ORIGINAL RESEARCH PAPER

Medical Microbiology

SEROPREVALENCE OF HIV AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AND UTILIZATION OF PPTCT SERVICES AT TERTIARY CARE HOSPITAL CHURU ,RAJASTHAN, INDIA

KEY WORDS: Antenatal, PPTCT, Seroprevalence

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ABSTRACT

Human immunodeficiency virus (HIV) infection in pregnant women has an important role in its spread to paediatric population by means of vertical transmission. Effective utilization of PPTCT services can reduce this spread. 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.This study was conducted for a period of 24 months from January 2024 to December 2025 which included total 19412 pregnant women who attended antenatal clinic. Blood samples collected after pretest counselling and informed consent and tested for HIV antibodies as per NACO guidelines.Out of 19412 antenatal registrations ,09 women were found to be seropositive with a seroprevalence rate of 0.046%. Majority of seropositve women were young primigravida, illiterate housewives belonging to rural area. Eight out of 09 partners of seropositive women , were found to be seropositive.All mother and baby pairs received antiretroviral prophylaxis. Seroprevalence of HIV infection in antenatal women is relatively low in this region than the national averageAppropriate antenatal screening, education, interventions during pregnancy, delivery and breastfeeding will bring down the mother to child transmission of HIV

INTRODUCTION

The human immunodeficiency virus infection is spreading throughout the globe at an alarming rate. UNAIDS aims to end HIV pandemic by 2030, adopting 90-90-90 strategy that is 90% of people living with HIV (PLHIV) know their status, 90% of diagnosed PLHIV are on treatment and 90% of PLHIV on treatment achieve an undetectable viral load by 2020(UNSAIDS). India is committed to achieving the global 90-90-90 target by 2020.This goal can be realised by universalization of HIV testing services in all the public health care institutions of the country. (NACO ,HCTS)In our country NACP and RCH programme are working in synergy for an effective PPTCT programme to increase HIV awareness through counselling and providing HIV screening to pregnant women on their very first contact with health care system. Universal screening of HIV infection as an integral component of routine antenatal checkups under PPTCT programme helps in providing unique opportunity to all pregnant women to be counselled and tested for HIV.

WHO stated that global HIV prevalence rate was approximately 35 million in 2013 which constitutes around 3.2 million HIV infected 2 children less than 15 years of age (Praveena et al.). 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 3 children below the age of 15 years (NACO). 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 world(G.S Asthagi et al).

Without any intervention, the risk of transmission of HIV from infected mother to her children is estimated to be around 20-45%(NACO Guidelines).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 aquire HIV depending upon duration of breast feeding and other risk 3 factors like breast abscess, mastitis, cracked nipple(NACO Guidelines).With effective PPTCT programme, the risk of vertical transmission of HIV in children can be decreased to less than 2%. Estimation of seroprevalence of HIV in pregnant women and analyses of uptake of various services provided at PPTCT centers can help in assessment of performance of the PPTCT programme.

METHODS

This was a retrospective study done at ICTC of DB Hospital , PDU Medical College Churu,RAJASTHAN ,January 2024 to December 2025. Study population was all registered pregnant women attending antenatal care clinic MCH wing at DB Hospital, Churu during a period of two years from January 2024 to December 2025

Pre-test counselling, HIV testing and post-test counselling was done by trained personnel as per NACO guidelines. Counselling comprised of information of HIV infection, its mode of spread, importance of HIV testing, and preventive measures available for reducing mother to child transmission.

Blood samples were collected after pre test counselling and informed consent. The samples were tested for HIV antibodies as per NACO guidelines. The first antibody test done was ELISA. If the initial result was positive, it was confirmed using two other supplemental tests. Interpretation was also done by using algorithm for HIV testing. Strategy III involves (a) all samples tested with one ELISA / rapid test; (b) reactive samples from the first test tested with different antigen or principle; (c) reactive samples from the second test are again retested with third system of different antigen or principle. After HIV test results were known post-test counselling was done and the results were declared. Confidentiality of the data was maintained.

All the seropositive patients were advised for institutional delivery and referred to ART centre.After birth baby is given Navirapin aacording to birth weight till 6 month,after that test is done.

RESULTS

During the study period from January 2024 to December 2025, total 19412 antenatal registrations were done in ANC at DB Hospital, Churu, Pre-test counselling was done of all.

Table1: Year wise prevalence of HIV in pregnant women

Year	Total Registered Pregnant Women	Total HIV-Positive Pregnant Women	Percentage
2024	9185	02	0.021
2025	10227	07	0.068
2024-2025	19412	09	0.046

Total 19412 antenatal registrations were made in Jan24-Dec2025 in which 09 females were found to be seropositive with a seroprevalence rate 046%.In 2024 out of 9185 total anc registrations,02 females were found to be seropositive with a seroprevalence rate of 0.021%.In 2025,out of 10227 anc registrations07 females were found to be seropositive with a seroprevalence rate of 0.068%.

Table 2: Demographic characteristics

Variables	Seropositive women N=09	Percentage
Age group	20-25yrs -06 26-30yrs -02 31-35yrs -01	66.6 22.2 11.11
Gravida	Primi -06 Multi -03	66.66 33.33
Residence	Urban -04 Rural -05	44.44 55.55
Religion	Hindu -08 Muslim -01	88.88 11.11
Literacy	Literate -04 Illiterate -05	44.44 55.55
Occupation	Housewife -08 Govt job – 01	88.88 11.11
Serostatus of husband	Positive -08 Negative01	88.88 11.11

Sociodemographic characteristics of seropositive women are shown in table no.3. Majority of seropositive women were young, belonging to 18-25 years of age group, primigravida, Hindu by religion, belonging to rural area. Majority were illiterate, housewives and were not using any kind of contraception. 08(88.88%) out of 09 partners of seropositive women tested, were found to be seropositive.

DISCUSSION

The NACO Technical Estimate Report (2015) estimated that out of 29 million annual pregnancies in India, 35,255 occur in HIV positive pregnant women. (NACO. PPTCT).

India initially launched its PPTCT programme in 2002 in the high risk states and has now expanded it to include 410 districts of India.(National Strategic Plan,PPTCT) .The PPTCT programme aims to prevent the perinatal transmission of HIV from an HIV infected pregnant mother to her newborn baby. The programme entails counselling and testing of pregnant women in the ICTCs. Globally over the past few years the PPTCT interventions have transitioned from the use of single dose Nevirapine to the use of multidrug antiretroviral therapy, to efficiently bring down the rate of transmission of HIV from mother- to-child to the level of less than 5%%(NACO Guidelines).

The average HIV prevalence among women attending antenatal clinic in India is 0.29% as per NACO annual report 2015-2016(Department of AIDS Control).The present study revealed a prevalence rate of 0.046%. According to the Rajasthan State AIDS Control Society (RSACS), seropositivity of HIV in pregnant women attending PPTCT was 0.11 in year 2011 and 0.09% in year 2012. Studies from different authors have reported seropositivity rates from 0.08% to 1.03%. Kaur G et al reported a low seroprevalence of 0.08% in Jammu(Kour Get.al).Sibia et al reported a high (1.03%) seropositivity from Punjab(Sibia P et al).

We observed that majority of seropositive women were primigravida, of rural area, illiterate, housewives similar to Kaur G et al and Kwatra et al in their studies(Mehta KD et.al, Kwatra. A et .al.) In the present study majority of seropositive women were in 18-25 year of age group. Ukey et al and Hussain T et al also made similar observation(Ukey PM et al, Hussain T et.al).

Husbands of 88.88% women were found to be HIV seropositive in the present study, Kaur G et al and Ukey et al reported higher seropositivity (80% and 96.59%) in the spouses of such patients.

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.

CONCLUSION

Our study reveals that the seroprevalence of HIV infection in antenatal women is low in this region than the national average. There is a need to improve uptake of HIV counselling and testing among this population by taking measures like educating and empowering women and creating awareness about HIV in the general public to overcome the social stigma attached to this disease. Acceptance of therapeutic measures to minimize mother- to- child transmission of HIV by seropositive mothers is high. With the optimum utilisation of PPTCT services and with the use of new multidrug ARV in seropositive pregnant patients, we can hope to safeguard our present and future generations.

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