

COMBINATIONS OF HEPATITIS B WITH PULMONARY TUBERCULOSIS

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Annotation: This study investigates the clinical features of tuberculosis in patients with hepatitis B, a combination that currently has significant practical importance. The incidence of hepatitis B and tuberculosis continues to grow, and this age group remains epidemiologically high-risk. The peculiar course of tuberculosis in such patients is determined by decreased immune system function and liver dysfunction, which impairs the metabolism of antituberculosis drugs and complicates treatment. Specific clinical manifestations, the frequency of hepatobiliary disorders, and reduced chemotherapy efficacy in this patient population were identified.

Keywords: tuberculosis, hepatitis B, liver, drug resistance, hepatobiliary system, clinical course.

The liver is an important organ that makes up the immune system. With hepatitis B, due to cytolysis of liver cells, its functions weaken, all this leads to serious disorders in the immune system. With the combined course of hepatitis B and pulmonary tuberculosis, serious changes occur in the mucous membrane of the respiratory tract, the number of pulmonary alveoli decreases, and the vital volume of the lungs decreases. The growing prevalence of drug-resistant forms of tuberculosis worldwide is forcing a new look at liver research. Currently, the effectiveness of chemotherapy is not only not increasing, but tends to decrease. One of the leading reasons is the spread of drug-resistant *Mycobacterium tuberculosis*. This fact makes it necessary to prescribe from 3 to 9 chemotherapy drugs daily at the same time and to carry out treatment for a long time – 6-8 months. This creates a high drug burden on the patient, and most of all it is experienced by the liver, carrying out the metabolism of tuberculostatics and pathogenetic agents. The incidence of liver and hepatobiliary system lesions, according to various authors, ranges from 5.0% to 72.8%. Anti-tuberculosis treatment in this category of patients is significantly hampered by the poor tolerability of anti-tuberculosis drugs, especially in the presence of hepatitis B liver damage. In this aspect, early detection and treatment of liver damage is relevant. Literature data and our experience show that the prognosis in patients with drug-resistant pulmonary tuberculosis with concomitant pathology of the hepatobiliary system is unfavorable, and the possibilities of chemotherapy are limited. That is why the problem of timely diagnosis of liver damage in patients with drug-resistant pulmonary tuberculosis remains of practical importance.

The purpose of our study was to study the state of the hepatobiliary system in patients with drug-resistant pulmonary tuberculosis.

Materials and research methods: A comprehensive clinical and instrumental examination of 263 patients with pulmonary tuberculosis was conducted at the Khorezm Regional Tuberculosis dispensary. Of these, 163 patients were diagnosed with drug-resistant tuberculosis, 100 with drug-sensitive tuberculosis. The age of patients with drug-resistant tuberculosis ranged from 18 to 67 years. There were 107 men ($65.6 \pm 3.7\%$) and 56 women ($34.4 \pm 3.7\%$).

Among patients with drug-resistant tuberculosis, the fibrous-cavernous form of the disease prevailed in 114 patients ($69.9 \pm 3.5\%$), the infiltrative form was detected in 37 ($22.7 \pm 3.2\%$), and

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the disseminated form in 12 ($7.4 \pm 2.0\%$). The resistance of Mycobacterium tuberculosis to anti-tuberculosis drugs was confirmed in all patients: 132 patients had secondary resistance, 31 had primary resistance.

In the group of patients with drug-sensitive pulmonary tuberculosis (aged 19 to 88 years), 66 men ($66.0 \pm 4.7\%$) and 34 women ($34.0 \pm 4.7\%$). The fibrous–cavernous form of the disease in this group was much less common — in $30.0 \pm 4.5\%$ of cases, which is 2.3 times lower than in the group with drug-resistant tuberculosis. On the contrary, the infiltrative form of pulmonary tuberculosis among patients with a sensitive form of the disease occurred in $62.0 \pm 23.6\%$ of cases, which is 2.7 times higher than in the drug-resistant group.

Clinical and echographic studies of the liver and gallbladder revealed liver pathology in 89 ($54.6 \pm 3.8\%$) patients with drug-resistant pulmonary tuberculosis, and pathology of the gallbladder in 51 ($31.3 \pm 3.6\%$) patients. A combination of liver and gallbladder pathology was detected in 33 ($20.2 \pm 3.1\%$) patients with drug-resistant pulmonary tuberculosis. Pathology of the hepatobiliary system was not detected in 32 ($19.6 \pm 3.1\%$) patients. These studies in patients with drug-sensitive pulmonary tuberculosis revealed liver pathology in 25 ($25.0 \pm 4.3\%$) patients and gallbladder pathology in 6 ($6.0 \pm 2.3\%$) patients. In 2 ($2.0 \pm 1.4\%$) patients with drug-sensitive pulmonary tuberculosis, a combination of pathology of the hepatobiliary system and gall bladder was detected. No pathology of the hepatobiliary system was detected in 44 ($44.0 \pm 4.9\%$) patients. Among patients with drug-resistant tuberculosis, the fibrous–cavernous form of the disease prevailed in 114 patients ($69.9 \pm 3.5\%$), the infiltrative form was detected in 37 ($22.7 \pm 3.2\%$), and the disseminated form in 12 ($7.4 \pm 2.0\%$). The resistance of Mycobacterium tuberculosis to anti-tuberculosis drugs was confirmed in all patients: 132 patients had secondary resistance, 31 had primary resistance.

In the group of patients with drug-sensitive pulmonary tuberculosis (aged 19 to 88 years), 66 men ($66.0 \pm 4.7\%$) and 34 women ($34.0 \pm 4.7\%$). The fibrous–cavernous form of the disease in this group was much less common — in $30.0 \pm 4.5\%$ of cases, which is 2.3 times lower than in the group with drug-resistant tuberculosis. On the contrary, the infiltrative form of pulmonary tuberculosis among patients with a sensitive form of the disease occurred in $62.0 \pm 23.6\%$ of cases, which is 2.7 times higher than in the drug-resistant group.

The main symptoms characteristic of liver pathology were expressed in 44 patients with a stable form of tuberculosis. Thus, asthenovegetative syndrome was noted in 25 patients, dull pain in the liver – in 14, dyspeptic disorders – in 18, liver enlargement – in 33, enlarged spleen – in 17, vascular asterisks on the skin of the abdomen – in 8, "liver palms" – in 24, jaundice of the skin – in 7, pruritus of the skin – in 12 patients. These symptoms are less pronounced in people with a sensitive form of pulmonary tuberculosis. Thus, asthenovegenerative syndrome was noted only in 5, dull pain in the liver – in 3, dyspeptic disorders – in 6, liver enlargement – in 21, spleen enlargement – in 1, vascular asterisks on the skin of the abdomen – in 1, "liver palms" – in 6, jaundice of the skin – in 1, pruritus of the skin – in 3 patients.

The pathology of the hepatobiliary system was diagnosed on the basis of clinical and laboratory studies, including echography on an INTERSCAN device (Germany) operating in real time with 3.5 and 5.0 MHz sensors.

In the group of patients with drug-sensitive pulmonary tuberculosis (aged 19 to 88 years), 66 men ($66.0 \pm 4.7\%$) and 34 women ($34.0 \pm 4.7\%$). The fibrous–cavernous form of the disease in this group was much less common — in $30.0 \pm 4.5\%$ of cases, which is 2.3 times lower than in the group with drug-resistant tuberculosis. On the contrary, the infiltrative form of pulmonary tuberculosis

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among patients with a sensitive form of the disease occurred in $62.0 \pm 23.6\%$ of cases, which is 2.7 times higher than in the drug-resistant group.

When performing echography of the hepatobiliary system, the size, contours and shape of the edges of the liver, its elasticity and mobility, sound conductivity and echostructure of the parenchyma, the pattern of the intrarenal vascular network, the gallbladder, its contours, wall thickness and the presence of stones were determined. Statistical processing of the research results was carried out on an IBM compatible computer using the Microsoft Excel software package for statistical calculations.

Results and discussions: Previously unrecognized liver diseases were diagnosed using clinical laboratory and echographic studies of the hepatobiliary system. When studying the comparative frequency of detection of pathology of the hepatobiliary system in patients with drug-resistant form and with drug-sensitive form of pulmonary tuberculosis, it was found that pathological changes in the hepatobiliary system are detected more often in patients with drug-resistant form of pulmonary tuberculosis. Thus, liver pathology in the form of hepatitis B in patients with drug-resistant pulmonary tuberculosis is 2.1 times more common, gallbladder pathology is 5.2 times more common than in patients with drug-sensitive pulmonary tuberculosis (54.6% and 25.0% ; 31.3% and 6.0% , respectively, $P < 0.001$; $P < 0.01$).

The combination of liver and gallbladder pathology was detected 10 times more often in patients with drug-resistant form than in those with drug-sensitive form of pulmonary tuberculosis (20.2% and 2.0% , respectively, $P < 0.001$). Patients without pathology of the hepatobiliary system were detected 2.2 times less frequently among patients with a stable form of pulmonary tuberculosis than among those with a sensitive form of pulmonary tuberculosis (19.6% and 44.0% , respectively, $P < 0.001$).

Conclusions: In patients with drug-resistant pulmonary tuberculosis, liver damage in the form of hepatitis B was detected 2.2 times more often, and gallbladder pathology was 5.2 times more common compared with patients with a drug-sensitive form of the disease. A comprehensive clinical and echographic examination made it possible to diagnose hepatitis B in 89 patients ($54.6 \pm 3.8\%$) and gallbladder pathology in 51 patients ($31.3 \pm 3.6\%$) with drug-resistant tuberculosis. Echographic examination of the hepatobiliary system significantly expands the possibilities of early detection of liver and gallbladder lesions in this category of patients. In chronic hepatitis and cirrhosis of the liver, echography allows you to obtain important diagnostic signs — dilation of the portal vein, splenomegaly, foci of high echogenicity, which ensures high diagnostic accuracy, reaching 100%.

List of literature

1. Djalilovna, A. M., Nurullaev, R. R., KB, T., & Rakhimova, M. (2022). Chronic viral hepatitis b in women of reproductive age living in the aral sea region.
2. Nurillaev, R. R., & Matyakubova, O. U. (2023). EPIDEMIOLOGICAL STRUCTURES OF DIARRHEAL DISEASES IN THE KHOREZM REGION. *PEDAGOG*, 6(2), 126-129.
3. Nurllayev, R. R., & Artiqov, I. A. (2023). IMPROVING THE PRIMARY PREVENTION OF ACUTE DIARRHEAL DISEASES AMONG CHILDREN. *Finland International Scientific Journal of Education, Social Science & Humanities*, 11(4), 6-10.
4. Ibadullayeva, S. S., Yakubov, K. Y., Artikov, I. A., Nurllayev, R. R., & Sadullayev, S. E. (2023). CHARACTERISTICS OF PATHOMORPHOLOGICAL CHANGES IN

- LYMPHOCYTIC LEUKOSIS IN CHILDREN. *Western European Journal of Medicine and Medical Science*, 1(4), 21-26.
5. Sadullayev, S. E., Matyakubova, O. U., Artikov, I. A., Nurllayev, R. R., Ibadullayeva, S. S., & Yakubov, K. Y. (2023). RESULTS OF STUDIES ON THE LEVEL OF POPULATION KNOWLEDGE ABOUT PARASITIC DISEASES AND ITS PREVENTION. *Western European Journal of Medicine and Medical Science*, 1(4), 15-20.
 6. 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.
 7. Аскарлова Роза Исмаиловна, & Отажонов Шамсиддин Зарифбоевич (2020). Туберкулез на фоне сопутствующей патологии. *European science*, (3 (52)), 106-108. doi: 10.24411/2410-2865-2020-10301
 8. Аскарлова 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.
 9. Аскарлова, Р. И., Машарипова, Ш. С., Атажанов, Ш. З., Машарипова, Х. К., & Якубова, У. Б. (2019). ОСОБЕННОСТИ ТЕЧЕНИЯ БЕРЕМЕННОСТИ ЖЕНЩИН, БОЛЬНЫХ ТУБЕРКУЛЁЗОМ ОРГАНОВ ДЫХАНИЯ. In *International scientific review of the problems of natural sciences and medicine* (pp. 202-209).
 10. Ибрахимова, 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).
 11. ARTIQOV, I., & ABDULLAYEVA, D. (2025). THE SPREAD OF DIARRHEAL DISEASES IN THE KHOREZM REGION. *Multidisciplinary Journal of Science and Technology*, 5(3), 672-677.
 12. Tuychiev, L., Khudaykulova, G., Rakhmatullaeva, S., Muminova, M., & Otajonov, S. THE ETIOLOGICAL STRUCTURE OF INFECTIOUS GENESIS DIARRHEA IN HIV-INFECTED CHILDREN. *Turkish Journal of Physiotherapy and Rehabilitation*, 32, 2.
 13. Худайкулова Гулнара Каримовна, Муминова Махбуба Тешаевна, & Отажанов Шамсиддин Зарифбаевич (2021). АНАЛИЗ ЭТИОЛОГИЧЕСКОЙ СТРУКТУРЫ ВИРУСНЫХ ДИАРЕЙ У ВИЧ-ИНФИЦИРОВАННЫХ ДЕТЕЙ. *Journal of cardiorespiratory research*, 2 (3), 31-34. doi: 10.26739/2181
 14. Аскарлова, Р. И., & Отажонов, Ш. З. (2020). Туберкулез на фоне сопутствующей патологии. *European science*, (3 (52)), 106-108.
 15. Отажанов, Ш. З., Худайцулова, Г. К., & Муминова, М. Т. (2019). THE COURSE OF DIARRHEA OF VIRAL ETIOLOGY IN HIV INFECTED CHILDREN. *Новый день в медицине*, (4), 252-255.
 16. 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.

17. Машарипова, Ш. С., Артиков, И. А., Садуллаев, С. Э., & Абдуллаева, Д. К. (2022). ТЕЧЕНИЕ КОРОНАВИРУСНОЙ ИНФЕКЦИИ НА ФОНЕ ГЕПАТИТОВ. Новости образования: исследование в XXI веке, 1(5), 573-577.
18. Юсупов, Ш. Р. (2020). Абдуллаева Дилфуза Кадамовна, Машарипова Шохиста Сабировна, Матякубова Ойша Уриновна Применение пектина в комплексной терапии при острых кишечных инфекциях. *Вестник науки и образования*, (5-2), 83.
19. Sadullayev, S. E., Abdullayeva, D. K., Ibragimov, S. J., & Yoqubov, Q. Y. (2024). ANALYSIS OF THE EPIDEMIOLOGICAL FEATURES OF DIARRHEAL DISEASES IN CHILDREN IN THE SOUTHERN ARAL REGION. *Multidisciplinary Journal of Science and Technology*, 4(2), 345-351.
20. ARTIQOV, I., & ABDULLAYEVA, D. (2025). CHICKENPOX: AMONG YOUNG CHILDREN IN KHOREZM REGION. *Multidisciplinary Journal of Science and Technology*, 5(3), 678-683.
21. ARTIQOV, I., & ABDULLAYEVA, D. (2025). THE SPREAD OF DIARRHEAL DISEASES IN THE KHOREZM REGION. *Multidisciplinary Journal of Science and Technology*, 5(3), 672-677.
22. Юсупов Шавкат Рахимбоевич, Абдуллаева Дилфуза Кадамовна, Машарипова Шохиста Сабировна, & Матякубова Ойша Уриновна (2020). Применение пектина в комплексной терапии при острых кишечных инфекциях. *Вестник науки и образования*, (5-2 (83)), 51-56.
23. Davronovna, A. K., & Bekboevich, K. S. (2025). GENERAL CHEMISTRY PROBLEMS OF MEDICAL STUDENTS AND STRATEGIES FOR THEIR SOLUTION. *Multidisciplinary Journal of Science and Technology*, 5(4), 726-730.
24. Davronovna, A. K., Yusupovna, A. Z., & Olimboyevna, I. M. (2025). ADDRESSING COMMON CHALLENGES IN CHEMISTRY COURSES FOR MEDICAL STUDENTS AND ENSURING ACTIVE STUDENT PARTICIPATION. *Multidisciplinary Journal of Science and Technology*, 5(4), 719-725.
25. Абдуллаева, Х. Д., Атаджонова, З. Ю., & Ибодуллаева, М. О. (2025). BLENDED AND DIGITAL TEACHING STRATEGIES FOR CHEMISTRY IN MEDICAL EDUCATION. *Multidisciplinary Journal of Science and Technology*, 5(4), 714-718.
26. Davronovna, A. H. (2025, January). MEDICINAL SUBSTANCES CONTAINING BIOMETALS AND THEIR APPLICATION IN MEDICINE. In *Next Scientists Conferences* (pp. 87-89).
27. Davronovna, A. H. (2025). MEDICINAL SUBSTANCES CONTAINING BIOMETALS AND THEIR APPLICATION IN MEDICINE. *Next Scientists Conferences*, 1 (01), 87-89.
28. Sadullayev, S. E., Matyakubova, O. U., Artikov, I. A., Nurllayev, R. R., Ibadullayeva, S. S., & Yakubov, K. Y. (2023). RESULTS OF STUDIES ON THE LEVEL OF POPULATION KNOWLEDGE ABOUT PARASITIC DISEASES AND ITS PREVENTION. *Western European Journal of Medicine and Medical Science*, 1(4), 15-20.
29. Nurllayev R. R., Ibadullayeva S. S., Yoqubov Q. Y. KICHIK QON AYLANISH DOIRASI ARTERIYALARINING MORFOLOGIK TUZILISHI //Научный Фокус. – 2023. – Т. 1. – №. 8. – С. 463-468.
30. Ibadullayeva, S. S., Yakubov, K. Y., Artikov, I. A., Nurllayev, R. R., & Sadullayev, S. E. (2023). CHARACTERISTICS OF PATHOMORPHOLOGICAL CHANGES IN

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- LYMPHOCYTIC LEUKOSIS IN CHILDREN. *Western European Journal of Medicine and Medical Science*, 1(4), 21-26.
31. ANALYSIS OF THE EPIDEMIOLOGICAL FEATURES OF DIARRHEAL DISEASES IN CHILDREN IN THE SOUTHERN ARAL REGION. (2024). *Multidisciplinary Journal of Science and Technology*, 4(2), 345-351.
<https://www.mjstjournal.com/index.php/mjst/article/view/870>
32. Yusupov , S., Sadullayev , S., & Yoqubov , Q. (2025). GEPATITLAR FONIDA KORONAVIRUS INFEKSIYASINING KECHISHI. *Journal of Science-Innovative Research in Uzbekistan*, 3(3), 294–303. Retrieved from
<https://inlibrary.uz/index.php/journal-science-innovative/article/view/76633>
33. Yusupov , S., Sadullayev , S., Yoqubov , Q., & Ibragimov , U. (2025). HOMILADOR AYOLLAR ORASIDAGI QIZILCHA: XUSUSIYATLARI, XAVFLARI VA OLDINI OLISH. *Journal of Science-Innovative Research in Uzbekistan*, 3(3), 286–293. Retrieved from <https://inlibrary.uz/index.php/journal-science-innovative/article/view/76634>
34. SH, Y. S., YOQUBOV, Q., & NURLLAYEV, R. (2025). FEATURES OF THE COURSE OF THE HERPES TYPE 4 VIRUS IN CHILDREN. *Multidisciplinary Journal of Science and Technology*, 5(3), 397-402.
35. NURLLAYEV, R., SH, Y. S., & YOQUBOV, Q. (2025). PECULIARITIES OF THE ETIOLOGICAL STRUCTURE OF ACUTE DIARRHEAL DISEASES IN THE CONDITIONS OF THE SOUTHERN ARAL REGION. *Multidisciplinary Journal of Science and Technology*, 5(3), 403-408.
36. Saliybayevna, I. S., Yodgor o'g'li, Y. Q., & Odilbekovna, R. D. (2025). EPIDEMIOLOGY AND COMPLICATIONS OF COVID-19. *Multidisciplinary Journal of Science and Technology*, 5(3), 218-224.
37. Saliybayevna, I. S., Yodgor o'g'li, Y. Q., & Odilbekovna, R. D. (2025). NOSOCOMIAL PNEUMONIA AND ITS ETIOLOGICAL FACTORS. *Multidisciplinary Journal of Science and Technology*, 5(3), 225-230.
38. Razzokberganova, D. O., Ibragimov, S. J., Yoqubov, Q. Y., & Atadjanova, O. N. (2025). NUTRITION IN VIRAL HEPATITIS. *Multidisciplinary Journal of Science and Technology*, 5(3), 59-62.
39. Ibragimov, S. J., Razzoqberganova, D. O., Yoqubov, Q. Y., & Atadjanova, O. N. (2025). EMERGENCIES IN INFECTIOUS DISEASES: EPIDEMIOLOGICAL, MEDICAL AND SOCIAL ASPECTS. *Multidisciplinary Journal of Science and Technology*, 5(3), 63-67.
40. Razzokberganova, D. O., Ibragimov, S. J., Bobojonov, Y. B., & Yoqubov, Q. Y. (2025). EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF ENTEROBIASIS. *Multidisciplinary Journal of Science and Technology*, 5(2), 665-668.
41. Yoqubov, Q. Y., Bobojonov, Y. B., Razzokberganova, D. O., & Ibragimov, S. J. (2025). FEATURES OF THE COURSE AND SPREAD OF TENIARINCHOSIS DISEASE. *Multidisciplinary Journal of Science and Technology*, 5(2), 669-672.
42. Masharipov, S. M., Matyakubova, O. U., & Yakubov, K. Y. (2025). IMMUNE STATUS IN PATIENTS WITH PARASITIC DISEASES IN KHOREZM REGION. *Multidisciplinary Journal of Science and Technology*, 5(1), 514-517.