

SEROPREVALENCE OF HEPATITIS B SURFACE ANTIGEN AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC IN GOVT. GENERAL HOSPITAL, ANANTAPURAMU (A. P.)

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ABSTRACT: The aim of this study was to determine Hepatitis B surface antigen (HBs Ag) as a serological marker for the viral infection among pregnant women in Govt. General Hospital, Anantapuramu. The study was carried out from January -2013 to December – 2014. Pregnant women were screened for hepatitis B by immune Chromatographic Technique (ICT) device designed for qualitative detection of HBs Ag in serum. Those found positive on screening test were confirmed by ELISA. Total number of pregnant women screened was 6428. The overall prevalence of sero-positive HBs Ag among pregnant women was 1.42%. HBs Ag was detected at a higher rate among pregnant women in age group of 22- 25 years. 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 therefore, every pregnant women undergoing delivery and/or any other surgical procedure must be screened for Hepatitis B.

KEYWORDS: Screening, pregnant women, seroprevalence, hepatitis B surface antigen.

INTRODUCTION: Hepatitis B virus (HBV) infection is a serious global public health problem in Asia, Africa, Southern Europe and Latin America, with the viral antigen (HBs Ag) initially called as Australian antigen. {Weinbaun et al., 2008,⁽¹⁾ Andre, 2004,⁽²⁾ Dane et al., 1970.⁽³⁾} HBV is the prototype member of the Hepadnaviridae family with virions which are double- stranded particles, measuring 40 to 42 nm in diameter with an outer lipoprotein envelope that contains three related envelope glycoproteins (Uyar, et al., 2009⁽⁴⁾ Hinnachi et al., 2009.⁽⁵⁾ The infection can be acute or chronic with a wide spectrum of clinical presentations ranging from asymptomatic carrier state to acute self-limiting infection or fulminant hepatic failure, chronic hepatitis with progression to cirrhosis and hepatocellular carcinoma. (Shepard et al 2006).⁽⁶⁾ Globally over 2 billion people are infected with the virus and over 350 million people have chronic infection (Eke et al 2011)⁽⁷⁾ and over 1 million deaths occur due to liver cirrhosis and liver carcinoma. (El Magrahe et al 2010).⁽⁸⁾

Diagnosis of HBV infection is usually through serological and virological markers. Hepatitis B surface antigen (HBs Ag) is the hall mark of HBV infection and is the first serological marker to appear in acute HBV infection and persistence of HBs Ag for more than 6 months suggest chronic HBV infection (Kao JH 2008).⁽⁹⁾ Pregnant women infected with Hepatitis B virus represent a major reservoir of the virus in the community. Vertical transmission is a important route for Hepatitis B infection. So the transmission of HBV from the carrier mothers to their babies can occur during the prenatal period. There are three mechanisms of HBV transmission from HBs Ag positive mother⁽¹⁾ Trans placental intra uterine transmission.⁽²⁾ Transmission during delivery by contact with maternal

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infected fluids in the birth canal.⁽³⁾ Post – natal transmission from mothers to infants during child care or through breast feeding (Chen and Chang – 2010).⁽¹⁰⁾

Vertical transmission has been reported in 90% of infants born to HBs Ag positive and HBe Ag positive mothers. (Pennap et al 2011).⁽¹¹⁾ Although this means of transmission has not been reported as teretogenic, but has a higher incidence of low birth weight,⁽⁴⁾ low intelligence quotient (Oguntola, 2008),⁽¹²⁾ liver cirrhosis and hepeticellular carcinoma in young adult hood.⁽⁸⁾ So because of the high risk of developing chronic HBV among infants born to HBs Ag positive mothers, administration of Hepatitis B immunoglobulins (HBIG) in combination with hepatitis B vaccine as post exposure prophylaxis is very important.⁽⁸⁾ As a result of this, maternal screening is necessary for the treatment of newborns, since passive and active immunisation are so important in the endemic areas like India. So this study was done to know the seroprevalence of hepatitis B surface antigen (HBs Ag) among pregent women.

MATERIALS AND METHODS: It was a retrospective study based on review of records of pregnant women before 38 weeks of gestation who attended the antenatal clinic of obstetrics/Gynaecology unit, Govt. General Hospital, Anantapuramu. The study was carried out from January 2013 to December – 2014. Hepatitis B surface Antigen (HBs Ag) was determined as a serological marker for the viral infection among pregnant women. Blood samples were collected from all the consenting pregnant women and were subjected to HBs Ag screening tests. A total of Six thousand, Four hundred and twenty eight samples were collected from the consenting pregnant women in the age group of 18 to 40 years were screened for Hepatitis B. Rapid immune chromatographic techniques (ICT), for qualitative detection of surface antigen of Hepatitis B was used to screen the pregnant women. Those found positive on screening tests were confirmed by ELISA.

RESULTS: During the study period, 6428 pregnant women in the age group 18 to 40 years who attended the antenatal clinic were included. HBs Ag was detected in 92 cases (1.42%) out of 6428 pregnant women. The highest prevalence was among the women aged between 20 to 25 years.

DISCUSSION: The present study shows the sero-prevalence of HBs Ag as 1.42% which is comparable to the sero-prevalence of 1.1% reported by Pande et al,⁽¹³⁾ Nandan et al has shown the national prevalence amongst antenatal women for Hep B 1.65%.⁽¹⁴⁾ Lodha et al (2001) in their review article on hepatitis B epidemiology have suggested the true prevalence rate in India as 1-2%.⁽¹⁵⁾ The prevalence of hepatitis B varies from country to country. The prevalence of sero positive HBs Ag among pregnant women in Saudi Arabia was 1.6%⁽¹⁶⁾ and 1.47% in Southeastern Turkey⁽¹⁷⁾ and 1.37% in Pakistan.⁽¹⁸⁾

CONCLUSION: Neonates who are infected by Hepatitis B will have an almost 90% risk of developing as HBs Ag carrier state and chronic liver disease. So in order to prevent perinatal transmission and spread of infection, neonatal immunization with HBIG and HBV vaccine should be given which can interrupt vertical transmission. Thus a routine prenatal screening for HBV in pregnant women is strongly advocated to reduce the morbidity of HBV infection in the community.

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