

# Recent Trends in the Epidemiology of HIV in Antenatal Women at a Tertiary Care Center

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## ABSTRACT

**Introduction:** Globally, women and children are the fastest growing group of HIV-positive individuals. As 90% of the pediatric HIV infection is due to mother to child transmission, determination of the seroprevalence in pregnancy will also enable us to take some measures to decrease the transmission to the newborn.

**Objective:** To study the seroprevalence of HIV among pregnant women.

**Methods:** Data of 31,328 women attending the antenatal clinic from January 2006 to December 2009 was analyzed. The pregnant women attending the antenatal clinic for consultation were counseled for HIV testing, informed consent was obtained and blood samples collected for HIV testing. Seropositive women were questioned regarding their awareness of AIDS, personal habits, blood transfusion, drug abuse and methods of contraception. Spouses of the seropositive pregnant women were also counseled and similarly tested for HIV.

**Results:** Acceptability of the test after patient counseling was 72.85%, and 95.3% women attended post-test counseling and collected reports.

**Conclusion:** There is no definite treatment for HIV/AIDS; however, the pandemic can be controlled by education and behavioral modification.

**Keywords:** HIV, Epidemiology, Antenatal women.

## INTRODUCTION

AIDS continues to be a major global health priority. Although important progress has been achieved in preventing new HIV infections and in lowering the annual number of AIDS related deaths, the number of people living with HIV continues to increase. AIDS-related illnesses remain one of the leading causes of death globally and are projected to continue as a significant global cause of premature mortality in the coming decades (World Health Organization, 2009).<sup>1</sup> According to HIV surveillance report 2008-2009 by NACO, India had an estimated 1.8 to 2.9 million HIV-positive persons in 2007 with an estimated adult HIV prevalence of 0.34% (0.25-0.43%). As the HIV prevalence among the high-risk groups (HRG) is very high compared to that among the general population, India continues to be in the category of concentrated epidemic. The sexual mode continues to be the major mode of transmission, though transmission through injecting drug use and men having sex with men are on the rise in many new pockets.<sup>2</sup>

Overall prevalence rate of HIV infection in pregnant women is 0.3% with a vertical transmission rate of 30%. Thus, about 30,000 infants acquire HIV infection every year. It is the prevalence of HIV in pregnancy, which would indicate the HIV prevalence in the female population and to some extent in the general population. National estimates of HIV are also based on the surveillance systems that focus on pregnant women who

attend antenatal clinic. This method assumes that HIV prevalence among the pregnant women is a good approximation of prevalence among the adult population.<sup>3</sup> Globally, women and children are the fastest growing group of HIV positive individuals. As 90% of the pediatric HIV infection is due to mother to child transmission, determination of the seroprevalence in pregnancy will also enable us to take some measures to decrease the transmission to the newborn. The epidemiology of HIV serves an important guideline to formulate the proper strategy to tackle the problem of mother to child transmission (MTCT). Moreover, we expect to achieve some idea about the recent trends of the infection in our population.

## METHODS

To the best of our knowledge, only a few studies on HIV prevalence in antenatal women are available from north India, and indicating the current trend in seroprevalence from this area. Hence, we undertook this study to determine the rate and trends of HIV seroprevalence among pregnant women attending antenatal clinics at the Pt BD Sharma PGIMS, Rohtak, which is a tertiary care hospital and caters to patients from all over Haryana.

This study was conducted from January 2006 to December 2009. All the pregnant women attending the antenatal clinic were counseled for HIV testing, informed consent was obtained, and blood samples were collected for testing. Samples were

processed as per NACO guidelines. The first test was done by Comb Aids – RS (Span Diagnostics Ltd.). If the sample tested positive it was tested with rapid immunochromatographic test by Retrocheck HIV (Qualpro Diagnostics). If the sample tested positive in the second test then third test was done by Triline rapid test device (Acon Biptech Co Ltd.). The samples which tested positive with all the above tests were considered to be positive (WHO strategy III). Seropositive women were questioned regarding their awareness of AIDS, personal habits, history of blood transfusion, drug abuse and methods of contraception. Spouses of the seropositive pregnant women were also counseled and tested for HIV antibodies as above after taking written consent. Post-test counseling was done by the same counselor who did the pretest counseling, and after maintaining strict confidentiality the reports were disclosed.

## RESULTS

From January 2006 to December 2009, 31,686 deliveries were conducted at our institute, 31,328 of the antenatal patients attending our outpatient departments were counseled for HIV testing, 22,824 patients underwent testing (Table 1).

	2006	2007	2008	2009	Total
Antenatal HIV testing	2006	2007	2008	2009	Total
Number of deliveries	7510	7874	8165	8137	31686
Number of women counseled	7565	7753	7873	8137	31328
Number of women who accepted testing	1439 (19%)	5405 (69.7%)	7850 (99.7%)	8130 (99.9%)	22824
Number of seropositive women	11	24	11	21	67
Spouses testing					
HIV positive	09	18	06	14	47
Seroprevalence	0.76%	0.44%	0.14%	0.25%	0.21%
Seropositive women who underwent LSCS	9	21	8	15	53
Seropositive women who underwent vaginal delivery	2	3	2	4	11
MTP				3	3

Total number of seropositive women who came for delivery was 67. Eleven (16.4%) had vaginal delivery and LSCS was done in 53 patients (79.1%). Total 30 patients had elective LSCS and 23 had emergency LSCS. Mean age of patients was  $28 \pm 2.3$  years (Table 2). Mean parity was  $1.3 \pm 0$ . Forty patients were referred from ART center at our institute and 37 were referred from outside. Out of 40 patients, 15 were taking ZDV and 10 were taking NVP. Rest of the patients came late so given NVP prophylaxis. Due to limitation of resources, testing could not be done on unbooked antenatal women who came directly to labor ward and were discharged the next day after delivery.

Majority of the seropositive subjects belonged to the low socioeconomic status and most of them were not using any contraceptive methods. Heterosexual promiscuity was the commonest risk factor found in these couples.

<b>Age</b>		
< 20 years	1	1.49%
21-30 years	56	83.58%
> 30 years	10	14.92%
<b>Parity</b>		
Primigravida	20	29.85%
Multigravida	47	70.14%
<b>Literacy</b>		
Illiterate	10	14.92%
Literate	57	85.07%
<b>Socioeconomic status</b>		
Low	60	89.55%
Medium	5	7.4%
High	2	2.9%
<b>Method of contraception</b>		
None	61	91.04%
Barrier	2	2.9%
OCP	4	5.9%
IUCD	0	–
<b>Risk factors</b>		
Heterosexual promiscus	50	74.62%
Multiple sexual partners	6	8.95%
H/O BT	1	–
I/V drug abuse	0	–
Associated STD	2	–
Unknown	8	11.94%

## DISCUSSION

India's socioeconomic status, traditional social ills, cultural myths on sexuality and a huge population of marginalized people make it extremely vulnerable to HIV/AIDS.<sup>4,5</sup>

Our study reflects the epidemiological aspect of HIV infection and uptake of services in our institution. In our hospital, we adopt universal counseling and voluntary screening by opt-in strategy. In this strategy, every woman agreeing to get tested signs a consent form. In spite of our best efforts we are lagging behind in counseling all the women (booked/ unbooked). This is due to the fact that many women are admitted at odd hours and get discharged even before the counselors may get a chance to meet them. This shortcoming can now be overcome by recruiting more technicians and counselors to have 24 hours coverage in the OPD and the labor ward all throughout the year. In the year 2006, only 19% patients accepted testing, in the year 2007, 69.7% patients accepted testing and in the year 2009, 99.9% patients accepted testing. This clearly shows that with the ongoing PPTCT services and spread of awareness regarding HIV/AIDS, the need for HIV testing is being felt among the antenatal attendees.<sup>4</sup> Pallikadavath et al showed that HIV awareness among north Indian married women was higher in the 15 to 24 years age group as compared to older women as reflected in the present study.<sup>4,6</sup>

When the status of the spouse was analyzed 81.8, 75, 54.5 and 66.6% were found to be seropositive in the years 2006,

2007, 2008 and 2009 respectively. All the spouses did not turn up for counseling and testing in spite of repeated requests and many declined to undergo testing in fear of discrimination. Many of the women came directly to labor ward and as a result the status of their spouses remained unknown.

The most common risk factor in our study was heterosexual promiscuity, thus making heterosexual route as most common route of transmission of HIV.

There is no definite treatment for HIV/AIDS; however, the pandemic can be controlled by education and behavioral modification. Thus, it is very important to understand the modes of infection, the vulnerable population and the changing trends in the epidemiology of HIV infection to be able to make new policies and amend the existing ones as an endeavor to limit this pandemic.

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