ABSTRACT

Background: As HIV infection in women occur primarily during reproductive years hence incidence of HIV infection specially in sexually active women is most sensitive marker to track course of HIV epidemics. It is easy to measure prevalence in pregnant women. This study was done to determine the seroprevalence of HIV in pregnant women in Medical College, Kota, India.

Methods: The study was conducted over the year January 2016 to April 2017 and included women either attending ANC or unbooked and referred cases came for delivery.

Results: Only 5 out of 15250 ANC were found positive while total 13 cases were positive including unbooked and referred cases. Majority of women 53.84% were in age group 24-29 years and 61.54% were primigravida and 38.46% were multigravida. Seroprevalence of HIV infection was only 0.00055% in my study during 16months period.

Conclusions: Appropriate antenatal screening, interventions during pregnancy, delivery and breastfeeding will bring down the mother to child transmission of HIV.

Keywords: HIV, Pregnant women, Seroprevalence

INTRODUCTION

Human immunodeficiency virus is a RNA retro virus. HIV infection is most dreadful but preventable. It is usually transmitted three ways: through unprotected sexual intercourse, heterosexual or homosexual; through blood or blood products, donated semen or organs; or from an infected mother to her child (vertical transmission). More than 70% of infections are a result of heterosexual transmission and over 90% of infections in children result from mother-to-child transmission.

WHO stated that global HIV prevalence rate was ~35 million in 2013. Around 3.2 million HIV infected children below 15 years of age.1 Women in the developing world are at higher risk of HIV infection than their male counterparts for a number of reasons, biological and sociological.

The rate of transmission of HIV from male to female is two to three higher than that from female to male.2 The Langerhans’ cells of the cervix may provide a portal of entry for HIV and it has been suggested that some HIV serotypes may have higher affinity for these, and therefore to be more efficient in heterosexual transmission.3

Early marriage, violence, sexual abuse and illiteracy are the major socioeconomic reasons of their vulnerability to HIV infection. HIV screening in antenatal women is important because HIV can be transmitted from an infected mother to child during pregnancy, labor, delivery and through breastfeeding. It is around 25-48%
transmission in developing countries. Upto 20% of breastfed infant may acquire HIV depending upon duration of breast feeding and other risk factors like breast abscess, mastitis, cracked nipple.4

In 1986 the govt of India established National AIDS control committee to formulate a strategy for HIV-AIDS prevalence. India launched a National AIDS control program in 1987.5

Prevention of parent to child transmission (PPTCT) program has been launched in year 2002.6

To prevent mother to child transmission in developing countries TLE (Tenofovir, Lamivudine, Efavirenz) administered to mother and Nevirapine to infant till 6wks.

METHODS

The study was conducted at J K Lone Hospital attached with medical college Kota, Rajasthan, India.

This study was hospital based retrospective study which included total 23673 pregnant women, 15250 from ANC and 8423 women came for delivery either unbooked or referred. Study was conducted duration of 16months i.e. January 2016 to April 2017. For all women first pretest counseling was done and then informed consent was taken, after it blood sample collected. The sample tested for HIV antibodies as per NACO guidelines. First antibodies test was ELISA, if the initial test is positive then it is confirmed by using two other supplement tests like HIV RNA test and P24 Antigen test, western blot test.7 After the confirmation of HIV, in positive patient’s posttest counseling done. Results kept private and confidential. The HIV positive women get their CD4 counts and tested for other infections.

For all positive women proper, antenatal care and ART given and advised hospital delivery following universal precautions.

RESULTS

Data was collected and analyzed from pregnant women who were tested during the period of 16 months from January 2016 to April 2017.

Table 1: Prevalence of HIV infection in pregnant women.

<table>
<thead>
<tr>
<th>ANC/ booked</th>
<th>Unbooked/ referred</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>15250</td>
<td>8423</td>
</tr>
<tr>
<td>Positive patients</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Prevalence %</td>
<td>0.00033</td>
<td>0.00095</td>
</tr>
</tbody>
</table>

Total 23673 women were ready for counseling and HIV testing under ICTC. Overall, HIV antibodies were detected in 13 out of 23673 of the subject, thus HIV prevalence rate was 0.00055% (Table 1).

Majority of the HIV positive pregnant women (53.84%) were in the age group of 25-29 years followed by same in 20-24years (23.08%), and 30-34 years (23.08%) (Table 2). Out of 13 HIV positive women, 61.53% HIV positive women were primigravida and 38.46% were multigravida.

Table 2: Age wise distribution in pregnant women.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>No. of women</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24</td>
<td>7</td>
<td>53.84</td>
</tr>
<tr>
<td>25-29</td>
<td>3</td>
<td>23.08</td>
</tr>
<tr>
<td>30-34</td>
<td>3</td>
<td>23.08</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100</td>
</tr>
</tbody>
</table>

DISCUSSION

In present study seroprevalence of HIV infection 0.00055% noted among 23673 pregnant women. Similarly, studies done by Giri et al and Patil et al at Maharashtra observed the prevalence of HIV as 0.41% and 0.44% respectively.8,9 While a study by Gupta et al done in North India revealed that the prevalence of HIV was found to be 0.88%.10 A study conducted by Khokar et al at tertiary care Hospital, Gujarat, observed prevalence of HIV as 0.35%.11 Although my results are contrast to prevalence in India i.e. 0.27% in 2015.

Six Indian states are considered to have high prevalence i.e. Manipur, Nagaland, Andhrapradesh, Tamilnadu, Karnataka and Maharastra. Rajasthan considered as low prevalence state. In Rajasthan decreasing trend of HIV prevalence in pregnant women (Table 3) as data collected by SIHFW (Jaipur).12 Udaipur, Jodhpur, Jalore, and Sirohi districts have high incidence of seropositivity in Rajasthan. Kota district comes in very low prevalence area.

Table 3: Year wise prevalence of HIV in pregnant women.

<table>
<thead>
<tr>
<th>Year</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0.07</td>
</tr>
<tr>
<td>2004</td>
<td>0.04</td>
</tr>
<tr>
<td>2005</td>
<td>0.05</td>
</tr>
<tr>
<td>2006</td>
<td>0.00</td>
</tr>
<tr>
<td>2007</td>
<td>0.00</td>
</tr>
<tr>
<td>2008</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Decrease in prevalence of HIV-AIDS is due increase awareness among society leading to increase in number of pregnant women attending ICTC. This reflects the importance of trained staff, proper counseling regarding disease, ANC care and institutional delivery. Nowadays knowledge regarding safe sex practices and self-care among students started from teenagers and college level which also shows good impact.
In the present study, out of those 13 HIV positive pregnant women maximum number of clients tested seropositive i.e 53.84% were in the age group of 25-29 years, followed by age group 20-24 years (23.08%) than older age group. Similar findings are revealed in the study done by Khokar et al and Sarkate et al. This is because of the fact that 25 to 29 years is the most sexually active age group. Young women are more vulnerable to the HIV epidemic and the virus is more easily passed to young women because of their immature vaginal tracts and easily torn tissues; meanwhile, gender inequities in many countries prevent young women from negotiating safer sexual practices including condom use. High prevalence in this group can be considered as forecasting of financial burden as well as loss of youth for the nation (Dash et al).

Among HIV-positive pregnant women in the present study, majority, 8 (61.54%), were primigravida while 14 (38.46%) were multigravida. A study done by Patil et al also revealed that, out of 309 HIV positive pregnant women studied, majority 166 (53.83%) were primigravida and 143 (46.2%) were multigravida. These findings are also consistent with study by Verma et al and Dash et al. The percentage of primigravida coming for institutional delivery is significantly more than multigravida, which again suggests the increased awareness of people towards HIV/AIDS. It is observed in present study that 83.33% clients were housewives and 16.67% clients were working.

CONCLUSION

This study concludes that recently prevalence rate of HIV in pregnant women is decreasing. This indicates that prevention campaigns are working effectively. ICTC can provides comprehensive, family centered clinical and supportive services by continuous information, education and counseling that empower the pregnant woman to take her own decisions and prevent the transmission of HIV to her infant.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

4. NACO Guidelines for the prevention of mother to child transmission of HIV Available at http://www.naco.nic.in/pmtct.html