



Original Article

Epidemiology of HIV in Antenatal women in an urban set up

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Abstract

Objectives : To study the seroprevalence of HIV amongst pregnant women and their spouses. **Methods :** The study was conducted from January 2004 to December 2005. The pregnant women attending the antenatal clinic for consultation and those coming directly to labor room for delivery (unbooked cases) 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 method of contraception. Spouses of the seropositive pregnant women were also counseled and similarly tested for HIV. **Results :** The seroprevalence of HIV was 0.41% and 0.63% in 2004 and 2005 respectively. **Conclusions :** There was 53.3% increase in seroprevalence of HIV in pregnant women in 2005.

Key words: prevention of parent to child transmission, seroprevalence in antenatal women

Introduction

The HIV pandemic has engulfed the world within 25 years, of its identification. The total number of people living with HIV/AIDS at the end of December 2005 is 40.3 million out of which 2.3 million were children¹. 4.9 million people were newly infected in 2005 out of which 0.70 million were children. This devastating experience is no longer contained in the African countries but we in India are at the shifting epicenter of the pandemic, as India has the second largest seropositive population in the world².

As heterosexual transmission is by far the most common route for contracting HIV infection, there is no doubt that the prevalence of HIV infection amongst the people with high risk behavior will be rising. But the prevalence in this group does not reflect the prevalence in the general population. 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 amongst the pregnant women is a good approximation of prevalence amongst the adult population³. As 90% of the pediatric HIV infection is due to mother to child transmission (MTCT), determination of the seroprevalence in pregnancy will enable us to make effective and timely intervention to decrease the transmission to the newborn.

In appreciation of the gravity of the situation Government of India in collaboration with National Aid

Paper received on 24/07/2006 ; accepted on 15/12/2007

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Control Organization (NACO) have started a number of programs to decrease MTCT. In our institution we have prevention of parent to child transmission (PPTCT), voluntary counseling and testing center (VCTC) and Apex centers. The epidemiology of HIV serves an important guideline to find the dynamics of this particular infection so as to formulate the proper strategy to tackle the situation. Moreover we expect to achieve some idea about the changing trends and pattern of the infection in our population. At the same time this will enable us to evaluate the efficacy of the ongoing program in our center.

Methods

This study was conducted from 1st January 2004 to 31st December 2005, a period of two years since the establishment of the PPTCT center in our institution. All the pregnant women attending the antenatal clinic for consultation and those coming directly to labor room for delivery (unbooked cases) were counseled for HIV testing, informed consent was obtained, and blood samples collected for HIV 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 HIV EIA Comb (J. Mitra & Co. Pvt. Ltd.). If the sample tested positive in this second test then the third test was done by SDBioline (Standard Diagnostics, INC). The samples which tested positive with all the above tests were considered to be HIV positive (WHO strategy III). Seropositive women were questioned regarding their awareness of AIDS, personal habits, blood transfusion, drug abuse, and method 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

In the year 2004 there were 8674 new antenatal patients attending our institution. The number of women counseled was 8408 out of which 6826 (81.18%) accepted testing. The seroprevalence of HIV was 0.41 (28x100/6826). Four thousand eight hundred and twenty six (70.70%) of the women who had accepted the testing returned for post test counseling whereas 21 (75%) of 28 seropositive women came back for post-test

counseling. As for the status of the spouse, 15 out of 28 (0.58%) were found to be seropositive, three were seronegative and were advised repeat testing after three months and use of barrier contraceptives in the meantime. Ten husbands did not accept testing at post test counseling even after repeated requests and their status remained unknown.

In the year 2005 the total number of new antenatal registrations (booked and unbooked) was 9024. The number of women counseled was 8871 out of which 8357 (94.20%) accepted testing. The seroprevalence of HIV was 0.63% (53x100/8357) 7873 (94.20%) of the women who had accepted the testing returned for post test counseling whereas 39 (73.58%) of 53 seropositive women returned for posttest counseling. Thirty one out of 53 husbands of the seropositive women were found to be seropositive, three were seronegative and 20 husbands refused testing at the post test counseling even after repeated requests and their status remained unknown.

In spite of our whole hearted approach it was not possible to counsel all the antenatal women as counseling could not be done on Sundays and Government holidays and the women who were admitted on Saturdays after 4 pm and delivered normally by Sunday were discharged before Monday morning.

Table 2 shows that most of the seropositive women were of the age group 20-25 years and nulligravidas. It also demonstrates that HIV infection is spreading equally amongst illiterate as well as literate women which indicates the inadequacy of the current strategy of combating the spread of this infection by information through mass media and public awareness. The increase has been found to be even greater amongst literate women (3.32 to 7.75 per thousand) in comparison to illiterate group (3.33 to 4.89 per thousand).

Majority of the seropositive subjects belonged to the low socioeconomic status and most of them, 23 out of 28 (82.14%) in 2004 and 47 out of 53 (88.68%), were not using contraceptive methods. Barrier method was not at all popular in this group as only 3.6% and 1.85% of the seropositive couples in the year 2004 and 2005 respectively were found to be using this method. Table 3 shows that heterosexual promiscuity was the commonest risk factor found in these couples.

Table 1. Uptake of services in PPTCT^a clinic.

Antenatal HIV testing	2004	2005
Number of women registered	8674	9024
Number of women counseled	8408	8871
Number of women who accepted testing	6826 (81.18%) ^a	8357 (94.20%) ^a
Number of women who collected report/attended posttest counseling	4826 (70.70%) ^b	7873 (94.20%) ^b
Number of women detected +ve	28 (0.41%) ^c	53 (0.63%) ^c
Number of +ve women who attended post test counseling/collected report	21 (75%) ^d	39 (73.5%) ^d
Spouses of seropositive women accepting HIV testing	18 (64.3%)	33 (62.3%)
Spouses testing HIV +ve	15/18 ^e (83.3%)	31/33 ^e (93.9%) ^e

^a z value 26.17, P<0.0001 ^b z value 38.91, P<0.0001 ^c z value 1.74, P=0.081
^d z value 0.0, P=1.0 ^e z value 0.19, P=0.85

Table 2. Maternal demographic characteristics.

Age Group (years)	2004	2005
15-20	5	9
20-25	13	30
25-30	9	11
30-35	1	2
35-40	0	1
Parity		
Primigravida	17	46
Multigravida	11	7
Literacy	z= 0.00, P=1.00	z = 0.00, P=1.00
Illiterate	3.33/1000	4.89/1000
Literate	3.32/1000	7.75/1000
Family income (Rupees per month)		
<1000	9	12
1000-2000	9	18
2000-5000	7	14
>5000	3	9
Method of contraception		
None	23	47
Barrier	1	1
OCP	5	5
IUCD	0	0

Table 3.

Risk factors	2004	2005
Heterosexually promiscuous husband/husband seropositive	20	38
Promiscuity/multiple sex partners	3	6
History of transfusion of blood or blood products	1	4
Intravenous drug user	0	0
Associated sexually transmitted disease	2	7
None/unknown	4	6

Discussion

Our study reflects the epidemiological aspect of HIV infection and analyses the uptake of services in the PPTCT unit of our institution. In our hospital we adopt universal counseling and voluntary screening by opt in strategy. In the opt in strategy every woman agreeing to get tested signs a consent form. In spite of our endeavour to maintain a meticulous patient flow cycle (registration - counseling - check up) we are lagging behind in counseling all the women who are undergoing registration (booked or unbooked). This is due to the fact that many women are admitted/referred at odd hours and may be discharged even before the counselors get a chance to meet them. This pitfall is now proposed to be rectified by recruiting more counselors and technicians to have 24 hours coverage all throughout the year. Another disheartening fact is that only 81.18% of the women counseled, accepted the testing in 2004. The silver lining is the increase in acceptance of the testing (94.20%) in 2005. Other studies in the same field have reported that the proportion of women agreeing to undergo HIV testing through the opt in approach is in the range of 36% to 86%⁴.

In the year 2004 only 70.70% of the women who accepted the testing came back to collect the report but this figure increased to 94.20% in 2005. This shows clearly that with the ongoing PPTCT services and spread of awareness regarding HIV/AIDS, the need for HIV testing is being felt amongst the antenatal attendees².

In our study the seroprevalence of HIV was 0.41% in 2004 and 0.63% in 2005 amongst the antenatal women. In India it ranges from <1% to 5.9%². The seroprevalence amongst antenatal women is >1% in the states of Tamil Nadu, Maharashtra, Karnataka, Andhra Pradesh, Manipur & Nagaland⁵. Higher prevalence rates are reported in other South East Asian countries like

Thailand (8%) and Myanmar (7%)². In our center the seroprevalence rate increased from 0.41% in 2004 to 0.63% in 2005. In increase is not significant (Z value 1.74, P=0.081).

The most common risk factor in our study was heterosexual promiscuity, thus stressing the fact that most common route of transmission of HIV is heterosexual. When the status of the spouse was analysed, 53.57% (15/28) and 58.49% (31/53) were found to be seroreactive in the year 2004 and 2005 respectively. It was not possible to counsel and test all the spouses as many did not turn up in spite of repeated requests and many declined to undergo testing as they suffered from the fear of discrimination. Many unbooked women came directly to the labor room and their spouses did not attend the PPTCT clinic later. As a result of this the status of the spouse remained unknown in 35.71% and 37.73% cases in the two consecutive years.

HIV/AIDS cannot be managed by medicine alone. Behavioral modification and percolation of knowledge about the disease is essential to control the pandemic. For this we must understand the epidemiology of the disease as regards the modes of spread, and the geographical areas affected so that we can adopt steps at the sociocultural level. Efforts should be made to evaluate HIV infection as a current day problem and to identify the persons vulnerable to infection.

Conclusion

Out of the twenty eight women who reported positive in HIV testing only about 75% turned up for posttest counseling.

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