ACCEPTANCE OF COUNSELING, VOLUNTARY HIV TESTING AND USE OF PROPHYLACTIC NEVIRAPINE IN LABOUR AND IMMEDIATE PUERPERIUM AT MUHIMBILI NATIONAL HOSPITAL, TANZANIA

M Ngarina[1] C Kilewo[1] R Mpembeni[2]

Summary

Background: Mother to child transmission contributes significantly to the incidence of HIV in our country. A PMTCT program exists in Muhimbili National Hospital (MNH) and some surrounding public hospitals since 2000. Inspite of this it has been observed that a substantial number of women delivering at MNH have not had VCT and therefore cannot benefit from the PMTCT intervention.

Objective: To determine the acceptance of counseling, voluntary HIV testing and prophylactic use of Nevirapine among pregnant women during labour / immediate postpartum at Muhimbili National Hospital.

Methodology: This descriptive Cross-sectional study was done in the labour ward of MNH.

Data collection: Trained counselors invited all women who met inclusion criteria as they were admitted. Patients who had obstetric complications were excluded. Women who accepted counseling were taken to private rooms for discussion and those who consented were screened for HIV using rapid tests. Direct observed therapy with Nevirapine was done. Data was filled in a structured questionnaire and analysed by EPI Info 6 and SPSS software.

Results: We recruited 885 women with unknown sero-status through convenient sampling. The overall acceptance of pre-test counseling in labour among women with unknown sero-status was 71.7% while acceptance of counseling and voluntary HIV testing was 56.6%. Among those who accepted pre-test counseling in labour, 78.9% accepted HIV testing and 8.6% of these were found to be HIV infected. Eighty-three percent of women diagnosed to be HIV infected accepted Nevirapine. Counselor's experience of more than 3 years had a significant impact on acceptance of counseling and testing of HIV in labour.

Conclusion and recommendation: The results of this study show that HIV testing during labour and use of prophylactic ARV is acceptable in our setting. Women with unknown serostatus in labour should be offered counseling and testing in order to prevent MTCT of HIV.

Key words: Acceptance, HIV testing in labour.

Introduction

The HIV/AIDS pandemic is now a major common medical problem encountered in reproductive health in many developing countries like Tanzania, and it poses a great challenge in the management of pregnancy and delivery.

It is reported that about 2.6m HIV positive women become pregnant every year worldwide, giving birth to about 800,000 (1,900 babies a day) HIV exposed children.[1] About 960,000 Tanzanian women were estimated to be living with HIV in the year 2003.[2] In the same year 18,929 new AIDS cases were reported 4% of them being below 15 years of age and most of these were likely to have acquired the infection through MTCT.[2] The overall HIV prevalence among pregnant women in Tanzania mainland is 9.6%.[1] It is estimated that 72,000 babies get infected with HIV every year among which 25,200 are infected through breast milk while the rest are infected perinatally.[3] The experience at MNH has shown that of the 37,000 deliveries that take place annually 47% had unknown serostatus and thus didn't benefit from the single dose Nevirapine program.[1]

The mechanism and timing of transmission remain uncertain; however increasing evidence indicates that transmission occurs mostly during the intrapartum period 60 - 75% of cases, and an additional risk of 14 - 29% that occurs with breastfeeding.[4]

Several clinical trials (e.g the Thailand,[5] Petra[6] and Cote d'Ivoire[7] studies) have shown that use of different ARV prophylactic regimens could reduce the rate of transmission of MTCT by 50 – 70%. Use of HAART and caesarean section reduces from 24.5 - 1.5%. Of special interest is the Uganda HIVNET 012 study which showed that an inexpensive (US$2), single dose regimen of Nevirapine given once in labour and once to the infant (within 72 hrs of birth) could reduce the risk of HIV-1 transmission during the first 14 –16 weeks of life by nearly 50% in breastfeeding population.[9]

Counseling and voluntary testing is recognized as an important strategy in HIV/AIDS control. It is an entry point to several interventions, including PMTCT but is still inadequately accessible in many parts of Tanzania.

Researchers and Public Heath authorities in a number of African countries have shown that although 33 – 95% of pregnant women accept HIV-1 testing in antenatal settings offering VCT, between 25 – 55% of those consenting to antenatal testing do not receive their results and only around 30% of those receiving results take prophylactic ARV during labour.[8,10,11] Acceptance of HIV counseling and testing and participation in PMTCT intervention among antenatal mothers was studied in Dar es Salaam, Tanzania (Petra study) from June 1996 – May 1998. Among the counseled pregnant women 76.4% accepted testing for HIV. Of these 13.7% were HIV positive. Only 68.1% of the tested women returned for their results and 27.4% of the infected cases agreed to participate in a clinical trial of PMTCT after fulfilling the eligibility critera.[8] Very few studies on HIV testing in labour and delivery have been done in African settings. Such a study done in Kigali Rwanda revealed that only 36.2% of women in the sample knew their HIV status and it was through VCT done during the antenatal period. After counseling 74.2% accepted testing for HIV and of these 15.8% were HIV infected.[12] Women whose partners had skilled and well paid jobs were about four times likely to accept HIV testing than were women whose partners were unemployed. It was also found out that acceptance of HIV testing in labour was about three times higher among women 35 years or older than among younger mothers.

Correspondence to M Ngarina, Box 65117, Muhimbili National Hospital.
[1]Dept of Obstetrics/Gynaecology, [2]Dept of Epidemiology and Biostatistics.

The aim of this study was to determine the acceptance of counseling, voluntary HIV testing and prophylactic use of single dose Nevirapine among pregnant women during labour and the immediate postpartum at Muhimbili National Hospital. The factors associated with acceptance to testing and Nevirapine use and reasons for refusal to participation to PMTCT programme were also analyzed.

Materials and methods

This descriptive cross-sectional study was conducted in the Labour Ward of MNH from August – November 2004. The hospital is the largest referral, consultant and University teaching unit in Tanzania. Approximately 20 - 30 deliveries are attended in a day. Patients come from all over Dar es Salaam, public and private health facilities; with or without PMTCT program. Patients from several HIV research projects are instructed to deliver at MNH. The hospital also receives few patients from neighboring districts. All pregnant women with unknown sero status admitted for delivery at the labour ward of MNH during the study period were invited to join the study.

Those who refused counseling or to engage in any discussion concerning the study were excluded and so were women with obstetric emergencies. Women in advanced stage of labour were approached for counseling within an hour after delivery if they had no complications.

Data collection procedure

Research assistants identified eligible women as they were admitted. They went through antenatal clinic cards to identify those already tested. Together with this every woman who was in a position to discuss was asked if she ever had pre-test counseling for HIV and if she knew her sero status.

Clients had their initial examination done by the doctor on call or the main researcher to establish whether they were in labour. They were then taken to private rooms within the labour ward. Pretest counseling for HIV screening and reassurance to alleviate anxiety was done in these rooms. An information form in local National language was read to the mother then given to her for self-reading latter. Study subjects were equipped with information and given few minutes to decide if they were ready to participate in the study or not.

HIV testing

Testing for HIV was done by counselor under supervision of laboratory technician. Two rapid tests as recommended in the national PMTCT guidelines were used. This was based on the recommended UNAIDS/WHO algorithm for rapid tests currently being used in PMTCT programs. The first test was Capillus test followed by confirming the positive samples with a second different test called Determine test. If a sample from a patient resulted into discordant results (indeterminate), ELISA test was done in laboratory by a technician. For quality control of HIV testing, ELISA in the laboratory confirmed every fifth positive test and every twentieth test results.

While still in the private room post-test counseling was done and the patient was given results within 30 - 40 minutes. For HIV positive mothers who accepted NVP prophylaxis a tablet of 200mg was administered. It was taken when the patient was confirmed to be in active phase of labour. Their infants were given Nevirapine suspension – 2mg/kg few hours after delivery.

Women who were eligible but came in advanced labour and there after had successful deliveries were counseled within 1 - 2 hours post delivery and those who gave consent were tested. Post-test counseling was done and Nevirapine suspension was given to the infants of infected mothers. Structured questionnaires were then completed after this exercise. This was a 24 hours exercise throughout the study period.

Data management and analysis

Data were entered into a computer, cleaned and analysed by EPI Info 6 software. SPSS software which was used to do the multivariate analysis to determine factors for acceptance of counseling and HIV testing in labour. Chi-square test was used to test the statistical significance where by a P – value of ≤ 0.05 was taken as statistically significant.

Ethical issues

Permission to do this study was given from MUCHS and MNH ethical committee after addressing the following issues; Observation of confidentiality, privacy, reassurance and comfort. We assured all those who refused testing of the same quality of care as other patients. Prophylactic NVP was given to infected mothers and their infants. HIV infected patients and their infants were referred to care and treatment programs established in our center.

Results

There were 1897 women who delivered in our labour ward during the study period. Out of these 885 (46.7%) were of unknown sero-status. (Figure 1). Among them, 383 accepted pre-test counseling, 151 refused pre-test counseling and 351 were not approached as they had obstetric emergencies or were not in position to give consent. So the overall proportion of women who accepted counseling was 383/(885-351) [71.7%]. Of those who accepted pre-test counseling 302/383 (78.9%) accepted HIV testing. Hence the overall proportion of women who accepted counseling and voluntary HIV testing was 302/534 (56.6%).Among those women who accepted pre-test counseling and voluntary HIV testing, 26 (8.6%) of them were diagnosed to be HIV positive. Seventy-seven percent of women diagnosed to be HIV infected accepted Nevirapine prophylaxis.

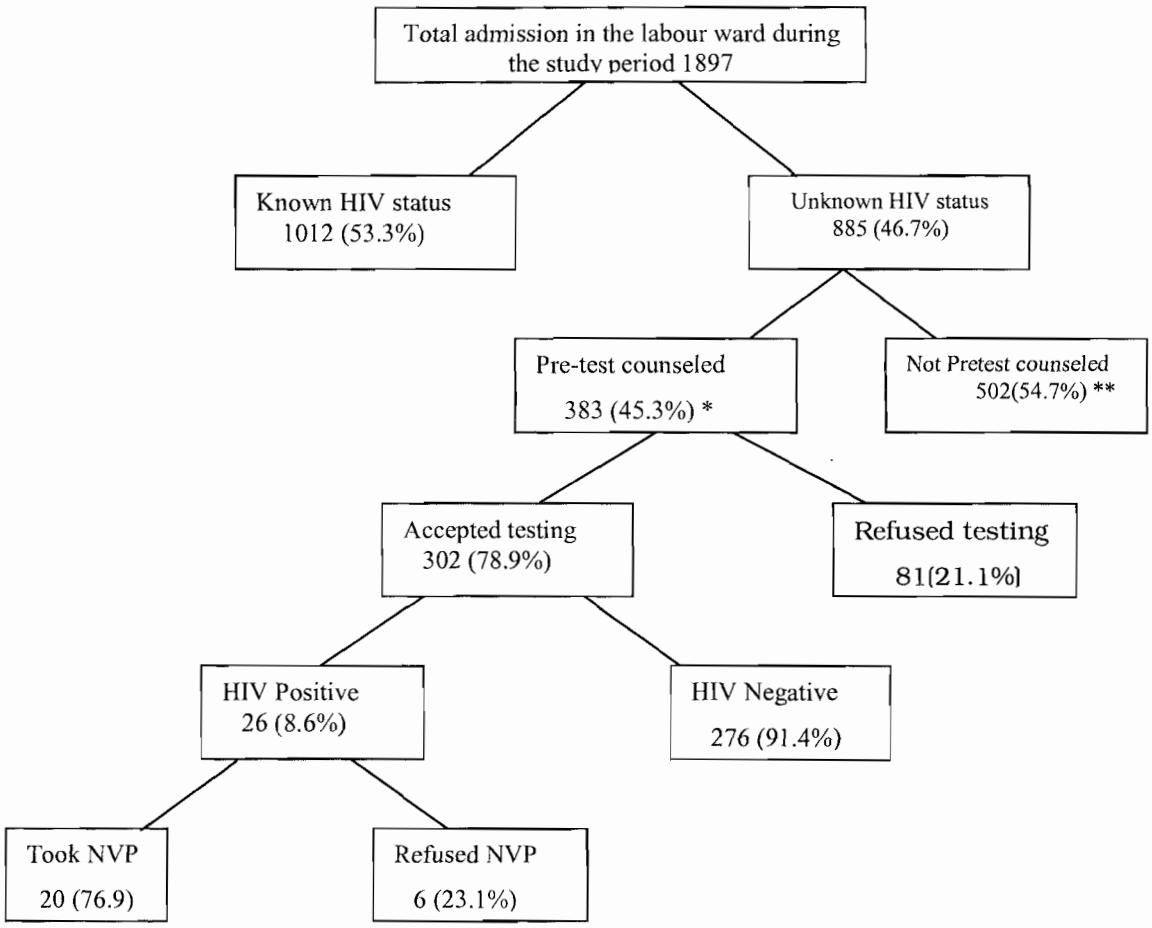
The mean age of women with unknown sero status who accepted pre-test counseling was 25.2 years, the youngest being 14 and the eldest 45 years old. The majority of them, 251 (65.5%) were married, 269 (70.2%) had completed primary school education, 217 (72.3%) had low parity and 80% were unemployed (table 1).

When all the predictive factors were analyzed together (multivariate analysis), it was observed that; counselor's experience of more than 3 years, women who had previous counseling for HIV testing, those who had antenatal HIV testing and those who had intrapartum vs postpartum counseling had a significantly higher acceptance rate (table 2).

Among women with unknown sero status, who had received antenatal pre-test counseling, 93 (45.6%) refused HIV testing at the antenatal clinic (table 3).

One seventy-nine women (47%) who accepted pre-test counseling in the labour ward were never offered pre-test counseling during the antenatal period as they were attending clinics that did not have VCT – PMTCT program.

The main reason for refusing HIV testing during the antenatal period was noted to be the same as that of refusing HIV testing in labour i.e. women not being ready to handle bad results (table 3).



* 346 + counseled before delivery; 37 - counseled after delivery. (Total 383)
** 151 – Refused counseling; 351 - too sick to be counseled. (Total 502)

Figure 1: Population Profile

Table 1: Socio-demographic characteristics of women with unknown sero status who accepted counseling in the labour ward of MNH:(n = 383)

Characteristic	n(%)
Age of patient	
14 – 19	75 (19.6)
20 – 24	**126 (32.9)**
25 – 29	84 (21.9)
30 – 34	53 (13.8)
35 - 39	40 (10.4)
40 – 44	5 (01.4)
Religion	
Christian	125 (32.6)
Muslim	**258 (67.4)**
Children living	
0 – 1	**217 (72.3)**
2 – 3	81 (21.2)
4 – 7	25 (06.5)
Parity	
0	107 (27.9)
1 – 2	**191 (49.9)**
3 – 9	85 (22.2)
Marital Status	
Single	79 (20.6)
Married	**251 (65.5)**
Unstable relationship	53 (13.8)
Mother's level of education	
No formal education	32 (08.4)
Primary education	**269 (70.2)**
Secondary education	79 (20.6)
Higher education	3 (00.8)
Occupation of mother	
Student	2 (00.5)
Housewife	**305 (79.6)**
Employed	29 (07.6)
Petty businesswoman	39 (10.2)
Peasant	8 (02.1)
Partner's level of education	
No formal education	14 (03.7)
Primary education	**238 (62.1)**
Secondary education	117 (30.5)
Higher education	14 (03.7)
Occupation of partner	
Student	4 (01.0)
Unemployed	71 (18.5)
Employed	132 (34.5)
Petty businessman	**163 (42.6)**
Peasant	13 (03.4)

Table 2: Predictive factors of acceptance of voluntary HIV testing among pregnant women with unknown sero status delivering at MNH (Multivariate analysis).

Characteristic	no Counseled	accepted testing (%)	odds ratio	95% CI	p-value
Counselor					
> 3 years experience	222	197 (88.7)			
< 3 years experience	161	105 (65.2)	0.134	0.067 - 0.267	0.000
Religion					
Christian	125	105 (84.0)			
Muslim	258	197 (76.4)	0.614	0.319 – 1.183	0.145
Antenatal counseling					
Had Counseling	204	165 (80.9)			
Never Counseled	179	137 (76.5)	2.106	1.108 – 4.000	0.023
Antenatal HIV testing *1					
Tested	111	64 (68.8)			
Never tested	93	101 (91.0)	0.190	0.079 – 0.458	0.000
Time of counseling					
Intrapartum	346	277 (80.1)			
Postpartum	37	25 (67.6)	2.404	1.011 – 5.715	0.047

*** 1 n=204 (i.e. those who were counseled antenataly) Statistically significant p-values are in bold.**

Table 3: Antenatal counseling and HIV testing among women delivering with unknown sero status and reasons for refusing antenatal screening

	N =383	*(N) %*
Got antenatal counseling	204	53.3
Never had antenatal counseling	179	46.7
	N=204	**(N) %**
Tested after antenatal counseling	111	54.4
Never tested after antenatal counseling	93	45.6
Reasons for refusing antenatal testing	**N=93**	**(N) %**
Can't handle bad results	48	51.6
Long waiting time	16	17.3
Fear of stigma and discrimination	11	11.6
Denial	8	8.6
Discouraged by partner	8	8.6
Under age	2	2.2

Discussion

This study showed that when pregnant women with unknown sero status came for delivery and were introduced to the subject of counseling, HIV testing and taking prophylaxis, the overall acceptance to counseling was 71.7% while that of HIV testing was 56.6%. The acceptance of HIV testing among those who accepted pre-test counseling in the labour ward was 78.9% and that of taking prophylactic ARV's was 77%.

Similar findings of acceptance of HIV testing in labouring women have been reported from studies done in Chicago, Kigali – Rwanda, and the USA.[12,13,14]

Twenty-one percent of counseled women refused testing for HIV. The reasons they gave included; not being ready to handle bad results, fear of stigma and discrimination and prior discouragement by partner. Few women were of the opinion that they were not infected. Generally it appeared

that in some women the fear of HIV testing exceeded the woman's concern for transmitting HIV to her infant. Labour pains were not mentioned as a reason for refusing testing.

In multivariate analysis, this study identified four factors that significantly influenced acceptability of HIV testing in labour and immediate puerperium. These were; first, counselors' experience of three years or more; second, intrapartum counseling (i.e counseling and testing before delivery was significantly acceptable than after delivery); third, prior exposure to pre-test counseling service and fourth, HIV test during antenatal period. Some of these factors were also noted in the univariate analysis.

A study on HIV testing in labour done in Kigali – Rwanda found out that woman of 35 years and more and those who had skilled and employed partners easily accepted to test.[12] At the same time studies done in the USA revealed that women who were 30 years and below, black or Hispanic, less than 32 weeks pregnant and who had no prenatal care easily accepted HIV testing in labour.[(15)]

These findings are completely different from those of this study whereby age, time of counseling and profession of both mother and partner did not affect acceptance. This could be because this study had very few partners who were professionals. No socio-demographic characteristic influenced acceptance in this study. This could probably be due to difference in cultural setting, economic status and level of education and perception of HIV/AIDS in our country as compared to the USA and Rwanda.

The coverage and utilization of VCT services during antenatal period is not yet 100% in Dar es Salaam. In this study 46.7% of women who accepted pre-test counseling in the labour ward never had the opportunity of getting such services during the antenatal period as they were attended in clinics that had no such service. Nevertheless 45.6% of women who had this opportunity refused HIV testing during the antenatal period the main reason being afraid of handling bad results. The remaining 54.4% of those who had an opportunity to be tested but did not take results.

Other studies have shown that although 75 - 95% of pregnant women accept HIV–1 testing in antenatal settings offering VCT, between 25 and 70% of these women do not obtain results.[8,10,11] This picture is almost the same as what was found in this study.

Accepting to use prophylactic antiretroviral drugs and actual use of the drug are two different things. One study found out that 60% of women who were diagnosed to be HIV-1 infected during the ANC screening accepted perinatal HIV-1 intervention but eventually only 15% of them used the drugs.[10] Another study found out that 67% of women who were offered ANC pretest counseling accepted testing and 55% returned for results. Nevirapine was given to 30% of them but only 20% took the drug.[16] Time lag between testing, getting the drug and keeping it till delivery could have contributed to the discrepancy between the number of women who tested positive and those who used Nevirapine. In this study, the use of Nevirapine was 77% among those positives who had unknown sero-status. This is relatively higher than what was found in other studies most probably due to Direct Observed Treatment (DOT) which we practiced.

Conclusion

Findings of this study imply that, generally, a good number of women accept pre-test counseling, HIV testing and use of prophylactic ARV during labour and immediate post partum. Direct observed treatment improves the uptake of NVP during labour. Counselors experience improves acceptance of HIV testing in labour. Unfortunately a considerable number of women who get antenatal pretest counseling either do not test or do not go for results mainly because they are not ready to handlc bad results.

Recommendation

To increase access to PMTCT intervention (use of NVP intrapartum) VCT should be practiced in most delivery units in maternity services

References:

1. Mugusi F, Lyamuya E, Kaaya E. Bakari M, Kwesigabo G. Scientific report of the National HIV/AIDS Care and Treatment Conference in Tanzania Dec.2004.
2. Ministry of Health Tanzania Mainland. National AIDS Control Program for Tanzania Mainland. HIV/AIDS/STI Surveillance reports no 18, 2003.
3. The United Republic of Tanzania – Ministry Of Health. National Guidelines for Clinical management of HIV/AIDS. April 2002.
4. UNAIDS AIDS epidemic update, December 1998. Geneva: World Health Organization 1998.
5. Shaffer N, Chuachoowong R, Mock PA et al. Short course Zidovudine for perinatal HIV-1 transmission in Bankok, Thailand: a randomized controlled trial. Lancet 1999;353:773-80.
6. Wiktor SZ, Ekpini E, Karson JM, et al. Short course Zidovudine for prevention of mother to child transmission of HIV-1 in Abidjan Coted'Ivoire: a randomized trial. Lancet 1999;353:781-85.
7. The PETRA study team. Efficacy of three short course regimens of Zidovudine and Lamivudine in preventing early and late transmission of HIV-1 from mother to child in Tanzania, South Africa and Uganda: a randomized, double blinded, placebo-controlled trial. Lancet 2002;359:1178-1186.
8. Kilewo C, Massawe A, Lyamuya E, Semali I, Kalokola F, Urassa E. HIV Counseling and Testing of Pregnant Women in Sub-Saharan Africa. Experience from a study on PMTCT-1 in Dar es Salaam, Tanzania. J Acquir Immune Defic Syndr 2001;28:458–462. (Experience from PETRA trial)
9. Guay L, Musoke P, Fleming T, Bagenda D. Intrapartum and neonatal single dose nevirapine compared with zidovudine for prevention of MTCT of HIV, in Kampala, Uganda: HIVNET 012 randomized trial. Lancet 1999;354:795–802.
10. Malonza IM, Richardson BA, Kreiss JK, Bnayo JJ, Stewart GC. The effect of rapid HIV-1 testing on uptake of perinatal HIV-1 intervention; a randomized clinical trial. AIDS 2003;17(1):113-8.
11. Cartoux M, Meda N, Van de Perre P, Newell ML, and the Ghent International Working Group on MTCT of HIV. Acceptability of Voluntary HIV testing by pregnant women in developing countries: an international survey. AIDS 1998;12:2489-2493.
12. Kowalezyk J, Jolly P, Karita E, Nibarere JA, Vyankandondera J, Salihu H. Voluntary Counseling And Testing For HIV Among Pregnant Women Tested In Labour In Kigali, Rwanda. J Acquir Immune Defic Syndr 2002;31(4):408-15.
13. Centers for Disease Control and Prevention. Rapid Point-care testing for HIV –1 during labor and delivery —/Chicago, Illinois, 2002. Morbidity and Mortality weekly report of Sept, 2003;52(36):866-868.
14. Carter M. Rapid oral HIV test during labour is feasible, acceptable, and accurate. AIDSmap news July, 2004. Available at www.aidsmap.com/en/news/ux/default.asp Accessed September 2004.
15. Roongpisuthipong A, Siriwasin W, Simond RJ, Sangtaweesin V, Vanprapar N, Wasi C, Singhanati S; Bangkok Collaborative Perinatal HIV Transmission Study Group. HIV seroconversion during pregnancy and risk for MTCT. J Acquir Immune Defic Syndr 2001;26(4):348-51.
16. Chalermchockcharoenkit A, Louisirirotchnakul S, Roongpisuthipong A, Sirimai K, Wasi C. Rapid HIV diagnostic test during the intrapartum period in Pregnant women who did not receive antenatal care. J Med Assoc Thai. 2002;85(6):703-8.