

PREVALENCE OF HEPATITIS B INFECTION AMONG PREGNANT FEMALE ATTENDING TERTIARY CARE HOSPITAL IN ROHILKHAND REGION OF UTTAR PRADESH

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ABSTRACT

Introduction: Hepatitis B infection is caused by hepatitis B virus (HBV), an enveloped DNA virus belonging to family Hepadnaviridae that infects the liver and causes hepatocellular necrosis and inflammation which are serious public health problem worldwide. Transmission of HBV from carrier mothers to babies can occur during perinatal period and is important factor in determining the prevalence of infection in highly endemic areas.

Aims and Objectives: To study the prevalence of Hepatitis B virus infection among pregnant female in North India and to compare seropositivity of Hepatitis B infection among pregnant and non –pregnant women.

Methods: The Present study was conducted in the department of microbiology on 568 pregnant female. The serums were obtained by centrifugation & test was done. The Hepatitis B surface Ag was detected by using HEPACARDS kit.

Results: In our current study on 568 pregnant female were screened for HBsAg and we found that 1.8% pregnant female were reactive with HBsAg in serum and 98.2% were Non reactive with HBsAg out of 568 pregnant female. Higher prevalence of HBsAg was reported in most sexually active age group.i.e.25-30 years (55.4%).

Conclusion: In the light of current study, it can be concluded that the Hepatitis B virus infection is a public health issue in this region, the prenatal counseling on HBV infection should be instituted within antenatal care clinic as it could help to raise awareness of disease among pregnant female either through health care workers or the Government.

Key words: Hepatitis B infection–Prevalence–Pregnant female

1 INTRODUCTION

Hepatitis is the inflammation of liver, most commonly caused by viral infections. Five hepatotropic viruses (A to E) are known to cause hepatitis. Of these, hepatitis B Virus (HBV) and hepatitis C virus (HCV) are of greater importance and among the most frequent viral infections in humans (El Serag 2012 and Eke et al., 2011)reported for the first time publicly on the discovery of a new antigen

named Australia antigen. (3, 4, 5) Thereafter, viral hepatitis type B became a driving force for the development of modern virus diagnostics and vaccines. (5) The virus may be detected within 30 to 60 days after infection and can persist and develop into chronic hepatitis B. Transmission from a chronically infected woman to her infant during delivery is efficient and is one of the most common routes of HBV infection worldwide.(6)

Hepatitis B infection is caused by the hepatitis B virus (HBV), an enveloped DNA virus belonging to family called

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Hepadnaviridae that infects the liver and causes hepatocellular necrosis and inflammation which are serious public health problem worldwide. (1, 2) The highest concentrations of infectious HBV are found in blood & serum. However, other serum-derived body fluids, such as semen and saliva, are also infectious. Persons with chronic HBV infection are the major reservoir for transmission, although any person testing positive for HBsAg is potentially infectious to both household and sexual contacts. . The virus may be detected within 30 to 60 days after infection and can persist and develop into chronic hepatitis B. Transmission from a chronically infected woman to her infant during delivery is efficient and is one of the most common routes of HBV infection worldwide.(6)

The development of chronic infection is very common in infants infected from their mothers or before the age of 5 years. Transmission of the virus may also occur through the reuse of needles and syringes either in health-care settings or among persons who inject drugs. In addition, infection can occur during medical, surgical and dental procedures, through tattooing, or through the use of razors and similar objects that are contaminated with infected blood. (2)

The prevalence of hepatitis B virus infection varies markedly in different geographical areas of the world. Based on the prevalence of Hepatitis B surface antigen (HBsAg), countries are classified as having high (where >8% of the population is HBsAg positive), intermediate (2–7%) or low (< 2%). Areas of high endemicity include South-East Asia, China, most of Africa, most of Pacific Islands, the Amazon basin and parts of the Middle-East. The areas of intermediate endemicity (2–7%) include South Asia, Eastern and Southern Europe, Russia and Central and South America. On the other hand, the areas with low endemicity (< 2%) include United States, Western Europe and Australia). India is the largest nation in the region and by its sheer population bears the bulk of HBV burden in South Asia and accounts for 10-15% of the entire pool of HBV carriers of the world.(7)

2 MATERIALS AND METHODS

The present study conducted in the department of Obs & Gynecology and Microbiology Government Medical College Budaun U.P. The written consent was taken from the female patients and the risk & benefits had been explained in the consent form before study. Information about the study was delivered to patient and consent obtained then face to face interview was conducted. Informed written consent was obtained from the 568 pregnant female patients who agreed to participate in the study were requested for screening of Hepatitis B surface antigen test and blood sample was sent for screening of Hepatitis B surface antigen test and blood sample was sent for screening of Hepatitis B surface antigen in central pathology lab were enrolled in the study. The blood sample was collected in clean clot activator vacutainer and

the blood was allowed to stand for 30 minute so that it may clot. Then the serum was obtained by centrifugation & test was done immediately.

STATISTICAL ANALYSIS

The data was transferred to computer and Chi-square test was used for categorical variable. P <0.05 was considered as significant.

3 OBSERVATION AND RESULTS

In this study total 568 pregnant female patients were screened for HBsAg. The distribution pregnant female according to their age group we found that maximum pregnant female (54.9%) belonged to age group 25-30 years, followed by 18-25 years (21.1%), 30-35 years (17.2%) and least in age group 35-40 (6.7%) showing in Table 1.

Table 1. Showing distribution of pregnant female according to their age group

Age Group in years	No. of Patients	Percentage%
18-25	120	21.1%
25-30	312	54.9%
30-35	98	17.2%
35-40	38	6.7%

In our observation we found the distribution of female patients according to their residential status out of 568 pregnant female we found 382 (67.2%) were from rural area and 186 (32.7%) from urban area showing in table 2.

Table 2. Showing distribution of pregnant female according to their residential status

Domicile	No. of Patients	Percentage%	Total no. of reactive patients	Percentage%
Rural	382	67.2%	7	1.8%
Urban	186	32.7%)	3	1.6%

The distribution pregnant female according to their education level showing most of the pregnant female we observed high school were 41.1%, Higher Secondary 23.2%, Primary 16.5%, Uneducated 11.2% and Graduate 7.7% showing in table 3.

Table 3. Showing Distribution of pregnant female according to their education level

Education Status	No. of Patients	Percentage%
Graduate	44	7.7%
Higher Secondary	132	23.2%
High School	234	41.1%
Primary	94	16.5%
Uneducated	64	11.2%
Total	568	100%

In our present study we found HBsAg reactive pregnant female patient were 1.8% and Non reactive 98.2% out of 568 pregnant female showing in table 4.

Table 4. Showing distribution of pregnant female according to the reactivity of HBsAg

Result of HBsAg reactivity	No. of Patients	Percentage%
Reactive	10	1.8%
Non reactive	558	98.2%
Total	568	100%

4 DISCUSSION

This is similar to previous study from Jamnagar by Khakhkhar V. *et al.*, (2012) which reported prevalence of Hepatitis B among pregnant female to be 4.2%. Classified as a region of high endemicity, India accounts to 10-15% of the total HBV carrier in the world.(8) Prevalence of HBsAg in our study is nearly similar than the study done by Osman EI *et al.*, (2012) in Khartoum who reported a moderate prevalence of 4.91% (9)

According to established criterion, the prevalence of HBV among pregnant women is classified as high inter-mediate (5–7.99%). (2) This finding is comparable with those among pregnant women from southern Ethiopia 6.1% and 7.3% among antenatal clinic attendees in Gondar Health Center, northwest Ethiopia. (15, 16) But it is higher than 4.9% of prevalence in Dessie referral hospital and 3.8% in Bahir Dar city. (17)

HBV infection is one of the most common viral infections known to humanity. Nearly, 350-400 million people suffer from this infection globally with 1 million deaths per year due to complications of this infection.¹¹ Prevalence of hepatitis B varies from country to country and depends on a complex interplay of behavioral, environmental and host factors. In general, it is lowest in countries with high standards of living (such as Australia, North America and North Europe) and highest in countries where socio-economic level is lower (such as China, South East Asia and South America).¹²

India lies in intermediate zones of prevalence rates as set by the World Health Organization. There is a wide variation in HBsAg prevalence in different geographical regions in India. The overall rate of seropositivity for HBsAg varies from 2% to 4.7% with the highest prevalence recorded in natives of Andamans and Arunachal Pradesh.^{13,14} The higher prevalence among 21–40 years age group could be due to higher exposure to occupational risk factors as well as high risky behavior among young individuals.¹⁰

5 CONCLUSION

In the light of current study, it can be concluded that the Hepatitis B virus infection is a public health issue in this region, the prenatal counseling on HBV infection should be instituted within antenatal care clinic as it could help to raise awareness of disease among pregnant female either through health care workers or the Government. They could be vaccinated against it and thereby preventing vertical transmission of hepatitis B in children.

REFERENCES

- [1] Colin WS, Edgar PS, F L, Ef A, P B. Hepatitis B Virus Infection Epidemiology and Vaccination. *Epidemiology Rev.* 2006;28:112–125.
- [2] Ramos JM, Toro C, Reyes F, Amor A, Gutiérrez F. Seroprevalence of HIV-1, HBV, HTLV-1 and *Treponema pallidum* among pregnant women in a rural hospital in Southern Ethiopia. *Journal of Clinical Virology.* 2011;51(1):83–85. Available from: <https://dx.doi.org/10.1016/j.jcv.2011.01.010>.
- [3] Mittal G, Gupta P, Gupta R, Ahuja V, Mittal M, Dhar M. Seroprevalence and Risk Factors of Hepatitis B and Hepatitis C Virus Infections in Uttarakhand, India. *Journal of Clinical and Experimental Hepatology.* 2013;3(4):296–300. Available from: <https://dx.doi.org/10.1016/j.jceh.2013.10.006>.
- [4] Tiruneh M. Seroprevalence of multiple sexually transmitted infections among antenatal clinic attendees in Gondar Health Center, northwest Ethiopia. *Ethiop Med J.* 2008;46(4):359–66.
- [5] Naqshbandi I, Qadri SY, Yasmeen N, Bashir N. Seroprevalence and risk factors of hepatitis B virus infection among general population of Srinagar Kashmir. *Int J Contem Med Res.* 2016;3:1050–1054.
- [6] Vipul K, M, Pragnesh B, J, Shashwati B, P, et al. Seroprevalence of hepatitis B amongst Pregnant women attending the antenatal Clinic of a tertiary care hospital. *National jour of med res.* 2012;2(3).
- [7] Datta S. An overview of molecular epidemiology of hepatitis B virus (HBV) in India *Virol. J.* 2008;11:156–156.
- [8] ; 2015.
- [9] Eke AC, Eke UA, Okafor CI, Ezebialu IU, Ogbuagu C. Prevalence, correlates and pattern of hepatitis B surface antigen in a low resource setting. *Virology Journal.* 2011;8(1):12–12. Available from: <https://dx.doi.org/10.1186/1743-422x-8-12>.
- [10] Blumberg BS. Hepatitis B- The hunt for a virus killer. Princeton: Princeton Universities Press; 2002.
- [11] Adibi P, Akbari L, Kahangi LS, Abdi F. Health-State Utilities in Liver Cirrhosis: A Cross- sectional Study. *Int J Prev Med.* 2012;3:94–101.
- [12] El-Serag HB. Epidemiology of Viral Hepatitis and Hepatocellular Carcinoma. *Gastroenterology.* 2012;142(6):1264–1273.e1. Available from: <https://dx.doi.org/10.1053/j.gastro.2011.12.061>.
- [13] Kanodia V, Yadav M, Bittu R, Maheshwari RK, Singh SK. Seroprevalence of hepatitis B surface antigen in hospital based population of Jaipur. *Rajasthan Med Pulse Int Med J.*
- [14] Seid M, Gelaw B. In Press; 2014.
- [15] Chowdhury A. Epidemiology of hepatitis B virus infection in India. *Hepat B Annu.* 2004;1:17–24.
- [16] Osman EI, Abdulrahman NA, Abbass O, Omer WH, Saad HA, Hamid M. Prevalence of Hepatitis B surface antigen and Hepatitis C virus antibodies among pre-surgery screened patients in Khartoum. *Central Sudan JGenMolVirol.* 2012;4(1):6–9.
- [17] Dienstag JL, Isselbacher KJ, Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, et al. Acute viral hepatitis. In: *Harrisons Principles of Internal Medicine*; 1998. p. 1677–92.

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