

Intra-familial Transmission of Hepatitis B Virus Infection in Arak City

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Objective:

The household transmission of hepatitis B virus (HBV) is a major health problem. High incidence of infection with HBV is observed within the household contacts of chronic HBV carriers and it is not rare to have several members of the same household who have evidence of infection with HBV. The prevalence rate of this infection is reported about 11% to 57% among family members of hepatitis B surface antigen (HBsAg) carriers. This study was aimed to evaluate serological determinants of chronic hepatitis B infection among family members of asymptomatic HBsAg positive carriers in Arak city (Central province of Iran) from 2012 to 2013.

Methods:

In this cross-sectional study, data were collected from the 100 chronic HBV carriers (subjects with positive HBsAg for at least 6 months period) as index cases and 700 members of their family by trained interviewers and a validated questionnaire. In addition, blood samples were obtained from them and titrated to detect serologic markers of hepatitis B [HBsAg, hepatitis B core antibody (anti-HBc) and hepatitis B surface antibody (anti- HBs)] using the ELISA test.

Results:

The index cases included 62 (62%) men and 38 (38%) women. Their mean age was 38.09 ± 9.7 years. 55% of them were married. The prevalence rate of HBsAg, anti-HBs and isolated anti-HBc (positive anti-HBc with negative HBsAg and anti-HBs) among household members were 23.4%, 20.8% and 2.2% respectively. The mothers of index cases had the higher prevalence rate of HBsAg positivity compared to their spouses (47.6% vs. 31.5%). The highest and lowest prevalence rate of HBsAg was in mothers and children of index cases respectively.

Conclusions:

This study showed that HBsAg positivity was more prevalent in mothers of index cases compared to their spouses, suggesting that mother-to-child HBV transmission was more efficient than sexually transmission of HBV. So, infected mothers are the main reservoirs of infection, leading to horizontal transmission. Therefore, cutting the chain of mother-to-infant transmission would remove this important mode of transmission.