



1. Of the 795 measles cases, most affected individuals were young children, particularly infants under one year (84.3%).
2. Moderate severity of disease was the most common clinical manifestation (85% of cases), and 10% of cases were severe.
3. Complications were more frequently observed in younger children, including obstructive bronchitis (15%), stenosing laryngotracheitis (13%), and bronchopneumonia (82%).

**Literature:**

1. Мухаммадиев И. С., Рахмонов Р. Н., Ибрагимова М. Ф. Эффективность применения кларитромицина при пневмонии с атипичной этиологией у детей //Golden Brain. – 2024. – Т. 2. – №. 3. – С. 110-115.
2. Rakhmonov R. N., Zubaydullayev S. V. o ‘g ‘li, & Kardjavova, GA (2024) //ACUTE MYOCARDITIS IN CHILDREN ON THE BACKGROUND OF BRONCHO-PULMONARY DISEASES. GOLDEN BRAIN. – Т. 2. – №. 3. – С. 70-75.
3. Namozovich R. R. Mansurov Jasur Choriyor ugli, Sobirov Og‘abek Sobir ugli ugli, & Allanazarov Alisher Boymuratovich.(2024) //Acute Obstructive Bronchitis in Children: Main Etiological and Clinical Features. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – Т. 4. – №. 2. – С. 98-100.
4. Rakhmonov R. N. et al. HEPATITIS C: THE CURRENT STATE OF THE PROBLEM //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2025. – Т. 3. – №. 1. – С. 339-347.
5. Раббимова Н. и др. Математическое моделирование и прогнозирование заболеваемости кожным лейшманиозом в республике узбекистан //Журнал проблемы биологии и медицины. – 2017. – №. 1 (93). – С. 104-107.
6. Anvarovna Y. N. et al. Clinical and Epidemiological Characteristics of Shigellosis in Adults at the Contemporary Stage //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 3. – С. 311-318.
7. Bakhronov J.J. ETIOLOGY, EPIDEMIOLOGY AND PATHOGENESIS OF VIRAL HEPATITIS B // Экономика и социум. 2025. №8 (135). URL: <https://cyberleninka.ru/article/n/etiology-epidemiology-and-pathogenesis-of-viral-hepatitis-b> (дата обращения: 10.11.2025).
8. Bakhronov J. J. ETIOLOGY, EPIDEMIOLOGY AND PATHOGENESIS OF VIRAL HEPATITIS DELTA // Экономика и социум. 2025. №6-2 (133). URL: <https://cyberleninka.ru/article/n/etiology-epidemiology-and-pathogenesis-of-viral-hepatitis-delta> (дата обращения: 10.11.2025).
9. Nematov H. A., Bakhronov J. J. CYTOMEGALOVIRUS INFECTION //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 12. – С. 335-344.
10. Zhasurovich B. Z. OCCULT HBV INFECTION //SHOKH LIBRARY. – 2025.
11. Zhasurovich B. Z. PREGNANCY AND VIRAL HEPATITIS B //SHOKH LIBRARY. – 2025.
12. Jakhongir B. et al. HEPATITIS C IN PREGNANT WOMEN AND NEWBORNS //Вестник магистратуры. – 2023. – №. 7 (142). – С. 10-12.
13. Rukhshonabonu M. et al. CLINICAL MANIFESTATION OF LENNOX-GASTAUT SYNDROME //Вестник магистратуры. – 2023. – №. 7 (142). – С. 19-21.
14. Bakhronov J. J. Kholmurodov Sh. F., Yakhyayeva Kh. D., Kuchkorov Sh. B. The role of artificial intelligence in modern medicine //Innovations in Technology and Science Education. – 2024. – Т. 2. – №. 7. – С. 464-467.

**PREVALENCE AND ANALYSIS OF TORCH INFECTIONS AMONG WOMEN OF  
REPRODUCTIVE AGE IN THE SAMARKAND REGION**

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**Annotation.** This article evaluates the frequency of TORCH infections among women of reproductive age in the Samarkand region. Although no targeted epidemiological study was conducted to estimate regional prevalence, the work analyzes screening data obtained during routine laboratory testing. The results primarily reflect the serological immune response to the pathogens that form the TORCH group.



The purpose of the study was to examine laboratory findings associated with TORCH markers using ELISA.

**Key words:** TORCH infection, antibodies, ELISA, test system.

### **SAMARQAND VILOYATIDA REPRODUKTIV YOSHDAGI AYOLLAR ORASIDA TORCH INFEKSIYALARINING TARQALISHI VA TAHLILI**

**Annotatsiya.** Ushbu maqolada Samarqand viloyatida reproduktiv yoshdagi ayollar orasida TORCH-infeksiyalarning uchrash chastotasi baholangan. Hududiy tarqalishni aniqlashga qaratilgan maxsus epidemiologik tadqiqot o‘tkazilmagan bo‘lsa-da, ish jarayonida muntazam laborator tekshiruvlar davomida olingan skrining ma’lumotlari tahlil qilingan. Natijalar asosan TORCH guruhiga kiruvchi patogenlarga nisbatan serologik immun javobni aks ettiradi. Tadqiqotning maqsadi — ELISA usuli yordamida TORCH markerlariga oid laborator ko‘rsatkichlarni o‘rganishdan iborat edi.

**Kalit so‘zlar:** TORCH-infeksiya, antitanachalar, ELISA, test tizimi.

### **РАСПРОСТРАНЁННОСТЬ И АНАЛИЗ TORCH-ИНФЕКЦИЙ СРЕДИ ЖЕНЩИН РЕПРОДУКТИВНОГО ВОЗРАСТА В САМАРКАНДСКОЙ ОБЛАСТИ**

**Аннотация.** В данной статье оценена частота TORCH-инфекций среди женщин репродуктивного возраста в Самаркандской области. Несмотря на то что целевого эпидемиологического исследования для определения региональной распространенности не проводилось, в работе проанализированы данные скрининга, полученные в ходе рутинных лабораторных тестов. Полученные результаты в основном отражают серологический иммунный ответ на патогены, входящие в группу TORCH. Цель исследования заключалась в изучении лабораторных показателей TORCH-маркеров методом ИФА.

**Ключевые слова:** TORCH-инфекция, антитела, ИФА, тест-система.

### **INTRODUCTION**

TORCH infections represent a group of perinatally significant infectious diseases, including *Toxoplasma gondii*, rubella virus, cytomegalovirus, and herpes simplex virus (HSV types 1 and 2). These pathogens are clinically important because primary infection during pregnancy can cause miscarriage, intrauterine fetal death, congenital malformations, or neurological disorders in newborns.

A challenge in diagnosing TORCH infections is that in many cases they occur asymptotically or manifest with nonspecific symptoms such as low-grade fever or mild malaise (1,4,6,7). Due to the high risk of congenital infection, many countries include TORCH testing as part of mandatory prenatal screening programs (1,3,5). Laboratory detection of immunoglobulin classes IgM (acute phase infection) and IgG (previous exposure and immunity) serves as the main diagnostic method (1,2,8).

### **STUDY OBJECTIVE**

To analyze laboratory indicators reflecting TORCH seropositivity among women of reproductive age in the Samarkand region.

### **MATERIALS AND METHODS**

The study was based on laboratory records and outpatient cards of patients who underwent TORCH screening at the Samarkand Regional Clinical Infectious Diseases Hospital.

Total analyzed: 13,572 ELISA laboratory tests

- Patients examined: 1,778
- Methods used: complete blood count and ELISA (IFA) for TORCH markers
- Sample type: blood serum

The following antibodies were tested:

| No | TORCH marker                 | Test type |
|----|------------------------------|-----------|
| 1  | <i>Toxoplasma gondii</i> IgG | Tox IgG   |
| 2  | <i>Toxoplasma gondii</i> IgM | Tox IgM   |



|   |                                   |             |
|---|-----------------------------------|-------------|
| 3 | Rubella virus IgG                 | Rub IgG     |
| 4 | Rubella virus IgM                 | Rub IgM     |
| 5 | Cytomegalovirus IgG               | CMV IgG     |
| 6 | Cytomegalovirus IgM               | CMV IgM     |
| 7 | Herpes simplex virus type 1/2 IgG | HSV-1/2 IgG |
| 8 | Herpes simplex virus type 1/2 IgM | HSV-1/2 IgM |

Most serum samples (11,553 tests) were obtained from women aged 18–43 years, reflecting the reproductive-age group. Remaining samples were from patients aged 5–17 years and 44–80 years.

### RESULTS

Among all screening tests, **52.72% of results were seropositive**, indicating detection of IgM and/or IgG antibodies.

**Table 1. Summary of seropositive TORCH markers**

| Marker         | % Positive    |
|----------------|---------------|
| CMV IgG        | <b>89.36%</b> |
| CMV IgM        | 5.73%         |
| HSV-1/2 IgG    | <b>93.21%</b> |
| HSV-1/2 IgM    | 13.97%        |
| Rubella IgG    | <b>90.26%</b> |
| Rubella IgM    | 2.20%         |
| Toxoplasma IgG | 9.04%         |
| Toxoplasma IgM | 2.88%         |

Herpes virus and cytomegalovirus IgG antibodies dominated the positive test results — a trend consistent with global studies (2,5).

IgM antibodies were detected in significantly smaller quantities, indicating low frequency of acute infections.

Further age-distribution analysis showed:

- HSV IgM antibodies were most common among women of reproductive age
- Rubella IgM was most common in adolescents (15–17 years), corresponding to standard vaccination periods
- Toxoplasma IgM was identified in girls under 18 years old (7.27%)
- Persistent rubella IgG immunity was observed in 88.24% of school-aged girls

### DISCUSSION

The results show a high level of population immunity to rubella, cytomegalovirus, and herpes simplex virus among reproductive-age women. This suggests that:

1. Many individuals had prior exposure but are not currently experiencing active infection. The risk of primary infection during pregnancy is relatively low.

At the same time, the low Toxoplasma IgG prevalence (9.04%) indicates that most women do not have immunity against toxoplasmosis, making them vulnerable to primary infection during pregnancy, which poses a risk of congenital disease.

### CONCLUSIONS

1. Serological screening is a reliable tool for diagnosing genital and perinatal infections in women of reproductive age. The minimal percentage of indeterminate results confirms the high specificity of the test systems used.
2. The mandatory TORCH screening panel should include detection of both IgM (active phase) and IgG (immunity/memory) antibodies.
3. Compared to global data, the Samarkand region shows a low prevalence of Toxoplasma gondii infection, which reduces the risk of congenital toxoplasmosis.

### References:



1. Мухаммадиев И. С., Рахмонов Р. Н., Ибрагимова М. Ф. Эффективность применения кларитромицина при пневмонии с атипичной этиологией у детей //Golden Brain. – 2024. – Т. 2. – №. 3. – С. 110-115.
2. Rakhmonov R. N., Zubaydullayev S. V. o ‘g ‘li, & Kardjavova, GA (2024) //ACUTE MYOCARDITIS IN CHILDREN ON THE BACKGROUND OF BRONCHO-PULMONARY DISEASES. GOLDEN BRAIN. – Т. 2. – №. 3. – С. 70-75.
3. Abdukarimova M., Gaibullayev J. GENERAL CHARACTERISTICS OF PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN WITH MYOCARDITIS //Modern Science and Research. – 2024. – Т. 3. – №. 2.
4. Namozovich R. R. Mansurov Jasur Choriyor ugli, Sobirov Og‘abek Sobir ugli ugli, & Allanazarov Alisher Boymuratovich.(2024) //Acute Obstructive Bronchitis in Children: Main Etiological and Clinical Features. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – Т. 4. – №. 2. – С. 98-100.
5. Rakhmonov R. N. et al. HEPATITIS C: THE CURRENT STATE OF THE PROBLEM //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2025. – Т. 3. – №. 1. – С. 339-347.
6. Ярмухамедова М. К., Ярмухамедова Н. А. Оценка эффективности ПППД у больных с ВГС //Вопросы науки и образования. – 2020. – №. 22 (106). – С. 24-29.
7. Yakubovna E. M. et al. Aspects of Clinical and Laboratory Diagnostics of Enteroviral Infection without CMS Damage //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 6. – С. 1-5.
8. Эпрашева М. Я. и др. The role of polymerase chain reaction in the diagnosis of enterovirus infection in patients with manifestations of acute intestinal infection //Журнал гепато-гастроэнтерологических исследований. – 2020. – Т. 1. – №. 1. – С. 91-93.
9. Anvarovna Y. N. et al. Organization of therapeutic and preventive measures to predict the development of secondary immunodeficiency in viral infections in young athletes //Journal of Positive School Psychology. – 2022. – С. 7147-7151.
10. Ярмухамедова, М., Ачилова, М., & Узакова, Г. (2016). Клиническая характеристика бруцеллеза в самаркандской области. Журнал проблемы биологии и медицины, (3 (89), 120–123. извлечено от [https://inlibrary.uz/index.php/problems\\_biology/article/view/3637](https://inlibrary.uz/index.php/problems_biology/article/view/3637)
11. Anvarovna Y. N. et al. POLYORGAN INSUFFICIENCY DURING OBTURATION OF GALLERY IN THE EXPERIMENT //Entomologist's Gazette. – 2022. – Т. 73. – №. 1.
12. ЯРМУХАМЕДОВА М. К., ЯКУБОВА Н. С., ВОСЕЕВА Д. Х. ОЦЕНКА ПРИМЕНЕНИЯ ГЕПАТОПРОТЕКТОРОВ У БОЛЬНЫХ С ХРОНИЧЕСКИМ ВИРУСНЫМ ГЕПАТИТОМ В //T [a\_XW [i [S US S\_S^ [Ûe YfcS^ . – 2022. – С. 431.
13. Egamovna M. F. et al. CLINICAL AND EPIDEMIOLOGICAL FEATURES OF THE COURSE OF SHIGELLOSIS IN ADULTS AT THE PRESENT STAGE IN 2009-2019//Web of Scientist: International Scientific Research Journal. – 2022 //T. – Т. 3. – С. 1285-1294.
14. Tuychiev L. N. et al. Nasopharyngeal extraction of s. pneumoniae from adult patients with acute respiratory infections and antibiotic resistance of isolated strains //Art of Medicine. International Medical Scientific Journal. – 2022. – Т. 2. – №. 1.
15. Тиркашев О. С., Матякубова Ф. Э., Раббимова Н. Т. Клинико-эпидемиологическая характеристика кори в Самаркандской области //VOLGAMEDSCIENCE. – 2021. – С. 624-625.
16. Ярмухамедова Н. и др. Особенности течения хронического гепатита с на фоне туберкулеза //Журнал вестник врача. – 2019. – Т. 1. – №. 1. – С. 129-132.
17. Раббимова Н. и др. Математическое моделирование и прогнозирование заболеваемости кожным лейшманиозом в республике узбекистан //Журнал проблемы биологии и медицины. – 2017. – №. 1 (93). – С. 104-107.
18. Anvarovna Y. N. et al. Clinical and Epidemiological Characteristics of Shigellosis in Adults at the Contemporary Stage //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 3. – С. 311-318.
19. Сувонкулов У. и др. Идентификация видовой принадлежности возбудителей кожного лейшманиоза методом полимеразной цепной реакции //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 91-92.
20. Еременко Ю. Е. и др. Проблема антибиотикорезистентности у пациентов с острым и хроническим риносинуситом //Оториноларингология. Восточная Европа. – 2020. – Т. 10. – №. 2. – С. 141-151.



21. Bakhronov J. J. ETIOLOGY, EPIDEMIOLOGY AND PATHOGENESIS OF VIRAL HEPATITIS B // Экономика и социум. 2025. №8 (135). URL: <https://cyberleninka.ru/article/n/etiology-epidemiology-and-pathogenesis-of-viral-hepatitis-b> (дата обращения: 10.11.2025).
22. Bakhronov J. J. ETIOLOGY, EPIDEMIOLOGY AND PATHOGENESIS OF VIRAL HEPATITIS DELTA // Экономика и социум. 2025. №6-2 (133). URL: <https://cyberleninka.ru/article/n/etiology-epidemiology-and-pathogenesis-of-viral-hepatitis-delta> (дата обращения: 10.11.2025).
23. Nematov H. A., Bakhronov J. J. CYTOMEGALOVIRUS INFECTION // Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 12. – С. 335-344.
24. Zhasurovich B. Z. OCCULT HBV INFECTION // SHOKH LIBRARY. – 2025.
25. Zhasurovich B. Z. PREGNANCY AND VIRAL HEPATITIS B // SHOKH LIBRARY. – 2025.
26. Jakhongir B. et al. HEPATITIS C IN PREGNANT WOMEN AND NEWBORNS // Вестник магистратуры. – 2023. – №. 7 (142). – С. 10-12.
27. Rukhshonabonu M. et al. CLINICAL MANIFESTATION OF LENNOX-GASTAUT SYNDROME // Вестник магистратуры. – 2023. – №. 7 (142). – С. 19-21.
28. Bakhronov J. J. Kholmurodov Sh. F., Yakhyayeva Kh. D., Kuchkorov Sh. B. The role of artificial intelligence in modern medicine // Innovations in Technology and Science Education. – 2024. – Т. 2. – №. 7. – С. 464-467.

### **INFECTIOUS MONONUCLEOSIS: CLINICAL AND LABORATORY FEATURES IN CHILDREN OF THE SAMARKAND REGION**

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**Annotation.** Infectious mononucleosis (IM) is a clinically significant viral infection caused predominantly by the Epstein–Barr virus (EBV), a member of the Herpesviridae family. Approximately 80–90% of the global population acquires EBV infection during their lifetime. Early and accurate identification of infectious mononucleosis contributes to improved treatment outcomes, especially through reducing the duration of fever, lowering lymphoid tissue proliferation, and accelerating the resolution of hepatocellular cytolysis.

**Key words:** infectious mononucleosis, Epstein–Barr virus (EBV), atypical mononuclear cells, children, clinical features

### **SAMARQAND VILOYATI BOLALARIDA INFEKSION MONONUKLYOZNING KLINIK VA LABORATOR XUSUSIYATLARI**

**Annotatsiya.** Infektsion mononuklyoz (IM) – asosan Herpesviridae oilasiga mansub Epstein–Barr virusi (EBV) tomonidan chaqiriladigan klinik jihatdan muhim virusli infeksiyadir. Aholining taxminan 80–90% umri davomida EBV infeksiyasini yuqtiradi. Infektsion mononuklyozni erta va aniq aniqlash davolash natijalarini yaxshilaydi, xususan, isitma davomiyligini kamaytiradi, limfoid to‘qimalarning ko‘payishini pasaytiradi va hepatotsellulyar sitolizning tezroq qaytishiga yordam beradi.

**Kalit so‘zlar:** infektsion mononuklyoz, Epstein–Barr virusi (EBV), atipik mononuklear hujayralar, bolalar, klinik belgilari.

### **КЛИНИЧЕСКИЕ И ЛАБОРАТОРНЫЕ ОСОБЕННОСТИ ИНФЕКЦИОННОГО МОНОНУКЛЕОЗА У ДЕТЕЙ САМАРКАНДСКОЙ ОБЛАСТИ**

**Аннотация.** Инфекционный мононуклеоз (ИМ) — клинически значимая вирусная инфекция, вызываемая преимущественно вирусом Эпштейна–Барр (ВЭБ), относящимся к семейству Herpesviridae. Около 80–90% населения мира инфицируется ВЭБ в течение жизни. Ранняя и точная диагностика инфекционного мононуклеоза способствует улучшению результатов лечения,