



HEPATITIS B VIRUS INFECTION IN CHRONIC LIVER DISEASE PATIENTS AT A TERTIARY CARE HOSPITAL

Clinical Microbiology

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ABSTRACT

Introduction: Hepatitis B is a major health problem and one of the most common infectious diseases worldwide. Approximately 2 billion people globally have serological evidence of past or present HBV infection. According to the most recent World Health Organization estimates, 350 million individuals are chronically infected and at risk for HBV-related liver disease. **Objective:** To determine the prevalence of Hepatitis B virus infection in chronic liver disease patients at a tertiary care hospital. **Method:** A total of 100 chronic liver disease patients attending the Gastroenterology department were included in this study over a period of 18 months. Demographic data and clinical findings were recorded using a structured proforma. All samples were screened for HBsAg detection by Sandwich ELISA following the kit manufacturer's instructions. **Results:** Out of 100 CLD patients, 81 (81%) were males and 19 (19%) were females. The male to female ratio of the total chronic liver disease patients was 4.2:1. HBsAg was found positive in 10 patients: 9 males and 1 female. Most of the HBsAg seropositive patients belonged to the 40-60 years age group. **Conclusion:** The prevalence of HBV infection in CLD patients was 10%. Males were more commonly affected than females, with the 40-60 years age group being most commonly affected.

KEYWORDS

HBV (Hepatitis B virus), CLD (Chronic liver disease), ELISA (Enzyme-linked immunosorbent assay)

INTRODUCTION

Hepatitis B virus (HBV) infection is a leading health problem globally. HBV infects approximately 2 billion people, and about 400 million are carriers worldwide [1,2]. Approximately 300 million cases of chronic liver infection worldwide are attributable to Hepatitis B virus. The total HBV carrier pool in India is estimated at around 43 million [3]. The prevalence of HBV is significantly different across various countries, although the virus is present worldwide [4].

Hepatitis B virus is a DNA virus belonging to the Hepadnaviridae family [5]. It is 10 times more infectious than hepatitis C virus (HCV) and 50 to 100 times more infectious than HIV. Chronic infection with HBV is a common cause of death associated with liver failure, cirrhosis, and liver cancer [6].

Humans are the only natural host of HBV. Blood is the most important vehicle for transmission, though it also spreads through contact with infected body fluids including semen and saliva [7,8]. Three modes of HBV transmission are currently recognized: parenteral/percutaneous transmission, perinatal transmission, and sexual transmission. The minimum infectious dose is so low that practices such as sharing a toothbrush or razor blade can transmit infection [9].

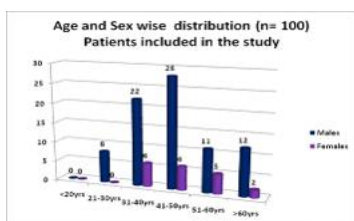
Materials and Methods

A total of 100 clinically diagnosed chronic liver disease patients attending the Gastroenterology department of Gandhi Hospital, Secunderabad, over a period of 18 months were included in the present cross-sectional descriptive study. Chronic liver disease patients of all age groups and both genders were included in the study. Patients with chronic liver disease secondary to metabolic diseases were excluded.

After obtaining informed consent, patients were enrolled in the study. Epidemiological and clinical data were recorded using a structured proforma. Under aseptic conditions, approximately 2 ml of blood was collected from each patient. Serum was separated, and all samples were screened for HBsAg detection by Sandwich ELISA (ERBALISA SEN HBsAg). The procedure was strictly followed according to the kit manufacturer's instructions.

Age and Gender Distribution of Chronic Liver Disease Patients

Figure I



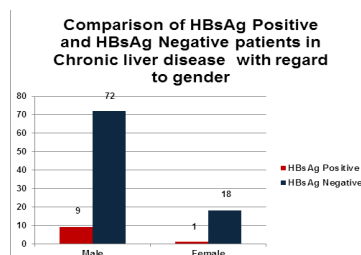
RESULTS

A total of 100 patients with chronic liver disease attending the Gastroenterology department were included in this study.

In the present study, most patients belonged to the 41-50 years age group. The male to female ratio of the total chronic liver disease patients was 4.2:1, with 81 males (81%) and 19 females (19%).

HBsAg Seropositivity by Gender

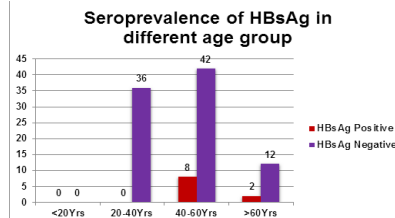
Figure II



HBsAg was found positive in 10 patients: 9 males (90% of HBsAg-positive cases) and 1 female (10% of HBsAg-positive cases).

Seroprevalence of HBsAg by Age Group

Figure III



Most of the HBsAg-positive patients belonged to the 40-60 years age group.

DISCUSSION

In our study, the prevalence of Hepatitis B virus in chronic liver disease patients was 10%, correlating with the study conducted by Kamat et al. [9] who reported an HBsAg prevalence of 17.4%. In the study conducted by Mandokhel et al. [10], 24.19% were positive for HBsAg. Saravanan et al. [11] reported HBsAg positivity as 57%.

In our study, 90% of HBV-infected patients were males and 10% were females, correlating with the study of Saravanan et al. [11] who reported 72% males and 28% females infected with HBV. The positivity amongst the male population was 18.1%, which was higher than the female population (15.8%) as reported by Kamat et al. [9].

Mandokhel et al.[10] reported that 27.07% of males and 21% of females were affected.

In the present study, the 40-60 years age group was more commonly infected with HBV, correlating with the study conducted by Kundu et al.[12] who reported HBV infection predominantly in the 41-50 years age group. Saravanan et al.[11] reported that HBV infection was more common in the 55 years age group. Arora et al.[13] reported that the 41-45 years age group was commonly affected with HBV.

CONCLUSION

In the present study, the prevalence of Hepatitis B virus infection in chronic liver disease patients was 10%. Males were more commonly affected than females. The age group most commonly affected was 40-60 years. These findings underscore the continued importance of HBV screening in chronic liver disease patients and emphasize the need for targeted prevention strategies, particularly in middle-aged male populations.

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