

ORIGINAL ARTICLE

Prevalence of Hepatitis B Surface Antigen
in Pregnant Women in Zahedan, Iran

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ABSTRACT

Introduction: Hepatitis B virus is one of the most common chronic infections in the world. Over half of the world population has been exposed to this virus. It is estimated that 3% of Iranian population are chronic carriers.

Objective: To determine the seroprevalence of hepatitis B infection in pregnant women in Zahedan, Iran.

Method: In this cross-sectional study in a period of one month in Zahedan, total cases of 200 pregnant women were enrolled in our study. Sera obtained from these pregnant women were evaluated for HBsAg by ELISA method.

Result: Our data showed that 6.5% of the pregnant women had a positive test for HBsAg. Conclusion: It seems that hepatitis B infection is highly endemic at least in pregnant women in Zahedan. On the basis of these epidemiologic data, screening of all pregnant women is necessary.

Key Words: Epidemiology, Hepatitis B, Pregnant women

INTRODUCTION

Hepatitis B virus is one of the most common viruses that are highly transmissible from mother to child in the world, especially in developing countries (1, 2). Although the mother will usually become jaundiced during the acute stage, some women have no symptoms of hepatitis, which is

one reason why CDC guideline includes mandatory screening of all women for hepatitis B during the first prenatal visit (2). This virus is highly contagious, and the risk that newborn infant will develop hepatitis B is about 10 to 20% if the mother is negative for the HBeAg, and as high as 90 percent if she is positive for the HBeAg(2,3). Diagnosis of infection in pregnant woman is very important because when her infant is born, the newborn must receive hepatitis B immune globulin and should be vaccinated with hepatitis B vaccine at birth. Then child should be vaccinated at one and six months after birth (2, 3, 4, 5). This reduces the risk of infection in infant to a range of zero to three percent (2). Epidemiological studies of hepatitis B virus have been done in the pregnant women in other countries including: USA, Germany and Mexico (6, 7, 8). Southeast of Iran is an endemic area for hepatitis B virus infection. It is estimated that 5.4% of Zahedan population are chronic carriers. Epidemiology of hepatitis B virus has been studied approximately in all high risk groups in Zahedan, but it has not been studied in pregnant women before. Therefore, the aim of the present study was to determine the prevalence of HBsAg positivity in the pregnant women in Zahedan.

METHODS

To detect the prevalence of HBsAg among pregnant women, we conducted an epidemiological study. In this cross-sectional survey in a period of one month in Zahedan (a city in Southeast of Iran), 200 pregnant women were selected randomly, using random number table from pregnant women who referred to obstetric and gynecology clinics in four areas of Zahedan. All subjects were questioned regarding risk factors such as tattooing, previous blood transfusion, IVD use, familial history for hepatitis and surgery, and also about history of jaundice, age and job. Sera were obtained and evaluated for HBsAg by using a commercial enzyme-linked immunosorbent assay (ELISA test, Sorin Biomedical).

RESULTS

Among 200 pregnant women, 13 cases (6.5%) were HBsAg positive. Of the 13 cases who were HBsAg positive, nobody had a history of tattooing, blood transfusion, surgery or jaundice. Among women who were HBsAg positive, three cases had a familial history of hepatitis. None of the subjects in this study was an IV drug user. In this survey, only 9 cases were health care workers, all of whom were HBsAg negative. All HBsAg positive pregnant women were housewives.

DISCUSSION

The prevalence of hepatitis B infection varies in different parts of the world. Also this prevalence varies from country to country, from one region to another region and from one group to another group in a country (9, 10). The 1995 CDC goals included an objective that, by the year 2000, 90% of pregnant women would be screened for HBsAg prior to delivery (11). In our country during recent years, none of pregnant women was screened in health centers. Our study showed that 6.5% of pregnant women in Zahedan were HBsAg positive. This prevalence is higher than prevalence in general population and less than prevalence in barbers in Zahedan. We did not find a similar study in Iran for comparison. In a sero-epidemiological study carried out in Zahedan in 1999, an average 5.4% of the general population was found to be HBsAg carrier (12). In another study in Zahedan in 2004 by Sharifi et al., among 103 barbers, 8.7% were HBsAg positive (13). Hepatitis B virus is highly contagious. Usually, the disease is passed on during delivery with exposure to the blood or fluids during the birth process (2). In patients with acute hepatitis B, vertical transmission occurs in up to 10% of neonates when infection occurs in the first trimester and 80-90% of neonates when acute infection occurs in the third trimester(2,3,5). Although the mother will usually become jaundiced during the acute stage, 50% of cases have no symptoms, which is one reason that all women

should be routinely tested for HBsAg at the first prenatal visit (2, 4, 5). In prenatal screening, only HBsAg test is recommended (14). If testing has not been done during pregnancy, it should be done at the time of delivery. If a pregnant woman has a positive test, her infant should be vaccinated against hepatitis B, also he or she should receive hepatitis B immune globulin. This reduces the risk that the infant will become infected to a range from zero to 3% (2). There is no report of the prevalence of HBsAg positivity in other regions of Iran but in one study in the USA, HBsAg prevalence among Hispanics and non-Hispanics, were 0.145 and 1.57%, respectively (6). In this American study, HBsAg prevalence in Asian pregnant women was

5.79%. In another study in Germany in 2001 by Dausch et al., prevalence of HBsAg positivity in pregnant women was 0.89% (7). Other study in Mexico in 2003 by Jose Luis Vazquez showed that prevalence of HBsAg in pregnant women was 1.65 % (8).

Conclusion: Since 6.5% of the pregnant women had a positive test for HBsAg, we advise all pregnant women should be routinely screened for HBV during the prenatal period.

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