



EPIDEMIC PROCESS IN HOSPITALS HIV INFECTIONS IN THE OF TASHKENT

Nematova N.U., Abdukakharova M.F., Qurbanbayeva B.R., Kodirova S. B.

Tashkent Medical Academy, Department of Epidemiology

Article history:

Received: July 26th 2024
Accepted: August 24th 2024

Abstract:

Nosocomial HIV infection refers to infectious diseases that have been transferred or have been arisen in hospital conditions (the sum of infections recorded and those that occurred in the hospital).

Nosocomial infection is one of the most severe forms. Therefore, serious attention needs to be paid to nosocomial viral infections. This article provides information on studying the mechanism of development of the epidemic process of nosocomial HIV infection in medical units in the city of Tashkent and improving its prevention.

Keywords: *Nosocomial HIV infection, morbidity, infectivity, prevalence.*

RELEVANCE. Nosocomial infections (NI) are an urgent problem in modern medicine worldwide, including our country. No less than 5-20% of patients admitted to medical institutions are infected in hospitals. Currently, under NI, diseases associated with the provision of medical services are understood not only to patients in hospitals but also in all healthcare facilities.

In 2020, according to the World Health Organization (WHO), the spread of HIV infection through hemocompatibility was observed in healthcare facilities (HCF). Nosocomial hemocompatible HIV infections, viral hepatitis B and C, cause socio-economic damage to the healthcare system [2, 4, 7, 11].

From 1981 to 2019, a total of 85 million people were infected with HIV. By 2019, the number of deaths reached 40.0 million [1, 2].

In 2019, the number of people infected with HIV in Russia reached 1 million. The number of new infections amounted to 94,668 people, 36,868 cases out of which resulted in a fatal outcome.

According to statistical data, men aged 30-40 (4%) are more affected by HIV infection, while women aged 30-30 (2-3%) suffer the most [6,12].

It has been established that HIV infection is unevenly spread among different administrative regions and population groups. The duration of the latent period of HIV infection, the course of the disease in chronic conditions, and the formation of chronic viral transmission ensure the prolonged preservation of the patient's danger to others.

This situation indicates that the epidemic process persists, and the pathogen remains as a biological species, meaning that patients and virus carriers cause new cases of the disease through various natural and artificial modes of transmission (e.g., medical procedures). In addition, there is an increase in the number of fatal outcomes due to complications

caused by the disease (the addition of opportunistic infections, etc.) in HIV-infected individuals [9,10].

RESEARCH GOAL. To study the mechanism of the epidemic process development in nosocomial HIV infection in Tashkent.

THE MATERIAL FOR THE INVESTIGATION included the reported data on HIV infection incidence from the republican and regional centers for AIDS prevention and the results of HIV testing in diagnostic laboratories. Retrospective and operational epidemiological research methods were used.

RESEARCH RESULTS AND CONCLUSIONS. As a result of the study, the following data was established. Taking into account new cases of HIV infection in our Republic, the number of people living with HIV infection is increasing every year. According to statistical data, men aged 30-40 (4%) are more susceptible to HIV infection, while women aged 30-35 (2-3%) are the most affected.

In 2022, the number of people with HIV in Uzbekistan was about 45 thousand, with the majority of infected individuals being patients aged 30 to 49. In the country, as worldwide, the virus is more often transmitted through sexual contact (74.3%). However, overall, the epidemiological situation with HIV in Uzbekistan is stabilizing.

According to the results of a retrospective analysis of HIV incidence in Tashkent from 1987 to 2020, it was noted that there was a slight increase in incidence from 1987, with only 76 cases identified. Over 18 years, this number increased from 295 to 468 cases, respectively (2002-2020). In 2006, there was a slight increase in incidence, with 1174 cases of HIV-infected individuals registered, and in 2015, there was a slight decrease, with 652 cases of HIV-infected individuals identified.



The current situation with HIV infection in 2020, 468 cases of HIV infection were registered in Tashkent by administrative territories, which is 173 or 2 per cent more than in 2002

The current situation with HIV infection is as follows. In 2020, by administrative territories, 468 cases of HIV infection were registered in Tashkent, which is 173 cases or 2 per cent more than in 2002.

In 2020, an increase in cases of HIV infection was noted in the following administrative territories of Tashkent: in Yakkasaray district - 33 cases, in Yunusabad district - 48 cases, in Shaykhontokhur district - 38 cases, in M.Ulugbek district - 19, in Chilanzar district - 37, in Yashnabad district - 33, in Sergeli district - 27, in Olmazar district - 25, in Mirabad district - 13, in Bektemir district - 18, in Uchtepa district - 12 cases. Compared to 2019, in 2020, cases of HIV infection increased in the following administrative territories: in Chilanzar district by 15 cases, in Yashnabad district by 28 cases, in Sergeli district by 25, in Olmazar district by 18, in M. Ulugbek district by 34, in Mirabad district by 44, in Uchtepa district by 33 cases, in Yakkasaray district by 15, and in Yunusabad district, cases of HIV infection decreased to 6 infected individuals compared to the same period last year (Figure 2).

When analyzing HIV-infected individuals by gender, it was found that men accounted for 290 individuals (62%), and women - 178 individuals (38%). An increase in cases of HIV infection among men is

noted in relation to the total number of registered HIV-infected women. The increase is observed in the following administrative territories of the city: in Shaykhantakhur district - 75.6%, Chilanzar - 69.2%, M. Ulugbek - 67.9%, Sergeli - 57.7%, and in Yakkasaray district - 56.3%.

Currently, the main modes of transmission of the human immunodeficiency virus are sexual, parenteral, and vertical (from mother to child). In 2023, 70.3% of HIV infection spread through sexually transmitted diseases.

The number of HIV infection cases through blood transfusion and its products has significantly decreased worldwide; however, the risk of infection through this route still exists. Every blood donor should undergo an HIV test to prevent infected blood from entering another organism. Unfortunately, not all health services include immunodeficiency virus testing of donated blood for the human.

HIV infection through blood (parenteral route of infection transmission) occurs when using shared non-sterile syringes and needles during drug injection, using non-sterile medical instruments during piercing or tattooing; when transfusing infected blood (if, due to negligence of medical personnel, it has not been tested for HIV); If we look at the parenteral route through medical procedures, it accounts for 6.5% (Fig. 1).

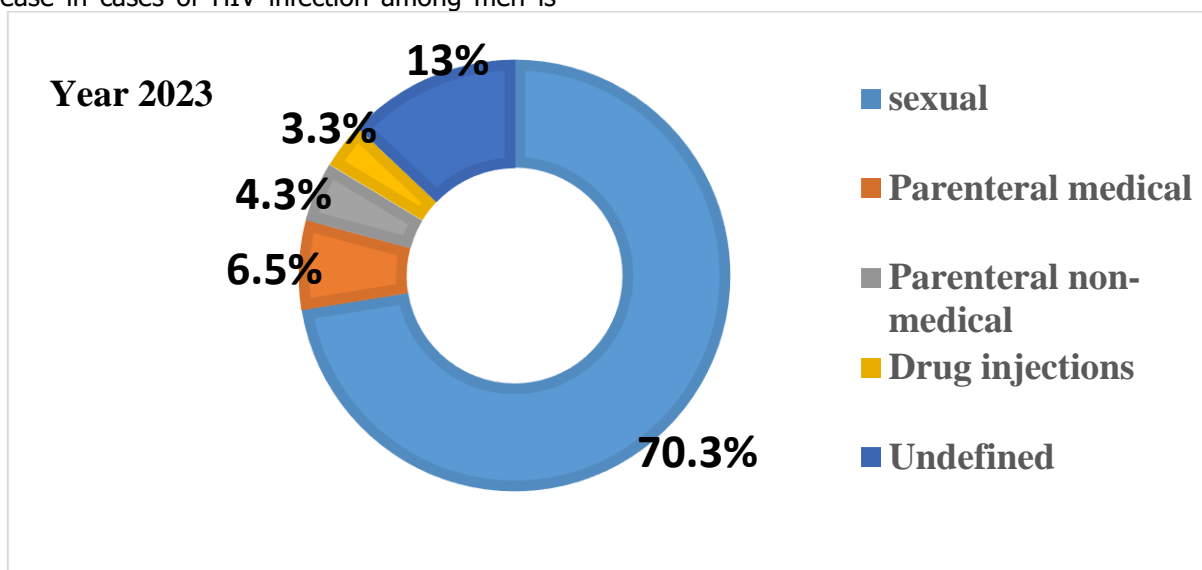


Figure 1. Analysis of the transmission routes of HIV infection in Tashkent (2023).

There is an increased risk of occupational infection among healthcare workers during the provision of medical care. Infection of healthcare workers can occur during therapeutic and diagnostic procedures, as well as during the collection and

disposal of wastes from healthcare facilities in case of injuries (cuts, injections, skin damage by bone fragments, etc.) and contamination of the skin and mucous membranes with biological fluids of patients containing HIV.



In Tashkent in 2020-2021, cases of HIV detection and suspicion of transmission through parenteral medical procedures were identified: in 2020, a total of 419 people with HIV infection were registered for 11 months (incidence rate - 16.4);

- including a total of 20 children under the age of 18 (incidence rate - 2.6);

- The total number of people diagnosed with HIV - individuals suspected of infection through parenteral medical procedures - 25 (6.0%);

- In particular, the disease in children under the age of 18 with suspicion of infection through parenteral medical procedures - 12 people;

25 people suspected of HIV infection through medical procedures sought medical care 34 times and received treatment 43 times in both inpatient and outpatient settings.

In 2021, a total of 472 people with HIV infection were registered for 11 months (incidence rate - 17.8);

- including 20 children under the age of 18 (incidence rate - 2.6);

- The total number of people diagnosed with HIV - individuals suspected of infection through parenteral medical procedures - 28 (5.9%);

- In particular, the disease in children under the age of 18 with suspicion of infection through parenteral medical procedures - 10 people;

28 people suspected of HIV infection sought medical care at least 50 times in healthcare facilities for both inpatient and outpatient services.

There is an increased risk of occupational infection among healthcare workers during the provision of medical care. Infection of healthcare workers can occur during therapeutic and diagnostic procedures, as well as during the collection and disposal of medical waste in case of injuries (cuts, injections, skin damage by bone fragments, etc.) and contamination of the skin and mucous membranes with biological fluids of patients containing HIV.

In recent years, there have been significant changes in the structure of occupational diseases among healthcare workers. It can be observed that the incidence of HIV infection among healthcare workers has increased compared to previous years.

In the dynamics of HIV transmission during parenteral medical procedures in Tashkent, the indicator of transmission through needles and systems during medical procedures increased by 65 cases (9.8%) in 2021 compared to 2016.

It was noted that the probability of contracting HIV infection during surgery has increased by 20 (4.2) in 2020 over the last 10 years.

When analyzing HIV codes in Uzbekistan, the majority of cases are identified under code 113 (i.e., based on clinical indications). In 2022, 1437 cases (35.7%) of infection were identified under this code. Among individuals in sexual contact with HIV-infected persons, 466 cases (11.6%) were identified under code 101. Under code 102, among patients with venereal diseases, 48 cases (1.2%) were identified, and infection was detected in 7 people (0.2%) with promiscuous sexual relations.

Drug use is a major factor in the spread of HIV/AIDS. The likelihood of HIV infection through the use of one syringe in a single injection is 5%.

In 2022, consumers of injection drugs accounted for 3.3% of the total registered HIV-infected individuals.

The above data on HIV infection in vulnerable groups indicate the need for further strengthening preventive measures, particularly conducting health education and increasing HIV testing coverage among these populations.

IN CONCLUSION, it can be stated that raising the level of knowledge among the population and healthcare workers about hospital-acquired HIV infection is crucial for early detection and prevention of the epidemic spread of the disease. This, in turn, requires an increase in the awareness of healthcare workers about HIV infection.

Currently, one of the effective ways to prevent the spread of HIV/AIDS infection in hospital settings is the development, improvement, and implementation of highly effective preventive measures for these diseases in medical practice.

REFERENCES:

1. Information Bulletin - //Global Statistics on HIV, Key Facts//, November 30, 2021.
2. Information letter from the Republican Center for Combating AIDS, 2022.
3. Information letter from the city center for combating AIDS, 2021.
4. Kryukova V.A., Ganina L.Yu., Turumova Z.Z., Satarkov I.K., Kadyrov Z.Z., Makhmatov A.A. //Basics of Epidemiological Surveillance for HIV Infection//, educational manual – Tashkent, 2011, p. 3.
5. Reference on HIV infection in the Russian Federation in the first half of 2020 © Federal Scientific and Methodological Center for Prevention and Control of AIDS of the Central Research Institute of Epidemiology of Rospotrebnadzor.
6. Kurb anov B.Z. Abstract //The place and importance of identifying the duration of the



- incubation period in improving the measures for the prevention of HIV infection in Uzbekistan//. Tashkent-2018.
7. Нейматова, Н. Ў., & Файзибоев, П. Н. (2016). Парентерал вирусли гепатитлар В, Сва ОИВ-инфекциясининг эпидемиологик хусусиятлари. *Замонавий инфектология: юкумлиичак, вирусли ва паразитар касалликларни даволашга замонавий ёндашув, Тошкент, 157.*
 8. Нейматова, Н. У., Матназарова, Г. С., Абдукахарова, М. Ф., & Кутлымуратова, Г. Д. (2020). Эпидемиологические особенности ВИЧ-инфекции в Республике Узбекистан.
 9. Toshtemirovna, X. N., Sultanovna, M. G., & Vali o'g'li, M. R. (2023). O 'zbekistonning koronavirusga qarshi kurashishdagi tajribasi, Koronavirus bilan uch yil. *IQRO, 3(1), 207-211.*
 10. Нейматова, Н. У., Абдукахарова, М. Ф., & Алматова, У. А. (2021). Эпидемиологическая ситуация по вич-инфекции в Республике Узбекистан.
 11. Urakovna, N. N., Sultanovna, M. G., Yunusovich, M. A., Fakhridinovna, A. M., Toshtemirovna, X. N., & Vlademirovna, B. E. (2023). Epidemiological Analysis Of The Human Immunodeficiency Virus. *World Bulletin of Public Health, 21, 95-98.*
 12. Умаров, Ж. Ж., Нейматова, Н. Ў., & Абсаттарова, В. К. (2018). К особенностям эпидемического процесса при ВИЧ-инфекции в Республике Узбекистан. In *Современные методы диагностики, профилактики и лечения ВИЧ-инфекции: Науч.-практ. конф.//Инфекция, иммунитет и фармакол* (No. 5, p. 134).
 13. Матназарова, Г. С., Нейматова, Н. Ў., & Рахмонбердиев, М. А. (2023). Оив Инфекциясининг Юқиш Йўллари Ва Олдини Олишчора-Тадбирлари. *Микробиологиянинг Долзарб Муаммолари» Мавзусидаги Республика Илмий-Амалий Анжумани, 131.*
 14. Нейматова, Н. Ў., Абдукахарова, М. Ф., & Хамзаева, Н. Т. (2024). Механизм Развития Эпидемического Процесса При Внутрибольничной Вич-ИнфекцииВ Городе Таш кент. *Open Herald: Periodical of Methodical Research, 2(1), 19-23.*
 15. Курбаниязова, М. О., Маденбаева, Г. И., Хамзаева, Н. Т., & Курбанбаева, Б. Р. (2024). Проблемы безопасного и доступного водоснабжения населения узбекистана на современном этапе. *Лучшие интеллектуальные исследования, 31(2), 62-73.*
 16. Матназарова, Г., Абдукахарова, М., & Нейматова, Н. (2021). Odamning immuntanqisligi virusi infersiyasining epidemiologiyasi va profilaktikasi.
 17. Калниязова, И. Б., Рахманова, Ж. А., Абдукахарова, М. Ф., & Нейматова, Н. Ў. (2022). Ўзбекистонда ҳомиладор аёллар орасида оив-инфекцияси бўйича эпидемик вазият.
 18. O', N. N., Abdukaxarova, M. F., & Sh, M. M. (2024). O'zbekiston respublikasida oiv-infektsiyasi bo'yicha aniqlangan holatlar. *International journal of scientific researchers (IJSR) INDEXING, 5(1), 337-340.*
 19. Нейматова, Н. Ў., Абдукахарова, М. Ф., & Хамзаева, Н. Т. (2024). Механизм Развития Эпидемического Процесса При Внутрибольничной Вич-ИнфекцииВ Городе Таш кент. *Open Herald: Periodical of Methodical Research, 2(1), 19-23.*
 20. Khamzaeva, N. T., & Saidkasimova, N. S. (2023). The effectiveness of a new food substance-a hard gelatin capsule-«vizion junior» is being studied in children who have recovered from the coronavirus. *World Bulletin of Public Health, 20, 41-45.*
 21. Хамзаева, Н. Т., Матназарова, Г. С., Саидкасимова, Н. С., Нуритдинова, Д. Ю., & Олимжонова, Г. О. (2023). The Effectiveness Of A New Food Substance-A Hard Gelatin Capsule-" Sedan Bark" Is Being Studied In Children Who Have Recovered From The Coronavirus. *European Journal of Interdisciplinary Research and Development, 12, 201-207.*