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ORIGINAL ARTICLE

PREVENTION OF PARENT TO CHILD TRANSMISSION OF HIV: A RETROSPECTIVE STUDY OF 5 YEARS IN A TERTIARY CENTRE, GUNTUR, SOUTH INDIA

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ABSTRACT: OBJECTIVE: Mother to child transmission of HIV is a major route of HIV infection in children. The objective of this study is to analyze the response to implementation of PPTCT programme, the response of the spouses of the seropositive antenatal women to undergo HIV testing, mode of delivery and breast feeding practices adopted by the seropositive postnatal women and the status of infants after delivery at 18 months. **METHODS:** This retrospective study was done in the Department Of Obstetrics and Gynecology, Guntur Medical College, Guntur, A.P, India and data collected from April 2009 to march 2014, a period of 5 years was studied. PPTCT centre was established in our institution in 2003. The practice in our institution is that all pregnant women attending the Antenatal clinic or Labour Room are counseled for HIV testing, and tested as per NACO guidelines. Babies born to HIV seropositive women are followed up to 18 months for confirmatory testing. **RESULTS:** The number of antenatal women counseled who opted for HIV testing were 99.4% and women who tested seropositive was 1.6 %, 1.3%, 0.9%, 0.84%, 0.6% for the years 2009-10, 10-11, 11-12, 12-13, 13-14 respectively showing a declining trend in the prevalence of HIV in antenatal women. 94.6% of women attended the post-test counseling. Spouses of seropositive antenatal women who opted for testing was 52.5% and seropositivity in the spouses tested was 65.87% during the study period. Of the 767 seropositive women who delivered, 542(70.66%) had vaginal delivery 225(29.33%) had LSCS for obstetric indication. Of the 767 seropositive women who delivered 719(93.7%) had live births, 28(3.65%) had intrauterine fetal demise and 20(2.6%) newborns died in the perinatal period. The number of seropositive women opting for exclusive replacement feeding was 54.4% during the study period April 2009 to March 2014. Confirmatory test for infants was done at 18 months and of the 136 infants tested, 14 were found to be seropositive. **CONCLUSION:** With effective implementation of PPTCT programme, HIV infection in antenatal women is showing a decreasing trend. Women are willing to undergo HIV testing but their spouses need to be counseled for coming to the antenatal clinic for testing.54% of women who were seropositive are opting for exclusive replacement feeding which may contribute to bring down the incidence of HIV in newborn, but as most of the antenatal patients are from the low socio economic status, reinforcement of counseling regarding exclusive breast feeding needs to be done. The seropositive status of the newborns is about 10.29% during the study period which can be brought down still further by initiation of triple drug ART Regimen for all pregnant women.

KEYWORDS: PPTCT, HIV, ART.

INTRODUCTION: Estimated people living with HIV (PL HIV) in India is 2.1 million (2011). National Adult Prevalence of PLHIV is 0.27% (2011), of these women constitute 39% of all PLHIV and children less than 15 years constitute 7% of all HIV infection. Mother to child transmission of HIV is a major

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route of HIV infection in children. However out of the 27 million pregnancies in a year, only 52.7% attend health institutions for skilled care during childbirth in India. Of those who availed health services 8.83 million ANCs received HIV counseling and testing (March 2013) out of which 12551 pregnant women were detected to be HIV seropositive.(1)

A total of 14.2 lakh children are estimated to be living with HIV/AIDS in India with about 14000 new HIV infections occurring annually. PPTCT programme has been implemented since 2002 with the aim of reducing transmission of HIV in antenatal period, intranatal period and post natal period by various measures. With effective measures mother to child transmission can be brought down from 15-30% to 2%.

The aim of the retrospective study was to analyze the effectiveness of implementation of PPTCT programme in tertiary care hospital in Guntur, Andhra Pradesh, India.

MATERIAL AND METHODS: This is a retrospective study done in the Department Of Obstetrics and Gynecology, Guntur Medical College, Guntur from April 2009 to March 2014, a period of 5 years. According to the protocol in the hospital, all pregnant women attending the antenatal clinic and coming to Labour room are counseled for HIV testing, informed, consent was taken and HIV testing was done as per NACO guidelines.

Spouses of seropositive pregnant women were also counseled and tested for HIV antibodies after taking the necessary consent. Post-test counseling was done for all positive pregnant women and their spouses and strict confidentiality was maintained.

All the women were counseled regarding the importance of antenatal care, the mode of delivery, importance of institutional delivery and were also counseled regarding the pros and cons of breast feeding and adherence to drug regimens and infant follow up.

From April 2009 to August 31st 2012 all the pregnant women received tablet nevirapine 200mg single dose at the onset of labour and pregant women already on ART were continued with their regime. Single dose Nevirapine syrup 2mg/kg body weight was given to all the live babies.

From September 1st 2012, with the aim of decreasing the transmission of HIV to newborn babies, triple drug ARV prophylaxis with 3 drugs Tenofovir 300 mg od(TDF)+Lamivudine 300 mg od(3TC)+Efavirenz 600 mg HS(EFV) was started for women with CD4> 350 from 14 weeks of pregnancy and continued throughout breast feeding period and 1 week after cessation of breast feeding.

For pregnant women with CD4< 350 life-long ART with 3 drugs Tenofovir 300 mg od (TDF)+Lamivudine 300 mg od (3TC)+Efavirenz 600 mg HS (EFV) was initiated.

All newborn babies were given syrup nevirapine at birth and continued for 6 weeks and at 6 weeks clotrimoxazole prophylaxis was started and continued for 18 months and babies were followed upto 18 months for confirmation of their HIV status.

RESULTS: The data collected from the department of Obstetrics and Gynecology- under PPTCT programme is tabulated and results are as follows.

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Year (April 1st- March 31st)	Total AN counseled	Total ANC tested	Total No. seropositive	Total no. Attending post-test counseling	Total no. of spouse tested	Total no. of spouse positives
2009-10	9191	9157 (99.63%)	153 (1.6%)	8369 (93.5%)	67 (43.79%)	50 (74.62%)
2010-11	9394	9393 (99.99%)	130 (1.3%)	8975 (95.54%)	56 (43.07%)	36 (64.28%)
2011-12	9239	9239 (100%)	91 (0.98%)	8885 (96.6%)	53 (58.24%)	28 (52.83%)
2012-13	8663	8843 (99.77%)	75 (0.84%)	8416 (95.17%)	44 (58.86%)	33 (75%)
2013-14	8101	7920 (97.76%)	52 (0.6%)	7509 (94.81%)	32 (61.52%)	19 (59.37%)
Total	**44788**	**44552 (99.4%)**	**480**	**42154 (94.61%)**	**252 (52.5%)**	**166 (65.81%)**

Table 1: Year wise Performance of Total antenatal women counselled, tested hiv seropositive, post-test counselling, spouse testing, seropositivity in spouses

Year (April 1st - March 31st)	LSCS	Vaginal delivery	Total	Opted for exclusive breast feeding	Opted for exclusive replacement feeding
2009-10	52	127	179	103(57%)	76(43%)
2010-11	40	119	161	75(47%)	86(53%)
2011-12	37	96	133	33(24.8%)	100(75%)
2012-13	40	109	149	62(41.6%)	87(58.4%)
2013-14	54	91	145	76(52%)	69(58.3%)
Total	**225(29.33%)**	**542(70.66%)**	**767**	**349(45.6%)**	**418(54.4%)**

Table 2: Year wise Performance of Mode of delivery in seropositive antenatal women and breast feeding options

Year (April 1st- March 31st)	Total deliveries	Live births	IUFD	Perinatal deaths
2009-10	179	168	5	6
2010-11	161	156	5	0
2011-12	133	126	4	3
2012-13	149	134	9	6
2013-14	145	135	5	5
Total	**767**	**719(93.74%)**	**28(3.68%)**	**20(2.6%)**

Table 3: Delivery outcome of seropositive antenatal women

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Year(April 1st- March 31st)	HIV test at 18 months	Found seropositive
2009-10	38	4(10.52%)
2010-11	26	5(19.23%)
2011-12	20	4(20%)
2012-13	25	0
2013-14	27	1(3.7%)

Table 4: Year wise Performance of Infant testing at 18 months

DISCUSSION: The data represents the implementation and response to PPCTC programme for HIV in a tertiary care hospital. The programme has effectively created awareness regarding HIV testing and rate of antenatal testing is almost 99.47% and for post-test counseling it is 94.11%.In other studies the rate of testing is 86-90% for antenatal testing[2,3] and for post natal testing it is 62%.[4,5]

Regarding spouse testing 50.29% of husbands of HIV women are coming forward for testing and of them 65.8% are testing seropositive. Most of the times the husbands do not accompany their wives to the hospital and when the women tests seropositive for HIV, they are reluctant to come to the hospital for testing due to the fear of diagnosis.[6] This is an area where improvement is needed and encouraging couples to attend antenatal clinics and simultaneous testing will go a long way.

There is a declining trend in prevalence of HIV in antenatal women.[7] In our study the prevalence of seropositivity was 1.6% in 2009-10 and it is 0.6% in 2013-14.

Maximum transmission takes place late in pregnancy and often during labour and elective LSCS has been advocated as a means of preventing intrapartum transmission.[8] Because of resource constraints NACO/WHO guidelines suggest vaginal delivery taking due precautions to decrease intra partum transmission. Most of the seropositive females,542 (70.66%) delivered vaginally and 225 (29.33%) had a cesarean section for obstetric indication keeping in line with NACO guidelines.93.7% of seropositive women had live births and 3.65% had intra uterine fetal demise and 2.6% of newborns died in the perinatal period.

Breast milk contains HIV virus and accounts for 14% risk of transmission to the newborn or 0.7-1% per month.[9] Regarding breast feeding practice, 54% of women opted for exclusive replacement feeding and 45.6% opted for exclusive breast feeding. Exclusive breast feeding is advocated by NACO for 6 months in a resource poor country like India and secondly with the new PPTCT ARV regimen instituted in India, the chances of HIV through breast feeding is likely to decrease still further.

Single dose nevirapine at the onset of labour reduces the risk of transmission by 45% and the transmission of HIV to newborn was 8.6-13.7%.[10] A total of 136 children were tested at 18 months and of them 14(10.29%) were found to be seropositive. From April 2009 to September 2012 all mothers and babies received single dose nevirapine and it has been effective in bringing down parent to child transmission from 30% to 10%.There is only one child who tested positive in 2013-14 out of 27 infants tested (3.7%) which is less when compared to the previous years. There is a paucity of data in infant testing at 18 months in the tertiary centre as outreach services are available for testing the status of the baby at 18 months and most of the infants are taken to the nearest ART centre for testing and a substantial proportion of infants would not have reached the age of 18 months by March 2014.

CONCLUSION: HIV infection in the antenatal women is not only a serious risk to her but also to the unborn child. HIV infection in the antenatal women is showing a decreasing trend. Women attending antenatal clinics are willingly undergoing antenatal testing. 54% of the women are opting for exclusive replacement feeding which should be advocated only if AFASS (Affordable, Feasible, Acceptable, Sustainable and Safe) criteria can be satisfied. Otherwise newborn infant morbidity or mortality may be increased due to resource constraints in a developing country like India. Single dose nevirapine to both mother and child is effective in bringing down the prevalence of HIV in newborn to 10%. Government of India is committed to work towards achieving the global target of 'Elimination of HIV infection in children by 2015 and NACO has decided to provide lifelong triple drug ART to all pregnant women from 1st of January 2014 irrespective of CD4 count or clinical stage and we can look forward to see a drastic fall in pediatric HIV infections in the near future with effective implementation of PPTCT programme.

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