Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2017; 5(10B):3920-3924 **ISSN 2347-954X (Print)**
©Scholars Academic and Scientific Publisher
(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI:10.36347/sjams.2017.v05i10.024

Study of Coverage and Utilization of Prevention of Parent to Child Transmission Services and HIV Status of Children of Seropositive Mothers—a Study Done At Government General Hospital, Kakinada

Dr. D. Manikyamba*, Dr. K. Krishna Prasad, Dr. A. Satyavani, Dr. N. Anil kumar
Department of Paediatrics, Rangaraya Medical College, Andhra Pradesh

Original Research Article

***Corresponding author**
Dr. D. Manikyamba

Article History
Received: 05.10.2017
Accepted: 12.10.2017
Published: 30.10.2017

Abstract: More than 90% of HIV infections in children under the age of 15 years are due to mother to child transmission. Strategies targeting pregnant women help to reduce HIV in children. Hence the present study is taken up to evaluate the utilization of PPTCT services at Government General Hospital, Kakinada and to study the HIV status of children of enrolled sero-positive mothers. All HIV positive antenatal women attending ART centre were enrolled in the study and their details were noted. They were started on Triple regimen ART (Tenofovir+ Lamividine +Efavirenz) the mode of delivery was noted and the feeding option adopted by the mothers was recorded. All the babies were started on Nevirapine (2ml/kg) for 6 weeks and the compliance was noted. DRIED BLOOD SPOT (DBS) test was done for all babies in the study at 6 weeks of age. Drydot blood test was repeated at 6, 12 and 18 months of age. If they are positive for DBS TEST, confirmation was done with WHOLE BLOOD SPECIMEN (WBS) test. 265 HIV positive pregnant women were enrolled in the study. Of them 143 were registered cases at Obstetrics and Gynaecology Department and 122 were referred from various Peripheral Health Centers.49.43% 0f enrolled women had their 1st antenatal visit in 1st trimester. 52.07% sreened for HIV in 2nd trimester. ART started in 34.33% in 3rd trimester .18% of the antenatal women know their HIV status before pregnancy.14% of the antenatal women and were screened at labour room. The mean time interval between 1st antenatal visit and HIV screening is 1.68 months in private sector, 1.5 months in the government peripheral sector (PHC s, CHC s) and 0.79 months in the tertiary health care centers. There is delay in ART INITIATION even after HIV screening which is 1.85 months in private sector, 1.59 months in government peripheral sector and 0.89 months in the ART CENTRE attached tertiary health care centers. 90% mothers opted for breast feeding. The mother to child transmission rate was 0.07 %. It is important to promote HIV screening at first antenatal visit and immediately initiate ART BY strengthening PPTCT services at periphery. Implementation of NACO B + PROGRAMME to initiate and give life time ART(using triple drug regimen) for all pregnant and breast feeding women living with HIV irrespective of their CD4 count or WHO clinical stage prevents vertical transmission of HIV.
Keywords: HIV infections, Nevirapine, ART treatment.

INTRODUCTION

The transmission of HIV from mother to child during pregnancy, delivery or breastfeeding is called Vertical or Parent to child transmission [1]. More than 90% of HIV infections in children under the age of 15 years are due to mother to child transmission.1Children living with HIV is one third less likely to receive ART when compared to adults.

Thirteen states in India (Andhra Pradesh, Madhya Pradesh, Tamilnadu, etc.) account for 90 % HIV positive antenatal women in the country*[2]. Andhra pradesh is estimated to have the highest number of HIV infected persons in Iindia, and also the highest HIV positive rate (1.26%) among the pregnant women. Strategies targeting pregnant women help to reduce HIV in children. Hence the present study is taken up to evaluate the utilization of PPTCT services at Government General Hospital, Kakinada and to study the HIV status of children of enrolled sero-positive mothers.

METHODOLOGY

The present study is a prospective observational study conducted at ART center and ICTC at Government General Hospital, Kakinada over a period of 18 months from January 2015 to 2016. All HIV positive antenatal women were enrolled in the study.

The details of the HIV positive enrolled women like age, address, educational status, parity, time of first antenatal visit, time of HIV screening and time of ART initiation were noted. All the HIV positive mothers in the study were started on Triple regimen ART (Tenofovir+ Lamividine +Efavirenz) and followed for compliance and side effects of drugs. The mode of delivery was noted. Feeding options were explained to the mothers according to NACO guidelines, and the feeding option adopted by the mothers was recorded. All the babies were started on Nevirapine (2ml/kg) for 6 weeks and the compliance was noted. Dried blood spot (DBS) was done for all babies in the study at 6 weeks of age. They were followed till the end of the study period. Drydot blood test was repeated at 6, 12 and 18 months of age. If they are positive for DBS TEST, confirmation was done with whole blood specimen (wbs) test. Spouse HIV status was noted for all the cases. All the details were recorded in a pre-designed proforma. Written consent was taken from all the enrolled women. The study was approved by the Hospital Ethics Committee.

RESULTS

265 HIV positive pregnant women were enrolled in the study. Of them 143 were registered cases at Obstetrics and Gynaecology Department and 122 are referred from various Peripheral Health Centers to Government General Hospital Kakinada. Demographic characteristics of the study population are given in table 1.

Table 1: Demographic characteristics of seropositive women:

Variable	Sero positive women (n = 265)	Percentage
Age		
< 20 years	157	59.24%
20-25 years	64	24.15%
26-30 years	36	13.58%
Locality		
Urban	116	56.22%
Rural	149	43.77%
Gravida		
G1	176	66.5%
G2	69	26%
G3	20	7.5%
Mode of delivery		
NVD	227	85.6%
LSCS	38	14.33%
HIV Status of spouse		
Positive	176	67%
Negative	37	14%
Unknown	52	19%

59% of them were < 20 years age. 56% belongs to urban areas. 66.5 % were primi gravia. HIV positivity among spouse was 61%. 51% of them were illeterates.

Table-2: Shows the time of first antenatal visit, HIV screening and ART initiation in the study population.

trimester	Time of first antenatal visit	Time of HIV Screening	Time of ART initiation
1st trimester	131	14	9
2nd trimester	97	138	118
3rd trimester	4	33	58
Labour room	33	33	33
Status known before pregnanacy	0	48	48
Total	265	265	265

49.43% 0f pregnant women had their 1st antenatal visit in 1st trimester. 52.07% sreened for HIV in 2nd trimester. ART started in 34.33% in 3rd trimester. 18% of the antenatal women know their HIV status before pregnancy. 14% of the antenatal women presented directly to the labour room and were screened at that time.

Table-3: Delay in HIV screening and ART initiation

Variable (Gestational months)	Private practitioners	Govt. Peripheral health sector	Govt. Tertiary health sector
Mean time of antenatal visit	3.12 (+/- 0.46)	3.4(+/- 0.65)	3.12 (+/- 0.65)
Mean time of HIV screening	4.80 (+/- 1.47)	4.9(+/- 1.72)	3.91 (+/- 1.33)
Mean delay in HIV screening	1.68	1.50	0.79 P < 0.01
Mean time of ART initiation	6.65 (+/- 1.52)	6.49(+/- 0.89)	4.80 (+/- 1.47)
Mean delay in ART initiation	1.85	1.59	0.89 P < 0.01

90% mothers opted breast feeding for their babies. All the babies screened at 6 weeks with DBS test were found to be negative for HIV. Two out of 105 babies who had their repeat screening at 6 months were seropositive. Details of seropositive babies are given in table 4.

Table-4: Details of the 2 sero positive babies

s.no	Time of HIV screening of mother	Initiation of ART to the mother	ART compliance of mother	Mode of delivery	Feeding option adopted.
Baby 1	6th month	7th month	Poor	NVD	Breast feeding
Baby 2	7th month	8th month	Poor	NVD	Breast feeding

The mean time interval between 1st antenatal visit and HIV screening is 1.68 months in private sector, 1.5 months in the government peripheral sector (PHC s, CHC s) and 0.79 months in the tertiary health care centers..There is delay in ART INITIATION even after HIV screening which is 1.85 months in private sector, 1.59 months in government peripheral sector and 0.89 months in the ART CENTRE attached tertiary health care centers.

DISCUSSION

A threefold strategy is needed to prevent babies from acquiring HIV infection from their mothers

- Preventing HIV infection among prospective parents
- Avoiding unwanted pregnancies among HIV positive women
- Preventing the transmission of HIV from HIV positive mothers to their infants during pregnancy, delivery and breast feeding.

The mean age of HIV positive women in the present study is 22.3 years. Several other authors reported similar results. This is the most sexually active age group..Majority of pregnant women in the present study are primigravida (66.51%). Awareness has to be created to all newly married women regarding mode of transmission of HIV and the existing PPTCT services. Primordial prevention is the first principle of PPTCT programme which is achieved through creating awareness on HIV.

18 % of antenatal women in the study know their HIV status before present pregnancy. This shows the importance of educating all sero positive women regarding the vertical transmission of HIV and to promote family planning services and to prevent UN intended deliveries in them which is the second component of_PPTCT services"._This can be achieved through Link workers, ASHA S, Anganwadi workers and ANMs.

In the present study 49.93% of study population had their first antenatal visit in 1st trimester , a study by yetyesh maru *et al.*[3] showed similar results (43.33%).According to NACO AIDS REPORT 2013-14 [4] only 56% of the antenatal women had their 1st antenatal visit in the 1st trimester. In the present study only 6.42% of the enrolled antenatals had their HIV screening in the first trimester and 52% in the second trimester which is compared with study conducted by Chaudhury *et al.*[5] and 14% of antenatal were screened at the labour room which can be compared to the study conducted by joshi *et al.*[6].

These points out the gaps in the mother and child health care services. Most of the antenatal that present directly at the labour room are migrant population. They miss the opportunity of enrolling in MCH seervices in the concerned geographic area. This can be prevented by conducting household survey at regular intervals to enrol the antenatals in the ELIGIBLE COUPLE REGISTER and to follow all the antenatals in the eligible couple register for early identification and to provide MCH services.

The mean time interval between 1st antenatal visit and HIV screening is more in private sector (1.68 months) followed by 1.5 months in government peripheral sectors and only 0.79 months in tertiary health care centres. This difference is statistically significant with a p value of < 0.001.There is also delay in the initiation of ART after screening for HIV. The mean delay in starting ART after screening is more in private sector (1.85 months) than in tertiary health care centers.0.89 months this difference is statistically significant with a p value of < 0.001.

The delay in ART initiation in various centers could be due to delay in collecting the HIV screening report for fear of knowing the HIV status or due to social stigma and discrimination if they are found to be postive or postponing until the next visit. Sailesh kore *at al*. [7] reported that only 80% of the antenatal women screened for HIV collected their reports. 9.4 % of the antenatals did not collect their reports for fear of being positive. This delay can be addressed by tracking the antenatals by mobile phone network systems.

Mother and child tracking system (MCTS) [8] implemented by the Indian government facilitates the regular followup of antenatals by intimating the antenatals for the followup visits through mobile phone network system. This system can be utilized to provide information of HIV test results to antenatal women to initiate early ART.

In the present study, 85.66% of the mothers had normal vaginal delivery and 14.33% had cesarian section .This is comparable to studies conducted by Tyade *et al*. [9] 3 yetyesh Maru *et al*. [3]. Since the evolution of PPTCT programme, there were drastic changes in guidelines regarding the mode of delivery. According to earlier guidelines, elective cesarian section reduces perinatal transmission of HIV by 50% and it should be the choice in ideal settings. After conducting extensive trials, in 2010 guidelines it was postulated that with effective usage of ART therapy cesarian section should be done for obstetric indications only.

Regarding the feeding options for newborns of HIV positive women several changes have occurred over a period of 10 years. WHO, UNICEF& UNFPA in 2003 developed [10] guidelines in the context of infant feeding by HIV positive women. The recommended option for HIV positive women was to avoid breast feeding when replacement feeding is acceptable, feasible, affordable, sustainable, and safe. Nonetheless when AFASS criteria cannot be met, mothers are advised to exclusively breast feed and to avoid mixed feeding.

The current recommendation is exclusive breast feeding for all babies of seropositive women [11]. In the present study 90 % babies are breast fed .It has not yet reached 100%. The exclusive breast feeding rate in other studies [6, 7] was much lower than this study. This can be due to various misconceptions in the society regarding breast feeding in HIV positive mothers. Counselling regarding exclusive breast feeding should start from the first antenatal vist and should be reinforced at each subsequent visit.

In the present study mother to child transmission rate was 0.07 %. Two children were found to be positive for HIV at 6 months. This low prevalence may be because all 265 babies did not complete their 6 months follow up. Transmission rates in other studies ranged from 3 – 6% [12-14] with SDNVP to mother and child and < 1% with the use of triple drug ART to the mothers and 6 weeks nevirapine to the babies.

This shows that the triple drug ART to all seropositive pregnant women irrespective of the CD4 count and feeding option is highly effective in reducing the mother to child transmission rate.

CONCLUSIONS

In the present study there is a delay between first antenatal visit and HIV screening and even after screening there is delay in initiation of ART. This delay is more in private sector and peripheral Primary and Community Health centers. The reason for delay in initiation of ART even after screening was due to delay in collecting the test report until next visit. This delay may be overcome by contacting the antenatals through mobile phone network system. It is important to promomte HIV screening at first antenatal visit and immediate referral to ART center for ART initiation and also strengthens PPTCT services at periphery through LINK WORKER SCHEME [15]. Implementation of NACO B + PROGRAMME to initiate and give life time ART(using triple drug regimen) for all pregnant and breast feeding women living with HIV irrespective of their CD4 count or WHO clinical stage prevents vertical transmission of HIV.

REFERENCES
1. UnaiDS U. USaiD (2004) Children on the Brink 2004: A joint report of new orphan estimates and a framework for action. URL: http://www. unicef. org/publications/files/cob_ layout6-013. pdf. 2013.
2. National Strategic Plan [NSP] -- 2013.
3. Maru Y, Haidar J. Infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia. Ethiopian Journal of Health Development. 2009;23(2).
4. Naco aids report 2013-14
5. Snehamay C, Sudipta B, Arunansu T, Sankar GU. Seroprevalence and utilization of therapeutic intervention in PPTCT services in a teaching hospital in Kolkata. J Obstet Gynecol India. 2007; 57(3):251-6.
6. Urvish J, Amimuddin K, Sudeshna B. PPTCT services and interventions-coverage and utilization- a cohort analysis in Gujarat, India. Healthline, Journal of Indian Association of Preventive and Social Medicine. 2010; 1(1):28-38.
7. Sailesh kore.
8. Integration of PMTCT and MNCH services in Telangana state – current Scenario and futuristic blueprint.
9. Anne Croy B, Van Den Heuvel MJ, Borzychowski AM, Tayade C. Uterine natural killer cells: a specialized differentiation regulated by ovarian hormones. Immunological reviews. 2006 Dec 1;214(1):161-85.
10. World Health Organization. Breastfeeding and replacement feeding practices in the context of mother-to-child transmission of HIV: an assessment tool for research. 2001.
11. NACO Annual Report 2012-13.
12. Arunachalam S. How relevant is medical research done in India?–A study based on Medline. Current Science. 1997 Jun 25;72(12):912-22.
13. Grover JK, Yadav S, Vats V. Medicinal plants of India with anti-diabetic potential. Journal of ethnopharmacology. 2002 Jun 30;81(1):81-100.
14. Shah HN, Bal BS, Finelli FC, Koch TR. Constipation in patients with thiamine deficiency after Roux-en-Y gastric bypass surgery. Digestion. 2013;88(2):119-24.
15. Kumari RL, Yadav BS. Changing trends of HIV infection in children with relation to the ongoing PPTCT programme. Journal of Microbiology and Biotechnology Research. 2017 Mar 26;4(5):38-42.