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Retrospective Eleven Years Study of PPTCT Programme in SMGS Hospital, Jammu

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ABSTRACT

BACKGROUND
Human Immunodeficiency Virus (HIV) infection is increasing at an alarming rate globally. Apart from heterosexual route, mother to-child transmission is the next most important route of HIV transmission accounting for over 90% of infections in children. HIV infection in women occur primarily during their reproductive years, hence pregnancy provides a unique opportunity for implementing prevention strategies against HIV infection.
OBJECTIVE
The present retrospective study is undertaken to evaluate the effectiveness of implementation of PPTCT programme in SMGS Hospital, Jammu.
MATERIAL AND METHODS
All pregnant women attending antenatal OPD were counselled and tested for HIV. All positive patients were again counselled, and ART started. Spouses of all positive women were counselled and tested. Universal work precautions, Modification of labour and delivery practices were followed. All the babies born to positive women received nevirapine prophylaxis for 6 wks and babies were tested at 18 months. Mothers were counselled regarding breast feeding.
RESULTS
A total of 44,677 ante-natal women were counselled and all of them gave consent for HIV testing. Seropositivity in these women was 49.37%. The no. of positive deliveries (140) exceeded the no. of positive antenatal cases (40). Most of these patients were primis or second gravidas, majority of them were young, belonging to age group of 20-30 yrs and most of them were not well educated; 100% of spouses were found to be seropositive. Most of these women (60%) were delivered through vaginal route. LSCS was one for obstetric indication in 40% of cases. There were 99.2% live births. ALL the mothers opted for replacement feeding 100%. Seropositivity of babies born to these mothers could not be calculated due to loss of patients to follow-up.
CONCLUSION
The PPTCT programme is effective and has reduced the rate of transmission from mother to child. Labour room screening and early infant diagnosis should be introduced in our hospital.

KEYWORDS: PPTCT, HIV, ART, Seropositivity.

INTRODUCTION

At the end of 2014, there were roughly 36.9 million individuals living with HIV worldwide, with two million people being infected for the first time. The transmission of HIV from an HIV positive woman to her kid occurs throughout pregnancy, labour, delivery, and breastfeeding. MTCT is by far the most prevalent method of HIV infection in children (90 percent). Without treatment, the probability of HIV transmission from mother to child ranges from 15% to 45 percent; however, antiretroviral therapy and other effective MTCT prevention treatments can lower the risk to less than 5%. India has a 0.22 percent

HIV prevalence rate. The pandemic in the country is concentrated among high-risk populations and is heterogeneously spread across the country, with substantial geographic differences in the vulnerabilities that fuel the epidemic. Even with this low prevalence, in terms of absolute numbers, India has the third highest burden of HIV in the world with an estimated 2.14 million people living with HIV, 87,000 estimated new infections and 69,000 AIDS-related deaths annually.

Uptake of antenatal services, HIV testing during pregnancy, use of antiretroviral treatment by pregnant women living with HIV, safe childbirth practises and appropriate infant feeding, uptake of infant HIV testing, and other post-natal healthcare services are all essential components of effective PMTCT programmes. [1,2] The WHO designated 22 priority nations, with India in the top 10, accounting for 75% of the worldwide PMTCT services need. The efficient scaling up of PMTCT interventions in these countries was predicted to prevent over 250,000 new infections each year. On June 30, 2015, Cuba became the first nation to be recognised by the WHO as having eradicated HIV transmission from mother to child.

In impoverished nations like India, husbands were thought to be primarily responsible for HIV transmission to mothers through sexual contact, and hence they were held equally accountable for HIV transmission to their children. In India, PMTCT is referred to as PPTCT (Prevention of Parent-to-Child Transmission) so that mothers are not solely to blame for their children's HIV infection. The PPTCT programme in India began in 2002.

HIV transmission from parent to child is a major source of new HIV infections in children. Children born to HIV-positive mothers get the virus from their mothers during pregnancy, labor/delivery, or breastfeeding. This is mostly avoidable with appropriate intervention, such as antiretroviral medication (ART) for mothers and antiretroviral (ARV) prophylaxis for newborns. In India, it is estimated that 61,000 lakh children aged 0 to 14 years are infected with HIV. Every year, an estimated 22000 pregnancies occur among HIV-positive women out of 29 million total. All of these HIV-positive pregnant women must be identified and treated promptly in order to limit mother-to-child transmission and, eventually, eliminate paediatric HIV. The programme provides HIV-positive women with counselling and information on the outcome of their pregnancy and HIV-related therapy.

Based on 2018 WHO guidelines, the programme aims to initiate antiretroviral treatment for all pregnant and breastfeeding women living with HIV regardless of the trimester of pregnancy, CD4 count and WHO stage. The aim of this retrospective study is to evaluate the effectiveness of PPTCT programme implementation at SMGS Hospital, GMC, Jammu, for a period between January 2010 to December 2020.

MATERIAL AND METHODS

This is an eleven-year retrospective research that was place in the Department of Obstetrics and Gynaecology at SMGS Hospital, GMC, Jammu, from January 2010 to December 2020.

The material came from the ICTC Centre at SMGS Hospital and the ART Centre at GMC Jammu. All pregnant women undergoing prenatal care at SMGS Hospital Jammu can get HIV counselling (group/individual) and testing at the ICTC Centre in the antenatal OPD. Women are informed about the relevance of the test and the implications of both a positive and negative result during pre-test counselling. Gaps in their HIV/AIDS knowledge are filled, and the degree of risk for each woman is assessed. After obtaining consent for HIV testing, blood samples are taken. Post-test counselling is provided, and it includes information on HIV, ART, regular exercise, a healthy lifestyle and nutrition, safe sex practises, and, most significantly, post-test counselling. After three quick tests, a lady is proven positive. After pre-test counselling, the spouses of positive women are tested for HIV, and the test is followed by post-test counselling. For positive women, a CD4 cell count is performed. ART was begun in HIV-positive women with CD4=350 cells/mm or WHO clinical stage 3 or 4 from January 2010 to December 2013. From January 2014 to December 2020, women were treated with a triple-drug ART regimen consisting of tenofovir (TDF) 300 mg, lamivudine (3TC) 300 mg, and efavirenz (EFV) 600 mg, regardless of their pregnancy trimester, CD4 count, or WHO stage. ART was continued in known HIV positive individuals who were already on it.

Our hospital lacks provision of HIV screening in labour room. All the positive deliveries were either booked with ART centre of our hospital or with other centres of the province. In our hospital, during labour, HIV positive women received single dose nevirapine 200 mg from January 2010 to December 2013 and from January 2014 to December 2020, triple-drug ART regimen during antenatal period was

continued. Universal work precautions were taken, vaginal examinations were minimized and all aseptic techniques were used, artificial rupture and membranes was avoided, routine episiotomy was not done and instrumental delivery was minimized. Cesarean section was performed only for obstetrical indication.

Except in the case of meconium staining of the fluid, routine suctioning of the infant with a nasogastric tube was avoided, and the umbilical chord was clamped shortly after birth. All of the babies were given nevirapine as soon as they were born, and they were given advice on baby feeding. Exclusive Breast Feeding (EBF) and Exclusive Replacement Feeding (ERF) benefits and hazards were discussed. Exclusive replacement feeding was permitted, but only if the A (Affordable), F (Feasible), A (Acceptable), S (Sustainable), and S (Safe) requirements were met. The dangers of mixed feeding were also discussed. From January 2010 to December 2013, HIV-positive newborns got a single dose of nevirapine syrup at the moment of delivery, and ARV prophylaxis for HIV-positive infants was initiated at birth in the form of daily nevirapine for six weeks for both EBF and ERF babies from January 2014 through December 2020.For infants weighing less than 2 kg nevirapine dose was 0.2ml/kg, 2-2.5kg 1ml, more than 2.5kg 1.5ml of the suspension once a day (10mg of nevirapine in 1ml of suspension).

Daily nevirapine was given for six weeks for both EBF and ERF babies. Co-trimoxazole prophylaxis was started at 6 wks and continued up to 18 months when HIV was ruled out. It was given in the dose of 2.5ml, 5ml, 7.5ml and 10ml for baby weight <5kg, 5-10kg, 10-15kg and 15-22kg respectively(5ml of syrup containing 40mg TMP/200 SMX).

An assessment of the child's development was done at regular intervals. Growth monitoring and immunization was done as per schedule. The ICTC and ART centres in our hospital lacks the provision of Early Infant Diagnosis by DNA PCR testing of dried blood spots/whole blood samples of babies at 6 wks. Only those babies were tested which show clinical symptomatology of HIV infection like failure to thrive, delayed milestones, etc. Final confirmation of HIV status of baby was done at 18 months by doing all three rapid tests for antibody detection.

RESULTS

The data collected from PPTCT programme of our institute. The data is tabulated, and results are as follows:

Table no.1

Year	No of antenatal cases counselled	No of antenatal cases tested	No of cases found positive	No of positive deliveries
2010	2822	2822	-	8
2011	3464	3464	4	9
2012	5086	5086	3	13
2013	5050	5050	3	12
2014	5625	5625	6	12
2015	2810	2810	3	15
2016	2920	2920	3	12
2017	3086	3086	2	18
2018	4398	4398	3	12
2019	4330	4330	5	18
2020	5086	5086	4	11
Total	**44677**	**44677(100%)**	**40(0.09%)**	**140**

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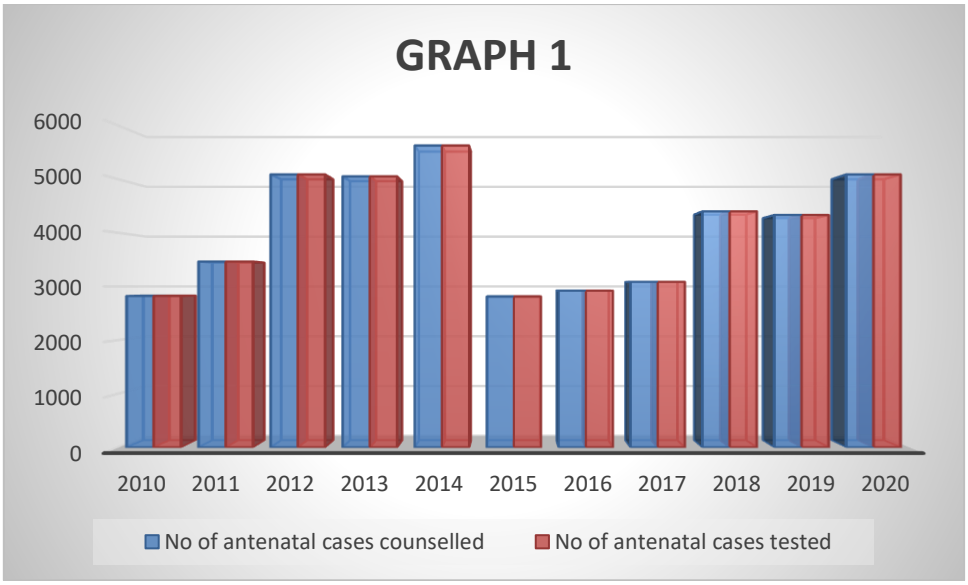

Table no 2. Year wise Mode of delivery of seropositive delivered women

Year	No. of positive deliveries	No of vaginal deliveries	No of LSCS
2010	8	4	4
2011	9	6	3
2012	13	10	3
2013	12	6	6
2014	12	6	6
2015	15	9	6
2016	12	7	5
2017	18	10	8
2018	12	8	4
2019	18	11	7
2020	11	7	4
Total	**140**	**84(60.0%)**	**56(40.0%)**

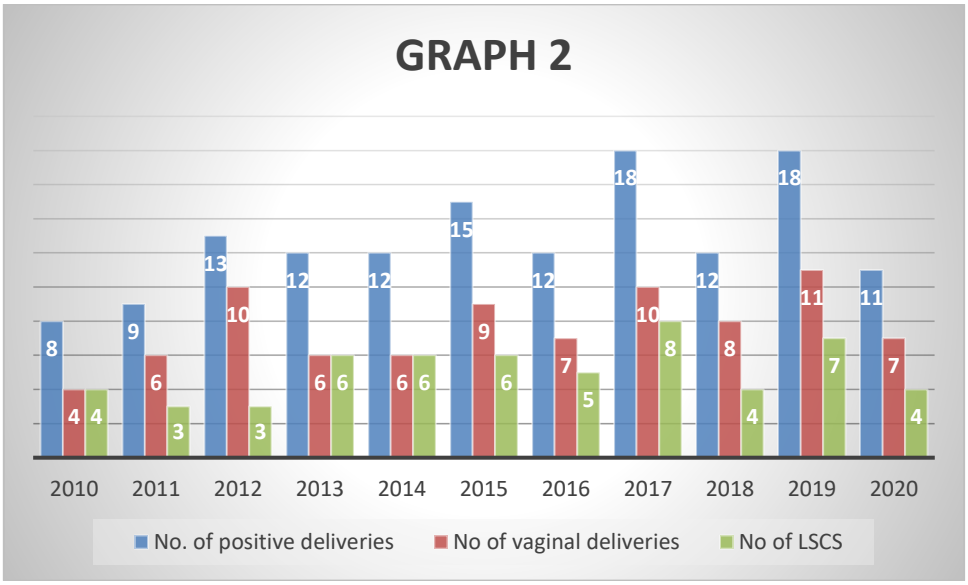

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Table no 3 Delivery outcome of seropositive deliveries

Year	No of Live births	Still Births	IUD
2010	8	-	-
2011	9	-	-
2012	13	-	-
2013	12	-	-
2014	12	-	-
2015	13	-	-
2016	12	-	-
2017	14	-	-
2018	15	-	-
2019	16	1	-
2020	15	-	-
Total	**139 (99.2%)**	**1(71%)**	**-**

Table no.4 Gravida wise distribution of seropositive delivered women

Year	No of positive deliveries	Primis	Gravida 2	Gravida 3	Gravida more than four
2010	8	8	-	-	-
2011	9	7	2	-	-
2012	13	8	2	3	-
2013	12	-	3	4	5
2014	12	-	4	4	4
2015	15	11	3	1	-
2016	12	9	2	-	1
2017	18	15	1	2	-
2018	12	8	2	2	-
2019	18	14	3	1	-
2020	11	7	2	-	2
Total	**140**	**87**	**14**	**17**	**12**

Table no 5. Age wise distribution of seropositive delivered women

Year	No of positive deliveries	15-19yrs	20-24yrs	25-30yrs	31-35yrs
2010	8	-	3	3	2
2011	9	3	5	-	1
2012	13	2	1	6	4
2013	12	-	6	5	1
2014	12	-	4	7	1
2015	15	10	3	2	-
2016	12	3	4	3	2
2017	18	4	2	5	7
2018	12	3	4	2	3
2019	18	2	1	6	9
2020	11	1	2	-	8
Total	**140**	**28**	**35**	**39**	**38**

Table no 6. Educational status of seropositive delivered women

Year	No of positive deliveries	Illiterate	Up to 10th	Up to 12th	>12th
2010	8	2	4	2	-
2011	9	3	3	3	-
2012	13	3	9	1	-
2013	12	4	8	-	-
2014	12	2	8	2	-
2015	15	3	6	3	3
2016	12	4	7	1	-
2017	18	2	9	5	2
2018	12	3	6	3	-
2019	18	1	8	7	2
2020	11	2	6	3	-
Total	**140**	**29(20.71%)**	**74(52.86%)**	**30(21.43%)**	**7(5%)**

DISCUSSION

Between January 2010 and December 2020, a total of 44,677 prenatal patients were counselled, and 100% of them agreed to testing. Our study reported a 0.09 percent seroprevalence rate in prenatal cases, which is lower than the national average seroprevalence rate in antenatal cases of 0.35 percent. Vellanki VS et al. discovered 1.12 percent seroprevalence, whereas Kulkarni SK et al. discovered 0.76 percent. 6

The number of positive births exceeds the number of positive prenatal cases since our centre is a tertiary referral centre in the province. The majority of these individuals were between the ages of 20 and 30. The majority of these individuals were in their first and second pregnancies. This is similar to a research conducted by Saritha K et al8. The majority of serpositive women had a poor educational standing, with 20.71 percent being illiterate and 52.86 percent having completed the eighth grade. This might be owing to these people's lack of knowledge regarding HIV transmission. According to a research by Singh LS et al.9, illiterates (23.6 percent) and those who studied up to class X had the highest rates of HIV seropositivity (52.9 percent).

The spouses of 20 prenatal seropositive women were all provided counselling, and they all agreed to testing with a 100% acceptance rate. After testing, all of the spouses tested positive for HIV, resulting in a seropositivity of 77.5 percent in our study, whereas Vellanki VS et al6. reported a seroprevalence of 80.55 percent in their study. In our research, no seropositive women chose MTP or permanent sterilisation. In the majority of instances (60 percent), vaginal delivery was used, while LSCS was used exclusively for obstetric reasons in 40.0 percent of cases. Our findings are similar to those of Saini VK et al., who showed that 62.4 percent of seropositive women delivered vaginally and 37.6 percent via LSCS. The HIV infection is passed from mother to child through breast milk. Breastfeeding moms' transmission rates might be as high as 30-40%. Nursing is not advised for HIV-positive mothers in wealthy nations, however WHO advocates breastfeeding with early weaning by 6 months for women in underdeveloped countries where infectious illnesses and malnutrition are the leading causes of infant mortality. After describing the benefits and drawbacks of nursing and replacement feeding, 100% of the women in our research chose exclusive replacement feeding. Because there was a lack of data at 18 months due to babies relocating and being tested at different centres, the seroprevalence of newborns could not be determined. Only 8 newborns were followed up on after receiving nevirapine for 6 weeks and were proven seronegative following testing at 18 months, out of 140 positive births.

CONCLUSION

There is need to further strengthen the PPTCT programme in our hospital. Labour room screening should be started to prevent any unbooked case remaining undiagnosed. Proper counselling of the parents should be done, so that they remain adhere to our center for the follow-up of their infants. Early

infant diagnosis by DNA PCR testing at 6 wks should be introduced in our hospital as per recommendations. With these improvements we will definitely achieve the goal of elimination of parent to child transmission of HIV.

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