



Original Article

Five Years of Parent-to-Child Transmission of HIV-AIDS Program in a Rural-Based Teaching Hospital

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Abstract

Objectives: To reduce the perinatal transmission of HIV AIDS in antenatal women—a need-based project with NACO protocols, with a series of interventions. **Methods:** Prospective and retrospective study, data collected from Parent-to-Child Transmission of HIV-AIDS records and case sheets. Women registered for pretest counseling in antenatal OP tested for HIV, posttest counseling given, single drug NVP administered to mother and neonate, exclusive breast feeding advised for first 6 months, and infant testing for HIV done at 18 months of age by ELISA. **Results:** Seroprevalence in antenatal women was 1.2%. Majority (95%) of mother-child pairs were administered single drug NVP. Institutional delivery rate for seropositive women was 70% and the perinatal transmission of HIV AIDS was 8%. **Conclusion:** Improve universal counseling and testing, more number of mother-baby pairs to be administered single drug NVP, increase institutional delivery rates for seropositive women, improve follow-up services with the help of outreach workers to reduce perinatal transmission of HIV AIDS.

Keywords: perinatal transmission of HIV AIDS, single dose Nevirapine discrimination factor.

Introduction

This need-based study was carried out with the sole aim of reducing the transmission of the HIV from mother to child. The UN general assembly 2001 resolved to reduce the proportion of infants infected with HIV AIDS by 50% before 2010. This project “Prevention of Parent-to-Child

Transmission of HIV-AIDS” (PPTCT) was initiated as per the NACO guidelines for single dose Nevirapine (SDNVP) prophylaxis due to high prevalence of HIV AIDS in antenatal women. The aim of the study was to do a series of interventions from the antenatal outpatient department in the form of enrolling maximum number of patients for pretest counseling, universal screening/testing for HIV AIDS, post-test counseling, obstetric interventions, follow-up of mother and child, and testing of infants at 18 months of age. These structured interventions were meant to reduce the perinatal transmission of HIV/AIDS.

Methods

This study was conducted in two maternity hospitals collaborated with Kakatiya Medical College, Warangal,

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Department of Obstetrics and Gynecology, from April 2002 to August 2007. All women attending the antenatal clinic were subjected to pretest counseling by qualified counselors, during which a group of 30 pregnant women was briefed about epidemiology of HIV/AIDS and routes of transmission, safe sex practices including condom usage, diseases acquired from mother to child, importance of universal screening, interpretation of laboratory test results for HIV/AIDS, importance of SDNVP prophylaxis, safe, affordable, and feasible infant-feeding practices, and importance of follow-up after delivery. Those women subjected to pretest counseling underwent laboratory testing for detection of HIV after obtaining a written informed consent. If a woman was found to be as HIV positive, she was retested using two other kits and declared seropositive as per NACO testing (strategy 3). The women found to be seropositive for HIV were administered SDNVP tablet (200 mg) at the onset of active phase of labor. Cesarean section was done only for obstetric indication. Delivery was carried out with all universal precautions and the neonate was administered SDNVP (2 mg/kg bodyweight) syrup immediately after birth. Exclusive breast feeding for 6 months was advised in all cases. Infants were immunized according to IAP protocol for vaccine preventable diseases. Rapid testing was done on infants at 18 months of age for detection of perinatal

transmission of HIV/AIDS. Results were tabulated and statistical analysis was done.

Results

A steady increase (80-96%; mean, 88%) was noticed in the number of women enrolled for the pretest counseling among women attending the antenatal clinics (Table 1).

Table 2 demonstrates that there was a progressive increase from 59 to a peak of 97% (mean 97%) in the number of women tested for the presence of HIV among those enrolled for the pretest counseling.

Table 3 shows the year-wise HIV seroprevalence rate (mean 1.12%), which reached a plateau, in antenatal women, with 72% of spouses being tested positive, 28% husbands being tested negative for HIV.

Among those tested seropositive for HIV, 70% delivered in our hospital and SDNVP was administered to 95% of mother-child pairs. 75% of the women had SPVD 10% delivered by induction 10% outlet forceps and 10% by CS (Table 4).

Table 5 shows that 8% of the infants were detected to have seropositivity for HIV AIDS infection among the

Table 1
Percentage of women who underwent pretest counseling

Year	Women attending antenatal clinic	Women counseled active (pretest)	Percentage (%)
2002-2003	23,170	16,067	80
2003-2004	22,100	17,300	86
2004-2005	24,050	21,840	75
2005-2006	23,100	22,019	96
2006-2007	24,680	21,261	75
Total	117,100	98,487	Mean 88 (Study)

d.f=4.

Statistically significant p-value of 0.001 (0.01). It compares well with NACO, 2004 of 83%.
Chi.square=655.297.

Table 2
Percentage of women tested

Year	No. of women counseled	No. of women tested	Percentage (%) of women tested
2002-2003	16,067	9,527	59
2003-2004	17,300	16,352	94
2004-2005	21,840	20,610	90
2005-2006	22,019	21,522	97
2006-2007	21,261	20,100	96
Total	98,487	88,111	Mean 88

d.f=4.

p=0.001 (0.01), Significant.

Chi.square=1198.501.

Table 3
Seroprevalence spouse positivity

Year	No. of women tested for HIV	No. of women positive for HIV	No. of spouse positive for HIV	Seroprevalence in antenatal women
2002-2003	9,527	172	150	1.08
2003-2004	16,352	260	191	1.05
2004-2005	20,610	260	177	1.00
2005-2006	21,522	225	152	1.14
2006-2007	20,100	260	153	1.30
Total	94,141	1,177	823	Mean 1.12

d.f=8.

p=0.001 (0.01), Significant.

Chi.square=151.023.

47% who came for follow-up serological testing at 18 months of age.

Discussion

The interventions in PPTCT to significantly reduce perinatal transmission of HIV/AIDS can be successful if they are integrated with Maternal and Child Health (MHC) services, similar to the voluntary counseling and testing centers for pregnancy healthcare in Nigeria¹. Previous studies have concluded that 90% of all pediatric infections were acquired maternally and that universal

screening and SDNVP were effective in reducing mother-to-child HIV transmission in resource-poor centers. The seroprevalence rate in our study was 1.2%; World Health Organization estimates that more than 60,000 children are likely to be born with HIV/AIDS every year in the absence of any interventions. In our study 88% of women attending antenatal clinics were enrolled for pretest counseling, an opt-out approach advocated by NACO. The single most important initial intervention in the program is enrolling as many women for pretest counseling for which the PPTCT center should be within the premises of the antenatal O.P. The second

Table 4
Institutional delivery rate/mother-baby pairs received SDNVP

Year	Tested for HIV	Delivered	Rate of institutional delivery	Percentage of mother-baby pairs receiving SDNVP
2002-2003	172	115	67	92
2003-2004	260	161	61	94
2004-2005	260	189	73	96
2005-2006	225	171	75	97
2006-2007	260	183	72	97
Total	1,177	819	Mean 70	Mean 95

d.f = 4.

p = 0.6 (>0.05), Nonsignificant.

chi.square = 2.44.

Table 5
Number of babies tested at 18 months of age from October 2003 to August 2007

Total no. of infants who came for follow-up	Number of infants tested positive for HIV	Number of infants tested negative for HIV	Percentage of perinatal transmission
300	24	276	8

most important step is to enroll maximum number of women for HIV testing from the pool of pretest counseling, we enrolled 88%. An ACOG study² conducted in 2007 stresses the importance of PPTCT services in reducing mother-to-child transmission. It also helps prevent stigma discrimination and new cases are not missed. The Zimbabwe study³ in 2008 demonstrated that routine antenatal screening reduces stigma discrimination. Strategy III testing guidelines of NACO were used for confirmation of positive cases. Total 90% of the clients collected laboratory reports, 77% collection of the reports by women/spouses are very important. In our study 72% of spouses were positive and 28% were negative for HIV. Testing ensures that further spread of infection in the community is arrested and they can be counseled for condom usage. The seroprevalence in our study was 1.12%, a moderate prevalence in a low-risk zone, showing that the epidemic reached a stationary/plateau phase because of our interventions that help prevent horizontal spread. The institutional

delivery rate is 70% which needs to be improved. Majority (95%) of the mother-child pairs in our study were given SDNVP and our patients were also educated to self-administer SDNVP, thus ensuring maximum coverage of mother-baby pairs. Cesarean section was recommended for obstetric indications in our protocol. No toxicity was observed for SDNVP administered to mother and infant. According to a Thai study conducted in 2007⁴, SDNVP may be associated with drug resistance. The efficacy of a program is measured by the endpoints which are mother-baby pairs receiving SDNVP-95% in our study. Secondary endpoints - Women offered HIV testing 95%, percentage transmission 8% in our study. All these endpoints have been successfully met in our study. A working group study conducted in 2007 advises multidrug regimes to high-risk patients. We counsel women to exclusively breast feeding the infant for first 6 months, because there are no acceptable, feasible, affordable, sustainable, and safe infant-feeding practices in our settings. In our study the p-value was significant

in all our observations. For many HIV mothers in resource-poor settings exclusive breast feeding was the only safe infant-feeding strategy available⁵.

Conclusion

The NACO guidelines should be followed in toto for the successful implementation of PPTCT program in resource-poor settings. The mainstay of the PPTCT program is the concept from the antenatal OP (new) women. The second important intervention is to mobilize as many counseled women as possible for laboratory testing for HIV. It is important to ensure that laboratory reports are issued to the women and spouses and posttest counseling done regarding the options in seropositive and seronegative cases. Spouse counseling, infant testing, and family testing form an integral part of our protocol. Family counseling regarding safe sex practices including condom usage, avoidance of high-risk behavior, SDNVP prophylaxis for mother and child, safe infant-feeding practices, and the necessity for follow-up is done routinely. It is vital to ensure that >90% of the mother-baby pairs are administered SDNVP during and after delivery. With this protocol we could reduce the perinatal transmission of HIV-AIDS to 8%. The drawback regarding institutional delivery rate of 70% in seropositive patient could be improved to 90-100%. More number of women should be enrolled in the antenatal clinics for pretest counseling and screening, where significant progress needs to be done. There are reports in literature about drug resistance to single drug NVP which can be corrected by administering adjunct therapy: AZT from 28 weeks of pregnancy, also Zidovudine to the baby after delivery as per WHO 2006 guidelines. We need to improve our follow-up of mother and child with the help of outreach workers and volunteers, monitor the condition of mother and child, and offer them nutritional supplements. The PPTCT project in this study is planning to involve Reproductive and Child Health-II program [mother and child services

of multipurpose health workers (F) in the rural health services] for proper coordination and follow-up, in the near future to integrate PPTCT with routine MCH care. Thus the NACO protocol on PPTCT can be successfully implemented in all tertiary hospitals with universal screening and testing of all antenatal women, improving institutional delivery rates among HIV positive women, administering SDNVP to mother-baby, safe delivery provided by the obstetrics unit with universal precautions, and good follow-up services to mother and baby in postpartum period with infant testing.

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References

1. Afolabi MO, Fatusi AO, Abioye-Kutei E, et al. HIV voluntary counseling and testing of pregnant health care centre in Ilesa, Nigeria. *Int J Third World Med* ISSN: 1539-4646.
2. Abrams EJ, Myer L, Rosenfield A, El-sadr WM. Prevention of mother-to-child transmission services as a gateway to family-based human immunodeficiency virus care and treatment in resource-limited settings; rationale and international experiences. *Am J Obstet Gynecol*. 2007; 197 (3): S101-6.
3. Chandisarewa W, Stranix-Chibanda L, Chirapa E, et al - Routine offer of antenatal HIV testing ("opt-out" approach) to prevent mother-to-child transmission of HIV in urban Zimbabwe. *Bull World Health Organ*. 2007; 85 (11): 843-50.
4. Bordeaux working group. HIV care and PMTCT in resource-limited settings. *Monthly intelligence report* 2007; 3.
5. Reducing mother-to-child transmission of HIV among women who breastfeed. *Linkages, academy for educational development - Spotlight* 2004: 1-6.