

HEPATITIS B VIRUS SEROPREVALENCE AMONG CHILDREN OF HEPATITIS B SURFACE ANTIGEN-POSITIVE MOTHERS

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Abstract. Immunization is the most effective strategy to prevent perinatal transmission of hepatitis B virus (HBV). In spite of receiving both hepatitis B immunoglobulin (HBIG) and HB vaccination, some children still contract chronic HBV infection from their hepatitis B surface antigen (HBsAg) positive mothers. This study aimed to determine the seroprevalence of HBsAg positivity among children born to HBsAg-positive mothers and evaluate factors associated with this transmission. This cross-sectional descriptive study was performed at King Chulalongkorn Memorial Hospital (KCMH) during 2016-2018. Children of HBsAg-positive mothers, aged 1-18 years who received 3-5 doses of HB vaccine with or without HBIG were recruited into the study. The first dose of vaccine and HBIG were administered within 12 hours of birth. Each child was initially checked for HBsAg and hepatitis B surface antibody (anti-HBs). Each child with a positive HBsAg test was also examined for alanine aminotransferase (ALT) level and hepatitis B e-antigen (HBeAg). The previous test results for HBsAg and HBeAg of all mothers were recorded. Sixty mothers and their 73 children [41 males, mean ($\pm$ standard deviation) age of the children was 5.8 ($\pm$ 3.7) years] were included in the study. Among the 73 studied children, 9 (12%) had a positive HBsAg and 62 (85%) had a positive anti-HBs test. Four of the 9 children with a positive HBsAg test had received both HBIG and HB vaccines. Among the 9 children with a positive HBsAg test, 5 had a positive HBeAg test with a normal ALT level, 2 had a positive HBeAg test with ALT elevation and 2 had a negative HBeAg test with ALT elevation. Children born to a HBeAg-positive mother were significantly more likely to be HBsAg positive (odds ratio (OR): 2.43; 95% confidence interval (CI): 2.14-61.01; $p = 0.004$). These findings suggest current strategies used to prevent mother to child transmission of HBV infection in the study population are unsatisfactory.

Keywords: immunoprophylaxis failure, hepatitis B immunoglobulin (HBIG), hepatitis B surface antigen (HBsAg), seroprevalence, vaccine.

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