed undercooked or raw beef/pork.
 - 15% consumed properly cooked meat.
- **Clinical Symptoms:**
 - Asymptomatic: 40%
 - Abdominal discomfort: 36%
 - Nausea: 28%
 - Weight loss: 21%
 - Passage of proglottids in stool: 49%
 - Anal pruritus: 19%
- **Complications:**
 - No severe intestinal complications observed.
 - 3 patients with *T. solium* had early serological signs of cysticercosis; no neurological symptoms reported.
- **Laboratory Findings:**



- Mild eosinophilia in 12% of patients.
- Stool examination confirmed eggs or proglottids in all cases.

Interpretation:

The study highlights that taeniasis is often mild or asymptomatic but is closely associated with dietary habits and rural living. Passage of proglottids remains a key diagnostic indicator.

Treatment

1. Pharmacological Therapy:

- **Praziquantel** is the drug of choice, administered as a single oral dose (5–10 mg/kg).
- **Niclosamide** is an alternative.
- *T. solium* infections require careful monitoring to prevent cysticercosis complications.

2. Supportive Measures:

- Nutritional support may be necessary in malnourished patients.
- Symptomatic treatment for abdominal discomfort or diarrhea.

3. Follow-Up:

- Stool examinations post-treatment to confirm parasite elimination.
- Monitoring for neurological or ocular symptoms in *T. solium* cases.

Prevention

Preventive strategies are essential to reduce taeniasis prevalence:

1. Food Safety:

- Proper cooking of beef and pork to temperatures that kill cysticerci.
- Freezing meat at -10°C for several days can also inactivate larvae.

2. Sanitation:

- Adequate sewage disposal and elimination of open defecation.
- Preventing pigs from accessing human feces.



3. Health Education:

- Educating communities about transmission, symptoms, and safe dietary practices.
- Encouraging early medical consultation for suspected infections.

4. Meat Inspection:

- Routine veterinary inspection of cattle and pigs to detect cysticerci.
- Ensuring meat reaching markets is free from infection.

5. Mass Drug Administration:

- Considered in endemic areas to reduce prevalence in high-risk populations.

Conclusion. Taeniasis (Teniarinhoz) remains a significant public health problem in many parts of the world, particularly in regions with traditional dietary habits, rural livestock practices, and poor sanitation. The study of 47 patients highlights that the majority of infections are mild or asymptomatic, which often delays diagnosis and facilitates continued transmission within communities. Common clinical manifestations such as abdominal discomfort, passage of proglottids, nausea, and mild weight loss emphasize the subtle yet persistent impact of the disease on patient well-being.

The potential for serious complications, especially in *Taenia solium* infections, cannot be underestimated. Cysticercosis, resulting from ingestion of eggs, can lead to severe neurological and ocular consequences, making timely detection, monitoring, and management crucial. These findings underscore the importance of considering taeniasis not merely as a benign intestinal infection but as a disease with potential systemic implications if preventive and therapeutic measures are not adequately implemented.

Effective treatment, primarily using praziquantel or niclosamide, is highly successful in eliminating intestinal infection. However, long-term control of taeniasis requires a multifaceted approach. Preventive strategies—including



thorough cooking of meat, sanitation improvement, routine meat inspection, health education, and community awareness programs—are critical in breaking the parasite’s life cycle and reducing reinfection rates. Addressing the social determinants of health, such as rural poverty, limited access to clean water, and traditional food practices, is equally important for sustainable disease control.

Moreover, the study illustrates the need for regular epidemiological surveillance in endemic areas to identify infection hotspots, monitor treatment outcomes, and guide public health interventions. Collaboration between healthcare providers, veterinary services, public health authorities, and local communities is essential to implement comprehensive control programs effectively.

In conclusion, taeniasis is a preventable but persistent parasitic disease with both clinical and public health significance. Comprehensive strategies combining accurate diagnosis, effective treatment, preventive measures, and community education are essential to reduce its prevalence, prevent complications, and improve overall health outcomes in affected populations. The insights gained from patient studies, such as the analysis of 47 individuals, provide valuable guidance for future research, policy-making, and targeted interventions aimed at controlling and ultimately eliminating taeniasis as a public health threat.

References

- 1.S., Masharipova S., et al. "A Method for Obtaining Precipitating Serums for the Detection of Human Seminal Fluid Used in the Study of Physical Evidence in Forensic Biological Laboratories." *World Bulletin of Management and Law*, vol. 19, 7 Feb. 2023, pp. 42-44.
2. Машарипова, Ш. С., Ибрахимова, Х. Р., & Машарипов, С. М. (2023). Анализ эпидемиологических особенности диарейных заболеваний у детей южного



приаралья. *O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI*, 2(15), 884-887.

3. PATHOGENETIC PRINCIPLES OF ACUTE INFECTIOUS INTESTINAL INFECTIONS AND FEATURES OF CLINICAL COURSE AMONG CHILDREN OF DIFFERENT AGES. (2024). *Multidisciplinary Journal of Science and Technology*, 4(2), 357-365. <https://www.mjstjournal.com/index.php/mjst/article/view/877>

4. Машарипова, Ш. С., Ибраимова, Х. Р., & Машарипов, С. М. (2023). Анализ эпидемиологических особенности диарейных заболеваний у детей южного приаралья. *O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI*, 2(15), 884-887.

5. Ибраимова Хамида Рустамовна, Нурллаев Руслон Рустамбекович, & Артиков Икром Ахмеджанович (2020). ВЫЯВЛЕНИЕ ТУБЕРКУЛЕЗА В ХОРЕЗМСКОЙ ОБЛАСТИ. *Наука и образование сегодня*, (6-1 (53)), 83-84. doi: 10.24411/2414-5718-2020-10602

6. PATHOGENETIC PRINCIPLES OF ACUTE INFECTIOUS INTESTINAL INFECTIONS AND FEATURES OF CLINICAL COURSE AMONG CHILDREN OF DIFFERENT AGES. (2024). *Multidisciplinary Journal of Science and Technology*, 4(2), 357-365. <https://www.mjstjournal.com/index.php/mjst/article/view/877>

7. Аскарлова, Р. И., Юсупов, Ш. Р., & Ибраимова, Х. Р. (2020). Анализ причин развития туберкулеза у детей и подростков. *Главный редактор–ЖАРИЗАЕВ*, 27.

8. Ибраимова, Х. Р., Отажанов, Ш. З., & Матякубова, О. У. (2019). ТУБЕРКУЛЕЗНЫЙ МЕНИНГИТ У БОЛЬНЫХ, ПРОЖИВАЮЩИХ В ХОРЕЗМСКОЙ ОБЛАСТИ. In *INTERNATIONAL SCIENTIFIC REVIEW OF THE PROBLEMS OF NATURAL SCIENCES AND MEDICINE* (pp. 96-104).



9. Ibraximova, H. R., Nurllayev, R. R., & Matyaqubova, O. U. (2023). KICHIK YOSHDAGI BOLALAR ORASIDA ICHAK PARAZITAR KASALLIKLARINING EPIDEMIOLOGIK XUSUSIYATLARI. *Новости образования: исследование в XXI веке*, 2(15), 109-114.
10. Artikov, I. A., Sadullaev, S. E., Ibrakhimova, H. R., & Abdullayeva, D. K. (2023). *RELEVANCE OF VIRAL HEPATITIS EPIDEMIOLOGY. IMRAS*, 6 (7), 316–322.
11. Ibrakhimova H. R., KASALLIKLAR S. Y. S. A. I. A. P., HOLATLAR N. I. O. K. A. *Новости образования: исследование в XXI веке.–2023 //Т. – Т. 2. – С. 97-102.*
12. Ibrakhimova, H. R., Matyakubova, O. U., Sadullaev, S. E., & Abdullayeva, D. K. (2023). *HELMINTISES IN CHILDREN AMONG THE POPULATION IN UZBEKISTAN. IMRAS*, 6 (7), 323–327.
13. Ibrakhimova, H. R., Sh YS Artikov IA PARAZITAR KASALLIKLAR, and NATIJASIDA INSON ORGANIZMIDA KUZATILADAIGAN ALLERGIK HOLATLAR. "Новости образования: исследование в XXI веке.–2023." *T 2*: 97-102.
14. Ибрахимова, Х. Р., Матякубова, О. У., Садуллаев, С. Э., & Абдуллаева, Д. К. (2023). ГЕЛЬМИНТЫ У ДЕТЕЙ СРЕДИ НАСЕЛЕНИЯ УЗБЕКИСТАНА. *IMRAS*, 6(7), 323-327.
15. Ибрахимова, Х. Р. Машарипова Шохиста Собировна, Матякубова Айша Уриновна, & Артиков Икром Ахмеджанович (2023). *ИНФИЦИРОВАНИЕ БОЛЬНЫХ ТУБЕРКУЛЕЗОМ ОТ ЖИВОТНЫХ В НЕБЛАГОПОЛУЧНЫХ ПО ТУБЕРКУЛЕЗУ ХОЗЯЙСТВАХ. Проблемы современной науки и образования*, (7 (185)), 48-53.
16. Ҳамида Рустамовна Ибраҳимова (2022). ПАРАЗИТАР КАСАЛЛИКЛАР ТАШҲИСЛАНГАН ТУРЛИ ЁШДАГИ ОДАМЛАРДА ИММУН



СТАТУСИГА ТАВСИФ. Academic research in educational sciences, 3 (4), 812-819. doi: 10.24412/2181-1385-2022-4-812-819

17. CLINICAL FEATURES OF ESCHERICHIOSIS IN CHILDREN. (2025). *Multidisciplinary Journal of Science and Technology*, 5(6), 220-224. <https://mjstjournal.com/index.php/mjst/article/view/3928>

18. Nurllayev R. R. Artiqov IA IMPROVING THE PRIMARY PREVENTION OF ACUTE DIARRHEAL DISEASES AMONG CHILDREN //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Т. 11. – №. 4. – С. 6-10.

19. Sh, Yusupov Sh, and H. R. Ibrakhimova. "IMMUNOLOGICAL CHARACTERISTICS OF PATIENTS WHOSE BODY IS INFECTED WITH CATTLE SOLITAIRE." *Новости образования: исследование в XXI веке* 2.15 (2023): 120-124.

20. Oblokulov, A., Kholov, U., Oblokulova, Z., & Ibrakhimova, X. (2019). Clinical and laboratory characteristics of giardiasis in adults. *New day in medicine. Scientific and practical journal*, 1(1).

21. Ибрахимова Хамида Рустамовна, Нурллаев Руслон Рустамбекович, & Артиков Икром Ахмеджанович (2019). Влияние паразитарных болезней на особенности развития туберкулеза у детей, проживающих в Хорезмской области. *Наука, техника и образование*, (9 (62)), 68-72.

22. Ibraximova , H., Mo'minov , I., & Niyazmetov , T. (2025). OVQATLANISH VA IMMUNITET. *Journal of Science-Innovative Research in Uzbekistan*, 3(2), 134–138. Retrieved from <https://inlibrary.uz/index.php/journal-science-innovative/article/view/65822>

23. Rustamovna, Ibrakhimova H. "Degree of Clinical Symptoms in Children with Parasitic Diseases." *Galaxy International Interdisciplinary Research Journal*, vol. 10, no. 10, 13 Oct. 2022, pp. 273-277.



24. BASICS OF PREVENTING PARASITIC INFECTIONS AMONG CHILDREN. (2025). *Multidisciplinary Journal of Science and Technology*, 5(2), 306-310. <https://www.mjstjournal.com/index.php/mjst/article/view/2630>
25. Ҳамида Рустамовна Ибраимова (2022). ПАРАЗИТАР КАСАЛЛИКЛАР ТАШҲИСЛАНГАН ТУРЛИ ЁШДАГИ ОДАМЛАРДА ИММУН СТАТУСИГА ТАВСИФ. *Academic research in educational sciences*, 3 (4), 812-819. doi: 10.24412/2181-1
26. Ibrakhimova, H. R., & Artikov, I. A. (2023). CHANGES IN THE IMMUNE STATUS OF PATIENTS WITH PARASITIC DISEASE. *Новости образования: исследование в XXI веке*, 2(15), 103-108.
27. Ибраимова, Х. Р., & Облокулов, А. Р. (2019). Современный взгляд на распространенность и патогенетические аспекты паразитарных заболеваний у детей. *Новый день в медицине*, 1(25), 30-34.-2022-4-812-819
28. Sh, Yusupov Sh, and H. R. Ibrakhimova. "IMMUNOLOGICAL CHARACTERISTICS OF PATIENTS WHOSE BODY IS INFECTED WITH CATTLE SOLITAIRE." *Новости образования: исследование в XXI веке* 2.15 (2023): 120-124.
29. Юсупов Шавкат Рахимбаевич, Аскарлова Роза Исмаиловна, Машарипова Шохиста Собировна, & Якубова Умида Бахтияровна (2019). Анализ факторов риска, влияющих на развитие туберкулеза у детей в Хорезмской области. *Наука, техника и образование*, (8 (61)), 66-72.
30. EPIDEMIOLOGY OF EXANTHEMIC DISEASES AMONG THE POPULATION OF KHOREZM. (2025). *Multidisciplinary Journal of Science and Technology*, 5(5), 66-71. <https://mjstjournal.com/index.php/mjst/article/view/3370>
31. HELMINTH INFECTIONS: CLASSIFICATION, DEVELOPMENTAL CONDITIONS, AND CLINICAL MANIFESTATIONS. (2025). *Multidisciplinary Journal of Science and Technology*, 5(6), 1241-1245. <https://mjstjournal.com/index.php/mjst/article/view/4123>



32. ROTAVIRUS INFECTION AMONG CHILDREN: TRANSMISSION, RISKS AND PREVENTIVE MEASURES. (2025). *Multidisciplinary Journal of Science and Technology*, 5(6), 225-230. <https://mjstjournal.com/index.php/mjst/article/view/3929>
33. Машарипова, Ш. С., & Машарипов, С. М. (2026). ЭПИДЕМИОЛОГИЯ ВНУТРИБОЛЬНИЧНЫХ ИНФЕКЦИЙ: РАСПРОСТРАНЁННОСТЬ, ФАКТОРЫ РИСКА И ПРОФИЛАКТИКА. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, 85(2), 237-245.
34. Raximboyevich, Y. S., Rustamovna, I. H., & Sabirovna, M. S. (2025). ROTAVIRUS INFECTION AMONG CHILDREN: TRANSMISSION, RISKS AND PREVENTIVE MEASURES. *Multidisciplinary Journal of Science and Technology*, 5(6), 225-230.
35. Машарипова, Ш. С., Матякубова, О. У., Абдуллаева, Д. К., & Ибодуллаева, С. С. (2025). КЛИНИЧЕСКИЕ И ИММУНОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ИНФЕКЦИОННОГО МОНОНУКЛЕОЗА У ДЕТЕЙ. *Multidisciplinary Journal of Science and Technology*, 5(6), 249-256.
36. Аскарлова Роза Исмаиловна, Атажанов Шамсиддин Зарифбаевич, Маткурбанов Хамдамбек Илхамбекович Анализ первичных форм туберкулеза у детей, проживающих в Хорезмской области // Наука, техника и образование. 2019. №9 (62). URL: <https://cyberleninka.ru/article/n/analiz-pervichnyh-form-tuberkuleza-u-detey-prozhivayuschih-v-horezmskoj-oblasti> (дата обращения: 09.02.2026).
37. Отажанов Ш. З., Худайцулова Г. К., Муминова М. Т. THE COURSE OF DIARRHEA OF VIRAL ETIOLOGY IN HIV INFECTED CHILDREN //Новый день в медицине. – 2019. – №. 4. – С. 252-255.
38. Ibraximova H. R., Artiqov I. A., Otajanov Sh Z. HELMINTH INFECTIONS: CLASSIFICATION, DEVELOPMENTAL CONDITIONS, AND CLINICAL



MANIFESTATIONS //Multidisciplinary Journal of Science and Technology. – 2025. – Т. 5. – №. 6. – С. 1241-1245.

39. Аскарова Роза Исмаиловна, Атажанов Шамсиддин Зарифбаевич, & Маткурбанов Хамдамбек Илхамбекович (2019). Анализ первичных форм туберкулеза у детей, проживающих в Хорезмской области. Наука, техника и образование, (9 (62)), 64-68.

40. Ibraximova H. R. et al. CLINICAL IMMUNOLOGICAL ALTERATIONS IN ENTEROBIASIS: A COMPREHENSIVE REVIEW //Shokh Articles Library. – 2026. – Т. 1. – №. 1.