

Original Article**The study of prevalence of Hepatitis B surface antigen during pregnancy**

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ABSTRACT

Background: Hepatitis B virus infection is a major public health problem accounting to 400 million chronic infections worldwide and great majority of the transmission of Hepatitis B in India and other developing countries occurs by vertical transmission from an infected carrier mother to the neonate, intrapartum or antenatally.

Objective: To determine the prevalence of Hepatitis B surface antigen (HBsAg) in Pregnant Women.

Methods: The study was conducted at M.P. Shah Govt. medical college and G.G. hospital, Jamnagar, Gujarat, India during July 2013 to December 2013, including 1810 antenatal women. All of them were evaluated using history, examination, and test for serum HBsAg using Commercial enzyme immunoassay kits.

Result: Of the total 1810 antenatal women, 15 were found to be positive for HBsAg (0.83%). Highest prevalence was found in age group 21-25 years (53.3%) followed by age group 26-30 years (33.3%), age group 17-20 and age more than 30 years (6.7%).

Conclusion: Hepatitis B is highly infectious, associated with maternal complications and transmission to the child. It is mandatory that all the antenatal women should be screened for HBsAg and appropriately managed.

Keywords: Antenatal screening, Hepatitis B surface antigen (HBsAg), Child transmission, Enzyme Linked Immuno Sorbant Assays (ELISA)

INTRODUCTION

Hepatitis B virus infection is a major public health problem accounting to 400 million chronic infections worldwide [1]. About 2 billion people (or 30% of world population) worldwide have serological evidence of current or past HBV infection [2]. It is hyperendemic in sub Saharan Africa and Asia [3]. The prevalence of Hepatitis B virus infection in Northern Europe and America is less than 1% of the population, contributing to 5 to 10% of the chronic liver disease. In Asia and Africa the prevalence varies from 5-10% of the population accounting to more than 50% of patients with chronic liver disease [4]. In endemic areas, most individuals are infected by vertical transmission or in early childhood [5]. Viral hepatitis during pregnancy is associated with a high risk of maternal complications,

has a high rate of vertical transmission causing fetal and neonatal hepatitis and has been reported as a leading cause of maternal mortality [6–9]. The carrier rate of Hepatitis B in India is 4.7%. A great majority of the transmission of Hepatitis B in India and other developing countries occurs by vertical transmission from an infected carrier mother to the neonate, intrapartum or antenatally [10]. In endemic areas, most individuals are infected by vertical transmission or in early childhood. Viral hepatitis during pregnancy is associated with a high risk of maternal complications, has a high rate of vertical transmission causing fetal and neonatal hepatitis and has been reported as a leading cause of maternal mortality [11]. The risk of progression to chronic HBV infection is inversely proportional to the age at which the infection was acquired. Without immunoprophylaxis, up to 90% of

infants born to hepatitis B e antigen (HBeAg)–positive mothers become infected. In contrast, only 20% to 30% of children exposed between ages 1 and 5 years, and fewer than 5% of adults, become infected [12]. That's why we perform this study to know the prevalence of HBsAg among different groups of women in Jamnagar district, India. It also aims at reducing the incidence of perinatal transmission of HBV by prenatal screening of all pregnant women for HBsAg and providing hepatitis B immunoprophylaxis to all new born infants of hepatitis B surface antigen positive mothers.

MATERIAL & METHODS

Study Population

This study was carried out at M.P. Shah Govt. medical college, Jamnagar. Women attending antenatal clinic were recruited for this study.

Study Sample

All eligible subjects recorded during the six month study period extending from July 2013 to December 2013 were included in the study.

Case Definition and Criteria of Inclusion

A detailed history of all the pregnant women attending the antenatal clinic was taken. After excluding pregnant women with history of previous liver diseases, diabetes and pre-eclamptic toxemia, 1810 antenatal women were enrolled into the study. Informed consent of all the subjects was taken.

Sample collection

From July 2013 to December 2013, blood samples were collected from 1810 Women attending antenatal clinic in our institute. 3-5 ml of blood samples were collected from all the patients after taking the informed consent. Centrifugation was performed at 5000 rpm to separate the serum. The materials used include serum, container, hypodermic syringe, cotton wool, micro pipette centrifuge, Hepatitis B surface Antigen ELISA plate, test tube, plate sealer and marker. The reagents used were: Hepatitis B antigen ELISA kit and the Methylated spirit (70% alcohol). All 1810 of the serum samples were tested for HBsAg using commercially available HEPALISA (Microwell ELISA test for the detection of Hepatitis B surface Antigen, J. Mitra & Co. Pvt. LTD, New Delhi, India).

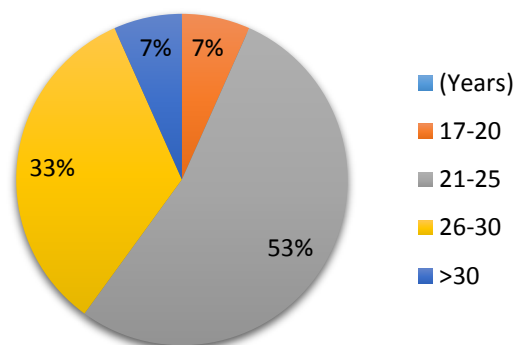
RESULT

1810 antenatal women were included in the study over duration of 6 months from July 2013 to December 2013.

Out of the total 1810 antenatal women tested 15 antenatal women were detected to be positive for HBsAg accounting to 0.83% prevalence.

Highest prevalence was found in age group 21-25 years (53.3%) followed by age group 26-30 years (33.3%), age group 17-20 and age more than 30 years (6.7%).

Age- wise distribution of HBsAg positive cases



DISCUSSION

India is the second largest pool of HBV carrier in the world (next to China). The number of carriers tends to grow with time because of both horizontal and vertical transmission. It is established beyond doubt that HBV infection is a public health problem in our country and its importance for morbidity and mortality has not been realized because it is a silent killer.

HBV infection affecting pregnant women may result in severe diseases for mothers and chronic infections for new born.

Our study of 1810 antenatal women showed that the sero-prevalence of HBsAg was 0.83%.

In a study by Chatterjee et al, the prevalence of HBsAg positivity in antenatal women ranged from 0.4% to 4.6% in India with overall mean prevalence of 1.09% and weighted prevalence 0.8%.[10]. Prevalence of HBsAg in pregnant women in the Northern part of Kerala, South India, 0.21% [13], 0.61% in a similar study in South India [14].

In our study majority of HBV infected participants belong to age group 21-25 years (53.3%) followed by age group 26-30 years (33.3%) while in study done by S. paranjothi and Dr.H.Vijayarani majority of HBV infected participants were from 25-29 years. [15].

CONCLUSION

Hepatitis B virus infection is a grave public health problem in developing countries especially in neglected and inaccessible areas of such nations. All pregnant women should be routinely screened during early prenatal visit. Likewise the administration of prophylaxis for babies of HBsAg positive mothers will greatly assist in reducing maternal transmission of HBV.

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