

## The Study of Prevalence of Hepatitis B Surface Antigen during Pregnancy in a Tertiary Care Hospital in South India

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### ABSTRACT

- To determine the prevalence of hepatitis B surface antigen during pregnancy in south Indian population. The study was conducted at Rangaraya Medical College, Kakinada during July 2016 to Jan 2018
- Including 21670 ante natal women. All of were screened for HBsAg. Of the total antenatal women 246 were found to be positive for HBsAg. Hepatitis B infection is highly infectious, associated with maternal complications with transmission to the child. It is mandatory that all the pregnant women should be screened for HbsAg and managed appropriately.

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### I. Introduction

- Hepatitis B virus infection is an important global health problem and india has over 40 million hepatitis B virus carriers accounting for 10-15% of the entire pool of HBV carriers of the world<sup>1</sup>. Of It is hyper endemic in Sub-Saharan Africa and Asia<sup>2,3</sup>. The prevalence of hepatitis B infection in northern Europe and America is less than 1% of population, contributing to 5-10% of the chronic liver disease. In Asia and Africa the prevalence varies from 5-10% of population accounting to more than 50% of patients with chronic liver disease<sup>4</sup>.
- Hepatitis B viral infection is transmitted by blood transfusion and its products, intravenous injections, transmission from mother to fetus, nosocomial infection, organ transplantation, tattooing and high risk occupations<sup>5</sup>. The carrier rate of Hepatitis B in India is 4.7%. The great majority of transmission of Hepatitis B in India and other developing countries occurs by vertical transmission from an infected carrier mother to the neonate, intra partum or antenatally<sup>6</sup>.
- Viral hepatitis B in pregnancy is associated with high risk maternal complications such as, flu like symptoms, jaundice, pyrexia, chronic carrier state (5-10%), death due to fulminant infection. Up to 90% babies born to carrier mothers may become carriers with fetal and neonatal Hepatitis, leading to cirrhosis of liver and hepato-cellular carcinoma in later life<sup>7</sup>.
- The serological for the diagnosis of acute hepatitis B infection is the serum antigen. It would appear in patient's serum usually after 2-10 weeks being infected with hepatitis virus, before liver enzymes are increased and clinical symptoms appear. In chronic hepatitis infection the HBsAg remains elevated for more than 6 months<sup>8</sup>.
- Prevalence of HBsAg in pregnant women In Mexico was 1.65%, in the northern part of Kerala, south India 0.21%<sup>9</sup>.
- Approximately 15-40% of infected patients will develop cirrhosis, liver failure or hepato-cellular carcinoma (HCC)<sup>10</sup>.
- HBV infection accounts for 500,000 to 1.2 million deaths each year<sup>11,12</sup>

### II. Materials And Methods

The study was a hospital based study that included 21670 out of them 246 HbsAG positive antenatal women who attended the labour room, Obstetrics and gynecology department, Rangaraya Medical College, Kakinada, Andhrapradesh, India from July 2016 to January 2018.

A Detailed history of all the pregnant women 21670 attending the labour room was taken. After excluding pregnant women with previous history of liver diseases, diabetes, pre eclamptic toxemia, ante natal women were enrolled into the study. Informed consent from all the subjects was taken and were screened for Hepatitis infection by rapid immune-chromatographic technique. Those found to be positive were confirmed by ELISA.

### III. Results And Discussion

Antenatal women were included in this study over a duration of 18 months from July 2016 to Jan 2018, 246 antenatal women were detected to be positive for HBsAg. Our study showed that sero positive prevalence of Hepatitis B is 1.1%. 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 weighed prevalence 0.8%. Prevalence of HBsAg in pregnant women in Mexico was 1.65%, in northern part of Kerala in south India, 0.21% and 0.61% in similar study in south India, 6.67% in Nigeria. The prevalence of Hepatitis B varies from country to country and there is wide variation in the prevalence in different regions of our country. The highest prevalence was reported by Chatterjee et al, in Bangalore, India, 4.6%.

### IV. Discussion

India falls into the intermediate endemicity area as regards the prevalence of HBV infection, which is 4%<sup>13,14,15</sup>. PREVALANCE OF HBV infection in pregnancy:

The overall seroprevalence of HBV infection in pregnancy is not significantly different from general population<sup>16</sup>

Different methods have to be adopted to modify the vertical transmission of HBV infection

HbIG: administration of HBIG in a dose of 200 IU i.e., every week from 28th week of gestation reduces the intrauterine infection to 16.1% against 32.7%<sup>17</sup>.

Lamivudine: It has been used with good safety and efficacy in the last four weeks of pregnancy to decrease the risks of vertical transmission<sup>18</sup>.

Li et al<sup>17</sup> in 2003 showed the intrauterine infection was reduced to 16.3% against 32.7% controls with its use from 28<sup>th</sup> week of gestation

However there is report of failure of vertical transmission of hepatitis B virus despite antenatal lamivudine therapy<sup>19</sup>.

### V. Conclusion

The probability of transmission of Hepatitis infection from mother to child during and after delivery is about 90%. The burden of the disease globally by vertical transmission is significant and this has led to the development of prophylactic protocols to decrease the pool of chronic carrier state worldwide. Appropriate antenatal screening, intervention, anti-immunoprophylaxis of neonate is mandatory.

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