

Original Research Article

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Seroprevalence of Hepatitis B Infection among Pregnant Women at a Tertiary Care Hospital

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ABSTRACT

Hepatitis B surface antigen is the first seromarker detected in the serum for active Hepatitis B infection. This is important to detect in pregnant women because if it goes undetected it can be harmful for both the mother and the foetus. In India prevalence rate of vertical transmission of HBV infection is also very high. To determine the seroprevalence of HBsAg among the pregnant women Study was conducted in the Serology Laboratory, Department of Microbiology, Sharda Hospital. It is a cross-sectional study. Qualitative detection of HBsAg was done from the patient's serum sample using the rapid test kit method, which yielded results within 20 minutes. Statistical analysis used: Nil. A total of 435 pregnant females were included in the study, out of which 12 were seropositive for HBsAg. Therefore, the prevalence rate was found to be 2.64% in the present study. Also, maximum positive cases were in the age group 20-25 years (75%). As vertical transmission is responsible for majority of HBsAg infections in our country it is therefore important if we screen all pregnant females irrespective of their risk factors and give combined immunization and immunoprophylaxis to the high-risk babies born to the seropositive mothers. This will help in reducing the prevalence rate of the HBV infection in India.

Keywords

Hepatitis B surface antigen, Pregnant women, Seroprevalence

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Introduction

Hepatitis B infection is prevalent worldwide but it is more pronounced in Asia and Africa. Prevalence rate of HBV (Hepatitis B Virus) infection in pregnant women worldwide accounts for 0.5-1.5% whereas in India the rate is much higher 0.2-7.7%.^[1] Hepatitis B infection leads to a wide range of clinical presentations from asymptomatic carrier state

to acute self-limiting infections or fulminating hepatic failure, chronic hepatitis with progression to cirrhosis and hepatocellular carcinoma. The first seromarker which indicate active HBV infection is the hepatitis B surface antigen (HBsAg) in serum.^[2]

Women at reproductive age groups and pregnant females are the most high-risk groups. Pregnant women also have the risk of

transmitting the infection to the foetus via vertical transmission which is an important route of transmission of HBV infection.^[3] Several studies both worldwide and in our country recommends that pregnant females should be screened for HBV infection prevents the growing foetus and the neonate from getting chronically ill by the infection.^[2]

Therefore, this study is done to determine the seroprevalence of HBsAg among pregnant individuals.

Materials and Methods

This study was conducted in the Department of Microbiology, Sharda Hospital. This is a hospital cross-sectional study including 435 pregnant women who attended the labour ward during the period of September 2019 to February 2020.

Blood samples were obtained by vein puncture, and serum was separated. Serum sample were tested for HBV infection using rapid card test for HBsAg detection and the results were obtained.

Results and Discussion

A total of 453 patients in the age group 20-30 years attended the Labour Ward during the study period were included in the study. Among the total subjects, 12 females were found to be seropositive for HBsAg. Hence, the prevalence rate was found to be 2.64% in the present study.

Age in years	Total subjects	No. of positive subjects	% prevalence based on age group
20-25	302	9	75
26-30	151	3	25

Higher prevalence rate 75% was found in the age group of 20-25 years followed by 25%

among 26-30 years. No co-infection was reported in any of the patients admitted. All the females who tested seropositive for HBsAg were followed up to the delivery and the baby was administered with both hepatitis B vaccine and specific immunoglobulin in the early neonatal period to prevent the vertical transmission of the virus.

Screening pregnant females during their first prenatal visit is an important instrument of disease detection, prompt diagnosis and intervention especially concerning a typically asymptomatic infection such as chronic HBV infection itself.^[2] In this study, the seroprevalence rate of HBsAg among pregnant females were found to be 2.67% which was in accordance to the study done by Lodha *et al.*, in their review article on hepatitis B epidemiology where they have suggested the prevalence rate in India as 1-2%.^[4] Similarly, in a systematic review of prevalence of hepatitis B in India by Ashish Batham *et al.*, found the point prevalence of 2-4% among the non-tribal population.^[5]

There is a wide variation in the prevalence rate depending on the different regions of our country also. High prevalence rate of 9.5% was reported by Praksh *et al.*, in North India^[6] and comparative low prevalence rate of 0.9% was reported by Dwivedi and colleagues,^[7] 0.82% reported by Chaterjee *et al.*,^[8] 1.1% reported by Pandey *et al.*,^[9] and 1.11% reported by Sibia P *et al.*,^[10]

In our study the prevalence rate of Hepatitis B infection was higher among the age group 20-25 years (75%). Similar correlation was observed by Kolou M *et al.*, where higher prevalence rate was seen among 20-29 years (26.33%)^[11] also, Pontius Bayo *et al.*, reported higher prevalence among women aged 20 years (20%).^[12] However, Sathiyakala *et al.*, found a higher prevalence rate among the age group 26-30 (46.1%).^[2]

Between 30-40% of all chronic HBV infection results from perinatal transmission. Therefore, universal prenatal screening for HBsAg substantially reduces perinatal transmission of HBV and the subsequent development of chronic HBV infection.^[2]

There are limitations to this study also as only HBsAg was tested as marker for hepatitis B infection. If other markers were combined with HBsAg the study would have been more informative and reliable.

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