Antenatal HIV Voluntary Counseling and Testing: Acceptance in Government centre of North India

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Original Article

Keywords: antenatal women, HIV prevalence, Prevention of Mother To Child Transmission, Tertiary care, Voluntary Counseling Testing

ABSTRACT

Background: Routine HIV counseling and testing done as a mandatory part of antenatal care in India has lead all pregnant women comes under the prevention of mother to child transmission of HIV (PMTCT) program. Despite such strategies, the effective execution and uptake of these programs remains a major obstacle. It is thus, important to understand experiences of pregnant women undergoing HIV testing to detect the flaws on the part of the provider and the benefiter and eliminate them to strengthen the PMTCT services.

Aim: We studied the acceptability of HIV voluntary counseling and testing (VCT) in antenatal women attending a tertiary health centre of north India. The impact of sociodemographic factors on HIV prevalence and uptake of PMTCT was also studied and the possible reasons for dropouts were determined.

Methods: Firstly we performed pretest counseling and sociodemographic data and blood samples collected from the consenting antenatal pregnant women were also taken. Samples were tested for HIV antibodies as per WHO guidelines. Data was analysed and presented as mean, percentages and tables.

Results: Of 30150 pregnant women counseled. 23464 (77.82%) underwent testing. 136 / 23464 women tested seropositive. The prevalence of HIV in antenatal women was found to be 0.58%. Majority of these women were young and belonged to the age group 20-24 years (0.23%). 22% refused testing, the reasons for which were tried to b sought. Strong associations were found between the HIV seroreactive status and marital status, low education status, low social class, high parity and unemployment.

Conclusion: To eliminate pediatric transmission of HIV and to create more awareness regarding HIV infection and parent to child transmission, there is a need to make VCT and PMTCT programs more acceptable to the population. The observations found in the study were consistent with the national projections.
Introduction

HIV continues to be one of the greatest health challenges in the world with approximately 35 million people living with HIV infection globally in 2013. [1] India has the third largest HIV epidemic in the world. [2] In India major route of HIV transmission is through sexual contact (85.6%). Nearly, 5% of infections are attributable to parent to child transmission. [3] The epidemic disproportionately affects women, who account for 39% of the total infections in the country. [2] Women stand at a higher risk of HIV infection and are a source of transmission to their children, thus forming the focus of most AIDS control programs aimed to meet the goal of achieving virtual elimination of pediatric HIV. Voluntary counseling and testing (VCT) has been identified as an effective tool in reducing HIV transmission. So far, very few studies have been conducted citing the acceptance of VCT and Prevention of Mother to Child Transmission programs (PMTCT) from this part of India. Undertaking this study was therefore important to understand the current trend of HIV seroprevalence and its sociodemographic impact, to formulate better strategies for success of PMTCT in India.

Methods

Place of study

This study is carried out in a tertiary care referral hospital of north India where mostly patients referred from other centers undergo antenatal checkups. The present study sets out to determine the impact of VCT in preventing mother to child transmission of HIV and to simultaneously identify the lacunae in the prevailing PMTCT programs.

Patients and period of study

Pregnant women consulted at the antenatal clinic of this hospital are routinely advised to undergo HIV screening after pretest counseling done by trained field workers and informed consent. The local pathological laboratory of our department serves these laboratory services to all such patients, and the tests are carried out as per the guidelines laid down by the national aids control organization (NACO), India. [4] The results were collected from all pregnant women tested in this laboratory and no selection bias was observed.

The findings were analyzed over 9.5 years from October 2005 to April 2015.

Ethical consideration

Informed written consent was obtained from each participant after pretest counseling and the participants were free to withdraw from the test any time they wanted. Ethical clearance for the study was obtained from the ethical committee of the institute.

Testing procedure

If the participant agreed to the testing, she was referred to the laboratory technician who performed a rapid HIV test (SD BIOLINE HIV-1/2 3.0 Rapid Test Procedure; bio standard diagnostics Pvt Ltd, India). If the participant tested positive for HIV or had an indeterminate test result, the result was checked using the COMBAIDS –RS Advantage-ST HIV1 & 2 IMMUNODOT TEST KIT (Span Diagnostics Ltd. India). Rapid test kits were kept under optimal conditions and used before the expiry date. Results were read under good illumination test quality was ascertained by running regular negative and positive control tests. The results were obtained in 5-10 minutes after the first test and in about 20 minutes after the second. The first rapid test kit used was previously evaluated by Consortium of National Reference Laboratories (NRLs) of Govt. of India and was found to have high sensitivity (>=99.5%) and specificity (>=98.0%); and the second test showed 100% sensitivity and specificity and intra and inter run precision. Samples giving positive results were reanalyzed using the COMBAIDS- RS Advantage-ST immunodot test kit. Standard biosafety, record keeping and client confidentiality procedures were observed.

Statistical analysis:

The results were presented in percentages and means. Simple inferential statistics were used. Qualitative data collected from group discussions were analyzed through detailed content analysis and ethnographic summary.

Result

Data was collected and analysis was done from a total of 30,150 pregnant women visiting the antenatal clinic during the period of October 2005 to April 2015. These women were provided voluntary pretest counseling for HIV Testing, out of which 23,464 (77.82%) consented for testing. About 22% pregnant women opted out from testing and hence we could not assess the seroreactivity in these women.

136 out of 23,464 women, i.e. (0.579%) tested seropositive for HIV antibodies in the double rapid tests (table 1).

The age of subjects ranged from 15 to 42 years with a mean age of 26.10 years. Most of these women, (10,839) 46.3% were in the age group of 25 - 34 years followed by 20-24 years, (10,373) 44.2%, >35 years (5.1%), and least in 15-19 years (4.4%).

Among the seropositive women, the majority (38.9%) were aged 20-24 years with the prevalence of this population being 0.23%, followed by the age group of 25-34 years (36%), the prevalence being 0.20%, then >35 years (18%) the prevalence of 0.076%, and in the age group of 15 –19 years (4.4%).
years (11.76%) with the prevalence of this category being the lowest of 0.06% as shown in table 2.

The mean age of the HIV positive women was found 26.29 years.

Table 3 shows the socio demographic characteristics, 21583 women (92%) were married, 21579 (92%) were unemployed, 15028 subjects (64%) had primary education, and as many as 17840 (76%) were found to be in the low socio economic class.

102 /136 seroreactive women (75%) accepted to utilize the PMTCT facility.

Table 1: Acceptance of HIV testing among pregnant women who were counseled

<table>
<thead>
<tr>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total no. of pregnant women counseled</td>
<td>30150</td>
</tr>
<tr>
<td>Total no. of pregnant women tested for HIV</td>
<td>23464/30150</td>
</tr>
<tr>
<td>Total no. of HIV seropositive pregnant women</td>
<td>136/23464</td>
</tr>
</tbody>
</table>

Table 1 - The prevalence of HIV among antenatal women visiting our centre during the period of study was found to be 0.58% which is higher than the national prevalence of 0.4% among antenatal women. This data is of concern as this part of India has been categorized as a low prevalence area.

Table 2: Age wise distribution of pregnant women

<table>
<thead>
<tr>
<th>Age group</th>
<th>HIV positive N=136</th>
<th>% positive</th>
<th>Prevalence</th>
<th>HIV negative N=23328(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19 years</td>
<td>16</td>
<td>11.76%</td>
<td>0.06%</td>
<td>1018 (4.4%)</td>
</tr>
<tr>
<td>20-24 years</td>
<td>53</td>
<td>38.9%</td>
<td>0.23%</td>
<td>10320 (44.2%)</td>
</tr>
<tr>
<td>25-34 years</td>
<td>49</td>
<td>36%</td>
<td>0.20%</td>
<td>10790 (46.3%)</td>
</tr>
<tr>
<td>&gt;35 years</td>
<td>18</td>
<td>13.2%</td>
<td>0.08%</td>
<td>1200 (5.1%)</td>
</tr>
</tbody>
</table>

Table 2 shows that HIV is fairly prevalent among the antenatal women in the age group of 20-24 years followed by 25-34 years, when the sexual activity is maximal. This is in consensus with the national survey report by NACO.

Table 3: Socio Demographic characteristics Of Pregnant Women

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>HIV positive</th>
<th>% positive</th>
<th>HIV negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>15</td>
<td>11%</td>
<td>1866 (8%)</td>
</tr>
<tr>
<td>Married</td>
<td>121</td>
<td>89%</td>
<td>21462 (92%)</td>
</tr>
<tr>
<td>Educational attainment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>22</td>
<td>16.4%</td>
<td>4665(20%)</td>
</tr>
<tr>
<td>Primary education</td>
<td>97</td>
<td>71.2%</td>
<td>14931 (64%)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>15</td>
<td>10.9%</td>
<td>2799(12%)</td>
</tr>
<tr>
<td>Higher education</td>
<td>02</td>
<td>1.5%</td>
<td>933 (4%)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>117</td>
<td>86%</td>
<td>21462 (92%)</td>
</tr>
<tr>
<td>Employed</td>
<td>19</td>
<td>14%</td>
<td>1866 (8%)</td>
</tr>
<tr>
<td>Social class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>2</td>
<td>1.5%</td>
<td>467 (2%)</td>
</tr>
<tr>
<td>Middle</td>
<td>23</td>
<td>17%</td>
<td>5132 (22%)</td>
</tr>
<tr>
<td>Low</td>
<td>111</td>
<td>81.5%</td>
<td>17729 (76%)</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>52</td>
<td>38.2%</td>
<td>7302 (31.3)</td>
</tr>
<tr>
<td>Multipara</td>
<td>74</td>
<td>54.4%</td>
<td>12131 (52%)</td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>10</td>
<td>7.4%</td>
<td>3895 (16.7%)</td>
</tr>
<tr>
<td>Gestational Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st trimester</td>
<td>15</td>
<td>11.0%</td>
<td>2799 (12%)</td>
</tr>
<tr>
<td>2nd trimester</td>
<td>20</td>
<td>14.7%</td>
<td>6998 (30%)</td>
</tr>
<tr>
<td>3rd trimester</td>
<td>101</td>
<td>74.3%</td>
<td>133531 (58%)</td>
</tr>
</tbody>
</table>

Table 3 demonstrates the relationship of HIV prevalence with the socio demographic factors of pregnant women. this clearly suggests that illiteracy, poverty, unemployment, are the factors responsible for the ignorance regarding HIV transmission and hence high prevalence.
Discussion

India has a low HIV prevalence of 0.3%.[3] Yet, in terms of individuals infected, it is home to the third largest number of people living with HIV in the world. Sexual contact is the most important route of HIV transmission in India. Mother to child transmission (MTCT) is by far the most important route of HIV spread in the pediatric population (90%).[9] The transmission of the virus from the mother-to-child during pregnancy, labour and delivery or breastfeeding is called mother to child transmission. [1]According to WHO, globally, an estimated 2.1 million individuals became newly infected with HIV in 2013. This includes over 240,000 children (<15years), and most of them were from developing countries and were infected by their HIV positive mothers during pregnancy, delivery or breastfeeding. [1]It is estimated that out of 27 million pregnancies every year, nearly 49,000 occur in HIV positive mothers. [3] However, out of these 27 million pregnancies, only about 52.7% attend health services for skilled care during child birth in India. Of those who availed health services, 8.83 million antenatal patients received HIV counseling and testing (March 2013) out of which 12,551 pregnant women were detected to be HIV positive. Of the 12,000 pregnant women found to be living with HIV, 84% were provided antiretroviral drugs (ARVs) to prevent mother to child transmission of HIV.[6]

It is well established that MTCT can now be reduced to less than 2 percent from 25–30 percent peremtial;[7]With the use of effective antiretroviral treatment (ART) and non-antiretroviral (ARV) strategies, MTCT has been virtually eliminated in developed countries. However, prevention of transmission through breast milk and formulating an effective ARV regimen has remained a major challenge for developing countries.[8] According to WHO, in 2013, 67% of pregnant women living with HIV in low and middle income countries (970,000) received ART to avoid transmission of HIV to their children. This is up from 47% in 2010.[9]

The Indian government is committed to eliminating new HIV infections among children by 2015. India’s PMTCT program started in 2002. To date, there are over 15000 sites offering PMTCT services based on 2013 WHO guidelines, the program initiates antiretroviral treatment for all pregnant and breastfeeding women living with HIV regardless of CD4 count or stage of infection.[9] In 2013-2014, 9.7 million pregnant women accessed HIV testing against a target of 13.2 million —a coverage of 74%.[9]

The availability of affordable, accurate, reliable, simple and rapid HIV tests providing results within the time frame of a single brief antenatal visit for single or a small number of clients significantly facilitates PMTCT programs by reducing travelling time and expenses. The sensitivity and specificity of these tests are greater than or equal to 99% and similar to those of ELISA. The rapid HIV tests are most suitable in developing countries where the majority of pregnant women are attended by traditional birth attendants (TBA), the pregnant women use the formal formal health sector only as a back up arrangement. If pregnancy and labour progress as expected, the pregnant women attends a local formal health post once at booking which mostly may be late in pregnancy. In these circumstances, rapid HIV tests afford the opportunity to screen for HIV in women attending peripheral units and provide results during same visit.

VCT has proved to be of promising help in reducing HIV transmission and has shown to provide behavior change and emotional support for those who test positive for HIV. At the same time, it is feasible and acceptable in reducing perinatal transmission of the virus. In order to improve the effectiveness of India’s PMTCT program and to meet the goal of achieving the virtual elimination of pediatric HIV in the country, it is important to devise appropriate evidence-based strategies. Ideally, all women should be screened for HIV before delivery during an initial prenatal care visit so that potent ART can be started in those found to be HIV infected. VCT is recognized as a priority in national HIV programs because it forms the gateway to HIV/AIDS prevention, care, treatment and support interventions but this has still not become embedded in peripheral health facilities in India. It is critical to increase the prenatal detection rate of HIV infected pregnant women so that effective interventions can be delivered.

This study recorded the apprehension of pregnant women regarding getting tested. This was found to be attributed to the fear of being tested positive, and the stigma attached to HIV.

We found the overall prevalence of HIV amongst pregnant women to be 0.57%. The national prevalence in antenatal women was 0.4%, which is lower than our finding. [9] One reason for this could be that our center being a referral tertiary health center, so most of the seroreactive cases are referred here which could be a reason for the overall higher prevalence.

Our study supports that HIV prevalence is higher in the reproductive age group when there is maximal sexual activity. The age wise distribution showed a higher prevalence of infection in young reproductive population, being maximum in age group of 20–24 years (0.23%) followed by 25–34 years (0.20%), >35 years (0.08%) and 15–19 years (0.06%). This observation seen in our study is
consistent with the national data, where the prevalence of 
HIV in India among 20-24 years is 0.18% and that among 
15-19 years old is 0.04%. [3]

Marital status was seen to have a strong relation with 
the HIV status of the study participants. Also, in Indian 
patriarchal society, women especially of the lower social 
class can not influence their husband’s behavior and 
and demand safe sex.

This study also depicts that the infection of HIV is more 
prevalent among the pregnant women who had no formal 
education at all or who did not complete secondary school 
education. This is in agreement with the study that reported 
that women having higher education have better knowledge 
of HIV transmission in contrast, the lower levels of female 
education promotes ignorance about the transmission 
and prevention of HIV infection especially in the unborn 
child. Most of the women could not complete secondary 
education. This may explain their being unemployed 
and also belonging to the low socio economic class. 
Unemployment being associated with poverty, and has also 
been linked with unsafe sex for money, thus, increasing the 
risk of HIV infection.[10][11]

Also, in this study it was found that most women who 
attended our antenatal OPD were multigravida, while 
primigravida who might be at higher risk of HIV infection 
by virtue of relatively younger age and the associated risky 
sexual behaviors, do not utilize formal antenatal services.

Furthermore, those that utilized the services presented 
late in third trimester, when interventions could be late 
to address some adverse trends of HIV on pregnancy 
especially in resource limited settings. Financial constraint, 
ignorance and lack of awareness were cited as reasons for 
late and poor utilization of antenatal services. This is in 
synchronization with other studies.[12][13]

The implementation of the government’s mandatory 
screening policy, which explicitly states that universal HIV 
screening should be included as an integral component 
of routine ANC check up, ensured that the women who 
are diagnosed with HIV would be linked to HIV services 
for their own health as well as to ensure prevention of 
HIV transmission to newborn babies under the PMTCT 
program.

In this study, 22% of the initially counseled women 
opted out testing after HIV counseling. The reasons for 
dropping out were the taboo attached to HIV, apart from 
the ignorance and financial constraints. The factors that 
influence the acceptance to HIV testing and receiving 
test results including the counseling technique used, were 
suspicion of being already infected, fear of having to cope 
with the result should it be positive, fear of discrimination, 
domestic violence or divorce. There is an almost hysterical 
kind of fear in India regarding the stigma and discrimination 
of HIV that the parents and in-laws can blame women for 
infected their husbands, while children can be denied right 
to go to school, most women depended on their husbands 
and in laws to take the decision regarding getting tested. 
This is in accordance with the findings of other authors too. 
[9][12]

While comparing group and individual pretest counseling 
techniques during the study, it was shown that there was 
a better patient acceptance of HIV testing following 
individual rather than group counseling. In our study, 
pretest counseling was partly provided as group counseling 
because lesser trained personnel are required and can be 
easily implemented at a public health set up. To maintain 
confidentiality, post test counseling was always provided 
individually.

At the same time it is important to understand that there 
is a strong need for couple counseling in order to make 
them understand the benefits of HIV testing, reducing HIV 
transmission and helping couples to cope with the HIV 
seropositive status. Couple counseling and testing will also 
ensure inclusion of underserved couples, especially those 
who are less educated and economically disadvantaged. 
We can thus, identify discordant couples and offer methods 
to them for reducing risk and transmission within their 
relationships. The World Health Organization recommends 
that couple testing be expanded in settings where routine 
HIV testing is offered, with support for mutual disclosure 
to empower couples to make informed decisions about HIV 
prevention and family planning. However there is a need to 
assess the acceptability and impact of this effort among 
couples.[14]

Among the study subjects, VCT was found to be high so 
also the utilization of PMTCT services, 77% and 75% 
respectively. The study shows an upward trend in the 
uptake of PMTCT program in this part of north India. This 
is in accordance with the national survey report. [2]

Conclusion: For this part of north India the prevalence in 
our study was found higher than that of the national survey 
because ours is a referral centre with a higher input of 
HIV infected pregnant women and the general population 
of antenatal women is being tested at adjoining district 
hospital. The acceptance of VCT was high so also was the 
uptake of PMTCT facility.

Social and demographic factors play an important role in the 
spread of HIV infection, knowledge about the transmission, 
awareness of self status and protection, awareness 

http://www.pacificejournals.com/aabs
regarding transmission to the baby and its protection, various government and government aided programs and their uptake by pregnant women. The prevailing national PMTCT program is being mostly jeopardized due to large number of women dropping out of the PMTCT cascade. In order to increase this uptake PMTCT programs can be integrated to demonstrate other health benefits to the mother and the child. It is imperative to look into alternative methods for implementation of PMTCT programs in order to maximize the reach of services to HIV infected women in least cost. Involvment of nongovernment organizations and national programs could maximize the reach of these services to infected women.

Reference
6. NACO guidelines for the prevention of mother to child transmission of HIV [http://www.naco.nic.in/pmtct.html]