

IMPACT OF PPTCT SERVICES IN HIV POSITIVE PREGNANCIES IN A TERTIARY CARE CENTRE OVER A PERIOD OF 14 YEARS

Kiran Kag¹, Archana Singh², Kirti Patel³, Sakshi Mishra³

¹Ex Senior Resident, Department of Obstetrics Gynaecology, NSCB Medical College, Jabalpur, Madhya Pradesh, India

²Associate Professor, Department of Obstetrics Gynaecology, NSCB Medical College, Jabalpur, Madhya Pradesh, India

³Assistant Professor, Department of Obstetrics Gynaecology, NSCB Medical College, Jabalpur, Madhya Pradesh, India

Received : 15/10/2023
Received in revised form : 28/11/2023
Accepted : 09/12/2023

Keywords:
PPTCT, pregnancy, HIV.

Corresponding Author:
Dr. Sakshi Mishra,
Email: drsakshimishra89@gmail.com

DOI: 10.47009/jamp.2023.5.6.142

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (6); 688-692



Abstract

Background: HIV is a chronic manageable disease and majority of the patients with HIV remain healthy with correct and timely treatment. Women constitute 39% of all People Living with HIV (PLHIV). Mother-to-child transmission is major route of HIV infection in children. National AIDS Control Programme (NACP) under the Ministry of Health, Government of India launched Prevention of Parent to Child Transmission (PPTCT) of HIV programme in the year 2002 in order to provide access to HIV testing services to all pregnant women enrolled for Ante-natal care with the aim to prevent the perinatal transmission of HIV. The aim is to study the services related to PPTCT programme of HIV/ AIDS and to study the pregnancy outcome among the women availing PPTCT services. **Materials and Methods:** This retrospective Observational study conducted at NSCB Medical College, Jabalpur from 01st January 2020 to 30th June 2021. Records of All HIV positive pregnant women and their exposed infants and children registered in PPTCT Centre during the year 2005 to 2019 were analysed. **Result:** Total 80,713 antenatal women registered at PPTCT centre. 73813 attended pretest counseling session and 70,661 accepted HIV testing. 137 women (0.16%) tested HIV positive in our study. Total 381 Dried blood spot sampling. **Conclusion:** Significant impact and uptake of PPTCT services was observed among PPTCT beneficiaries over the 14 years.

INTRODUCTION

HIV is a chronic manageable disease and majority of the patients with HIV remain healthy with correct and timely treatment. Women constitute 39% of all People Living with HIV (PLHIV) and children accounting for 3.4% of the total PLHIV estimates.^[1,2] Mother-to-child transmission of HIV is a major route of HIV infection in children, the risk being around 20-45% in the absence of any interventions. However, antiretroviral treatment (ART) and other interventions can reduce this risk to below 5%. Around 20.52 thousand pregnant women are estimated to be given services for the prevention of mother-to-child transmission of HIV and another estimated 22,677 pregnant women are in need of PPTCT interventions. All these HIV infected pregnant women need to be detected and provided with timely ART in order to reduce mother to child transmission and ultimately to eliminate paediatric HIV.^[3]

Prevention of mother to child transmission of HIV (PPTCT) has been at the forefront of global HIV prevention activities since 1998. National AIDS Control Programme (NACP) under the Ministry of Health, Government of India launched Prevention of Parent to Child Transmission (PPTCT) of HIV programme in the year 2002 in order to provide access to HIV testing services to all pregnant women enrolled for Ante-natal care with the aim to prevent the perinatal transmission of HIV.^[3,4]

PPTCT services were rapidly scaled up all over the country during NACP III (2007–2012). The number of pregnant women tested annually under the PPTCT programme has significantly increased over the last decade. Around 1.4 million HIV infections among children were prevented between 2010 and 2018 due to the implementation of PPTCT services.^[5]

PPTCT services are being provided in our institution, Netaji Subhash Chandra Medical College, Jabalpur since 2005, under PPTCT programme. We therefore undertook this study to

assess PPTCT Services and pregnancy outcome among women availed these services in the department of obstetrics and gynecology over a period of 14 years.

Aim: 1. To study the services related to Spectrograms of HIV AIDS.
2. To study the pregnancy outcome among the women availing PPTCT services.

MATERIALS AND METHODS

This retrospective Observational study was conducted at PPTCT Centre Department of Obstetrics & Gynecology, Netaji Subhash Chandra Bose Medical College and hospital, Jabalpur from 01st January 2005 to 30th June 2021. Records of All HIV positive pregnant women and their exposed infants and children registered in PPTCT Centre during the year 2005 to 2019 were included in the study. Demographic and obstetric profile were noted. All the information from the records was noted. Services related with the prevailing NACO guidelines were studied. Pregnancy outcome was assessed. At the end of study period all the informations were compiled and analysed. Throughout the study period confidentiality was maintained.

RESULTS

Total 137 women were seropositive during study period.

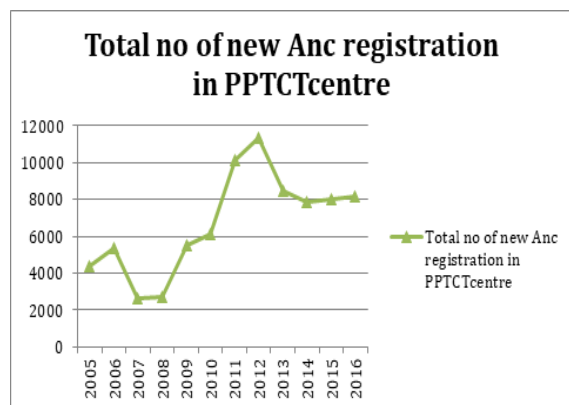


Figure 1: Total no of new ANC Registration in PPTCT Centre

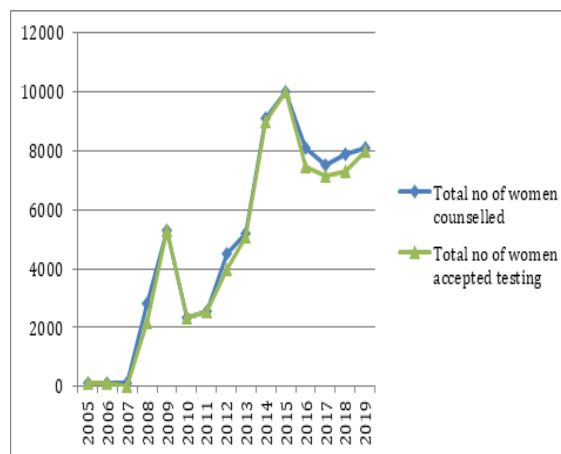


Figure 2: Total no of women counselled & accepted HIV testing

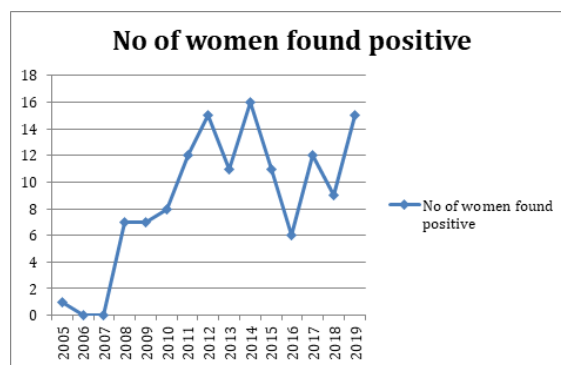


Figure 3: No of women found positive

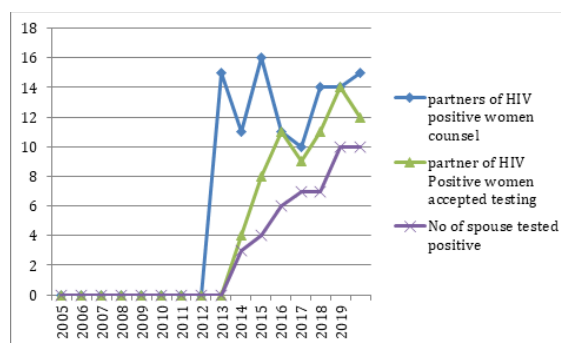


Figure 4: no of spouse counseled, accepted testing and seropositive

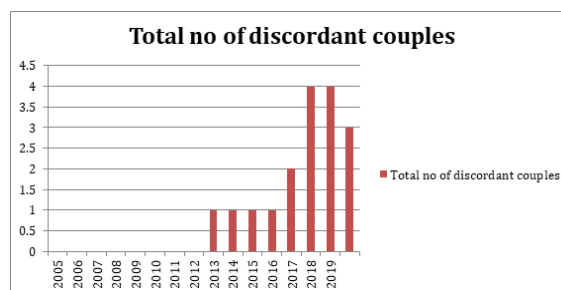


Figure 5: Total no of discordant couples

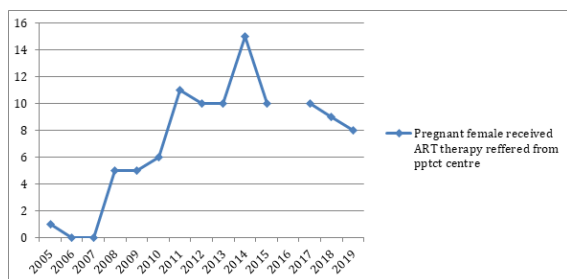


Figure 6: Pregnant Women Received ART

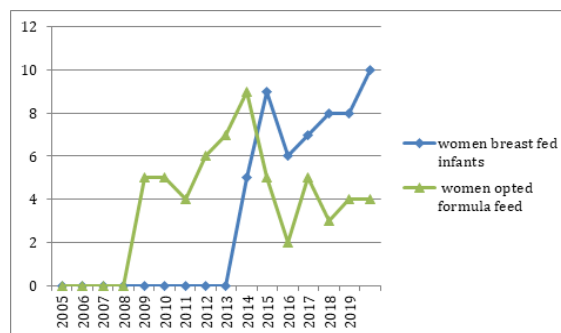


Figure 7: Number of women and feeding option

Table 1: demographic profile of seropositive women(2005- 2019)

Variables		Frequency	Percent
Age Group (years)	18-24	72	52.55%
	24-30	58	42.34%
	30-36	7	5.11%
Gravida	Multigravida	31	22.63%
	Primigravida	106	77.37%
Occupation Spouse/partner	Driver	8	5.84%
	Skilled Worker	38	27.74%
	Un Skilled Worker	91	66.42%
Locality Area	Rural	79	57.66%
	Urban	58	42.34%
Trimester when detected positive	First	18	13.14%
	Second	89	64.96%
	Third	30	21.90%

Table 2: Mother profile: art duration and transmission rate

ART Duration of Mother	Babies Died		Loss to follow up babies		Sero -Negative babies		Sero-Positive Babies.		P value
	N	%	N	%	N	%	N	%	
<Twenty four week (n=13)	0	0.00%	0	0.00%	12	92.31%	1	7.69%	0.001
>Twenty four week (n=39)	0	0.00%	1	2.56%	37	94.87%	1	2.56%	
MTP(n=5)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	
Single Dose(n=35)	1	2.86%	0	0.00%	30	85.71%	4	11.43%	
Zero Dose(n=45)	2	4.35%	31	67.39%	3	6.52%	10	21.74%	

DISCUSSION

In the present study the 14 year PPTCT records provided us a total of 80,713 new pregnant women registered out of which 73813 attended pretest counselling session, 70,661 accepted HIV testing. Total 137 women(0.16%) tested HIV positive in our study. The seroprevalence of HIV infection among pregnant women was 0.78% in 2005 which decreased to 0.3% in 2012 with further decrease to 0.19% in 2019. Madhya Pradesh comes under low prevalence state where seropositivity in pregnancy is less than 1%. Radhika AG et al, Malhotra et al, MohiteR, and Mukherjee reported similar findings in their studies.^[1-4]

We observed an exponential rise in antenatal registration, counselling and testing in later years (2013 onwards) as compared to initial years. Various maternal and child health policies, awareness activities in the community, training and orientation workshops among PPTCT staff, medical and paramedical staff has certainly lead to increase ANC registrations, willingness to HIV counselling and testing.

In our study majority of seropositive women 72(52.55%)were in the age group 18-24. Majority were primigravida106 (77.37%). All were housewives but majority (66.42%)of their spouses were unskilled worker by occupation(57.66%). 79(57.66%)belonged to rural area. We found majority of women falling in the reproductive group. Same holds true for the first pregnancy in that age group. Most of the partners were unskilled workers suggesting their low education and socioeconomic status. The lack of education, awareness, poverty are the issues which lead to increase HIV infection and MTCT. Similar results were found in the study conducted by Radhika AG et al.^[6]

In our study 89(64.96%) seropositive women were in second trimester group. This was their first contact with any health services. As per the guidelines it is recommended that early the ART initiation lesser the maternal to child transmission. Moreover if mother is initiated on ART at the earliest, it will improve both mother infant survival. Detection in first trimester can also give an option for medical termination of pregnancy.^[6]

In the present study only 106 (77.37%) spouses accepted counseling and 69 consented for testing. 53 were positive. In earlier years spouse or partner were quite hesitant to be presented at the centre for counselling and /or testing. It is only after the year 2013, we observed an increase uptake of testing among spouses of positive women. Lack of education, awareness, low socio-economic status, family culture, stigma and sensitiveness associated with HIV, migrants were the reasons for low acceptance. Partner involvement, counselling and testing is critical for PPTCT and is a big challenge.

High risk behaviour of either of the partner is one of the major risk factor in HIV infection and transmission. We found 5 women and 8 spouses had promiscuous behavior, 2 women had blood transfusion in their previous delivery and 4 spouse were indulged in high risk intravenous drug abuse respectively. Sexual promiscuity and intravenous drug abuse are well established modes of HIV transmission. Similar results were obtained in the studies conducted by Parmeshwari s Jacob, Mansdal S.^[7] We observed 13% discordance among the couples in our study. Discordance is an intriguing aspect of HIV infection. BC Ravikumar et al found discordance among couples in their study.^[8]

In the present study we found less number of women registering to ART centre in the initial years. 2013 onwards we found a steep rise in uptake of ART services and all positive women were registered at ART centre.

All the seropositive mothers and their infants were initiated on ARV (prophylaxis / treatment) as per the then national guidelines.^[3] 50 women received ARV single dose Nevirapine (Sd Nvp) 200mg orally (before 2013). ARV prophylaxis Sd Nvp, being implicated to be mutagenic and resistant, phased out in 2013. Later the updated guidelines recommended, efficacious Tripple drug ART (Tenovofir, Lamivudine and Efavirenz) lifelong initiated to all seropositive women and their newborns on Nvp suspension for 6 weeks.

Women who were on ART in their antenatal period for more than 24 weeks 2.5% infants were positive as compared to 7.69% positive infants of women who were on ART during pregnancy for less than 24 weeks gestation. Women who received single dose (before 2013) prophylaxis 11.53% infants were positive.^[9] Infants who completed the 6 weeks ART prophylaxis, the transmission rate was 2.63% as against the infants who received for 12 weeks (7.69%) and single dose (11.11%). The transmission rate is affected by duration of ART to the mother, breastfeeding options, duration of nvp to infants.

Total 113 infants were subjected to Dried blood spot sampling as per national EID guidelines out of which 41 babies were lost to follow up. 72 completed the EID testing schedule out of which 11 were consistently found to be positive till 18th month.^[10,11] Since 2 year DBS testing is not in operation at our center due to nonavailability of technician. Also in the initial years of

commencement of this service, it was on hold for a year. This has certainly affected the lost to follow up who certainly required DBS sampling.

19 women were lost to follow up in our study. This signifies the importance of follow up of these women in the care and treatment in context to maternal and child transmission of HIV. Rest all the positive women in study group were being followed up. All survived and are on life long antiretrovirals.

We observed a definite improvement of PPTCT services over the 14 years. The declining trend of HIV infection and its implications in context to PPTCT has been observed in our study. Pre and post-test counselling, willingness to testing, uptake of ART prophylaxis and ART treatment, institutional deliveries, safer feeding options and EID improved to attain the goal of PPTCT programme.

CONCLUSION

The observations in the study demonstrated continuous decline trend in the seropositivity among pregnant women. We observed increased acceptance regarding counselling and testing among women and their partners and adherence to the ART treatment.

The ultimate aim of PPTCT Programme is to prevent the Mother To child transmission of HIV/AIDS and to provide continuum of care to the affected family. MTCT is a biggest challenge in resource constrained settings. The successful implementation of the PPTCT programme is mainly dependent on HIV counselling, testing, lifelong efficacious Triple ART, feeding practices, EID and infant ARV prophylaxis, important linkages follow-up.

Sustained efforts through awareness building activities in antenatal clinic and among medical and paramedical workers at the hospital, increase in manpower, regular training of counsellors, NGOs, outreach activities have helped to bring this remarkable change.

REFERENCES

1. National technical guideline on antiretroviral treatment guideline 2018
2. World Health Organization. 2010. WHO Recommendations on the Diagnosis of HIV Infection in Infants and Children. Available from: http://www.searo.who.int/LinkFiles/HIVAIDS_paediatric_2.pdf. Accessed February 26, 2015.
3. Updated guideline for prevention of parent to child transmission (PPTCT) of HIV using multidrug antiretroviral regimen in India (December 2013) http://naco.gov.in/sites/default/files/National_Guideline_s_for_PPTCT.pdf
4. Performance evaluation of PPTCT (Prevention of parent to child transmission of HIV) programme: an experience from West Bengal Shuvankar Mukherjee¹, Santanu Ghosh, Dipendra Narayan Goswami, Amrita Samant Mukherjee S, Ghosh S, Goswami DN, Samanta A. Performance evaluation of PPTCT (Prevention of parent to child transmission of HIV) programme: an experience from West Bengal. Indian J

- Med Res. 2012 Dec;136(6):1011-9. PMID: 23391798; PMID: PMC3612305.
5. HIVsentinelveillance2019. (http://naco.gov.in/sites/default/files/ANC%20Report_9th%20June_Highress%20for%20web%20%282%29.pdf)
 6. Prevention of Parent to Child Transmission of HIV: Single Centre Experience of 14 years at Tertiary Care Hospital in Delhi, India AG Radhika, 1 Sonia Chawla,2 and Sruthi Bhaskaran doi: 10.7860/JCDR/2017/26432.10423
 7. Reducing the mother-to-child transmission of HIV: findings from an early infant diagnosis program in Delta state Nigeria.IBIBO, Judith A.; NWOSE, Ezekiel Uba; CHIME, Helen. Reducing the mother-to-child transmission of HIV: findings from an early infant diagnosis program in Delta state Nigeria. International Journal Of Community Medicine And Public Health, [S.l.], v. 4, n. 12, p. 4352-4357, nov. 2017. ISSN2394-6040.Available at <<https://www.ijcmph.com/index.php/ijcmph/article/view/2186/1605>> Date accessed: 27 dec. 2021. doi:<http://dx.doi.org/10.18203/2394-6040.ijcmph20>
 8. B C, Balakrishna P. Discordant HIV couple: Analysis of the possible contributing factors. Indian J Dermatol 2013;58:405 [serial online] 2013 [cited 2021 [ijcmph.com/index.php/ijcmph/article/view/2186/1605](http://www.ijcmph.com/index.php/ijcmph/article/view/2186/1605)]. Available at: <<http://www.ijcmph.com/index.php/ijcmph/article/view/2186/1605>> Date accessed: 27 dec. 2021. doi:<http://dx.doi.org/10.18203/2394-6040.ijcmph20>
 9. Mother-to-child HIV transmission and its correlates in India:systematic review and meta-analysis Mihir Bhatta 1, Nalok Dutta Bhatta M, Dutta N, Nandi S, Dutta S, Saha MK. Mother-to-child HIV transmission and its correlates in India: systematic review and meta- analysis. BMC Pregnancy Childbirth. 2020 Sep 4;20(1):509. doi:10.1186/s12884-020-03193-3.PMID: 32887567; PMID: PMC7473816.1, Srijita Nandi 1, Shanta Dutta 2, Malay Kumar Saha 3doi: 10.1186/s12884-020-03193-3.
 10. MITTAL, Mahim; MALL, Ashutosh Kumar; SHARMA, Yash Gopal.Maternal and fetal outcomes in HIV positive pregnant females. International Journal of Research in Medical Sciences, [S.l.], v. 4, n. 12, p. 5237-5240, dec. 2016. ISSN 2320-6012. Available at: <<https://www.msjonline.org/index.php/ijrms/article/view/29/29>>. Date accessed: 27 dec. 2021. doi:<http://dx.doi.org/10.18203/2320-6012.ijrms20164186>.
 11. DBS Sample collection for Early Infant Diagnosis (EID) by PCR(Laboratory Services Division December 2015)http://naco.gov.in/sites/default/files/DBS_Sample_Collection_for_EID_Module_Read_Only.pdf