



URGANCH DAVLAT TIBBIYOT INSTITUTI JANUBIY OROLBO'YI TIBBIYOT JURNALI

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EPIDEMIOLOGICAL ANALYSIS OF HEPATITIS B SCREENING INDICATORS IN URGENCH



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Abstract. This article analyzes the results of screening studies conducted in 2023–2025 in Urgench city aimed at detecting hepatitis B virus infection. The study employed epidemiological research methods along with modern laboratory diagnostic techniques, including serological and PCR methods. The findings indicate a higher prevalence of the infection among certain age groups. These results highlight the importance of strengthening epidemiological control, improving early detection, and enhancing preventive measures.

Keywords: hepatitis B, screening, epidemiology, serological diagnostics, PCR.

ЭПИДЕМИОЛОГИЧЕСКИЙ АНАЛИЗ ПОКАЗАТЕЛЕЙ СКРИНИНГА ВИРУСНОГО ГЕПАТИТА В В УРГЕНЧЕ

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Аннотация. В данной статье представлены и проанализированы результаты скрининговых исследований, проведённых в 2023–2025 годах в городе Ургенч с целью выявления вирусного гепатита В. В ходе исследования применялись эпидемиологические методы исследования, а также современные лабораторные методы диагностики, включая серологические и ПЦР-методы. Полученные данные свидетельствуют о более высокой распространённости инфекции среди отдельных возрастных групп. Результаты подчеркивают необходимость усиления эпидемиологического контроля, ранней диагностики и совершенствования профилактических мероприятий.



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Ключевые слова: гепатит В, скрининг, эпидемиология, серологическая диагностика, ПЦР.

URGANCH SHAHRIDA VIRUSLI GEPATIT B SKRINING KO‘RSATKICHLARINING EPIDEMIOLOGIK TAHLILI

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Annotatsiya. Mazkur maqolada 2023–2025-yillar davomida Urganch shahrida virusli gepatit B infeksiyasini aniqlashga qaratilgan skrining tadqiqotlari natijalari tahlil qilingan. Tadqiqot jarayonida epidemiologik tadqiqot usullari hamda zamonaviy laborator diagnostika usullari, xususan serologik va PZR metodlari qo‘llanildi. Olingan natijalar kasallikning ayrim yosh guruhlarida ko‘proq uchrashini ko‘rsatdi. Ushbu ma‘lumotlar virusli gepatit B infeksiyasining tarqalishini nazorat qilish, uni erta aniqlash va profilaktik choralarini yanada takomillashtirish zarurligini asoslaydi.

Kalit so‘zlar: gepatit B, skrining, epidemiologiya, serologik diagnostika, PZR.

Introduction. Hepatitis B virus infection is one of the widespread infectious diseases affecting the liver, which, as a result of a long-term process, may lead to the development of liver cirrhosis and hepatocellular carcinoma. According to the 2024 report of the World Health Organization (WHO), 254 million people worldwide are living with chronic hepatitis B infection, with approximately 1.2 million new cases reported annually [3,4]. In 2022, 1.1 million people died due to hepatitis B, mainly as a result of liver cirrhosis and hepatocellular carcinoma (the primary type of liver cancer) [3]. The WHO has set a goal to eliminate viral hepatitis by 2030 and recommends strengthening strategies for screening, vaccination, and treatment in this regard [1].

In Uzbekistan, hepatitis B infection also remains an important epidemiological problem. In some healthcare facilities, particularly hemodialysis units, blood transfusion centers, and maternity institutions, the risk of transmission of the infection is relatively high.

Methods and Materials. The study employed epidemiological (retrospective), statistical (Fisher’s exact test), and serological (rapid test) methods. In the confirmatory stage, a molecular-genetic (PCR) diagnostic method was used. The study material consisted of official data on hepatitis B screening obtained from the Urganch city department of the Sanitary-Epidemiological Well-Being and Public Health Committee.

Results. Retrospective analysis conducted among the population of Urganch city showed that during 2023–2025 a total of 25,840 individuals underwent HBV screening, of whom 176 cases (0.68%) were confirmed positive for the virus. (Figure 1).



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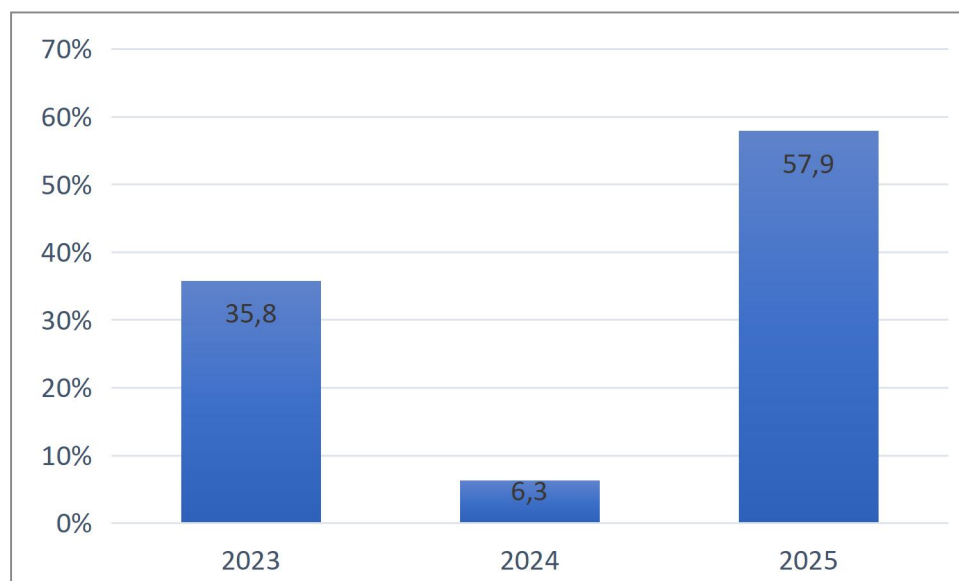


Figure 1. Distribution of hepatitis B virus positive cases by year (%) in Urganch city during 2023-2025.

During 2023–2025, a total of 176 hepatitis B virus-positive cases were recorded. Year-wise analysis showed that 2023 accounted for 35.8% of all cases, while 2024 accounted for 6.3%. The highest proportion was observed in 2025, which represented 57.9% of all cases.

The overall analysis of all hepatitis B virus-positive cases identified during the study by age groups shows that the disease predominantly affects the socio-economically active population. According to the obtained data, more than half of all positive cases, specifically 51.1%, were observed in the 31–45 age group. (Figure 2).

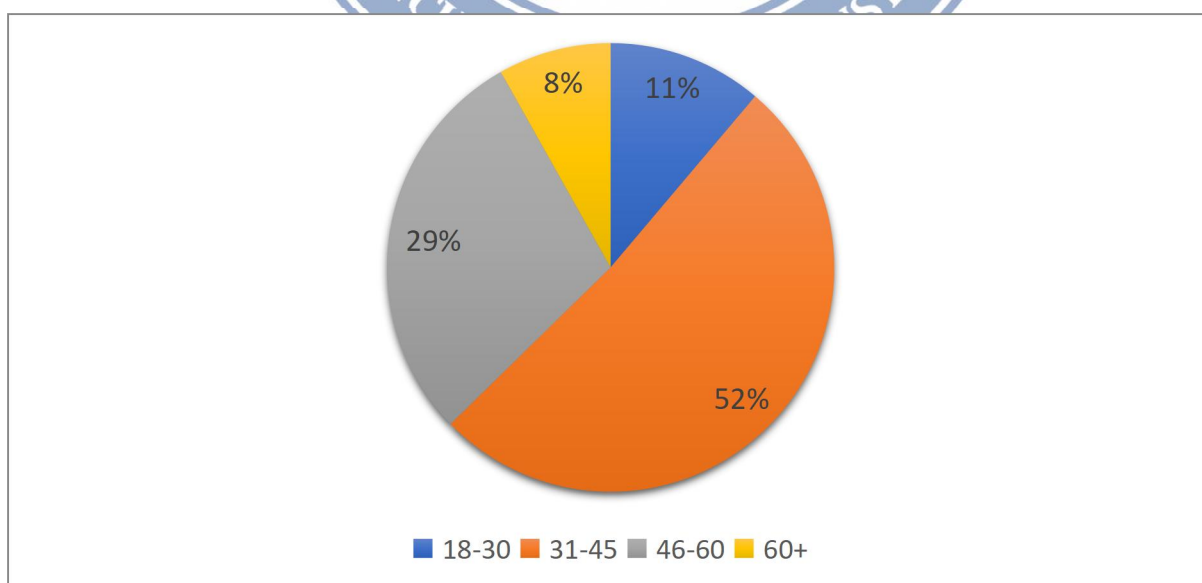


Figure 2. Distribution of all identified HBV cases (n=176) by age groups.

The next highest proportion of the disease burden was observed in the 46–60 age group, accounting for 28.9%. In the subsequent age distribution, the 18–30 age group represented 11.9%,



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while the lowest prevalence was recorded among individuals over 60 years of age, accounting for 8.1%. The gender distribution of identified HBV cases showed an almost equal proportion between males and females. Of the total patients, 51.1% (90 individuals) were male, while 48.9% (86 individuals) were female. This indicates that the virus is distributed in the studied region without a significant gender-related difference.

Discussion. The results of this study demonstrated that the prevalence of hepatitis B virus (HBV) in Urganch city during 2023–2025 was 0.68%. Although this indicator is relatively low, it remains epidemiologically significant. In particular, despite a reduction in screening coverage in 2025, the increased proportion of detected cases indicates improved diagnostic efficiency and enhanced targeting of high-risk groups.

According to the study results, the highest proportion of cases was observed in the 31–45 age group, indicating that the socio-economically active population is at higher risk of hepatitis B virus infection. This finding is consistent with other scientific studies, which also report a higher prevalence of the disease among working-age populations.

The gender-based analysis showed no significant difference between males (51.1%) and females (48.9%), indicating that the infection is not distributed in a gender-dependent manner in the studied region. The increasing detection rates over the years can be explained by improvements in laboratory diagnostic methods, particularly serological and PCR testing, as well as the enhanced effectiveness of targeted screening programs among high-risk groups. Overall, the obtained results highlight the need to strengthen epidemiological surveillance of hepatitis B infection in Urganch city, expand screening programs, and improve preventive measures, especially those targeting high-risk populations.

Conclusions:

Based on the results of this study, the detection rate of hepatitis B virus (HBV) in Urganch city during 2023–2025 was found to be 0.68%. The analysis showed that the highest detection rate was recorded in 2025, which can be explained by improved diagnostic processes and increased effectiveness of screening programs.

Age-based analysis indicated that the disease was predominantly observed among the 31–45 age group, representing the socio-economically active population. Gender distribution was nearly equal between males and females, indicating that the infection is not gender-dependent in its distribution.

On the basis of the obtained results, it is justified to strengthen preventive and control measures against hepatitis B infection in Urganch city, with particular emphasis on improving screening and diagnostic activities targeted at high-risk groups.

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