Original Research Article

Evaluation of patients' adherence to Human Immunodeficiency Virus at the Ouagadougou University Teaching Hospital: A prospective, cross-sectional, descriptive and analytical study.

Abstract

Objective: To study adherence to HIV screening among parturients and recent mothers with unknown HIV serostatus in the maternity ward of the University Teaching HospitalBogodogo in Ouagdougou

Patients and methods: Our study was prospective, cross-sectional, descriptive and analytical, and was conducted over a 4-month period from 1 May to 31 August 2022. .Frequencies were given with a 95% confidence interval. Univariate and multivariate logistic regressions were used to analyse the factors influencing adherence to screening. A difference was statistically significant if $p<0.05$. The odd ratio was also used if $p< 0.05$.

Results: In our study, parturients and recent mothers who did not know their serostatus represented 3.33% of women during the study period.The average age of the women was 26.5 years; housewives (58.8%), those with less than secondary education (70%) and married women (77%) were the most representative. The women had at least one prenatal consultation, and the majority (78.8%) had not been offered HIV testing during their pregnancy, which explains why they did not know their HIV status. More than half of the women (54.50%) had poor knowledge in Prevention of Mother-to-Child Transmission of HIV PMCT/HIV.The uptake rate was 85.6%. The factors influencing uptake were being post-partum and not having been offered screening. Neither socio-demographic characteristics nor level of knowledge had any influence on uptake. Fear was the main reason for refusing screening.HIV seroprevalence was 2.59%.

Conclusion: In our area, a lot of parturients did not know their HIV status. As HIV screening during pregnancy is fundamental to PMTCT/HIV, an assessment of health workers' knowledge of PMTCT/HIV would be necessary in order to improve the quality of care provided to women.

Key words: Parturients, HIV, serostatus, adherence, Mother-to-child, transmission, prevention, Ouagadougou

1-Introduction

According to UNAIDS, 900 children are born with Human Immunodeficiency Virus (HIV)every day worldwide [1]. In 2011, 300,000 children were infected with HIV through their mothers, 90% of whom were from sub-Saharan Africa. In the same year, women accounted for more than half (59%) of people living with Acquired Immune Deficiency Syndrome (AIDS) in Africa sub-Saharan [1]. Mother-to-child transmission is the second most common route of HIV transmission after sexual transmission. Prevention of mother-to-child transmission of HIV (PMTCT/HIV) is the mainstay of the fight against paediatric HIV, as it helps to reduce transmission during pregnancy and/or per-partum and/or while breast-feeding.

Over the past twenty years, the prevention of mother-to-child transmission (PMTCT) for human immunodeficiency virus (HIV) has achieved significant successes worldwide. The recommendations of the World Health Organization (WHO) on the regimens of antiretrovirals (ARVs) for pregnant women infected with HIV have evolved significantly over time, from single dosage antiretrovirals (sdARVs) and zidovudine (AZT) alone (2004) to lifelong combination antiretroviral therapy (cART), regardless of the patient's immune status (2013). The strategy of cART for pregnant women evolved from option A to option B to option B+ [2,3].

However, PMTCT displays a disparate effect globally due to imbalanced health resource distribution. In high-income countries, mother-to-child transmission (MTCT) rates have decreased to less than 1% . For example, only 44 HIV-positive infants were born in the United States in 2016, with an estimated incidence of 1.1/100,000 live births. In eastern and southern Africa, the MTCT rate was still as high as 9% in 2018. Therefore, measures should be pursued to improve PMTCT in settings with limited resources, especially in low- and middle-income countries [4,5,6]

Since 2000, Burkina Faso has made PMTCT/HIV one of its priorities. The PMTCT/HIV programme began in 2002 in three pilot health districts, gradually expanding to cover all districts by 2009 +[7]. Screening is offered as early as the first antenatal care (ANC). Women found to be HIV-positive are monitored, as are their children, who are then screened and treated if they are infected.

This programme has reduced the mother-to-child transmission rate from 13.5% in 2006 to 7.8% in 2010in the national context of Option B.Despite this programme and the massive screening campaign, the uptake of screening remains insufficient at 56% in 2010 [7]. Many women give birth without having been screened for HIV for a variety of reasons, including lack of Antenatal Care (ANC). As a result, these women arrive in the delivery room with an

unknown serological status, and give birth in ignorance of their HIV status, since screening is not always systematically offered in the delivery room in Burkina Faso.The situation described above is detrimental to the reduction of MTCT/HIV in Burkina Faso.The aim of our study is to assess adherence to screening among parturients and recent mothers with unknown HIV status in the obstetrics and gynecology department of the Bogodogo University Teaching Hospital.

2-Patient Anthropometrics and Study Methodology.

Our study was prospective, cross-sectional, descriptive and analytical, and covered a 4-month period from 1st May to 31st August 2022. Our study population consisted of parturients who were admitted to the maternity ward.All parturients admitted to the department during the study period and who agreed to take part in our study were included. All parturients in a clinical state that did not allow consent to be sought (hemodynamic shock, eclampsia, coma, etc.) were not included.Data were collected in the delivery room. Each parturient admitted to the delivery room was asked about her serostatus. If the serostatus was unknown, and if the conditions were favourable, we collected the data confidentially. If the interview proved difficult, we repeated it within 72 hours of delivery.

After obtaining the patient's informed consent, the Determine rapid test was used to screen for HIV infection, followed by post-test counselling to provide the results.In the event of a positive result, the woman and her newborn were treated in accordance with the national protocol in force.To assess our patients' knowledge of MTCT/HIV, we established a score based on 10 variables: the possibility of transmission of MTCT/HIV, the possibility of transmission during pregnancy, the mechanism of transmission during pregnancy, the possibility of transmission during childbirth, the mechanism of transmission during childbirth, the possibility of transmission during breastfeeding, the mechanism of transmission during breastfeeding, the possibility of prevention of mother-to-child transmission, knowledge of prevention of mother-to-child transmission by antiretrovirals (ARVs), knowledge of another means of prevention of mother-to-child transmission other than ARVs.

A correct answer to one of these variables is worth 1 point and a wrong answer is worth 0 points. According to the score obtained, the level of knowledge was estimated: poor for a score of 0 to 4 out of 10, average for a score of 5 to 7 out of 10 and good for a score of more than 7 out of 10.

Counselling was carried out with women in the first stage of labour, or within 72 hours postpartum. This counselling respected confidentiality standards. Screening was carried out after

obtaining informed consent from the patients. Treatment was initiated in the event of HIV seropositivity.

Text was entered using Microsoft Word 2016, tables and graphs were produced using Microsoft Excel 2007, and data was entered and analysed on a computer using EPI-INFO software version 3.5.1 English.Frequencies were given with a 95% confidence interval. Univariate and multivariate logistic regressions were used to analyse the factors influencing adherence to screening. A difference was statistically significant if $p<0.05$. The odd ratio was also used if $p< 0.05$.

3-Results

3.1-Frequency of patients with unknown HIV status

During our study period, we recorded 2,757 deliveries, 47 of which were not included in our study because they presented complications that prevented counselling. Of the 2710 patients included in our series, 90 (3.33%) did not know their HIV status.

3. 2-Reasons for not screening

During the course of our study, 90 parturients arrived in the theatre without having been tested for HIV infection during pregnancy. The various reasons for not having taken the test are shown in Table I.

Table I: Distribution of women according to reasons for not having an HIV test during pregnancy

Reason for not carrying out the test	Number	Percentage
Not proposed	71	78.89
Confident of her status	8	8.89
Fear	5	5.56
Spouse refuses	1	1.11
Test unavailable	4	4.44
Long waiting line	1	1.11
Total	**90**	**100**

3.3-Factors associated with adherence to HIV screening

3.3.1 Influence of sociodemographic characteristics on adherence to screening

Age, parity, level of education, occupation and marital status were the socio-demographic characteristics assessed in our patients. The influence of these different characteristics on adherence to screening for HIV infection is summarised in Table II.

Table II: Influence of patients' socio-demographic characteristics on their adherence to HIV testing

Socio-demographic characteristics	**Adhesion**	**Odd ratio**	**p**	**IC**
Age (n = 77)				
≥ 30 years	27	1.21	0.76	0.21-3.83
< 30 years old	50	--	--	--
Parity (n = 77)				
Primiparous	22	1.33	0.68	0.33-5.30
Child ≥ 2	55	--	--	--
Level of education (n = 77)				
Educated	41	0.50	0.28	0.14-1.78
Not at school	36	--	--	--
Residence (n = 77)				
Urban	55	0.75	0.68	0.18-2.98
Non-urban	22	--	--	
Occupation (n = 77)				
Not gainfully employed	52	0.92	0.90	0.52-3.29
Gainful activity	25	--	--	--
Marital status (n = 77)				
Single	4	0.65	0.71	0.02-1.21
Married	73	--	--	--

All $p > 0.05$ the difference is not significant. Socio-demographic characteristics had no influence on adherence.

3.3.2 Influence of previous screening on adherence to screening

Some of our patients had already been screened for HIV infection. The influence of this previous screening on adherence is shown in Table III.

Table III: Influence of previous screening on current adherence to HIV testing

Notion of previous screening	Adhesion n=77	Odd ratio	p	IC
Yes	40	1.26	0.69	0.28-5.38
No	37	--	--	--

p>0.05 the difference was not significant.The notion of previous screening did not influence adherence to screening.

3.3.3-Influence of pregnancy follow-up on compliance with screening

Pregnancy follow-up in our patients was assessed on the basis of the number of ANC sessions, the qualification of the health worker who performed the ANC, and the proposal to screen for HIV infection during the ANC sessions. Table IV shows the influence of these variables on current adherence to screening.

TableIV: Influence of pregnancy follow-up on adherence to HIV testing

Pregnancy monitoring	Adhesion n=77	Odd ratio	p	IC
Number of ANCs				
Less than 3 ANC	13	2.21	0.41	0.28-20.41
At least 3 ANC	64	--	--	--
Agent qualification				
Paramedical agent	60	1.05	0,9	0.26-4.28
Doctor	17	--	--	--
Previous screening proposed				
Yes	12	0.15	**0.003**	0.04-0.55
No	65	--	--	--

p < 0.05 for the notion of screening proposal. The difference is significant. Adherence was higher among women who had not been offered screening during ANC.

3.3.4 Influence of the timing of the offer of screening on adherence to screening

Patients were offered HIV screening either in the delivery room in 11.11% of cases or in the post-partum period in 88.89% of cases. The rate of uptake of screening according to the period of counselling is shown in Table V.

TABLE V: Influence of the timing of the offer of screening on uptake of the test

Counselling period	Adhesion n=77	Odd ratio	P	IC
Delivery room	6	0.19	0.02	1.21-22.25
Post-partum	71	5.25	--	--

p<0.05 The difference is significant. The timing of counselling would influence adherence to screening.Compliance is higher in the post-partum period.

3.3.5. Influence of the condition of the newborn on acceptability of screening in the post-partum period

Counselling for HIV screening was carried out in the post-partum period in 80 patients. The acceptability of testing according to the condition of their newborn is shown in Table VI.

Table VI: Influence of newborn status on acceptability of screening test

Condition of the newborn	**Adhesion (n = 70)**	**Odd ratio**	**P**	**IC**
Deceased	4	0.20	0.19	0.69-20.31
Living	67	--	--	--

p>0.05 The difference was not significant.The condition of the newborn did not influence adherence to screening in the post-partum period.

3.3.6 Influence of knowledge of PMTCT/HIV on adherence to screening

Table VII shows the influence of the level of knowledge of PMTCT/HIV on adherence to screening.

TableVII: Influence of level of knowledge of PMTCT/HIV on uptake of screening

Level of knowledge	Adhesion (n = 77)	Odd ratio	P	IC
Poor	41	0.71	0.57	0.21-2.37
Good and average	36	--	--	--

p>0.05 The difference was not significant.Knowledge of PMTCT/HIV did not influence adherence to screening.

3.4-Results of screening using the Determine® rapid test

In our study, 2 of the 77 patients who were screened for HIV infection were positive for the Determine rapid test, representing a seroprevalence of 2.59%.

4-Discussion and comments

4.1. Frequency

The frequency of patients with unknown HIV serostatus was 3.33%.Our rate was lower than those of THERON G. in South Africa [8] and MWEMBO TAMBWE in the DRC [9], who had rates of 7.5% and 52.2% respectively.Our rate can be explained by the unconditional commitment of the Burkina Faso government to the fight to prevent mother-to-child transmission of HIV. Burkina Faso has 100% coverage of all health districts for PMTCT/HIV services, with free HIV testing and care for HIV-positive mothers.

4.2. Reasons for the absence of HIV testing during pregnancy

Failure to offer HIV testing was the main reason for women's unknown HIV status, with a rate of 78.89%. The health worker would be largely responsible for women not knowing their serostatus, especially as all the patients had undergone at least one PNC and those who had not been offered screening were very supportive.The level of qualification of the health worker did not influence whether HIV testing was offered (p = 0.44). This could be explained by the inadequate training of some health workers at all levels of qualification in the management of parturients with regard to PMTCT/HIV.

4.3. Adherence to screening

The take-up rate for HIV testing was 85.6%.

This rate was lower than that of EKOUEVI D. in Togo [10], which was 92%; similar to that of BELLO F. in Nigeria [11] and higher than those of THERON G. [8] and MWEMBO TAMBWE in the DRC [9], which were 63.3% and 62.9% respectively.

In our study, the factors influencing adherence to screening were being post-partum and not having been offered HIV screening.

The predominance of adherence in the post-partum period could be due to the fact that the patient was calmer and more receptive to counselling.

Our adherence rate could be explained by the fact that the vast majority of women understood the need to know their serostatus. However, there is still work to be done, as the non-adherence rate was not negligible (14.6%). We therefore need to emphasise the need for all pregnant women to know their HIV status in order to save the life of their child, and to help women overcome their fear, which was the main reason for refusing screening in our study.

4.4. Seroprevalence

Seroprevalence in our study was 2.59%.Our rate was lower than those of EKOUEVI D. in Togo [2], BELLO F. in Nigeria [11]and THERON G. in South Africa [8], who found rates of 8.8%, 6.7% and 13% respectively.Our rate reflects the drop in HIV prevalence in Burkina Faso, due to the government's increased awareness and involvement in the fight against HIV [12].

Conclusion

To prevent vertical transmission of HIV, every woman should know her HIV status during pregnancy.In our study, we found parturients who did not know their HIV status.Health workers were essentially responsible for women not knowing their status, as they had all received at least one PNC during their pregnancy. Our uptake rate would indicate that the majority of women were aware of the importance of screening and their responsibility as mothers in the fight against MTCT/HIV. The availability of screening tests in the delivery room would make up for the lack of screening during pregnancy.As HIV screening during pregnancy is fundamental to PMTCT/HIV, an assessment of health workers' knowledge of PMTCT/HIV would be necessary in order to improve the quality of care provided to women.

Conflict of Interest Statement

The authors declare no conflicts of interest

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