

A Comparative Study of Viral Hepatitis Infection Rates in Najaf Governorate, Iraq: (2023 vs. 2024)

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ABSTRACT

There is no information about the prevalence of hepatitis infection in the general population in Iraq because the political and social situation has not stabilized over the last decades. The most common cause of chronic liver disease is hepatitis B and C HBV and HCV infections are among the most common infectious diseases that affect human beings across the globe. The two infections have been linked to a wide constellation of clinical manifestations that include acute or fulminant hepatitis, chronic infection that may be clinically asymptomatic or may culminate in chronic hepatitis and liver cirrhosis. More than 20 million individuals are infected with hepatitis B per year around the world, and the estimated prevalence of chronic carriers of hepatitis B is 350 million individuals. In highly endemic regions, the hepatitis B virus is most frequently spread to the child by the mother at birth (perinatal transmission) or due to horizontal transmission (exposure to infected blood), especially when one child is infected and then transmits it to another uninfected child below the age of five years. Among the infants who are infected by their mothers or earlier than the age of five, chronic infection is widespread. The data of 590 patients infected with viral hepatitis C and B in 2023 and 620 patients with viral hepatitis C and B were collected from (Public Health Laboratory) in Al-Najaf as a center for all positive samples from all regions of Al-Najaf Governorate in Iraq (rural and city) with ages ranging from 1 to 80 years, males and females. Of the 590 infected patients in 2023, 392 had HBV infection, and 198 had HCV infection. Of 620 patients in 2024, 400 of them had HBV infection, and 220 of them had HCV infection.

Keywords: HBV, HCV, Viral Infection.

Article Information

Received: Received: April 28, 2025; Revised: May 30, 2025; Online: June, 2025

INTRODUCTION

Hepatitis is characterized by inflammation of the liver tissue, which is encountered due to various factors, which are excessive alcohol or chemical poisons, autoimmune disorders, or some medications. Thus, the most spreading ailment of hepatitis is a viral infection. Widespread as viral hepatitis (Razavi, H., 2020).

The intensity of the infection will be in the form of mild and self-limiting, and when the duration of the inflammation is acute or chronic. When the liver is infected and the infection does not last more than six months, then we consider it to be acute hepatitis, and when chicken infection disease takes more than six months, then we refer to it as chronic hepatitis. Five different forms of hepatitis have been identified, namely, "A, B, C,

D, and E," and each type of hepatitis is in another viral family, and each type has its epidemiology (Aria P. Pisano, Cecilia G. Giadan et al., 2021). Thus, viral hepatitis is an international health issue, in which millions of individuals are affected, and leads to thousands of deaths, regardless of whether the illness is acute or chronic, cirrhosis, or cancer of the liver (Connors, E. E., 2023). However, the good news is that there are good vaccines that have been given against the occurrence of hepatitis. Hepatitis A and hepatitis B; although there is no vaccine for hepatitis C, the virus can also be cured through life-saving treatment (Jefferies, M., Rauff, B., et al., 2018).

Hepatitis is a highly serious illness, and it causes numerous fatalities, which continue to rise yearly, and most of the affected people are unaware that they have the condition (Artikov, I. A., Sadullaev, S.E., et al., 2023). Eradication or substantial disease reduction is still far, in spite of the measures that have been utilized and taken to fight the infection, with the hope of confining and controlling the number of those infected with the virus (Ahmad, U. U., Usama, M., et al., 2023). In an actual sense, this study will present a clear image of how the rates of viral infection of hepatitis have been evolving throughout that year in that particular area.

METHODS

Sample Collections:

The data of 590 patients infected with viral hepatitis C and B in 2023 and 620 patients with viral hepatitis C and B were collected from (Public Health Laboratory) in Al-Najaf as a center for all positive samples from all regions of Al-Najaf Governorate in Iraq (rural and city) with ages ranging from 1 to 80 years, males and females. Of the 590 infected patients in 2023, 392 had HBV infection, and 198 had HCV infection. From the 620 patients in 2024, 400 of them had HBV infection, and 220 them had HCV infection.

Study design:

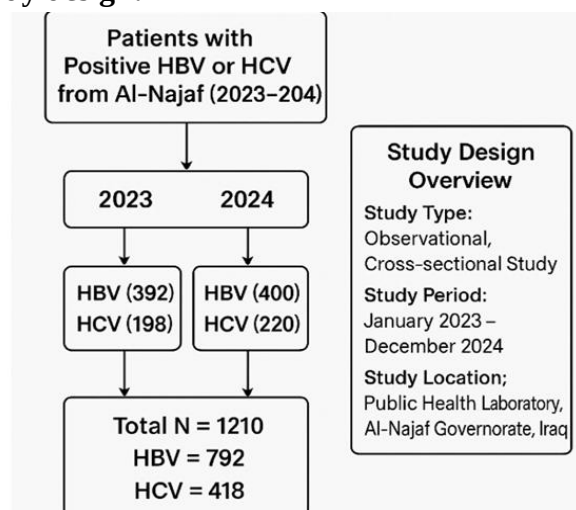


Figure (1): Study design.

Sample Inclusion and Exclusion Criteria

Public health laboratory, Al-Najaf Governorate, Iraq. Period: 2023- 2024 Public health laboratory, Al-Najaf Governorate, Iraq. Period: 2023- 2024 Population: Both males and females aged 1 to 80 years old of rural and urban centers in Al-Najaf. Amount of Cases Obtained: 2023: 590 patients, HBV-positive 392 cases, HCV positive: 198 cases, 2024: 620 patients, HBV positive 400 cases, HCV positive: 220 cases.

Exclusion Criteria:

Co-infection with HBV-HCV (where applicable), Incomplete Demographic or clinical data, Patients who have previously been taking antiviral medications before the sample collection, Poor or spoiled biological sample.

Statistical Analysis

SPSS version 26.0 (IBM Corp., Armonk, NY, USA) was used to analyze all data. The cumulative number of cases was computed both for HBV and HCV during two successive years (2023 and 2024) successive years. The frequencies and percentages were utilized in describing the distribution of HBV and HCV infections. Mean age and gender choice were summarized as age (Mean±SD) and gender (proportions), respectively.

RESULTS

Viral hepatitis B and C infection Prevalence:

In the study under consideration, the outcomes indicated that out of 590 individuals infected with viral hepatitis in 2023, there were 392 infected individuals (66.4 %) with a hepatitis B virus, and 198 people (33.6 %) infected with a hepatitis C virus, as should be marked in **Figure (2,3)**, and 2024 there were 400 infected individuals (64.5%) with a hepatitis B virus, and 220 people (35.5 %) infected.

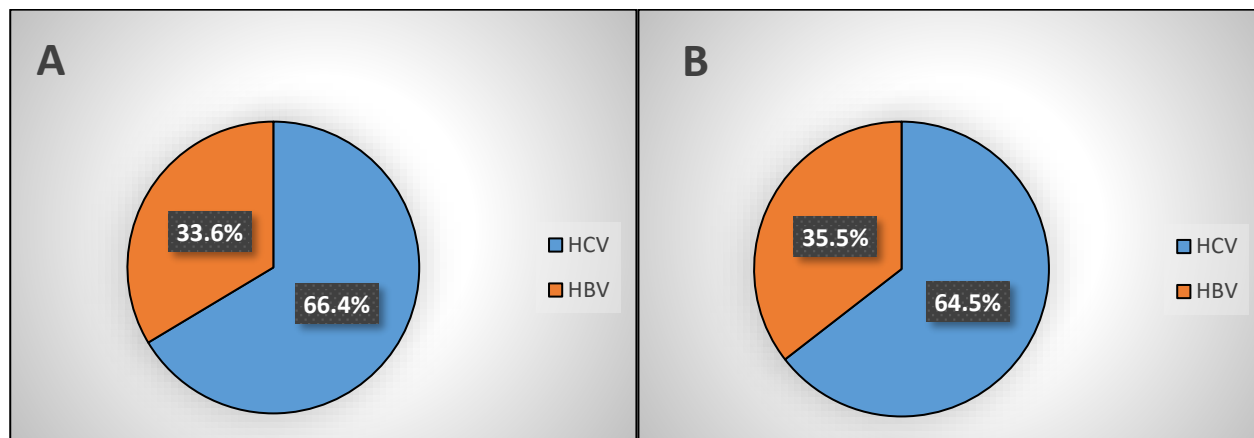


Figure (2): A-Prevalence of viral hepatitis B and C types in 2023, B- Prevalence of viral hepatitis B and C types in 2024.

Prevalence of viral hepatitis B and C according to sex:

The percentage of males with viral hepatitis B was (45%), and the percentage of males with viral hepatitis C was (24.9%), according to the percentage of females with viral hepatitis B was (14.9%) patients, and the percentage of females with viral hepatitis C was (15.2%) patients. **Figure (3).**

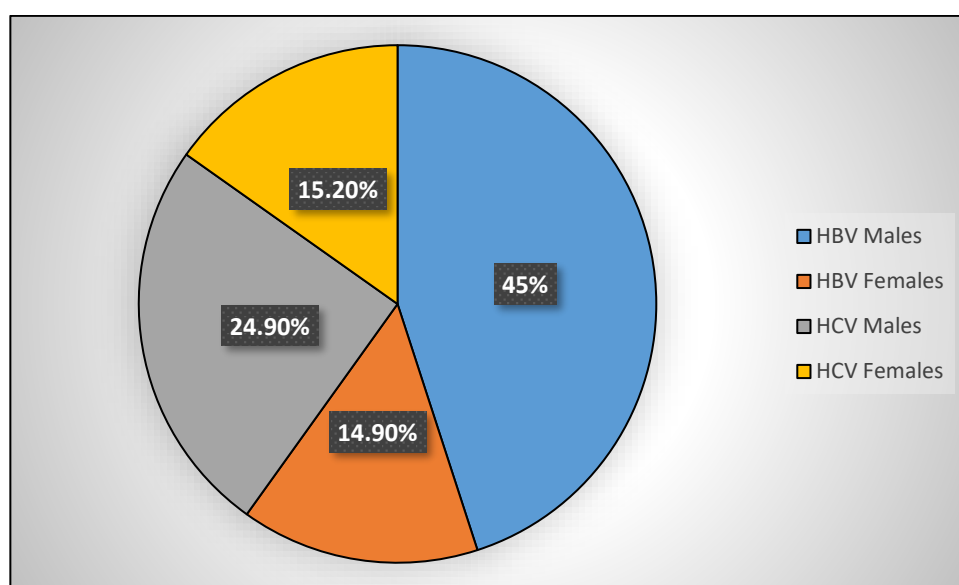


Figure (3): The prevalence of viral hepatitis B and C based on the proportion of male and female infected individuals.

Geographical distribution of viral hepatitis B and C during the period of sample collection:

The prevalence of viral hepatitis B in the city is very high with a rate of 50.9 %, but is much less common in the countryside with a rate of 17.1% and the prevalence of viral hepatitis C in the city increased by 23.3%, while the prevalence of viral hepatitis C lowed in the countryside with 8.7% as shown in **Figure (4)**.

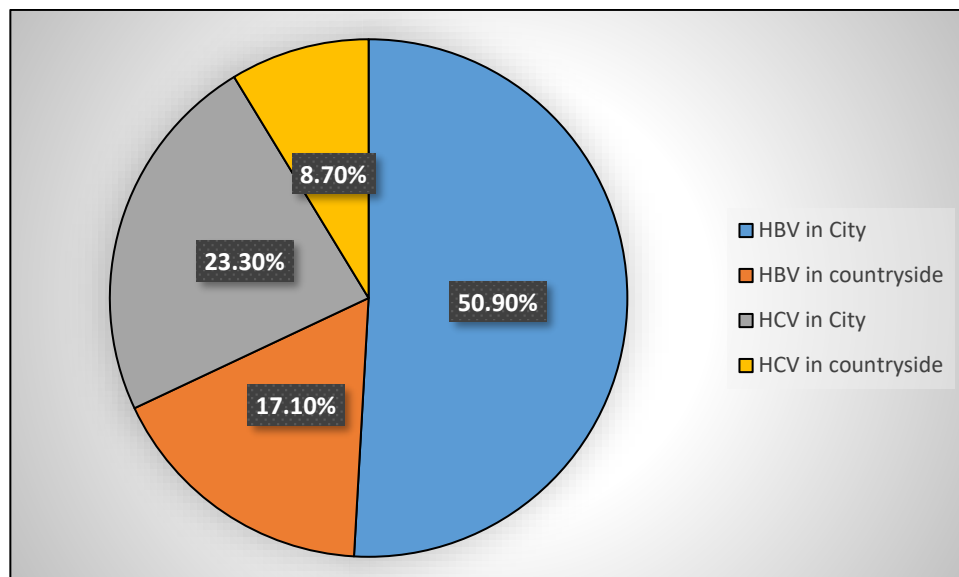


Figure (4): Prevalence of viral hepatitis B and C geographically.

DISCUSSION

Viral hepatitis B and C infection Prevalence:

The rate of the general population infected by hepatitis in Iraq is not accessible because of a politically and socially turbulent situation over the past decades (Jawetz, R.J., J.L. Melnick, et al., 2019). hepatitis B and C are the most frequent causes of chronic liver disease (Hong Li Libo Yan, Ying Xi, et al., 2020). The HBV and HCV are some of the most common infectious diseases in people across the globe (You CR, Lee SW, et al., 2023). The cause of both infections is linked to a wide spectrum of clinical manifestations, including either an acute or a fulminant presentation with hepatitis, to a chronic infection that manifests in either a clinically silent mode or as chronic viral hepatitis and liver cirrhosis (M Iannacone, L. G. Guidotti, 2020). Hepatitis B affects more than 20 million individuals every year, and the number of those who are carriers is 350 million. In hyper-endemic regions, transmission of hepatitis B infection most

commonly occurs during the mother-to-child at birth (perinatal transmission) or horizontal transmission (exposure to contaminated blood), especially among an infected child to an uninfected child infected before age five years of life (Venkatakrishnan, B., & Zlotnick, A., 2023). A very common occurrence is chronic infection in infants who are infected by their mothers, or who are below the age of five years (Hadden, J. A., Perilla, J. R., et al., 2018). The virus may also be transmitted through the reuse of contaminated needles, syringes, or sharps in healthcare or community settings, or by people who inject drugs. Infection may occur during medical, surgical, and dental procedures, or by tattooing or using razors and similar tools stained with contaminated blood (Delpino, M. V., & Quarleri, J., 2024).

Prevalence of viral hepatitis B and C according to sex:

This finding agrees with other findings made in Pakistan and Bangladesh, which indicate that the high frequency of HBV among the male

population exceeded that of women (Diana di Filippo Villa, Maria-Cristina Navas, 2023). Infection after touching needles, tattooing, and impacted by skins, as well as exposure to affected blood and other body fluids including saliva, menstrual fluids, vaginal fluids, and semen, brings about hepatitis B (Esquer Garrigos, Z., Jandhyala, D., et al., 2023). The reuse of contaminated needles, syringes, or sharps in a health care or community setting or by persons who inject drugs is also a possible means of virus transmission (Statistics, D., 2024).

The source of infection may be through medical, surgical, and dental procedures, tattoo, or by using razors and their counters that have been contaminated with infected blood. Besides, sex can spread hepatitis B and especially in individuals with unvaccinated individuals and people with multiple partners (Yu, Y., Gomez-Cabello, C. A., et al., 2024). The rate of occurrence of infection with HBV differs across countries and depends on an intricate combination of behavioural, environmental, and host factors. In our study, the rate of viral hepatitis B was increased surprisingly by 59.9%. It was revealed that geographical areas characterized by poor economic status exhibited a high prevalence of HBV, and this is a factor that has highlighted the necessity to control this disease (Weng MK., 2020).

Geographical distribution of viral hepatitis B and C during the period of sample collection:

Could not accept this finding and demonstrated the fact that the hepatitis infection of the four types is more common among people living in the countryside than in urban areas (World Health Organization, 2024). Lack of proper sanitation systems, access to healthy drinking water, and low levels of health education among the victims of rural settlement lead to the fact that the examples of HAV and HEV become more frequent. The prevalence of HBV and HCV was very pronounced in the countryside (Tsai PJS, 2024).

CONCLUSION

The following conclusions could be drawn, based on this study:

- 1-The rate of Hepatitis B and C viral increased in Al-Najaf as a comparison between the last two years (2023, 2024)
- 2-The rate of infection was higher in males than in females.
- 3-The rate of infection was higher in the city than in the countryside.

ACKNOWLEDGMENT

Al-Najaf Teaching Hospital and the Virology Laboratory at the Public Health Center in Najaf, Iraq, were self-funded.

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