

Utilization of PMTCT services at Juba Teaching Hospital, South Sudan

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Abstract

Objective:

To determine the uptake of PMTCT services by mothers attending postnatal services at Juba Teaching Hospital.

Study Design:

A cross-sectional study conducted at the Mother and Child Health (MCH) clinic between May and August 2012

Results:

All 300 women recruited had at least one antenatal care visit and 246 (82%) received antenatal counselling for HIV: 201 (67%) were tested and 15 (7.5%) were positive. Thirteen of these HIV positive mothers delivered in a health facility. CD4 tests were not done. Three mothers were put on single dose Nevirapine and two on a more efficacious ARV combination, the rest did not receive an ARV. Ten of HIV exposed infants received Nevirapine after delivery. Not all of the HIV-exposed babies were tested by polymerase chain reaction/deoxyribonucleic acid (PCR/DNA). Six babies were on exclusive breastfeeding for the first six months with four on formula and five on mixed feeding. Six mothers were not using any mode of family planning, one used condoms, one had an IUCD and one used dates (natural) method.

Conclusion:

Although the majority of the mothers received HIV counselling during the antenatal period less than 70% were tested for HIV. CD4 count testing was not routinely done and the use of HAART and other more efficacious ARV combinations were rarely used. DNA/PCR was not routinely done for HIV exposed infants. Safe infant feeding practices were limited. A majority of those with HIV positive partners did not practice safe family planning methods.

Introduction

The United Nations General Assembly Special Session on HIV/AIDS (UNGASS) declaration of 2001 committed the member countries to reduce the number of infants infected by HIV/AIDS by 50% in 2010, by ensuring that 80% of pregnant women receive HIV information, counselling, testing, interventions to prevent vertical transmission and other HIV prevention services [1]. The strategy towards universal elimination of mother-to-child transmission of HIV includes seven principal strategic directions [2].

The WHO guidelines [3] recommend that:

- Mothers diagnosed as HIV positive during pregnancy begin a triple antiretroviral regimen immediately irrespective of their CD4 count and remain on the same regimen throughout pregnancy and continuing for life.
- Infants born to HIV positive mothers receive daily

NVP or AZT from birth until age 4-6 weeks regardless of infant feeding method.

- Appropriate family planning is offered during the antenatal period. This helps to reduce risks of unwanted pregnancies and HIV transmission to uninfected partners. Strengthening the link to family planning services and condom access for dual protection offers a chance to further prevent MTCT.

The broad objective of this study was to determine the utilization of PMTCT services among women seeking MCH services. The specific objectives were to determine the proportion of mothers:

1. Attending postnatal services who underwent HIV counselling and testing, intra-partum and postpartum;
2. Testing positive who had CD4 count, clinical staging and ART treatment;
3. Testing positive who delivered in a facility and were

practicing safe infant feeding; and

4. Testing positive with no pregnancy intention who had initiated family planning.

Materials and method

Study design

This was a cross-sectional study whereby all consenting and eligible postnatal mothers bringing their children for immunization at the MCH clinic up to 9 months after delivery at Juba Teaching Hospital during May to August 2012 were enrolled.

A sample size of 300 was estimated as the number required to define the uptake of services using the Cochrane method [4]. All mothers who agreed to join the study were given the consent form with a verbal explanation for those who could not read.

Data collection and management

The principal investigator trained research assistants on the enrolment algorithm, privacy of participants' information and ethical issues. The data were collected using a structured questionnaire through direct interview. Data management used MS Access 2007 (Microsoft Corp, Seattle, USA) while statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS 17.0, SPSS Inc. Chicago).

Ethical consideration

Ethical clearance was obtained from University of Nairobi and Kenyatta National Hospital Research and Ethical Committee, and the Ministry of Health, Republic of South Sudan Research and Ethical Committee.

Results

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the 300 enrolled mothers and their partners.

HIV counselling and testing

Of the 246 mothers reported as receiving HIV counselling, 201 reported being tested for HIV and among these 15 were HIV positive – see details in Table 2. No CD4 counts had been done.

ARV/ART intervention

Of the 15 HIV positive women, only five received antiretroviral drugs for PMTCT, three received single dose Nevirapine (NVP) and two had highly efficacious antiretroviral regimen – see Table 2.

Table 1. Socio-demographic characteristics of mothers and their partners

Characteristics		
Mothers (n=300)		
Age years		
Mean (SD)	25.4 (5.3)	
Median (IQR)	25 (22-28)	
Min - Max	13-42	
Parity		
Mean (SD)	2.9 (1.8)	
Median (IQR)	2.0 (1.5-4.0)	
Min-Max	1-10	
Frequency		
	n	%
Level of education		
Not educated	63	21.0
Primary	102	34.0
Intermediate	5	1.7
Secondary	92	30.7
College/university	38	12.7
Employment status		
House wife/ unemployed	207	69.0
Employed	93	31.0
Marital status		
Not married	11	3.7
Married	285	95.0
Divorced / Separated	4	1.3
Husbands (n=300)		
Age in Years		
Mean (SD)	33.9 (8.8)	
Median (IQR)	32.5 (28-38)	
Min - Max	13-65	
Frequency		
	N	%
Alive		
Yes	297	99.0
No	3	1.0
Educational level		
None	14	4.7
Primary	46	15.3
Intermediate	11	3.7
Secondary	118	39.3
College/university	111	37.0
Number of wives		
1	196	65.0
2 or more	104	35.0
Employment status		
Unemployed	26	8.7
Employed	274	91.3

Infant PMTCT intervention

Of the 15 HIV positive mothers only 10 reported that their babies received NVP after delivery while 5 reported no intervention. Nine of those babies who had NVP received it during the first six months and one for only one month. PCR/DNA testing was not routinely done and none of the 15 HIV exposed babies received testing despite the fact that 10 of them were aged around nine months. Six mothers practiced exclusive breastfeeding for the first six months, 5 mixed fed and 4 formula-fed their babies.

Family planning among HIV positive partners

Only six of the HIV positive mothers had delivered more than six weeks previously and so were eligible for family planning. Three were not using any family planning method, one used condoms, one had an IUCD and one used the 'dates' methods.

Discussion

Antenatal counselling and testing is crucial in PMTCT. In this study 82% received counselling during their antenatal clinic visit compared to Kenya where antenatal testing and counselling uptake is more than 90% [5]. The lack of testing is a missed opportunity for those who could have been HIV positive leading to a risk for infant HIV infection. The reasons could be attributed to lack of provider initiation, inappropriate integration of PMTCT services into the antenatal care systems, or lack of understanding of the importance of perinatal HIV testing. Personal factors include a need to consult a partner, fear of results, no perceived need due to previous negative test, and cost when attending private clinics [6].

The prevalence of HIV was 7.5% among the 201 mothers who were HIV tested antenatally, compared to 6% of 299 found in an earlier study done in South Sudan among antenatal mothers in Juba Teaching Hospital [7, 8] this difference could be due to the smaller sample in this study.

Antenatal intervention for HIV positive mothers is the cornerstone in reducing mother-to-child transmission. This includes a CD4 count, clinical and laboratory staging, antiretroviral therapy and counselling on infant feeding. None of the 15 HIV positive mothers had had a CD4 count or clinical staging, which reflects lack of adherence to guidelines and availability of equipment for CD4 testing. A cohort study on effectiveness of antiretroviral therapy in South Africa has shown that each month of HAART is associated with increase in CD4 cell count of 15.1 cells/ml, which in turn further reduces MTCT of HIV [9].

The uptake of ARV/ART was low among the 15 HIV positive mothers. This could be attributed to shortage of drugs or health facility factors such as lack of proper counselling on adherence. In 2011, 59% of pregnant women living with HIV had received antiretroviral therapy or prophylaxis during pregnancy and delivery in sub-

Table 2. PMTCT services intervention given to the mothers and their partners

Variable	Frequency	
	n	%
Mothers counseled for HIV test (n=300)		
Yes	246	82.0
No	48	16.0
Did not know	6	2.0
Mothers tested for HIV(n=300)		
Yes	201	67.0
No	93	31.0
Did not know	6	2.0
Mothers Result for HIV (n=201)		
Positive	15	7.5
Negative	181	90.0
Did not know	5	2.5
Mother's CD4 test done for PMTCT		
Did not know	15	100.0
ARV/ART intervention among HIV positive mothers (n=15)		
Yes	5	33.3
No	10	66.7
Regimen used for HIV positive mothers (n=15)		
Sd NVP	3	20.0
AZT+3TC+NVP	1	6.7
AZT+3TC+LPV/r	1	6.7
Co-trimoxazole	5	33.3
Multivitamin	1	6.7
Nothing	3	20.0
Don't know the drug	1	6.7
Disclosure of HIV+ status to partner (n=15)		
Yes	7	46.7
No	8	53.3
Partners tested		
Yes	124	41.3
No	114	38.0
Did not know	62	20.7
Partners HIV results (n=124)		
Positive	7	5.6
Negative	114	91.9
Did not know	3	2.4
Partners intervention		
Co-trimoxazole	2	40.0
Did not know	3	60.0

Saharan Africa [10]. In this study only 40% of the mothers received either co-trimoxazole or multivitamins. On average MTCT rates are 15% for Sd NVP, 6.5% for more efficacious dual regimens and 2.4% for three-drug ARV combination [7, 11]. In sub-Saharan Africa the coverage of antiretroviral medicine for preventing mother-to-child transmission of HIV in 2010 was 50% for the effective regimens and 10% for single dose NVP [12].

Health facility delivery enhances the opportunity for HIV testing during the antenatal period and provides both intrapartum and immediate postpartum HIV testing which in turn will help in early infant intervention in terms of prophylactic antiretroviral drugs. Health facility delivery was more common among the HIV positive mothers (85.7% vs. 83.8% $p=0.05$). This shows that PMTCT intervention at the facility level could have been achieved during delivery and thus reduced the number of untested mothers. Those who tested positive could have been put on ART/ARV.

While a study in Kenya showed 90% of exposed infants being on antiretroviral drugs [6], in this study only 10 of the 15 infants born to the HIV positive mothers received NVP after delivery. At the time of the interview 7 of the babies at age 6 months were still on Nevirapine syrup, two were aged more than six months and were continuing with the Nevirapine syrup while one used Nevirapine for one month and was still breastfeeding. This shows an inadequate counselling on use of the medicine and could also be attributed to health system factors.

All the exposed infants did not have DNA/PCR testing and were still receiving prophylaxis. This may mean that some of the babies could be receiving prophylaxis instead of treatment for HIV. Every HIV exposed infant should be screened for DNA/PCR at six weeks, and followed for 2 years (e.g. during immunization and growth monitoring). Early infant diagnosis (age 0 to 18 months) in Kenya showed a prevalence of 8.4%. [7, 13, 14]

It is recommended [15] that:

- HIV exposed infants are exclusively breastfed for the first six months unless replacement feeding is safe and affordable;
- Mixed feeding is avoided;
- Breastfeeding stops only when other foods can provide an adequate safe diet.

Extended antiretroviral prophylaxis during the entire breastfeeding period reduces postnatal transmission of HIV in breastfed infants. The Kesho Bora study found that giving HIV positive mothers a combination of 3 antiretroviral drugs reduces transmission during

breastfeeding by 54% [16]

Knowing the HIV status of one's partner is critical and forms an important entry point for establishing prevention among couples as well as providing access to prevention, care and treatment services for the whole family [10]. Disclosure of HIV positive status helps to improve mode of infant feeding in case the mother had preferred exclusive breastfeeding or formula feeding. It also supports the mother to adhere to antiretroviral drugs both for herself and baby without fear. Providers should encourage couple counselling, testing, disclosure and positive living among HIV infected women. This study found that only 7 of the 15 HIV positive mothers had disclosed their HIV status to their partners.

Family planning services are among the core interventions of PMTCT provided to help women determine future child bearing patterns including the prevention of HIV-infected births. The low uptake of family planning seen in this study puts the majority of the HIV positive couples at increased risk.

Conclusions

Findings from this studies show that, although the majority of women were offered HIV counseling, more than 30% did not receive HIV test. Women who tested positive did not have a CD4 test done, they were provided co-trimoxazole, multivitamins and sd NVP, while the use of HAART was limited for both mothers and babies. Babies born to HIV infected mothers were not tested for HIV using PCR/DNA and were not fed according to the national guidelines. The majority of women did not disclose their HIV status to their partners and condom use was limited despite their importance in the PMTCT strategy.

Recommendations

1. All women should be encouraged to be tested for HIV during pregnancy and disclose their status to their partners.
2. CD4 counts should be mandatory and routine for all HIV positive mothers.
3. All exposed children should have their HIV status established early.
4. Use of more efficacious ARVs or HAART should be given to all mothers.
5. Research at national level involving more health facilities should be done to evaluate PMTCT services.

Study limitations

This study was conducted in only one referral hospital

and involved only mothers who could access the facility. So it could not represent the whole Juba population.

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UNICEF Infant and Young Child Feeding Counselling Card

On page 96 is Counselling Card number 22 from the set 'UNICEF Infant and Young Child Feeding: counselling cards for community workers'. It shows the risk of an HIV-positive mother passing the virus to her new baby if she and the baby take ARV and practice exclusive breastfeeding during the first 6 months (see article on page 81).

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