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Original Research Article

Seroprevalence of HIV in ANC clinic attendees and utilization of PPTCT services at a tertiary care hospital of western Rajasthan, India

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ABSTRACT

Background: 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. This study aims to determine seroprevalence of HIV in antenatal women, demographic factors of seropositive women and utilization of PPTCT services to minimize the risk of mother to child transmission.
Methods: A retrospective study was done among pregnant women attending antenatal clinic of a tertiary care hospital within a period of two years from November 2013 to October 2015. Pre-test counselling, HIV testing, and post-test counselling were done as per NACO guidelines. Antiretroviral prophylaxis was given to seropositive women and their children. Analysis of demographic data of seropositive women and assessment of utilization of PPTCT services was done.
Results: Out of 40,913 new antenatal registrations 26,803 (65.58%) women attended pre test counselling and 24716(60.41%) of them accepted HIV testing. Thirty-eight women were found to be seropositive with a seroprevalence rate of 0.16%. Majority of seropositve women were young primigravida, illiterate housewives belonging to rural area. Eight out of 33 partners of seropositive women tested, were found to be seronegative. Out of the 38 seropositive women, 4(10.52%) opted for pregnancy termination, and 31(81.57%) had delivery in our institution. All mother and baby pairs received antiretroviral prophylaxis.
Conclusions: Seroprevalence of HIV infection in antenatal women is relatively low in this region than the national average and acceptance of therapeutic interventions to reduce the mother to child transmission is high. There is scope to improve acceptance of counselling and testing of HIV.

Keywords: Antenatal, Human immunodeficiency virus, PPTCT, Seroprevalence

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.[1] 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.[2] 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. This also ensures that they get access to HIV services for their own health and also to ensure prevention of HIV transmission to their newborns.

India is characterised as low prevalence nation, still it has the third largest number of people living with HIV/AIDS.[3] As per NACO report 2015-2016, national adult HIV prevalence in India is estimated at 0.26%. According to HIV Sentinel Surveillance (HSS) 2014-15, the overall HIV prevalence among ANC clinic attendees, considered a proxy for prevalence among the general population, continues to be low at 0.29% in the country, with an overall declining trend at the national level.[4] HIV data from antenatal women has been used to monitor trends in the general population and to predict the seroprevalence in young children.[5,6]

UNAID reports reveal that mother to child transmission is the largest source of HIV infection in children. Children (<15 years) accounted for 12% of total new infections estimated in India in 2015.[4] Without any intervention, the risk of transmission of HIV from infected mother to her children is estimated to be around 20-45%.[7] With effective PPTCT programme, the risk of vertical transmission of HIV in children can be decreased to less than 2%. 8 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.

To the best of our knowledge this is the first study, attempting to determine seroprevalence of HIV in antenatal women and assess utilization of PPTCT services, from Rajasthan.

METHODS

This was a retrospective study done at tertiary care hospital attached to Dr. S.N. Medical College, Jodhpur, and Rajasthan. Study population consisted of all newly registered pregnant women attending antenatal care clinic at Umaid Hospital, Jodhpur during a period of two years from November 2013 to October 2015.

All of these women were asked to attend a counselling session at PPTCT situated in our institute. Here 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. Data about socio-demographic and obstetric factors were gathered. After counselling women were offered HIV testing by Opt-out approach. Those who were willing for test were tested for HIV after informed consent using three different rapid tests as per NACO guidelines. Post-test counselling was done according to the test results. Partner notification/testing were offered in seropositive women. Information about MTP services were given to those who did not wanted to continue their pregnancy. For those who intended to continue their pregnancy were advised for regular follow up at ANC and PPTCT centre. Confidentiality of data was maintained throughout the study.

All the seropositive patients were advised for institutional delivery. Those women who tested positive for HIV and delivered before April 2014 were given prophylactic single dose Nevirapine therapy at the time of delivery and from April 2014 onwards seropositive women were referred to ART centre for lifelong ART regimen (Triple drug regimen) irrespective of their CD4 count and WHO clinical stage as per updated NACO guidelines for prevention of mother to child transmission of HIV.

RESULTS

During the study period from November 2013 to October 2015, total 40,913 new antenatal registrations were made in ANC OPD of Umaid Hospital. Pre-test counselling was offered to all but only 26,830 (65.58%) attended the counselling and among them 24,716 (60.41%) accepted HIV testing. Out of these, 38 patients were found to be seropositive for HIV with a seroprevalence rate of 0.16% (Table 1).

Table 1: PPTCT services and HIV seropositivity in antenatal women.

Antenatal HIV testing	Total no.	Percentage
New ANC registrations	40,913	100
Women attended pre-test counselling	26,830	65.58
Women accepted HIV testing	24,716	60.41
Women found HIV positive	38	0.16
Seropositivity		0.16

Sociodemographic characteristics of seropositive women are shown in table no.2. 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. Majority of seropositive women were already in their second or third trimester of pregnancy at the time of testing. Eight (24.24%) out of 33 partners of seropositive women tested, were found to be seronegative. Husbands of 5 seropositive women refused for testing.

Table 2: Demographic characteristics of seropositive women.

Variables		Seropositive women N=38	Percentage
Age group	18-25 years	23	60.52
	26-30 years	11	28.94
	31-35years	4	10.52
Gravida	Primi	21	55.26
	Multi	17	44.74
Trimester of pregnancy	First	9	23.68
	Second	13	34.22
	Third	16	42.10
Residence	Rural	25	65.78
	Urban	13	34.22
Religion	Hindu	25	65.78
	Muslim	12	31.57
	Other	01	02.63
Literacy	Illiterate	19	50.00
	Literate	19	50.00
Occupation	Housewife	26	68.42
	Labourer	07	18.42
	Service	05	13.15
Contraceptive practice	Condom	04	10.52
	O C P	02	05.26
	IUCD	01	02.63
	None	31	81.57
Addiction	Tobacco	08	21.05
	Smoking	01	02.63
	None	29	76.31
Serostatus of husband	Positive	25	65.78
	Negative	08	21.05
	Refused for test	05	13.15

Table 3: Utilization of PPTCT services and pregnancy outcome of seropositive women.

	No. women/newborn	Percentage
Termination of pregnancy	04/38	10.52
Delivery at our institute	31/38	81.57
Live birth	31/31	100
Vaginal delivery	26/31	83.87
Caesarean delivery	05/31	16.13
Antiretroviral prophylaxis		
Mother	31	100
Newborn	31	100

Majority of seropositive women attended the antenatal clinic regularly, 10.52% opted for MTP. Thirty-one women (81.57%) who continued with their pregnancy had delivery in our institution. Out of these 83.87% delivered vaginally and 16.13% were delivered by Caesarean section. One patient delivered at district hospital of nearby area and two were lost to follow up. All, of the mother and baby pairs delivering at our institution, received ARV prophylaxis (Table 3).

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. In the absence of any intervention, an estimated (2015) cohort of 10,361 infected babies will be born annually.[9]

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. As on 31st August 2016 in India there are 20,756 Integrated Counselling and Testing Centres (ICTC), most of these in government hospitals, which offer PPTCT services to pregnant women.[9] 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%.7 Screening of HIV in pregnant women plays the most important role in reducing mother to child

transmission and thus in reducing the burden of paediatric HIV population. Estimation of seroprevalence of HIV infection in pregnant women provides necessary information for an effective implementation of PPTCT programme.

The HIV testing can be offered as either opt- in or opt-out approach. Centre for Disease Control (CDC) recommends an opt out approach as the testing rate is 85-98% 10 In the present study the overall acceptance of HIV testing using opt-out approach was 60.41%. According to the Rajasthan State AIDS Control Society, testing percentage among registered pregnant cases was 79%.11 Joshi et al and Sinha et al reported higher (83% and 79% respectively) while Kulkarni et al reported a lower (43.13%) acceptance rate of HIV testing using the opt-out approach.[12-14] But Parameshwari et al. and Chaudhari et al reported HIV testing in 100% and 96% antenatal cases respectively.[15,16] To achieve high rates of counselling and testing, good counselling skills and experience of the counsellor is fundamental.

The average HIV prevalence among women attending antenatal clinic in India is 0.29% as per NACO annual report 2015-2016.[4] The present study revealed a prevalence rate of 0.16%. 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.[11] Present figures of seroprevalence in this study match the figures reported by Rajasthan State authorities. Recent studies from different authors have reported different seropositivity rates, ranging from 0.08% to 1.03%. Kaur G et al reported a low seroprevalence of 0.08% in Jammu.[17] Mehta et al. from Jamnagar, Gujarat reported 0.38% and Kulkarni et al from Nanded, Maharashtra reported 0.76% seroprevalence in antenatal women.[18] Sibia et al reported a high (1.03%) seropositivity from Punjab.[19]

The most recent data of 14th round of HIV Sentinel Surveillance among ANC clinic attendees shows that Maharashtra (0.32%), Punjab (0.32%), Rajasthan (0.32%) and Tamil Nadu (0.27%) recorded HIV prevalence similar to national prevalence (0.29%). There are signs of slowly rising epidemic in Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Punjab, Rajasthan, and Uttar Pradesh, albeit at a moderate to low level.[20]

We observed that majority of seropositive women were primigravida, belonging to rural area, illiterate, housewives without any addiction, similar to the observations made by Kaur G et al and Kwatra et al in their studies.[18,21] In the present study majority of seropositive women were in 18-25 year of age group, being the sexually active age group. Ukey et al and Hussain T et al also made similar observation.[22,23]

Husbands of 65.78 % 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. In our study, almost one fourth of seropositive women had serodiscordant partners. This is an important observation as it shows that female can be the Index case where both partners are seropositive. It also underlines the need to involve both partners in voluntary HIV testing and counselling. Husbands of 5 out of 38 HIV positive women did not turn up for HIV due to the fact that they were neither having any symptoms of infection nor were aware of the importance of HIV counselling and testing.

A three pronged approach is needed to prevent babies from acquiring HIV from their mothers (i) primary prevention of HIV in women of child bearing age (ii) Preventing unintended pregnancies among women living with HIV (iii) Prevent HIV transmission from pregnant women infected with HIV to their child.

In the present study 10.52% of seropositive women opted for pregnancy termination. Kwatra et al and Chaudhary et al reported that 11% and 17% of their patients respectively opted for pregnancy termination.[24] Thirty-one (81.57 %) seropositive women in our study got delivered at our institute. Tayade et al reported 78.07% institutional delivery in their study.[25] In our study only 16.13% patients were delivered by caesarean section. Joshi reported 41.66%, Ukey 21.33 % and Choudhary et al reported 42.86 % cesarean rates. Caesarean section is not recommended for prevention of mother-to-child-transmission and only if there is an Obstetric indication for the same.

Mother-to-child -transmission risk during vaginal delivery can be minimised by adopting safe delivery practices such as observing universal work precautions and avoiding artificial rupture of membranes, repeated vaginal examinations, assisted instrumental delivery, invasive foetal monitoring procedures, episiotomy and prematurity.

India has transitioned from the single dose Nevirapine strategy to that of multi-drug ARV prophylaxis. According to the new guidelines of NACO, effective from 1st January 2014, pregnant women who are found to be HIV positive are initiated on lifelong ART irrespective of CD4 count and WHO clinical Staging; their newborn (HIV exposed) babies are initiated on 6 weeks of Syrup Nevirapine immediately after birth so as to prevent transmission of HIV from mother to child and is extended to 12 weeks of Syrup Nevirapine if the duration of the ART of mother is less than 24 weeks.[9] All the mother-baby pairs delivering at our institute (100%) received ARV prophylaxis. Chaudhary et al and Tayade et al also reported 100% coverage, thus emphasising the good counselling skills of health providers and concern of mothers towards safety of their child. HIV infected mothers should be counselled about hazards of mixed feeding and for regular follow-up for the well being of themselves and their children, to prevent HIV transmission during post natal period.

CONCLUSION

Our study reveals that the seroprevalence of HIV infection in antenatal women is relatively 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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