HEPATITIS B SEROPOSITIVITY AMONG CHRONIC LIVER DISEASE PATIENTS IN HAZARA DIVISION PAKISTAN

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Background: Hepatitis B virus infection is one of the major health problems in the developing countries including Pakistan. The present study was conducted to document the frequency of Hepatitis B seropositivity in patients with chronic liver disease in the Hazara Division.
Methods: Serum samples were collected form 893 patients suffering from chronic liver disease (CLD) from all parts of the Hazara Division during period July 2000 to July 2002. Hepatitis HBsAg was detected by the immunochromatographic method. **Results:** A total of 271 (30.35%) tested positive for HBsAg including 199 males (73.43%) and 72 females (26.56%). **Conclusion**: There is a high frequency of HBV seropositive individuals of both sexes among patients referred for chronic liver disease. These frequencies obtained for Hazara Division compare well with figures from other parts of Pakistan as well as developing countries.

Keywords: Hepatitis B, Chronic Liver Disease, HBsAg

INTRODUCTION

Viral Hepatitis B (HBV) is one of the major world wide health problems. It is one of the cause for chronic liver disease (CLD) and hepato cellular carcinoma (HC), along with hepatitis C virus (HCV) and Hepatitis D Virus (HDV).

Hepatitis B causes an estimated 1-2 million deaths per year world wide[1] and it is estimated that there are 300 million carriers of HBV in the world[2]. The carrier rate varies in different areas of the world. In Pakistan the carrier rate is 10–15% in adults and 5% in children upto 5 years of age.[3]

The transmission of HBV like HCV is parenteral i.e. commonest by transfusion of unscreened blood and blood products, 1/V drug abuse, from mother to child, needle prick, ear piercing, tattoos, barber razors, etc. Infection may also spread by fomites, sharing of tooth brushes and abrasions.

Due to lack of awareness about immunization, preventive measures and improper blood screening Pakistan is highly endemic for HBV with 22.48% cases of acute hepatitis in children being due to HBV infection.[4] Upto 60% of patients with CLD and HC were found to be HBV seropositive in Pakistan.[5]

Due to the alarming rate of spread of HCV more research work has been carried out on HCV infection. Therefore no recent evaluation of HBV infection has been carried out, which still poses a major health problem in Pakistan.

The purpose of this study was to assess the HBsAg seropositivity in patients presenting with symptoms of CLD in Hazara Division and to find the male to female ratio of the infection.

MATERIAL AND METHODS

The study period was two years extending from July 2000 to July 2002. Eight hundred and ninety three (893) serum samples were collected from patients with symptoms of chronic liver disease. All these patients belonged to a different parts of Hazara Division. The age varied from 11 days to 91 years. A total of 633 males and 260 females patients were tested.

The presence of HBsAg in these patients was detected by the immunochromatographic method. A commercial kit was used. This test is a rapid qualitative immunoassay. It employs a combination of monoclonal dye-conjugate and poly clonal solid phase antibodies to select and identify Hepatitis B surface antigen with a higher degree of sensitivity. This test has an overall 98% agreement with RIA and 99% with EIA. It gives a positive result when antigen concentration is higher than 0.5 Mg/ml.

RESULTS

Out of 893 patients tested, 271 (30.35%) were positive for HBsAg while 622 (69.65%) were negative. The total number of male population tested was 633 (70.88%) and total number of female patients tested was 240 (29.11%). Out of the total male population 199 i.e. 31.43% were positive for HbsAg. While of the females tested 72 i.e 27.6% had HBsAg seropositivity. The difference is not statistically significant (Table-1).

The male patients visiting the laboratory for this test was 2.4 times more than the females. Out of the total HBsAg seropositive patients 199 i.e. 73.43% were males and 72 i.e. 26.56 were females (table-2).

Table-1: HBsAg Seropositivity in Hazara Division

Number		HBsAg Positive	HBsAg Negative
Total	893	271 (30.35%)	622 (69.65%)
Males	633	199 (31.43%)	434 (68.6%)

Females	260	72 (27.6%)	188 (72.4%)

Table-2: Distribution of HBsAg seropositive subjects by gender (n=271)

Gender	Number	Percentage
Males	199	73.43%
Females	72	26.56%

The number of male patients testing seropositive was 2.75 times more than the females patients testing seropositive for HBsAg.

DISCUSSION

In this study of patients presenting with chronic liver disease 30.35% tested positive for HbsAg. These findings are slightly lower than those shown in previous studies carried out in Pakistan, where HBV seropositivity was present in 52.85% cases of CLD and 22.64% cases of cirrhosis.[6]

In a study carried out in Vietnam which is also a developing country like Pakistan, CLD due to HBV was 47% while 23% of these cases were HCV seropositivite.[7] In Africa the third most common cause of death in medical wards is due to liver diseases. Hepatitis B was the commonest cause of these liver diseases, with 15-60 % seropositivity for HbsAg in the normal population.[8] In contrast in developed countries like Italy cirrhosis due to HBV infection was found only in 4.4% of the patients tested.[9]

In our study male patients with CLD tested positive for HbsAg 2.7 times more than the female patients. However the male population that visited the aboratory and health care facilities was 2.4 times more than the females. This may be due to either increased infections in males, or due to the fact that health care is sought more frequently by the male population than the female population.

In a previous study carried out by us in the Hazara Division for the same duration, patients with CLD were seropositive for HCV in 40.8% cases. This rate is more than the HBV seropositivity found is CLD in this area which is 30.35%. However the male to female ratio was found to be same in both cases. In contrast the Vietnam study shows HbsAg seropositivity more than HCV seropositivity in CLD patients as discussed above.[7]

The increased frequency of HCV infection in Hazara may be explained by the fact that HCV has a higher propensity for liver disease. In addition screening for HbsAg has been carried out routinely in blood banks for some time now. Greater awareness against HBV infection and availability of vaccine may have also contributed in slightly lower rate of CLD due to HBV infection in recent years.

It is evident that although HCV infection rate is higher in the Hazara Division, HBV infection should not be ignored, as it is still a major cause of chronic liver disease in the Hazara Division. We therefore conclude that HBV infection is still major cause of CLD in the Hazara Division.

RECOMMENDATIONS

1. People must be educated about this infection and availability of vaccine must be stressed.
2. WHO guideline of universal immunization of all infants and adolescents must be strictly followed.
3. Proper screening of blood and blood products must be carried out before transfusion.
4. Disposable syringes and razors must be promoted.
5. Proper sterilization of surgical and dental instruments must be carried out.
6. Proper disposal of infected materials and disposable syringes must be carried out to prevent the spread of HCV viral infection in the community.

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