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REVIEW ARTICLE

HBV INFECTION AMONG RURAL PREGNANT WOMEN ATTENDING A TERTIARY CARE HOSPITAL

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ABSTRACT

Back ground: Hepatitis B virus infection (HBV) is one of the most important community health problems and also one of the most common infectious diseases in the world. In endemic areas, HBV infection occurs mainly during infancy and early childhood, with mother to child transmission (MTCT) accounting for approximately half of the transmission routes of chronic HBV infections. **Objective:** The present study was undertaken to determine the prevalence of chronic HBV infection among rural antenatal mothers registered at Adichunchanagiri Hospital and Research centre, Bellur . **Method:** Hepatitis B surface Antigen (HBsAg) was determined as a serological marker for the viral infection among pregnant women. Blood samples collected from the study population under standard procedure were investigated for Hepatitis B surface Antigen (HBsAg) by Rapid Immunochromatography test and positive samples were further confirmed by commercially available ELISA kit. **Results:** Of the total 200 antenatal women, 03 were found to be positive for HBsAg (1.5%). All the pregnant women who were positive were in the age group of 15-25 years and in first trimester. **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.

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INTRODUCTION

India falls into the intermediate endemicity area (4%) as regards the prevalence of HBV infection (Tandon, 1999 and 1996). Vertical and horizontal transmission in the perinatal period and early childhood are the major ways of propagation of this infection in India (Sehgal, 1992; Mittal, 1996; Thyagarajan, 2002). 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 (Ornoy, 2006; Tse, 2005; Dafallah, 2003 and Chatterjee, 2009). 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 (Chang, 2000).

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Keeping in view the dreadful complication of hepatitis, its high infectivity and the pregnant women being a vulnerable group are likely to be more predisposed to these infections, this study was done to know the seroprevalence of hepatitis B surface antigen (HBsAg) among pregnant women. Early detection of HBV infection provides almost complete protection \ against perinatal acquired HBV infection and administration of neonatal prophylaxis in a timely fashion and to create awareness of prophylaxis against HBV infection and its impact on uterus and new born.

MATERIAL AND METHODS

The study was prospective and approved by the Institutional Ethical Committee. The present study was conducted at Adichunchanagiri Hospital and Research Centre, B.G.Nagara attached to Adichunchanagiri Institute of Medical Sciences , B.G.Nagara involving a population of 200 pregnant women, aged 15–40 yrs attending antenatal clinic. Informed consent was obtained from the study group. Rapid Immuno Chromatographic Techniques (ICT) for qualitative detection of surface antigen of Hepatitis B was used to screen the pregnant women. Those found positive on screening tools were

confirmed by ELISA. Individuals were interviewed by structured questionnaire, including data regarding obstetric history, previous Hepatitis B vaccination, HBsAg status and risk factors for infection. Statistical Analysis was carried out using Statistical Package for Social Sciences (SPSS) version 1.0 statistical package.

RESULTS AND DISCUSSION

A total of 200 pregnant women attending antenatal clinic at Adichunchanagiri Hospital and Research Centre, B G Nagara, a tertiary care hospital attached to Adichunchanagiri Institute of Medical sciences, B G Nagara, situated in a rural area, were studied. All the women were asymptomatic and unaware of Hepatitis B vaccination. The age range of the subjects was 15-40 years with a mean age of 26.5 years. Among the 200 participants, 3 women tested positive for HBsAg. The seroprevalence of HBsAg positivity in this current study was 1.5 %. All the pregnant women who were positive were in the age group of 15-25 years. The age distribution and HBsAg screening test results were given in Table 1.

Table 1. Distribution of pregnant women with respect to age

Sl.No	Age group	Number	Positive
01	15-25	153	03
02	26-35	43	00
03	36-45	04	00

The distribution of trimester of pregnancy and HBsAg screening results were given in Table 2.

Table 2. Trimester of pregnancy and HBsAg status

	I trimester	II trimester	III trimester
No. of patients	No. of patients	No. of patients	No. of patients
	180	15	05
15 - <25yrs	03	00	00
26 - <35 yrs	00	00	00
36 - < 45 yrs	00	00	00
HBsAg positive	03	00	00

The present study shows the sero-prevalence of HBsAg 1.5 % which is comparable to national prevalence amongst antenatal women for Hepatitis B. Lodha *et al*. (2001) in their review article on hepatitis B epidemiology have suggested the true prevalence rate in India as 1-2% (Lodha, 2001). Gupta *et al* (1992) and Biswas *et al*, (1989) have reported the incidence as 2.3 and 2.5% respectively. The lowest seroprevalence (0.61%) among pregnant women attending antenatal clinic was reported by Shaiza parveen *et al* (2012) (15). There is a wide variation in the prevalence in different regions of our country, and the highest prevalence has been reported by Prakash *et al* in North India (9.5%) and by Chaudary among the aborigines of Andaman as well as from Arunachal Pradesh (Chaudhary, 2004) The prevalence of hepatitis B varies from country to country. The prevalence of sero-positive HBsAg among pregnant women in Saudi Arabia was 1.6% [18]. and 1.47% in Southeastern Turkey (Ali Yavuzcan, 2011), and 1.37% in Pakistan (Sania, 2009), and 6.67% prevalence was reported in Nigeria (Pennap, 2011). The prevalence of HBV carrier state during pregnancy in India in this study was low compared to previous reports. In our study all the pregnant women who were positive were in the age group of 15-25 years.(100%) while in study done by Mehta *et al* (Mehta, 2014), majority of HBV infected participants were from 21-25 years.

Conclusion

In order to prevent perinatal transmission and spread of the infection within the larger community pregnant women should receive prenatal screening for hepatitis B. Neonates who are infected by hepatitis B will have an almost 90% risk of developing chronic hepatitis B surface antigen (HBsAg) carriage and chronic liver disease. Infants may spread the disease to siblings and others. Neonatal immunization with HBIG and HBV vaccine interrupts vertical transmission.

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Conflict of Interest: There is no conflicts of interest.

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