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Original article

Prevalence of Hepatitis B & Hepatitis C in a small health care centre in western Uttar Pradesh: A retrospective study

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ABSTRACT

Introduction: Around 325 million people globally are suffering from Hepatitis B and Hepatitis C infections. In India, it is estimated that roughly 40 million people with Hepatitis B and 6-12 million people with Hepatitis C are chronically diseased respectively. HBV & HCV both are involved in inflammation of the liver and are common infections affecting male, female and children. It is also a leading cause of Chronic Liver Disease (CLD) and Hepatocellular carcinoma (HCC).

Aim- The aim of our study is to determine the prevalence of Hepatitis B and Hepatitis C virus in the population coming for treatment in our small health care set-up from the surrounding district and villages to get a clear prospective about the status of the patient's infection.

Material and methods: It is a retrospective study and the total numbers of samples collected were 730 over a period of six months i.e. from June 2023 to November 2023. Blood samples were taken from outdoor as well as indoor wards. The serum was separated which was divided into two aliquots i.e. one for HBs antigen and other for anti HCV antibodies.

Screening was done by using rapid immune chromatographic card test for both HBs antigen and anti HCV antibody using Hepa card and TRI-DOT respectively. The seropositive samples were sent outside for further confirmation by ELISA.

Results: We screened 730 individuals with age group 16 to 60 years. Out of 730, 51 were infected with both Hepatitis B virus (28) and Hepatitis C virus (23) in number.

Conclusion : We concluded that the younger age group is suffering from hepatitis disease as compared to other age groups.

Key words - Hepatitis B, Hepatitis C, Chronic Liver Disease, Hepatocellular Carcinoma, TRI-DOT, ELISA

Introduction

Around 325 million people globally are suffering from Hepatitis B and Hepatitis C infections. As mentioned in WHO report one in twenty individual are suffering with viral Hepatitis. In India, it is estimated that roughly 40 million people with Hepatitis B and 6-12 million people with Hepatitis C are chronically diseased respectively .[1]HBV & HCV both are involved in inflammation of the liver and are common infections affecting male, female and children. It is also a leading cause of Chronic Liver Disease and Hepatocellular carcinoma (HCC).[2] Similarities of these infections are seen in distribution, hepatotropism, transmission and ultimately chronic infection eventually leading to HCC and liver cirrhosis[3].Major diseases like Tuberculosis, AIDS and Malarial infections can be compared with viral hepatitis.[4]

Co morbidities such as CLD etc caused by these two viral infections are significant problems.[5] Higher prevalence is due to multiple factors like improperly screened blood or blood products for the transfusion, nose prick or ear prick, tattoo making by unsterilized needles, use of unsterilized injection and use of same syringes and needles by the quacks, visit for shaving purpose to the barbers and using unsterilized syringes by IV/ IM drug users.[6]

The aim of our study is to determine the prevalence of Hepatitis B and Hepatitis C virus in the population coming for treatment in our small health care set-up from the surrounding district and

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villages to get a clear prospective about the status of the patient's infection.

Material and methods

The study was conducted at small health care set-up in Western Uttar Pradesh. It was a retrospective study and the total numbers of samples collected were 730 over a period of six months i.e. from June 2023 to November 2023. Blood samples were taken from outdoor as well as indoor wards. The serum was separated which was divided into two aliquots i.e. one for HBs antigen and other for anti HCV antibodies.

Screening was done by using rapid immune chromatographic card test for both HBs antigen and anti HCV antibody using Hepa card (J Mitra and Co) and TRI-DOT (J Mitra and Co) respectively. Principle of HEPA card is based on the antigen capture and HCV TRI-DOT is a fourth generation test which detects antibodies. The seropositive samples were sent outside for further confirmation by ELISA.

Inclusion and Exclusion Criteria

In our study, patients of 16 to 60 years of age of both genders were included. Moreover patients with history of multiple blood transfusions, IV/ IM drug abusers, having tattoos, nose and ear piercing, multiple sexual partners, homosexuals, history of any past surgery, hemodialysis and organ transplants. The outdoor patients coming for anti natal care and pre operations patients were also included.

Children due to technical difficulties in collection of blood and Hepatitis B virus vaccinated patients were excluded.

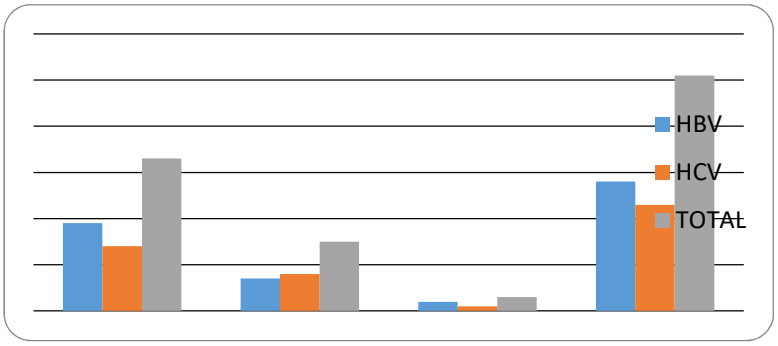
Results

In our six months duration study i.e. from June 23 to November 23, been screened 730 individuals with age group 16 to 60 years. Out of 730, 51 were infected with both Hepatitis B virus (28) and Hepatitis C virus (23) in number. (Table-1, Figure-1)

Table-1: Total number of infected patients with HBV and HCV.

AGE- GROUP	HBV	HCV	TOTAL
16-30	19	14	33
31-45	07	08	15
46-60	02	01	03
TOTAL	28	23	51

Figure-1



Among total screened subjects, 592 were males and out of these, 39 were infected with HBV and HCV i.e. 21 and 18 respectively.

138 were females, out of these, 12 were infected with HBV and HCV i.e. 5 and 7 respectively (Table-2, Figure-2).

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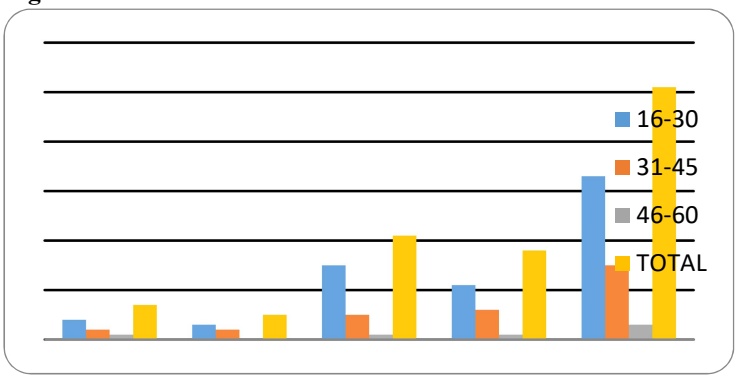
Table-2: Ratio of male and female in positive cases of HBV and HCV infection.

AGE-GROUP	FEMALES HBV	HCV	MALES HBV	HCV	TOTAL
16-30	04	03	15	11	33
31-45	02	02	05	06	15
46-60	01	-	01	01	03
TOTAL	07	05	21	18	51

Figure-2

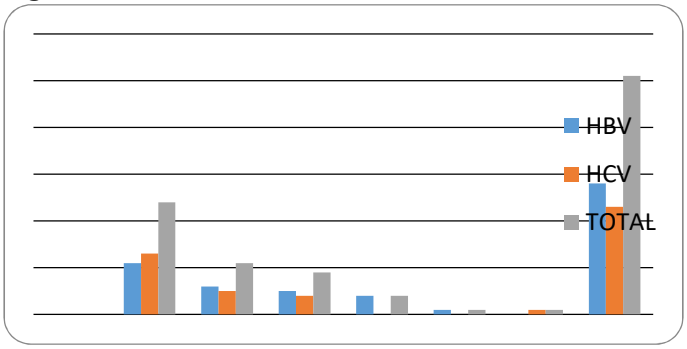


The geographical distribution shows the maximum number of patients with Hepatitis B and Hepatitis C virus positive were belonged to Hapur followed by Pilkhuwa, Ghaziabad, Bulandshahr and Anwarpur. There were no cases for HCV from Bulandshahr and Anwarpur. One case was found positive for HCV from Meerut (Table-3, Figure-3).

Table-3: Geographical distribution of HBV and HCV infection.

AREAWISE DISTRIBUTION	HBV	HCV	TOTAL
Hapur	11	13	24
Pilakhuwa	06	05	11
Ghaziabad	05	04	09
Bulandshahr	04	-	04
Anwarpur	01	-	01
Meerut	-	01	01
TOTAL	28	23	51

Figure-3



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Discussion

Hepatitis A, B, C, D and E viruses cause viral hepatitis which are public health problem worldwide including India. Our study includes HBV and HCV virus which is transmitted via infected blood and other body fluids transmitted parenterally and perinatally by per-cutaneous or mucosal exposure. To understand the epidemiology, we need to study the prevalence of HBV & HCV infection to help in the disease prevention and control.

The prevalence of HBV & HCV in our study was 6.98% (51/730) i.e., 3.8% and 3.1% respectively, which is much higher than other study reports from northern India[7]. In our study, prevalence of male and female was 5.34% and 1.64%, which is much less as compared to study report by Shivani Khular et al[8].

In present study seroprevalence had shown an increase in younger age group of 16-30 years having 4.52%, whereas in other studies, seroprevalence was high in old she groups i.e., 41-60 years[9,10,11,12,12]. The higher prevalence of HBV & HCV in our study from different areas was calculated and Hapur showing the highest with 3.28% followed by Pilkhuwa (1.5%), Ghaziabad (1.23%) and Bulandshahr (0.54%). Anwarpur and Meerut with 0.13% were showing the lowest prevalence rate.

Conclusion

The present study finding indicates that HBV infection is more prevalent than HCV. We also concluded that the younger age group is suffering from hepatitis disease as compared to other age groups. We also noticed that male patients had out-numbered female patients.

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