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Original Article

Prevention of parent to child transmission of HIV - scenario of West Bengal

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Abstract

Objectives : Transmission of HIV infection from the monogamous women to their babies is a problem in India. Prevention of parent to child transmission (PPTCT) program was initiated by National AIDS Control Organization (NACO) to reduce the vertical transmission of HIV. *Aims :* This study was conducted to evaluate the outcomes of the babies of the women detected HIV positive in the year 2004 in 10 PPTCT centers of West Bengal. *Methods :* The women in antenatal clinics of the PPTCT centers were tested for HIV infection after counseling. During labor, the HIV positive women were given nevirapine and the newborns were given nevirapine as per NACO guidelines. The babies were followed up and tested for HIV infection at 18 months. The results were collected from record books without taking the identity of the women. *Results :* The prevalence of HIV infection among the antenatal women was 0.11%. We had the information of the pregnancy outcomes of 49 out of 107 positive women. Of the women who had continuation of pregnancy, 95.34% had vaginal delivery and altogether 88.37% babies were live born. Only 11 babies, out of 38 live born, attended the 18 months follow up and two were detected HIV positive (18.18%). *Conclusion :* The protection rate of nevirapine is encouraging. The adherence rate of the subjects must be improved.

Key words: vertical transmission of HIV, nevirapine

Introduction

India is a country having more than one billion population and an estimated 5.21 million people infected by Human Immunodeficiency Virus (HIV) at the end of 2005. The prevalence of HIV among the adult population is 0.91%. Among the HIV infected adults, 39% are females. The average HIV prevalence among antenatal women in India is 0.88%[1]. Because of the large population, India is contributing a lion's share to the global HIV pandemic in spite of a low prevalence rate of HIV infection.

A study showed that the awareness about the HIV and acquired immunodeficiency syndrome (AIDS) being very low among the people of India, 60% of the women of India have not heard about HIV[2]. The social stigma and discrimination of the HIV affected people always play a vital role provoking the positive people to hide themselves away from regular follow up and treatment. A study from south India consisting of 134 HIV infected women showed that 89% women identified heterosexual route as the route of HIV transmission and 88% had monogamous relationship[3]. The monogamous relationship with the spouses was identified as the only

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route of HIV transmission in females who were not sex workers in another Indian study[4]. The monogamous women, being infected by HIV via the heterosexual route from their spouses, transmit the infection to the next generation through vertical transmission and a report showed that the vertical transmission rate in India varies between 13-60%[5].

The prevention of parent to child transmission (PPTCT) program was initiated by National AIDS Control Organization (NACO) to reduce the vertical transmission of HIV. There are four prongs of the PPTCT program. The first one is the primary prevention of HIV infection, second is prevention of unintended pregnancies among HIV infected women, third is prevention of HIV transmission from HIV infected women to their infants and the last or the fourth one is the provision of treatment, care and support to the HIV infected women, their infants and their families[6]. Though HIV prevalence is apparently low in India, the vast PPTCT program appears to be less cost effective but it is a vital platform to deliver the message of HIV prevention among the common monogamous women.

As a part of the PPTCT program by NACO, West Bengal State AIDS Prevention and Control Society (WBSAPCS) had started the PPTCT program on 1st January 2004 in 10 centers (nine medical colleges of West Bengal and one maternity hospital in Kolkata). The present study was conducted to note the outcome of pregnancy of the women detected as HIV positive, the vertical transmission rate of HIV in the PPTCT program as well as to have an evaluation of the PPTCT program in the 10 centers of West Bengal, in the first year of the initiation of the program i.e., 2004.

Methods

Women attending the antenatal clinics of all the 10 PPTCT centers in 2004 were counseled regarding the HIV infection with special reference to the possibility of HIV transmission from the parents to their children. After taking an informed consent, they were tested for their HIV status with rapid testing methods at the same antenatal clinic. Those who were found to be HIV positive underwent confidential post-test information and counseling regarding thorough intimation about the vertical transmission and importance of their delivery in the PPTCT centers. Fort those who wanted to have termination of pregnancy (MTP) after post-test counseling, the procedure was carried out. While they were admitted in the institutions, at the onset of labor the positive women were given oral nevirapine according to NACO guideline. The labor was conducted with universal precautions. After the birth of the baby, nevirapine syrup was given to the new born as per as NACO guideline. If the mother had come in the very advanced stage of labor (delivery would occur within two hours of admission) or she had confinement in the labor emergency, nevirapine dose given to the mother would not give protection against the vertical transmission of HIV. In these cases the newborn babies would be given two doses of nevirapine according to NACO guideline. All the mothers were counseled in detail about the merits and demerits of breastfeeding.

The mothers and the babies were asked to come for the follow up visits every six months after birth till the 18 months of age of the baby. As the maternal antibody against HIV crosses the placenta and enters the baby through breast milk, the testing of the baby for the presence of HIV infection was scheduled at the 18 months age of the baby. A positive antibody test at 18th month of age of the baby indicated that the baby was infected.

We extracted the data from the record books without taking the identity of the women into account and analyzed the data for the study purpose.

Result

The total number of antenatal women who were tested for their HIV status in the year 2004 in all the 10 PPTCT centers in West Bengal was 96,600. Among them, 107 were detected as HIV positive (0.11%).

Out of these 107 positive women, we have the information about the pregnancy outcomes of only 49 women (45.79%). The majority (43 out of 49, 87.75%) had opted for continuation of pregnancy while six had their pregnancy terminated.

Of the 43, 95.34% or 41 had vaginal delivery and two had cesarean delivery.

Regarding the outcome of the babies of the HIV positive mothers, our collective record has the evaluation of 43 newborns only. Out of these 43 babies; 88.37% or 38 were born alive. 16.27% (7/43) babies were born pre-term (born before 37 completed weeks of gestation) and out them four were still born and three were born alive.

Nevirapine was given as per the PPCT protocol and 31

out of 38 (81.57%) mothers with live born babies got the drug during labor. 89.47% (34/38) of the babies born live got the pediatric drops of nevirapine. Three women delivered in other institutions and one at home.

Regarding the follow up of the babies up to eighteen months of age and testing their HIV status at that age, the results are as follows. Four babies expired before the completion of 18 months. Twenty-one babies attended the first follow up visit at 6 months but their is a decline of the attendance thereafter (Figure 5) and only 11 babies had attended the 3rd follow up visit 18 months and were tested for their HIV status. Out of these 11 babies (each of the mothers and the babies

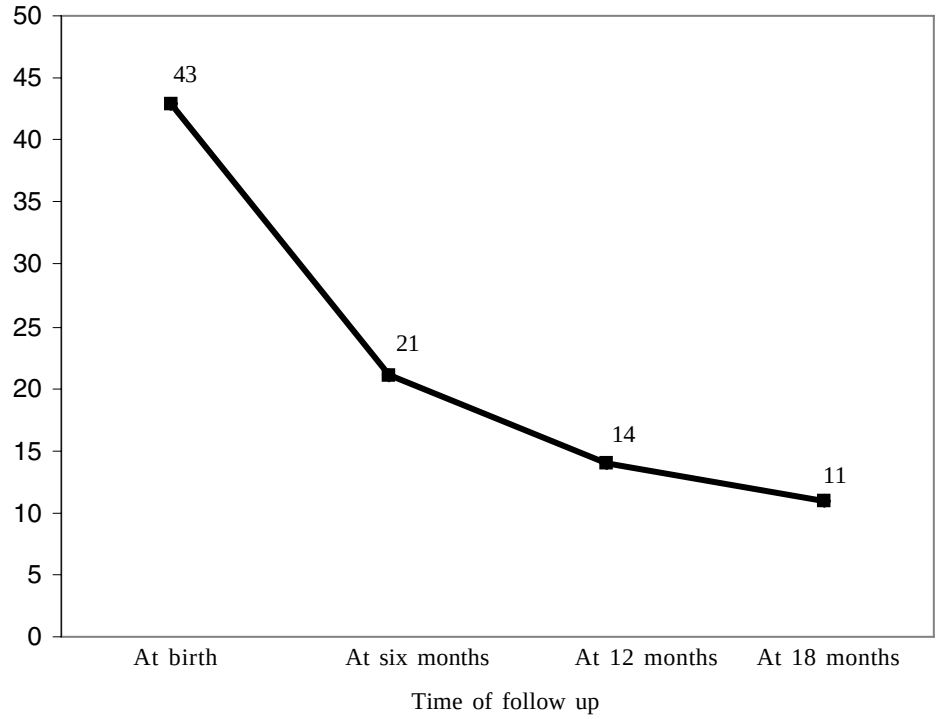

Figure 1. Follow up visits of the babies.

had got the scheduled doses of nevirapine), only two or 18.18% were detected as HIV positive.

Discussion

The prevalence of HIV positive antenatal women in the ten PPTCT centers of West Bengal in 2004 was 0.11%, which is far lower than the HIV infection rates among the pregnant women in Andhra Pradesh, Maharashtra, Karnataka and Tamilnadu where the rate was stable at over 1%[7].

The present study depicted that strikingly a large number of women did not attend the concerned institutions during their deliveries. We could collect the delivery records in different institutions in only 45.79% of cases. Though home deliveries are not uncommon in West Bengal, as also shown in a study[8] done in South 24 Parganas district, in one study the drop out rate was 54.21% which indicates that we have to be more vigilant to counsel the mothers to uphold their confidence regarding the need, safety and efficacy of delivery in their particular institution so that they may get the benefits of the PPTCT program to minimize the vertical transmission.

12.24% of our HIV positive women opted for MTP. A study, conducted in three hospitals in India between 1996 and 1998, detected 116 HIV positive antenatal mothers and among them 17 (14.65%) underwent MTP [9].

The cesarean section rate in the present study was 4.65% (2/43) and both were emergency cesarean sections. Evidence shows that performing a cesarean section prior to the onset of labor can reduce the risk of infection up to fourfold because it minimizes the exposure of the child to maternal body fluids[10]. Another study showed greater post-cesarean section morbidity in HIV positive women in comparison to the control group of women[11]. The present study is the analysis of the first year records of PPTCT program, so the consciousness might be less among the health care givers giving rise to less number of cesarean section. But as the program is going on, now there is increased number of cesarean sections as depicted in unpublished data.

In our study, 83.73% babies were born at term whereas one study from Helsinki[12] showed that 92% infants of the HIV positive mothers were born at term and another study[13] showed 77.3% babies of the HIV positive mothers were born preterm.

Of the 38 mothers having live born babies, 31 mothers as well as their babies got nevirapine as per schedule. Three mothers had confinement in the emergency room and their babies got the double dose of the drug. Four mothers and their babies did not get nevirapine. Three of them had their deliveries in other institutions where the facilities of antiretroviral drugs were not available and one had home delivery. All of them reported to the concerned centers afterwards.

The follow up in our study is poor. Four babies expired before 18 months of age. The attendance of the babies at the 6 monthly follow ups gradually declined and only 11 babies attended the final follow up and tested for their HIV status.

At the end of the study, 18.18% (2/11) babies were detected positive for HIV in spite of receiving the scheduled doses of nevirapine. All the babies were breast fed up to 4 months of age. The SAINT trial[14] compared the efficacy of nevirapine versus combined zidovudine and lamivudine (ZDV+3TC) therapy in prevention of mother to child transmission (MTCT) of HIV infection. One dose of nevirapine was given to HIV-infected mothers in labor followed by a second dose 24 to 48 hours after delivery, and one dose to their infants 24 to 48 hours after birth and the combined regimen was given for seven days. Women in the combined regimen (ZDV+3TC) were given zidovudine (ZDV) (600 mg, then 300 mg every three hours during labor and 300 mg twice a day for the next 7 days) plus lamivudine (3TC) (150 mg) twice a day during labor and for the next seven days. Infants received ZDV (12 mg) plus 3TC (6mg) twice a day for 7 days after birth. The overall rates of MTCT of HIV were 14.0% and 10.8% for nevirapine and for the combination of ZDV+3TC regimens respectively. We did not encounter any serious side effects of nevirapine. The SAINT trial also showed no side effects of the drug during their 6 weeks follow up period.

The adherence rate of the HIV positive mothers and their babies to the PPTCT program was poor during our entire study period. In the year 2004, total 107 women were detected HIV positive in the different PPTCT centers; six of them had MTP subsequently. Of the remaining 101 women, we have the record of delivery of only 43 women. Further, if we note the follow up visits of the babies, the picture is gloomy. A large number of mothers and their babies were lost to the follow up. The fear of social stigma and discrimination may play a role which compels the women to hide their identity as HIV positive and to choose some other place for confinement may be home delivery.

The present is the analysis of the first year data of our PPTCT program. Proper health education regarding HIV and AIDS may alleviate the social stigma and the adherence rate would definitely be much better in subsequent years. To prevent this sort of dropouts in future, the first thing required is more intense and more thorough post-test counseling. The women must be convincingly assured that the confidentiality about their HIV status would be maintained at the optimum level. The benefits of nevirapine therapy should be emphasized to every positive mother during their antenatal visits. Home visits by the health care givers to the positive mothers before and after delivery would definitely improve the adherence rate to the PPTCT program. The involvement of the “Positive people net work” may raise the confidence level of the HIV positive mothers. We can also strengthen the PPTCT program by opening the other PPTCT centers in different parts of the state. The woman would then be able to choose the nearest center for delivery. The protection rate against the vertical transmission of HIV is however quite encouraging in our study. This encouraging level of protection against the vertical transmission of HIV would be a strong tool of our future propaganda and would definitely raise the confidence level of the HIV positive mothers.

Conclusion

The vertical transmission rate of HIV is very low in our PPTCT program. The protection from MTCT by nevirapine is encouraging. The drop out rates of the positive mothers and their babies are high. A thorough posttest counseling, involvement of positive people and proper health education are needed to maintain a low HIV prevalence rate in our state.

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