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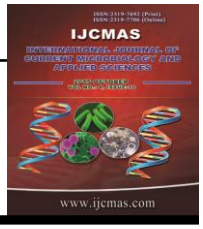

Original Research Article

Hepatitis B Virus Seroprevalence among Hospital Based General Population in a Tertiary Care Centre

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Keywords

Hepatitis B virus, Immuno chromatography, Seroprevalence

A B S T R A C T

Hepatitis B virus infection is endemic throughout the world especially in tropical and developing countries. Clinical data collected in the hospital gives the estimation of burden of disease in the community as patients with different background attend the hospital. With this background the present study was designed. It is a prospective study estimating the prevalence of HBV infection in a tertiary care centre. Study was conducted to know the prevalence of hepatitis B virus infection in a tertiary care centre in Vijaypur, Karnataka. Patients attending Out-Patient Department (OPD) and In-Patient Department (IPD) with various diagnosis who were advised for HbsAg testing were included in this study. Immunochromatographic method was used for qualitative detection of HbsAg to diagnose HBV infection. A year-wise seropositivity showed there was slight increase in the HBV positive cases. In 2013 prevalence rate was 1.57% and in 2014 it was 1.76%. Male preponderance compared to females was seen. More number of cases was seen in active age group i.e. 31-40 years. The present study shows there is slight increase in number of cases in 2014 compared to 2013. This study also highlights that hospital based studies can be an alternate option for community based studies.

Introduction

Hepatitis B virus (HBV) is common human pathogen and causes acute and chronic liver disease throughout the world. Chronic illness develops in 5-10% of infected adolescents or adults and up to 90% in infected neonates. Chronic HBV infection is a major cause of liver cirrhosis and primary cell carcinoma.

Hepatitis B is endemic throughout the world, especially in tropical and developing countries and also in some regions of Europe. Its prevalence varies from country to country and depends on behavioral environment and host factor.

More than two billion people worldwide have evidence of past or current HBV infection and 350 million are chronic carriers of the virus, which is harbored in liver and causes an estimated 6, 00, 000 deaths from cirrhosis of liver and hepatocellular carcinoma. In Middle East and Indian subcontinent, an estimated 2-5% of general population is chronically infected and falls in intermediate category according to World Health Organization (WHO) classification.

Several surveys for HbsAg screening have been carried out at different places for blood donors, pregnant women. Surveys for screening HBsAg have been primary, simple and most useful mode for determining HBV infection rate.

Materials and Methods

Source of data: The study group comprised of patients of all age groups and both sexes who attended and admitted in OPD and IPD during January 2013 to December 2014 of all departments of Al-Ameen Medical College, Hospital and Research Centre (AMC, H&RC), Vijaypur, Karnataka.

Methodology: Two ml of blood sample was collected with aseptic conditions. The serum was separated and it was used for the present study. Specimens containing visible precipitates or cloudy specimens were clarified prior to testing by high speed centrifugation i.e. 10,000 revolutions per minute for fifteen minutes before testing. The test was performed within twenty four hours from the time of sample collection.

For qualitative detection of HbsAg, test was done by Immunochromatographic method to diagnose HBV infection. The test was performed and interpreted according to manufacturer's instructions. Patients personal details like age, sex, address were noted down. The HBsAg test result (positive or negative) was noted of individual person. The collected data was represented in tabular form and prevalence rate was calculated. The speed, sensitivity, ease to perform and interpret the results makes it more useful for both individual as well as large scale studies.

Results and Discussion

The study was conducted from January 2013 to December 2014. A total of 15,230 samples were screened for HbsAg during this period and year wise prevalence rate was calculated. From January-December 2013, 6,930 samples were screened, out of which 108 were positive and prevalence rate was 1.57%. From January-December 2014, 8300 samples were screened out of which 146 were positive and prevalence rate was 1.76%. There is slight increase in prevalence rate in 2014 compared to 2013 (Table 1). Male preponderance is seen compared to females (Table 2). Increased prevalence of HBV infection is seen in 31- 40 years age group followed by >50 years age group.

In our study of hospital based population the prevalence rate of HbsAg in year 2013 was 1.57% and in 2014 it was slightly increased to 1.76%. This may be due to increased awareness about HBV infection and number of samples to be tested has also increased.

Similar studies on prevalence of hepatitis B are conducted in India. A study conducted by Singh et al among blood donors in Mangalore showed prevalence as 0.62%. Another study conducted by Ronald Roche et al in Mangalore in 2012 showed prevalence rate of HbsAg as 1.56%. According to WHO definition one could categorize Karnataka into a HBV low endemic state.

Table.1 Seropositivity of HbsAg among hospital based population

Year	Total No. Screened	HBsAg positive	Total positive (In %)
2013	6930	108	1.57
2014	8300	146	1.76

Table.2 Sex distribution of seropositivity of HbsAg in hospital based population

Sex	Total No. Screened	HBsAg positive	Total positive (In %)
Male	8100	161	1.99
Female	7130	93	1.30%

Another review of hepatitis B prevalence in India by Lodha et al has concluded that it is between 1-2%. Smita sood and Shirish malvankar have noted 0.87% prevalence which is hospital based study similar to us. A study conducted by Bhatta CP et al in Kathmandu Medical College teaching hospital in 2003 showed prevalence rate of HbsAg as 2.5%.

In the present study has reported higher prevalence among males (1.99%) compared to females (1.33%). Many studies shows male preponderance compared to females. Dutta et al reported 35.3% in males and 19.3% in females. Singh et al reported 0.65% in males and 0.25% in females. Higher prevalence among males is also noted in Smita Sood et al study. It is hypothesized that females clear HBV more efficiently compared to males.

In the present study higher prevalence rate was seen in the age group of 31-40 years followed by > 50 years. Similar findings were noted in Smita Sood et al study. This may be due to higher chances of exposure to HBV infection due to sexual activity.

In conclusion, the present data is limited to patient population served by our hospital and not applicable to other centers. Hospital based studies can be alternate option to community studies which are difficult to conduct. The present study provides good reference to formulate strategies to reduce the seroprevalence rate. The patient attending our hospital represents cross section of Vijaypur district population with mix of rich and poor and urban and rural population. Therefore our study highlights HBV infection rate of this part of state and shall provide reference for future studies on epidemiology of HBV infection.

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