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*Original Article*

# Sero Prevalence of Sexually Transmitted Diseases Among Pregnant Women in a Tertiary Care Hospital

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**ABSTRACT**

Pregnant women are at increased risk of sexually transmitted infections (STIs) due to physiological changes that accompany pregnancy, such as congestion of the cervix, edema of the vaginal mucosa, and alterations in the vaginal flora. Hepatitis B, Syphilis and HIV are transmitted sexually and it is not surprising to note the co-existence of HIV and Syphilis (VDRL) in the same patient. This present study clearly documents a relatively declined sero-prevalence of HBsAg, HIV and VDRL in pregnant women.

**KEYWORDS:** Asymptomatic pregnant women, HBsAg, HIV, VDRL.

## INTRODUCTION

Pregnant women are at increased risk of STIs due to physiological changes that accompany pregnancy, such as congestion of the cervix, edema of the vaginal mucosa, and alteration sin the vaginal flora.[1] Additionally, pregnant women may be less likely to have partners that use condoms, and may have fewer options to leave unsafe relationships.[2] Syphilis and HIV are both transmitted sexually and so it is no surprise that a substantial number of people are infected with both agents. Syphilis is a systemic infectious disease caused by sexual or congenital transmission of the spirochete bacterium *Treponema pallidum* (*T. pallidum*). Syphilis causes a variety of signs and symptoms corresponding to stages of infection (primary, secondary, latent and tertiary). The primary stage classically presents with a single chancre (a firm, painless, non-itchy skin ulceration), secondary syphilis with a diffuse rash which frequently involves the palms of the hands and soles of the feet, latent syphilis with little to no symptoms, and tertiary syphilis includes gummatous, cardiovascular, and neurological complications that can lead to significant disability and premature death. Congenital syphilis results in fetal or perinatal death, as well as disease complications in surviving newborns.[3-5] Syphilis is believed to have infected 12 million people in the year 1999, with greater than 90% of cases in the developing world. It affects between 700,000and 1.6 million pregnancies a year, resulting in spontaneous abortions, stillbirths and congenital syphilis.[6] Syphilis infections declined rapidly with the widespread use of antibiotics; syphilis is associated with HIV infection which increases the risk of HIV transmission by two to five times and acquisition by causing genital ulcers. The rate of HIV and syphilis coinfection varies depending on the prevalence of both infections in the community or the patient group being studied; along with individual risk factors.[7-10] Sexually transmitted infections (STIs) are a major global cause of infertility, long-term disability and death with severe medical and psychological consequences for millions of men, women and infants.[11] The genital ulcerations and inflammation caused by syphilis are implicated as cofactor making infected individuals three to five times more likely to acquire HIV if exposed to the virus through sexual contact. Unless prompt diagnosis and treatment of syphilis are carried out, serious complications including male and female infertility may result, and in pregnancy, adverse outcomes such as still birth, congenital abnormalities, prenatal death and serious neonatal infection.[12] Syphilis, a reportable disease caused by *Treponema pallidum*, is tracked by the Centers for Disease Control and Prevention (CDC). That is, it can be transmitted either by intimate contact with infectious lesions (most common) or via blood transfusion (if blood has been collected during early syphilis), and it can also be transmitted transplacentally from an infected mother to her fetus.[13,14]

## MATERIALS AND METHODS

**Study Area:** Kirodimal Government Hospital, Government Medical College, Raigarh, Chattishgarh, India.

**Samples Collection and Laboratory Method**

4500 apparently healthy pregnant women, who attended the antenatal clinic at Govt General Hospital, Raigarh**,** between March and August 2015 were screened for

HBsAg, HIV and VDRL, in clinical microbiology section of microbiology department, Government Medical College, Raigarh. An ethical clearance for this study was obtained from ethical and research committee. 4ml of venous blood was collected by venepuncture into a plain bottle and allowed to clot. Screening for HIV antibodies was performed as per NACO guidelines; by using tridot- HIV card-J mitra. HBV infection was diagnosed by detecting Hepatitis B surface antigen (HbsAg) by ELISA (Hepalis; J. Mitra & Co.Ltd); and syphilis antibodies were identified by RPR SPANCARD latex kit.

## RESULTS

A total number of 4,500 serum samples, collected from pregnant women attending antenatal clinic were analyzed for sexually transmitted diseases. Only 8 samples found positive for HIV, constituting 0.17%. The same numbers of positives were also found for HBV, whereas the no. of syphilis cases identified by VDRL are slightly moreie.10 accounting for 0.22%.

**Table 1: Prevalence of Seromarker.**

| Seromarker | | Number of seropositivity | Prevalence rate % |
|---|---|---|---|
| **HIV** | | 8/4500 | 0.17 |
| **HBV** | HbsAg | 8/4500 | 0.17 |
| **Syphilis** | VDRL | 10/4500 | 0.22 |

Age wise analysis of sexually transmitted infections has shown highest prevalence in the age group of 20-30 years. The prevalence of all sexually transmitted diseases was more in multigravida.

**Table 2: Prevalence of STI in relation to age and gravida.**

| S. No. | Age | No. of women. 4500 | HIV+ cases (8) | HBV +ve Cases (8) | VDRL (reactive)(10) |
|---|---|---|---|---|---|
| **1** | <20 years> | 1000 | 2 | 2 | NIL |
| **2** | 20-30 years | 3000 | 6 | 6 | 10 |
| **3** | >30 years | 500 | NIL | NIL | NIL |
| **4** | Gravida | | | | |
| | Multi | 3000(66.6%) | 6 | 6 | 8 |
| | Primi | 1500 (33.4%) | 2 | 2 | 2 |

## DISCUSSION

Most of the published data on STIs among pregnant women is related to those having symptoms of STIs and/or bad obstetrical history.[15,16] In our series 4500 asymptomatic pregnant women were studied, and overall prevalence of any one of the three infections (HIV, HBV, and Syphilis) was between 0.17-0.22 %. A multicentric study reported prevalence of 7.4 % in any one of the five infections (HIV, HBV, Syphilis, Chlamydia, and Gonorrhea), and only half of them had clinical signs and/or symptoms.[15] This implies that syndromic approach which is used to manage STIs in pregnancy in our country is notoriously poor in identifying high proportions of infections in asymptomatic pregnant women as observed by other workers too.[15,16] In the present study, positivity for HBV (0.17%) was the lowest. This is in contrast with the 2.6 % carrier rate of HBsAg reported in a follow-up study of asymptomatic mothers from South India.[17] In a recent study from Delhi, 4.25 % mothers were found to be carriers.[18] These prevalence rates conform to India's status as an intermediate endemicity area, and in an endemic population, vertical transmission is responsible for majority of HBV infections. 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.[19] Therefore, all the infants born to HBsAg seropositive women need to be given universal infant immunization.

The HIV prevalence in antenatal women attending public hospitals in different states of India varies from 0 to 2 %, and Punjab is an area of low level epidemic (prevalence rate >1 %).[20] Our result of 0.22 % seropositivity is in accordance with the same and almost similar to the finding from Chandigarh where no woman was found to be HIV positive.[15] However, asymptomatic HIV infected women transmit the infection to their offspring, and mother-to-child trans mission is by far the most significant route of transmission of HIV infection in children below the age of 15 years. 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.[21] Timely detection of HIV infection and use of anti-retroviral therapy along with the knowledge to avoid contracting the infection could help in curtailing this problem. In the present series, 10 woman tested positive for Syphilis i.e 0.22%. In the study of Datey et al., the overall prevalence of Syphilis from five different centers of study was 1 %, and the prevalence was the lowest (0.3 %) at Chandigarh and Calcutta.[15] Although the seroprevalence of syphilis in pregnancy is low, it is a recognized cause of fetal loss. Proper treatment and

antenatal care of the VDRL-reactive women would help in achieving successful pregnancy outcome.

## CONCLUSION

This present study clearly documents a relatively declined sero-prevalence of HBsAg, HIV and VDRL within the of study period of 6 months, this reflects the level of HIV and VDRL in the general population, this is due to the fact of the community based outreach embarked upon by the health professionals in the area with a focus of getting to zero level in the region.

## RECOMMENDATION

All pregnant women should be screened for HIV and syphilis at their first antenatal visit within the first trimester and again in the third trimester. Pregnant women presenting with syphilis should be offered HIV testing and all HIV-positive pregnant women should be regularly screened for syphilis.

## ETHICAL APPROVAL

This research work was performed according to ethical guidelines of ethical committee of Govt. Medical College, Raigarh. No bio-data of the patients were required for research.

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