Research Paper

Volume : 2 | Issue : 11 | November 2013 • ISSN No 2277 - 8179

Prevalence of sexually transmitted infections in pregnant women attending antenatal clinic in a predominantly rural area in Haryana

Medical Science

KEYWORDS : HIV, HBV, HCV, pregnant women

Dr. Megha Maheshwari	MD, Flat No 218, Pocket 1, Sector 23, Rohini, New Delhi – 110085.
Dr. Priti Agarwal	MD, 520/12 Krishna colony, Gurgaon
L. Sumitra Devi	M.Sc., SGt Medical College, Village Budhera, Gurgaon, Haryana

ABSTRACT

This is a prospective study to determine the prevalence of HIV, hepatitis B virus and hepatitis C virus apparently healthy asymptomatic pregnant women who were attending the antenatal clinic. The information regarding their socio-demographic status and behavioral characteristics and obstetric history was recorded. The blood samples was collected after obtaining informed written consent from the patients, who were tested for the HIV antibodies (as per NACO guidelines), HBsAg (rapid test) and anti HCV antibodies (rapid test). The overall prevalence of the three sexually transmitted infections studied was 1.15 % only with the highest prevalence of hepatitis B virus (0.7 %), followed by HIV (0.2 %), and hepatitis C virus (0.25 %). No woman tested positive for multiple infections. All the infections were more common in illiterate and multigravida women of low socio-economic status.

Introduction

Infection with the human immunodeficiency virus (HIV), the hepatitis B Virus (HBV) and the hepatitis C Virus (HCV) is a global health problem. According to UNAIDS epidemiological report 33 million people are infected with HIV worldwide, 18 million of which are women[1]. India has an estimated 220,000 children infected with HIV/AIDS.[2]

The predominant mode of transmission of HIV in children is vertical, i.e., it is acquired through the intrauterine or intrapartum routes or through breast feeding from an HIV infected mother. When women living with HIV receive antiretroviral prophylaxis during pregnancy, delivery and breastfeeding, the risk of HIV transmission is reduced to less than 5%.[3] Co-infection of HIV with HBV and HCV is a common event due to the similar routes of transmission.[4] Studies have revealed that the hepatitis viruses may actually increase the rate of progression to AIDS, impair immune reconstitution, increase the risk of hepatotoxicity from antiretroviral treatment and lower overall level of CD4 count.[5] Coinfection of HIV with HCV is however more common than with HBV and more serious in terms of morbidity.[6] Seroprevalence of HIV, HBV and HCV is reported to be more common in developing countries. However, the prevalence of these infections in pregnant women may differ in geographically disparate regions. The present study was undertaken to determine the current prevalence of HIV, HBV and HCV in asymptomatic pregnant women of a predominantly rural area of Haryana.

Materials and Methods

This study was conducted from January 2011 to December 2012 among pregnant women receiving antenatal care at antenatal clinic of the Obstetrics and Gynecology Department of SGT Medical College and Hospital, Budhera, a rural area of Haryana. A total of 2000 consecutive apparently healthy, asymptomatic pregnant women in the age group of 15 – 45 years who had history of normal obstetric performance were included in the study. Demographic, socio-economic, and obstetric history was recorded, and blood samples were collected after obtaining their informed written consent. Five ml of blood samples was collected from each patient and allowed to clot, serum samples were then obtained and screened for HIV, Hepatitis B Virus (HBV) and Hepatitis C Virus infections. Screening for HIV antibodies was performed as per NACO guidelines and kits provided; HBV infection was diagnosed by detecting Hepatitis B surface antigen (HBsAg) by rapid (Hepacard, Diagnostic Enterprises,India) test, HCV was detected by detecting anti HCV antibodies by using rapid test kit (HCV Tridot, J Mitra & Co. Pvt. Ltd., India)

Results:

Of the 2000 women included in the study, 90 % were <30 years of age, 95% had a rural background, and 84 % had education up to the 8th grade or more. Majority of them (78.8 %) belonged to low socio-economic status and were housewives (96 %). Multigravida were more (59 %) than primigravida (41%). History of promiscuous sexual behavior in husbands was given by 38 (2%) pregnant women, however, none gave history of intravenous drug abuse by herself or husband. Table1 about here.

Table 1 Demographic factors of the pregnant women attending antenatal clinic.

S. No.	Characteristics	No (%)
1.	Age <21 21-30years >30 years	 796 (40%) 1002 (50%) 202 (10%)
2.	rural background	1903 (95%)
3.	Education >8th <8th Illiterate	 1680 (84%) 215 (11%) 105 (4%)
4.	Multigravida	1178 (59%)
5.	Primigravida	822 (41%)
6.	History of promiscuous behavior by husbands	38 (2%)
7.	History of vaccination	18 (1%)
8.	History of blood transfusion	23 (1.15)
9.	Socio – economic status Low income Middle income High income	 1576 (78.8) 370 (18.5) 54 (2.7)

Out of the 2000 women studied only 23 (1.15%) were found to be seropositive. The highest prevalence was that of HBV (0.7%) followed by HIV (0.2 %) and HCV (0.1 %). There was no case of coinfection with HIV, HBV and/or HCV infections. Table 2 about here.

Table 2 Prevalence of HIV, HBV and HCV infection in relation to various socio-demographic factors

	HIV (%) N=4	HBV (%) N=14	HCV (%) N=5
Age <21 21- 30 31 - 40 >40	 0 4 (100) 0 (100) 0	 2(14.2) 7(50) 3(21.4) 2(14.2)	 1(20) 3(60) 1(20) 0
Background urban rural	 2(50) 2(50)	 9(64.3) 5(35.7)	 3(60) 2 (40)

Education			
<8th	3(75)	11(78.6)	2 (40)
8th or more	1(25)	3(21.4)	3 (60)
Multigravida	3(75)	8(57)	4 (80)
Primigravida	1(25)	6(43)	1(20)
History of			
Blood transfusion		3(21.4)	2(40)
High risk sexual behavior by husbands	1(25)	10(71.4)	1(20)
Intravenous drug use by husband	2(50)	1(7.2)	2(40)
Contraceptive use			
None			
Oral Contraceptive Pill	2(50)	10(71.4)	2(40)
Barrier method	..	..	..
Intra Uterine Contraceptive Device	.. 2(50)	1(7.2) 3(21.4)	1(20) 2(40)

Study of the various factors in relation to HBV infection showed that the infection was significantly more prevalent in women having low literacy rate than those having education up to the 8th grade or more. Other high-risk factors observed in HBsAg-positive women were highrisk sexual behavior of the husband (10/14; 71.4 %). None of the HBs Ag positive women were immunized against HBV.

All the 4 HIV positive women of our study were in the age group of 21–30 years, 2 were from urban background, 3 were multigravida. Husbands of all 4 of them also tested positive for HIV. Majority (62%) of the seropositive women were not using any contraceptive method.

Discussion

The overall prevalence of HIV, HBV and HCV in the present study was 1.15 % (23/2000), which is less as compared to certain other studies from India.[7] The highest prevalence was of HBV (0.7 %) is in accordance with a recent study from Utter Pradesh which gives a HBs Ag prevalence of 0.9% in pregnant women.[8] but that too was very low in comparison to other studies from North and south India which have reported a prevalence of 2.4% and 2.6% respectively.[7,9]10-20% of women seropositive for HBsAg transmit the virus to their neonates in the absence of immunoprophylaxis.[8] The presence of HBsAg in the pregnant women does not pose an additional risk for pregnancy, but the infected infants became reservoir of infection, and as adults, they are at risk of developing chronic hepatitis, liver cirrhosis, and hepatocellular carcinoma. Therefore, all the infants born to HBsAg seropositive women need to be given universal infant immunization.

The prevalence of HCV (0.25 %) was also found to be very low in our study population. A study from Rajasthan shows seroprevalence of HBs Ag (1%) and anti HCV antibodies (0.4%) in female population which is slightly higher than our study.[10] Other studies from northern India found more than 1% prevalence of HCV in pregnant women.[11,12]

Haryana is an area of low level epidemic for HIV (prevalence rate <1 %).[13] Our result of 0.2 % seropositivity for HIV is in accordance with the same. Pregnancy does not have any adverse impact on the course of HIV infection, and cases of AIDS represent only a fraction of population infected with HIV. However, asymptomatic HIV-infected women transmit the infection to their offsprings, and mother-to-child transmission is by far the most significant route of transmission of HIV infection in children below the age of 15 years. Young children progress through the disease at a much faster rate. 33% of children with HIV die within the first 12 months, 50% by 24 months and 60% by 36 months.[2] With more and more pregnant women testing positive for HIV and perinatal transmission rate of 15–40 %, pediatric AIDS is becoming a major public health problem in India. Timely detection of HIV infection and use of antiretroviral therapy along with the knowledge to avoid contracting the infection could help in curtailing this problem. None of the pregnant females in the present study were coinfected with any of these viruses. However coinfection rates ranging from 0.2% to 1% have been reported from India and abroad.[14,15,16]

Various studies conducted in other parts of our country found low literacy status, high-risk sexual behavior, history of STIs in husbands, and blood transfusions to be associated with increased prevalence of these infections.[7,17] Despite being a rural area, the literacy rate (96%) of our study population was quite commendable. This could be one of the factors responsible for low rates of seroprevalence of these infections in thjs particular community.

In conclusion, it is very important to understand the changing trends in the epidemiology of these infections. Women are more vulnerable due to inadequate knowledge about STIs, mode of transmission, safer sexual practices and lack of female-controlled prevention method. Emphasis should be laid on targeted interventions of prevention services through information, education, and promotion of women's right. Universal screening for these infections, public awareness and education would go a long way in curbing the prevalence of these infections in pregnant women and associated perinatal mortality and morbidity.

REFERENCE

1. http://www.unaids.org/globalreport/global_report.htm | 2. http://www.unicef.org/india/children_2358.htm | 3. http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/jc2434_worldaidsday_results_en.pdf | 4. Raizada, A., Dwivedi, S., & Bhattacharya, S. (2011) The hepatitis B, hepatitis C and the HIV co-infection at an antiretroviral centre in Delhi. Tropical Doctor Jul;41(3):154-6. Epub 2011 May 17. | 5. Centre for disease control, CDC. (2001). Frequently asked questions and answers about coinfection with HIV and HBV. New England Journal of Medicine 34(3):215-217. | 6. Sherman, K. (2002). Hepatitis C virus prevalence among patients infected with Human Immunodeficiency virus. A cross sectional analysis of the U.S. Adult AIDS Clinical Trial group. Clinical Infectious Diseases 34(6):831-837. | 7. Jindal, N., Arora, U., Singh, S., & Devi, B. (2012) .Prevalence of Sexually Transmitted Infections (HIV, Hepatitis B, Herpes Simplex Type 2 and Syphilis) among asymptomatic pregnant women. Journal of Obstetrics and Gynaecology of India. April;62(2):158-161. | 8. Dwiwedi, M., Misra, S.P., Misra, V., Pandey, A., Pant, S., Singh, R., & Verma, M. (2011). Seroprevalence of hepatitis B infection during pregnancy and risk of perinatal transmission. Indian Journal of Gastroenterology Mar;30(2):66-71. | 9. Shanmugam, J., & Nair, S. R. (1982). A three and half year follow up study of HBsAg carrier state in asymptomatic mothers. Indian Journal of Pathology and Microbiology. 25:273–8. | 10. Sood, S., & Malvankar, S. (2010). Seroprevalence of Hapatitis B Surface Antigen, Antibodies to the Hepatitis C Virus, and Human Immunodeficiency Virus in a Hospital – Based Population in Jaipur, Rajasthan. Indian Journal of Community Medicine 35(1):165-169. | 11. Sood, A., Midha, V., Bansal, M., Sood, N., Puri, S., & Thara, A. (2012). Perinatal transmission of Hepatitis C virus in Northern India. Indian Journal of Gastroenterology Jan;31(1):27-29. | 12. Kumar, A., Sharma, K. A., Gupta, R. K., Kar, P., & Chakravarti, A. (2001). Prevalence of risk factors for Hepatitis C Virus among pregnant women. Indian Journal of Medical Research 126(3):211-5. | 13. Arora, D. R., Gautam, V., Gill, P. S., Arora, B., & Gupta,V. (2004). Haryana state in India, still a low HIV prevalence state. Sexually Transmitted Infections 80:325-326. | 14. Roche, R., Amrita, S., Leslie, & Nayak, R. (2012). Prevalence of the Human Immunodeficiency virus, the Hepatitis B Virus and the Hepatitis C Virus among the Patients at a Tertiary Health Care Centre: A Five Year Study. Journal of Clinical and Diagnostic Research. May (Suppl-2), Vol-6(4): 623-626 | 15. Bassey, E. B., Moses, A. E., Udo, S. M., & Umo, A. N. (2009) Parallel and overlapping Human Immunodeficiency Virus, Hepatitis B and C virus Infections among pregnant women in the Federal Capitol Territory, Abuja, Nigeria. Online Journal of Health and Allied Sciences. 8(1):4. Retrieved from www.ojhas.org/issues29/2009-1-4.htm | 16. Ajayi, B.B., Ajayi, O. D., Hamidu, I., Dawurung, J. S., Ballah, A. D., Isah, J., & Chama, C. M. (2013). Seroprevalence of some sexually transmitted infections among antenatal attendees in university of Maiduguri teaching hospital, Maiduguri-Nigeria. Annals of Biological Research 4(2):141-145. | 17. Chakravarti, A., Rawal, D., & Jain, M. (2005). Study on the perinatal transmission of the hepatitis B virus Indian. Journal of Medical Microbiology. 23:128–30.