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Original Research Article

HIV and pregnancy: fact sheet of a tertiary care hospital in Ajmer, Rajasthan, India

Sandhya Choudhary*, Swati

Department of Obstetrics and Gynecology, JLN Medical College, Ajmer, Rajasthan, India

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***Correspondence:**

Dr. Sandhya Choudhary,

E-mail: somikuki89@gmail.com

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ABSTRACT

Background: As HIV infection in women occurs primarily during reproductive years, hence incidence of HIV infection especially in sexually active women is more sensitive marker to track course of HIV epidemics. Pregnant women represent low risk population, so prevalence in pregnant women is proxy to HIV in general population.

Methods: A prospective study was conducted in the Department of Obstetrics and Gynecology in JLN Medical College, Ajmer from April 2015 to August 2018. It included women attending antenatal clinic and emergency ward of labor room of our hospital.

Results: Total 71 women were found positive for HIV out of 36,006 pregnant women who attended antenatal clinic, giving the prevalence of 0.197%. Out of these 71 cases, 1 case was positive for both HIV1 and HIV2. The prevalence of HIV positive women delivering in our hospital was 0.269%. 40.84% women belonged to age group 25-29.9 years and 39.43% to 19-24.9 years. Among 71 antenatal seropositive women, primigravida and second gravid accounted for equal fraction of the study population i.e. 33.80% each. 19.72% came from urban areas while 80.28% were from rural areas. 22.53% (16/71) had sero-discordant spouses. All seropositive women had singleton pregnancy and were housewives. 94.61% were registered for Anti-Retroviral Treatment (ART) and 5.39% went loss to follow up.

Conclusions: The serodiscordance rate in our region is quite high (22.53%). Increased awareness in society leading to increase in number of pregnant women attending ICTC will help in reducing transmission of HIV by safer sex practices.

Keywords: ART, HIV, Serodiscordance, Seroprevalence

INTRODUCTION

Human Immunodeficiency Virus (HIV) is an RNA virus belonging to retroviridae family and lentivirus subfamily. HIV infection is the most dreadful but a potentially preventable infection. Its spectrum varies from dead end to chronic infection. There are two types of HIV: HIV₁ which is more prevalent worldwide, more virulent and has high infectivity; and HIV₂ which is prevalent in West Africa with less virulence and less infectivity.¹ At the end of 2009, an estimated 33.3 million individuals were living with HIV infection according to the Joint United Nations

Programme on HIV/AIDS (UNAIDS).¹ It is usually transmitted by four ways: (1) unprotected sexual intercourse [homosexual/heterosexual]; (2) infected blood and blood products; (3) sharing of needles in intravenous drug users [IDU]; and (4) vertical transmission [mother to child transmission]. Occupational hazard comes under a rare mode of acquisition of this infection. High risk groups are FSW (female sex workers), MSW (male sex workers), transgenders, IDUs, migrants and truckers [bridge population] and their partners. Pregnant women belong to low risk population. In India more than 70% of HIV infections are result of heterosexual transmission and

over 90% of infections in children result from mother to child transmission [MTCT].²

Rate of transmission of HIV from male to female is two to three times higher than that from female to male.³ Langerhans' cells of the cervix may provide a portal of entry for HIV and it has been suggested that some serotypes may have higher affinity for these and therefore to the more efficient in heterosexual transmission.⁴ MTCT may occur in prenatal period (23-30%), intra natal (50-65%) and postnatal during breast feeding (12-20%).¹

In the absence of prophylactic anti-retroviral therapy to the mother during pregnancy, labor, and delivery and to the fetus following birth, the probability of transmission of HIV from mother to infant or fetus ranges from 15-25% in industrialized countries and from 25-35% in developed countries.¹ Today the rate of MTCT has fallen to 1% or less in pregnant women who are receiving combination ART for their HIV infection.¹ MTCT risk increases in presence of mastitis, cracked nipples and breast abscess.⁵

In 1986 the Government of India established National AIDS Control Committee to formulate a strategy for HIV/AIDS prevalence. India launched National AIDS Control Program (NACP) in 1987.⁶ Prevention of Parent to Child Transmission (PPTCT) Program was launched in year 2002 under NACP-II. To prevent MTCT in developing countries HAART (Highly Active Anti-Retroviral Therapy) i.e. TLE (Tenofovir, Lamivudine, Efavirenz) is administered to mother and syrup Nevirapine to infants till 6 weeks. As of 2010 it is a first line option in the developing world.⁷

METHODS

It was a prospective study, conducted in the Department of Obstetrics and Gynecology, JLN Medical College, Ajmer from April 2015 to August 2018, i.e. for a total duration of 41 months. A total of 36,006 pregnant women were tested for HIV₁ and HIV₂ in the booking visit of antenatal clinic of whom 71 were detected to be positive for HIV. Out of these 71, one patient was positive for both HIV₁ and HIV₂ and rest were positive for HIV₁. Also, those women who presented to the emergency department of our hospital directly in active labor whose HIV status was unknown, were tested for HIV₁ and HIV₂.

The total number of HIV positive deliveries in our hospital during these 41 months was 130 out of 48,230 deliveries in our hospital during the same duration of time. For all these women pre-test counseling was done and then informed consent was taken followed by venous blood sample collection. Samples were tested for HIV antibodies as per NACO guidelines. First antibody test was ELISA. If this came out to be positive, then it was confirmed by using two other supplement tests like HIV RNA test and p24 antigen test, Western blot test.

After confirmation of HIV, post-test counseling was done. Results were kept confidential and HIV positive pregnant women were referred to ART center for CD4 T cell count, tests for other infections and to initiate ART.

RESULTS

A total of 36,006 pregnant women who visited our hospital in antenatal clinic underwent pre test counselling for HIV testing. Out of them, 70 women were confirmed positive for HIV₁ and 1 woman for both HIV₁ and HIV₂. The prevalence of HIV infection in our antenatal clinic was 0.197% and the prevalence of HIV positive delivery in our hospital was 0.269% (Table 1).

Table 1: Prevalence of HIV infection in pregnant women.

No. of women	HIV positive	Prevalence
Antenatal clinic: 36,006	71	0.197%
Total number of deliveries: 48230	130	0.269%

25-29.9 years age group accounted for the maximum number of HIV positive cases [40.84%] which was followed by the age group 19-24.9 years [39.43%]. 14.08% women belonged to age group 30-34.9 years and 5.63% of these women were of age 35 years and above (Table 2).

Table 2: Age wise distribution of HIV infection in antenatal pregnant women.

Age (in years)	No. of women (n=71)	Percentage
19-24.9	28	39.43
25-29.9	29	40.84
30-34.9	10	14.08
≥35	4	5.63

Out of 71 antenatal seropositive women, both primigravida and second gravid accounted for equal number of cases i.e. 24 in each group [33.80% each], and remaining were third gravida and above [32.39%] (Table 3).

Table 3: Gravidity and parity status of antenatal pregnant women.

Gravida/para	No. of women (n=71)	Percentage
Primigravida	24	33.80
Second gravida	24	33.80
Gravida 3 and above	23	32.39

Husbands of 16 HIV positive antenatal women were confirmed to be HIV negative giving sero-discordance rate of 22.53 (Figure 1).

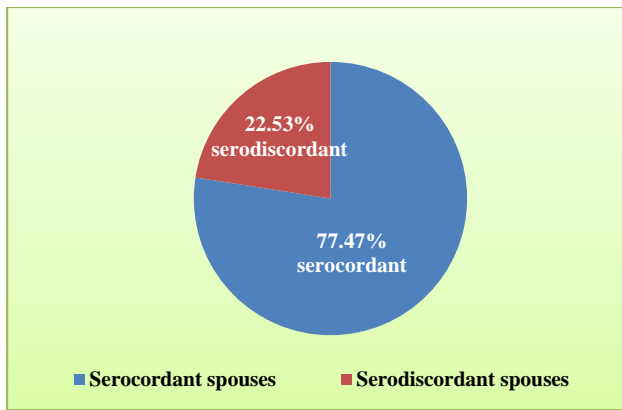


Figure 1: Status of spouse.

Maximum number of HIV positive women came from rural area i.e. 80.28% and remaining 19.72% belonged to urban residential status (Figure 2).

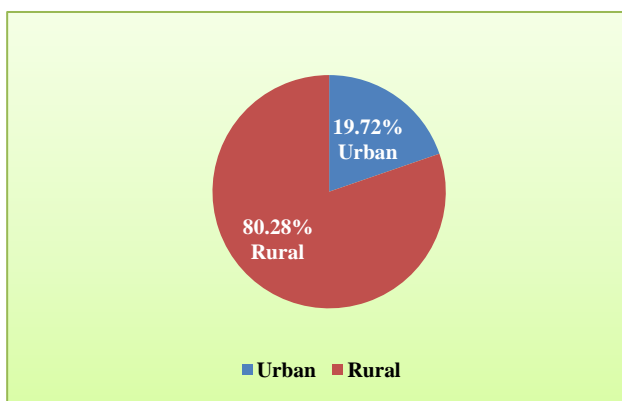


Figure 2: Residential status.

All HIV positive women were housewives. All 71 women had singleton pregnancy. 94.61% were registered for Anti-Retroviral Treatment (ART) and 5.39% went loss to follow up. The total number of pregnant women tested positive for HIV as well as women delivering in our hospital per year during the study period is being shown in Figure 3, which shows a variable trend.

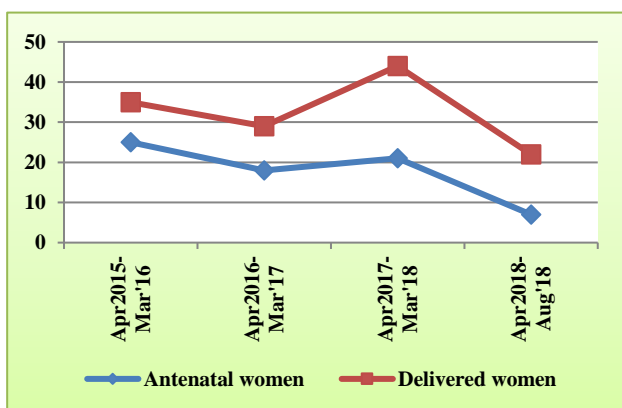


Figure 3: Year-wise trend of HIV positive status in antenatal and delivered women.

DISCUSSION

National adult (15-49 years) HIV prevalence is estimated at 0.26% (0.22%-0.32%) in 2015.⁸ In 2015, adult HIV prevalence is estimated at 0.30% among males and at 0.22% among females.⁸ In present study sero-prevalence of HIV infection was 0.197% among 36,006 antenatal pregnant women. Similar studies done by Giri et al and Patil et al, at Maharashtra observed the prevalence of HIV as 0.41% and 0.44% respectively.^{9,10} While a study by Gupta et al done in North India revealed that the prevalence of HIV was found to be 0.88%.¹¹ A study conducted by Khokhar et al at a tertiary care hospital, Gujarat, observed prevalence of HIV as 0.35%.¹² Six Indian states are considered to have high prevalence i.e. Manipur, Nagaland, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra. Rajasthan is considered as a low prevalence state. Decrease in prevalence of HIV-AIDS is due to increase in awareness among society leading to increase in number of pregnant women attending ICTC.⁸ In the present study, out of 71 HIV positive women in our antenatal clinic, maximum numbers of clients who tested sero-positive i.e. 40.84% were in age group 25 to 29.9 years. Study done by Khokhar et al and Sarkate et al also revealed maximum age prevalence in 25-29 years age group.^{12,13} Young women are more vulnerable to HIV epidemic and the virus is more easily passed to young women because of their immature vaginal tracts and easily torn tissues. Meanwhile gender inequalities in many countries prevent young women from negotiating safer sexual practices including use of condoms. High prevalence in this age group can be considered as forecasting of financial burden as well as loss of youth for the nation (Dash et al).¹⁴ Among HIV positive pregnant women, in present study, primigravida, second gravida and third gravida and above, each accounted for one third fraction of the study population. In contrast to this, a study done by Patil et al revealed that, out of 309 HIV positive pregnant women studied, majority 166 (53.83%) were primigravida.¹⁰ The percentage of primigravida coming for institutional delivery is significantly more than multigravida in his area, but in our area the above findings suggest almost equal access of primigravida and multigravida to institutional delivery. Men are twice as likely as women to bring HIV infection into a marriage, presumably through extra-marital sexual behavior.^{15,16} Women become infected twice as fast as men probably due to increased biological susceptibility.¹⁵ Prevalence of HIV in pregnant women has increased steadily, and sex with husbands is the only identified risk exposure for most of these women.¹⁷ However, among married adults, the incidence of sero-discordance with women being HIV positive and the husband being negative has been reported ranging from 1.2% to 3.5%.^{15,16} Out of 71 HIV positive pregnant women in present study, 22.53% were sero-discordant: meaning their husbands were negative for the HIV status. This data was 3.3 times higher than that studied by Shah I et al who found sero-discordance rate of 6.7% in his study.¹⁸ There is still a paucity of

research on the socio-demographic and other underlying factors associated with HIV transmission among women in India. 80.28% of study subjects belonged to rural area in present study. Basis of this seems poverty and unemployment in rural India due to which male population is forced to move to urbanized sectors for work like driving, laboring, construction work, etc. where they contract the disease from extramarital unsafe sex practices. Figure 3 shows year-wise trend of HIV positive status in antenatal and delivered women. There is a variable trend i.e. neither constant, nor increasing or declining number of HIV positive pregnancies in our hospital. This could be explained on basis of lack of contraception in many HIV positive women who got pregnant repeatedly. Some of these opted for abortion, while others continued their pregnancies. Better access of women to antenatal clinics and institutional deliveries may also be implicated as a reason of this variable year wise trend.

CONCLUSION

Every HIV positive person has the right to get treatment but simultaneously it is his/her duty to disclose his/her serostatus to the spouse. Lack of spousal communication is a key factor in perpetuating intra-marital transmission. Identification and treatment of STDs offers an important additional strategy for prevention of HIV/AIDS in married couples. Education and awareness programs for society and especially among poor class regarding STDs and HIV prevention are of paramount importance.

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