Short Report

Seroprevalence of hepatitis B among pregnant women in southern Turkey

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Abstract

The aim of the present cross sectional seroprevalence study was to determine the frequency of HBV carriers in pregnant women registered at the Gaziantep Maternity Hospital, Turkey. The records of a total of 11,840 pregnant women were examined retrospectively. HBsAg was detected in 252 (2.1%) of 11,840 women. The prevalence of HBV infection in pregnant women in the southern region of Turkey is at an intermediate level. The observed low seroprevalence might be attributed to the lower mean age of the study population compared to the adult population.

Keywords: Hepatitis B, Seroprevalence, Seropositivity.

Introduction

Hepatitis B virus (HBV) infection is a major public health problem and one of the most common infectious diseases in the world. The prevalence of chronic HBV infection varies widely in different parts of the world. Turkey is one of the countries with intermediate endemicity in the European region of the World Health Organization. Hepatitis B seropositivity varies between 2% and 7% in the regions with intermediate endemicity.[1-3] In Turkey, Southeastern Anatolia is a region with a high prevalence of HBV infection (8.2% in rural areas and 6.2% in urban areas).[4]

The transmission of parental HBV generally occurs during the birth process through contact with infected blood. Therefore, prenatal screening of pregnant women for HBsAg is a helpful strategy for the prevention of vertical transmission of HBV infection.

The aim of this cross-sectional study was to evaluate the frequency of HBV carriers in pregnant women registered at the Gaziantep Maternity Hospital.

Patients, Methods and Results

The southeastern region of Turkey, where the study was conducted, is the least developed region of Turkey, in terms of economic, social, and health indices. Majority of the patients studied belonged to the middle socioeconomic class who had health insurance. This provided ready access to health services, including antenatal care.

This retrospective cross-sectional seroprevalence study was conducted at Gaziantep Maternity Hospital in Turkey, between June 2003 and February 2005. During the study period, the records of a total of 11,840 pregnant women were investigated retrospectively.

Table: HBsAg seroprevalence in pregnant women in different Muslim countries.

Muslim Countries	Seroprevalance (%)
Qatar	1.00
United Arab Emirates	1.50
Afghanistan	1.53
Lebanon	2.90

Blood samples were obtained from all participants during the hospital stay. Each serum specimen was tested by a rapid cassette test for HBsAg (ACON, AZURE Institute, China).

The mean age of the study population was 25.5 ± 8.2years (range 19-43 years).

HBsAg was detected in 252 (2.1%) of 11,840 women, none of whom were aware of their condition. No significant difference was found between the seropositive and seronegative women, in mean age.

Discussion

Hepatitis B infection is one of the most important community health problems in Turkey.[5] In childhood, prenatal screening for HBsAg is a helpful strategy for the prevention of vertical transmission of HBV infection. The highest risk of perinatal HBV transmission is in infants born to both HBsAg- and HBeAg-positive mothers and has been reported to range from 70%-90%. In contrast, the risk in infants born to HBsAg-positive, but HBeAg-negative mothers is 5%-20%.[1,2]

In our study, the rate of HBV carriers in the female population of childbearing age was at an intermediate level (2.1%). The rates of HBsAg and anti-HBs positivity in pregnant women were found to be lower compared to the rates observed in the normal population. The observed low seroprevalence in our study might be attributed to the lower mean age of the study population compared to the adult population. In addition, this difference could also have occurred due to the higher prevalence of HBV infection in men, since the normal population includes both men and women.

According to socioeconomic status, HBsAg seroprevalence demonstrates significant differences. In various studies conducted on pregnant women in southeastern Turkey, HBsAg seroprevalence was between 1.9% and 13%.[6] Diyarbakir is the city, which has the highest HBsAg positivity in Turkey.[6] The higher rates reported in southeastern region can be attributed to the smaller sample size. Additionally the reported studies were held as early as 10 years and on high risk patients, who admitted to university hospitals. Nas et al.[7] reported the HBsAg positivity of pregnant women in Ankara, the capital of Turkey, to be 1.3%.

In different Muslim countries, HBsAg seroprevalence in pregnant women is between 1.0% and 2.9% (Table-1).[8-10] These rates are consistent with our study.

This study has a number of important limitations. First, the population consists of only women who were able to access a hospital; for this reason the prevalence reported here may be a lower estimate of the true prevalence among reproductive- aged women in Gaziantep. The rate might be higher in the individuals who had a lower socioeconomic level such that they could not even reach a hospital. Second, no data is available for risk factors of patients (e.g., birthplace, education, parity, residence, and occupation). Third, only the cassette test was used for detecting HbsAg, and HBeAg was not evaluated at all. However, intrapartum screening with rapid testing is feasible, acceptable, and suitable for periodic surveillance activities in population. Despite these limitations, the present study was valuable due to the large number of the study participants.

In conclusion, the finding of lower HBsAg seropositivity in pregnant women in the present study supports that HBV infection more commonly spreads horizontally. Women of reproductive age should be involved in a routine vaccination schedule considering the high risk of HBsAg positivity in neonates through mother-child transmission.

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References

1. Lavanchy D. Hepatitis B virus epidemiology, disease burden, treatment and current and emerging prevention and control measures. J Viral Hepat 2004; 11: 97-107.
2. American Academy of Pediatrics. Hepatitis B. In: Pickering LK, Baker CJ, Long SS and McMillan JA, eds. Red Book: 2006 Report of the Committee on Infectious Diseases. Elk Grove Village I L: American Academy of Pediatrics 2006; pp 335-55.
3. Andre F. Hepatitis B epidemiology in Asia, the middle east and Africa. Vaccine 2000; 18: S20-2.
4. Mehmet D, Meliksah E, Serif Y, Gunay S, Tuncer O, Zeynep S.Prevalence of hepatitis B infection in the southeastern region of Turkey: comparison of risk factors for HBV infection in rural and urban areas. Jpn J Infect Dis 2005; 58: 15-9.
5. Uzunalimoglu O, Yurdayd?n C, Cetinkaya H, Bozkaya H, Sahin T, Colako?lu S, et al. Risk factors for hepatocelluler carcinoma in Turkey. Dig Dis Sci 2001; 46: 1022-8. .
6. M?st?k R and Bal?k I. Epidemyologic analysis of viral hepatitis in Turkey. In: Bal?k I and Tekeli E, eds. Viral Hepatitis. Istanbul: Viral Hepatitle Sava??m Dernegi 2003; pp 9-55 (in Turkish).
7. Nas T, Taner M Z, Y?ld?z A. Seroprevalence of syphilis, human immunodeficiency virus type-1, and hepatitis b virus infections among pregnant women in Turkey. Int J Gynaecol Obstet 1999; 66: 171-2.
8. Al Awaidy S, Abu-Elyazeed R, Al Hosani H A, Al Mulla A, Al Busaiedy S, Al Amiry A, et al. Sero-epidemiology of hepatitis b infection in pregnant women in Oman, Quatar and the United Arab Emirates. J Infect 2006; 52: 202-6.
9. Todd C S, Ahmadzai M, Atiqzai F, Miller S, Smith JM, Ghazanfar SA, et al. Seroprevalence and correlates of HIV, syphilis and hepatitis b and c virus among intrapartum patients in Kabul, Afghanistan. BMC Infect Dis 2008; 8: 119.
10. Nabulsi M M, Khalil A M, Farah A E, Araj GF. Prevalence of hepatitis B surface antigen in pregnant Lebanese women. Int J Gynaecol Obstet 1997; 58: 243-4.