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Seroprevalence of Hepatitis B Virus Infection Among The Pregnant Populations in India

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ABSTRACT

A total of 100 maternal samples were collected from the volunteers during third trimester of the pregnancy as standard method of collection. HbsAg and Anti-HBC parameters assay was performed using the ELISA kit for detection of Hepatitis B virus infection. 11% of the samples were found to be sero positive and 24% were found to be positive for HbsAg and anti-HBC infection against the hepatitis. Antenatal screening must be made as a mandatory during the third trimester of pregnancy. Vertical transmission like breast-feeding of infants from the sero positive mothers must be avoided.

Key words : HbsAg, Anti-HBC, Hepatitis B virus, Pregnancy.

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Infection with the Hepatitis B virus (HBV) is considered a public health problem worldwide. According to World Health Organization (WHO) estimates, there were 400 million carriers of the infection in 2000. Every year, approximately one million people die because of the association between HBV and the development of chronic clinical forms such as active chronic hepatitis, cirrhosis and hepatic carcinoma. Sero epidemiologic studies carried out in several Latin American countries revealed a wide range of prevalence for antibodies against the core antigen (Anti- HBc), ranging from 0.6% in chile to 21.4% in the Dominican Republic. The seroprevalence in Mexico was 1.4%, with similar frequencies by gender: 1.3% among males and 1.5% among females.

The National Health and Nutrition Examination Survey (NHANES III) study showed a 0.42% seroprevalence for HbsAg in the population between 6 and 74 years of age. The incidence of chronic HBV infection is high in China, more than 120 million people in China are carriers of HBV, 40% to 60% of them catch HBV infection from their mothers. HbsAg, double-loop structure projecting from the surface of the HBV particle and is the major neutralizing epitope. Antibodies to the determinant confer protection in adults against all the common subtypes of HBV (Stirk *et al*., 1992). Hepatitis B virus is made up of an inner core surround by an outer capsule. The outer capsule contains a protein called HbsAg (Hep B surface antigen). The inner core contains HbcAg (Hep B core antigen). A third protein called HbeAg is also found within the core (Vyas *et al.,* 1978).

Perinatal transmission of hepatitis B virus (HBV) from infected mother to infant often leads to severe long-term sequel. These carrier children have an approximate lifetime risk of 25% of dying of primary hepato cellular carcinoma or cirrhosis and the deaths usually occur during adulthood when familial and financial responsibilities are maximum (Stevens *et al.*, 1979 and 1985). Prevention of perinatal transmission is possible with immuno prophylaxis of risk babies shortly after birth (Beasley *et al.*, 1983). Routine antenatal Hepatitis B surface antigen (HbsAg) screening and immunization of risk babies is very effective in preventing perinatal transmission of Hepatitis B virus. They studied 1,800 parturient attending a public hospital to assess the rationale for such vaccination in Bangladesh. In one in every 29 deliveries (63 of 1,800 or 65%) without risk factors would remain undetected if HbsAg screening were performed on selected groups (Karim Rumi *et al*., 1998).

In 1994, they surveyed children and pregnant women, collected demographic information and drew blood for laboratory testing. Among the 439 children (mean age, 5