



ORIGINAL RESEARCH PAPER

Microbiology

A STUDY ON PREVALENCE OF HIV INFECTION AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC IN A TERTIARY CARE HOSPITAL, KOTA, RAJASTHAN

KEY WORDS: HIV, Pregnant women, Seroprevalence

Savita Singh*

Assistant Professor, Department Of Microbiology Govt. Medical College, Kota Rajasthan *Corresponding Author

Archana Garg

Senior resident, Department of Microbiology Govt. Medical College, Kota Rajasthan.

ABSTRACT

INTRODUCTION: Burden of HIV in pregnant women follows overall epidemic in India. Estimating the HIV seroprevalence among pregnant women provide essential information for monitoring trend of HIV in general population and assist in prevention from mother to child transmission.

MATERIAL AND METHOD: This study was conducted for a period of 12 months from January 2018 to December 2018 which included 3987 pregnant women who attended antenatal clinic. Blood samples collected after pretest counselling and informed consent and tested for HIV antibodies as per NACO guidelines.

RESULTS: Out of 3987 pregnant women, 6 found to be positive for HIV-1 antibodies with prevalence rate of 0.15%. Majority of seropositive women (.10%) were in the age group of 20-30 Years. No pregnant women was found seroreactive for HIV-2 antibodies. We also observed past 3 years prevalence of HIV in pregnant women. A total of 10925 women were tested over a period of 3 years out of which 20 were positive for HIV1 antibodies giving an overall prevalence rate of 0.18%.

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

INTRODUCTION

HIV / AIDS is a global diseases. In India, the first case of human immunodeficiency virus (HIV) was reported in 1986 in Chennai.¹ WHO stated that global HIV prevalence rate was approximately 35 million in 2013 which constitutes around 3.2 million HIV infected children less than 15 years of age (Praveena et al., 2016).² According to NACO, it is estimated that about 30,000 infants acquire infection each year. Mother to child transmission is by far the most significant route of transmission of HIV infection in children below the age of 15 years (NACO, 2006).³ It has been long proven that prevention is the only successful strategy to counter the spread of HIV and an important part of this preventive strategy is to prevent the transmission of HIV from infected mother to infant .To prevent mother to child transmission of HIV, prevention of parent to child transmission of HIV (PPTCT) programme had been launched under the NACP. This programme is the largest national antenatal screening programme in the world⁴

In 1987, a National AIDS Control Programme (NACP) was launched under the Ministry of Health and Family Welfare, Government of India, to coordinate national responses. Its activities covered surveillance, blood screening, and health education.⁵ More than 70% of infections are a result of heterosexual transmission and over 90% of infections in children result from mother-to-child transmission. HIV screening in antenatal women is important because HIV can be transmitted from an infected mother to child during pregnancy, labor, delivery and through breast feeding. 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.³

AIM

The present study was carried out to determine the prevalence of HIV in pregnant women attending ante natal clinic, as antenatal route is the most common route of HIV in children less than 15 years of age.

MATERIAL AND METHODS

This is a retrospective hospital based descriptive study which included 3987 pregnant women who attended antenatal clinic. Pregnant women registered at antenatal clinic of this hospital were routinely advised to undergo HIV screening in ICTC. Blood sample was collected after pretest counseling and informed consent. The sample was tested for HIV antibodies as per NACO guidelines. First antibody test was ELISA, if the initial test is positive then it is confirmed by using two other supplement tests with different antigen.

After the HIV test result is known, post test counselling is done and the result is declared. Confidentiality of data was maintained at all the time. Proper antenatal care is given. Hospital delivery is advised for them following universal precaution. Retrospective analysis of data was carried out over a period of twelve month from January 2018 to December 2018 in tertiary care hospital, kota.

RESULTS

Numbers of pregnant women included in the study were 3987. Data was collected and analyzed from pregnant women who were tested during the period of 12 months from January 2018 to December 2018. Overall, HIV antibodies were detected in 6 out of 3987 of the subject, thus HIV prevalence rate was 0.15 % Majority of pregnant women tested for HIV were in the age group of 20-30 years (.10%) (Table 1).

We also observed past 3 years prevalence of HIV in pregnant women. A total of 10925 women were tested over a period of 3 years out of which 20 were positive for HIV1 antibodies giving an overall prevalence rate of 0.18%. (Table 2).

Table 1: Age wise distribution of pregnant women tested and seropositive pregnant women in 2018

Age (Years)	No. of Pregnant Women tested	No. of HIV-Positive Pregnant Women	Prevalence
<20	543	2	.05%
20-30	3149	4	.10%
>30	295	0	0%
Total	3987	6	.15%

Out of 3987 pregnant women tested for HIV, 6 were found to be positive accounting for seroprevalence rate of 0.15%. Majority of the HIV positive pregnant women (.10%) were in the age group of 20-30 years followed by <20 years (.05%). None of the pregnant women of more than 30 years of age was detected positive for HIV.

A total of 10925 women were tested over a period of 3 years. 20 were positive for HIV1 antibodies giving an overall prevalence rate of 0.18% (Table 2)

Table 2: Year wise prevalence of HIV in pregnant women.

Year	Total Registered Pregnant Women	Total HIV-Positive Pregnant Women	Prevalence
2016	3770	8	0.23%
2017	3168	6	0.18%
2018	3987	6	0.15%

DISCUSSION

India's socio-economic status, traditional social ills, cultural myths on sexuality and a huge population of marginalized people make it extremely vulnerable to HIV/AIDS.⁵ Since the first case reported in 1986 in Chennai in South India, HIV had spread rapidly from urban to rural areas and from high-risk groups to the general population.⁶ HIV infection in women occurs primarily during their reproductive years. Thus pregnancy provides a unique opportunity for implementing prevention strategies against HIV Infection. Majority of women in the general population acquire HIV infection from their infected partners through heterosexual route and longer exposure leads to higher risk.^{6,7}

There is also increased awareness about the disease and methods of its prevention in the general population in the recent years. All these factors may have contributed to lesser prevalence in the younger age group. Several methods have been proposed for measuring HIV prevalence; yet each presents specific challenges. Surveillance of HIV infection among pregnant women attending antenatal care clinics (ANC) has been the mainstay system of monitoring of HIV epidemic in India.

India initially launched its PPTCT programme in 2002 in the high risk states and has now expanded it to include 410 districts of India.⁸

In present study seroprevalence of HIV infection 0.15% noted among 3987 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.^{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%.¹⁰ A study conducted by Khokar et al at tertiary care Hospital, Gujarat, observed prevalence of HIV as 0.35%.¹¹

Six Indian states are considered to have high prevalence i.e. Manipur, Nagaland, Andhrapradesh, Tamilnadu, Karnatka and Maharastra. Rajasthan considered as low prevalence state. Udaipur, Jhodhpur, Jalore, and Sirohi districts have high incidence of seroprevalence in Rajasthan. Kota district comes in very low prevalence area.

Decrease in prevalence of HIV-AIDS is due increase awareness among society leading to increase in number of pregnant women attending ICTCs. This reflects the importance of trained staff, proper counselling 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.

A study carried out in western India by Ukey et al in 2003-2004 reported that the most affected age group was 18-24 years.¹² It indicates the prevalence was high among newly sexually active pregnant women. Young women are more vulnerable to HIV epidemic and the virus is more easily passed to young women because of their immature vaginal tract. Different authors have reported different prevalence rates, ranging from 0.16 % to 0.88%.

Appropriate antenatal screening, intervention and preventive strategies during pregnancy, delivery and breastfeeding will bring down the mother to child transmission of HIV. There for it may be recommended that every pregnant women should be screened for HIV after pretest counselling and obtaining informed consent, even though curative treatment is not available at present we can minimize, if not prevent the pediatric infection by early screening followed by short chemotherapy, safe delivery and modified infant feeding.

A major limitation of surveillance system is that it is conducted for a specific period and has limited geographical coverage

CONCLUSION

A significant decline in HIV prevalence during the 3 years was observed. This indicates that prevention campaigns are working effectively Strengthening counselling and testing for HIV infection

to all pregnant women, raising awareness of high risk behaviours for HIV infection in women and their sexual partners during antenatal visits that empower the pregnant woman to take her own decisions and prevent the transmission of HIV to her infant

REFERENCES

1. E. A. Simoes, P. G. Babu, T. J. John et al., "Evidence for HTLVIII infection in prostitutes in Tamil Nadu (India).," *The Indian journal of medical research*, vol. 85, pp. 335-338, 1987.
2. Praveena, P., Edward, S., Kannan, L. 2016. A study on cognizance of vertical transmission of HIV/AIDS among pregnant women attending antenatal clinic in a tertiary care hospital, Chennai. *Int. J. Community Med. Public Health*, 3: 408-13.
3. NACO Guidelines for the prevention of mother to child transmission of HIV [<http://www.naco.nic.in/pmtct.html>].
4. G. S. Ashtagi, C. S. Metgud, P. R. Walvekar, and V. A. Naik, "Prevalence of HIV among rural pregnant women attending PPTCT services at KLE Hospital, Belgaum," *Al Ameen Journal of Medical Sciences*, vol. 4, no. 1, pp. 45-48, 2011.
5. World Health Organization and Joint United Nations Programmes on HIV/AIDS, *Guidelines for Second Generation HIV Surveillance: An Update: Know Your Epidemic*, World Health Organization, Geneva, Switzerland, 2013, http://apps.who.int/iris/bitstream/10665/85511/1/9789241505826_eng.pdf.
6. P. Srikanth, T. J. John, H. Jayakumari et al., "Epidemiological features of acquired immunodeficiency syndrome in southern India," *Indian Journal of Medical Research*, vol. 105, pp. 191-197, 1997.
7. R. R. Gangakhedkar, M. E. Bentley, A. D. Divekar et al., "Spread HIV infection in married monogamous women in India," *Journal of the American Medical Association*, vol. 278, no. 23, pp. 2090-2092, 1997.
8. National Strategic Plan, Multi-Drug ARV for Prevention of Parent to Child Transmission of HIV (PPTCT) under National AIDS Control Programme in India, 2013, <http://www.naco.gov.in/upload/NACP%20%20IV/18022014%20BSD/National%20Strategic%20Plan%20PPTCT.pdf>.
9. Giri PA, Bangal VB, Phalke DB. Prevalence of HIV among rural pregnant women attending antenatal clinics at Pravara Rural Hospital, Loni, Maharashtra, India. *Int J Health Allied Sci*. 2012;1:13-5.
10. Patil VM, Moray AP, Patil SP. Ten years' trend of HIV seroprevalence among Indian pregnant women attending antenatal clinic at tertiary hospital in Dhule, Maharashtra, India. *Int J Reprod Contracept Obstet Gynecol*. 2017;5(5):1514-9.
11. Khokhar N, Jethwa D, Lunagaria R, Panchal N. Original research article seroprevalence of hepatitis b, hepatitis c, syphilis and hiv in pregnant women in a tertiary care hospital, Gujarat, India. 2015;4(9):188-94.
12. Ukey PM, Akulwar SL, Powar RM. Seroprevalence of human immunodeficiency virus infection in pregnancy in a tertiary care hospital. *Indian J Med Sci*. 2005;59(9):382-7.