Epidemiological Study of HIV Infection / AIDS Pregnant in the City of Likasi

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Abstract: *HIV infection is a problem of development and public health. Our cross-sectional descriptive study aimed to calculate the prevalence and determination of HIV-positive pregnant profile and the determination of risk factors among the variables studied. The transmission of HIV from mother to child (TMC) is the major mode of contamination the new-born and toddler. Voluntary testing counselling (VTC) and protection of HIV transmission from mother to child (PTMC) are therefore of its importance during pregnancy. The survey covered 1682 records voluntary pregnant women to HIV testing in the city of Likasi including 63 HIV-positive cases (3.7%; 95% CI 2.8 to 4.6%). The infection is real and present in pregnant women seen in four centres are located PTMC. The civil status, occupation, educational level, parity, gravidity, abortion, age and the presence of STI determine HIV infection.*

Keywords: HIV / AIDS infection - Gestante - Epidemiological study

1. Introduction

Infection with human immunodeficiency is, nowadays, a plague that decimates the world population dramatically. Sub-Saharan Africa bears and continues to bear most of the burden of the HIV / AIDS and the Southern Africa is the epicentre. The prevalence rates of HIV and trends vary widely between urban and rural populations in the country. Young people are most affected. The feminization of the pandemic is another point that deserves mention because it is more visible in sub-Saharan Africa where 57% of adults 15 to 49 years living with HIV / AIDS are women (WHO, 2005). In DR Congo, the prevalence was estimated at around 4.5% at the national level while Katanga were 6.6% in 2005 (NACP / Katanga, 2005). The UNAIDS report (2009)

The city of Likasi is in the urban-rural district of Likasi where we observed a high concentration of the population on artisanal mining. This would generate promiscuous sexual activities at the base of the spread of HIV. Hence the need to conduct an epidemiological study to determine the frequency, the profile of pregnant women and seek the degree of statistical association between HIV infection, STIs and other individual variables.

2. Patient and Method

Our research was conducted from May 2005 to April 2006 in the city of 4 Likasi where HIV testing centres have been opened since May 2005. The investigation is descriptive cross. Data collection is done in PMTCT registers and ANC / PMI in services with the same names. The two HIV tests used are determined according capillus and strategies NAP (2006). The regimen used nevirapine to the mother and the child as antiretroviral molecule.

The study population of 1682 pregnant women voluntary HIV testing. This number is taken from the sample size calculated from the national prevalence of HIV / AIDS in DRC estimated at 4.5%; accuracy (1%) is selected as a function of the entire city of Likasi and the risk of error is 5%. The formula (n = (Zα) ². (Pk) / ε²) (Chami, 2003) gives 1651 individuals. So we preferred to work with the population who viewed since the beginning of PTMC in

Likasi. Frequency measurements and calculated estimation are the prevalence and odds ratio. The significance of differences was assessed by the test chi-square or pearson independence test at the 5% threshold. The software Epi-Info 2007, Excel and Word 2010 in Windows 7 was used in data analysis.

3. Results

Prevalence of HIV / AIDS LIKASI

Table I: Distribution of pregnant voluntary HIV screening test according to HIV status

Sero status	ηi	%	95%
HIV positive	63	3.70	2,8 4,6
Sero negative	1619	96.30	
Total	1682	100.00	

In our study, the prevalence of HIV / AIDS among pregnant is 3.70 ± 0.9% for the period from May 2005 to April 2006.

Table II: Distribution of pregnant volunteers to test according to the results of testing centres in the city of Likasi

Centre or Hospital	HIV positive	Sero negative	Total
CS MILUMBA	17 (3%)	545 (97%)	562
MULINZI	9 (4%)	216 (96%)	225
CS Kikula	27 (4.4%)	589 (95.6%)	616
HGR DACO	10 (3.6%)	269 (96.4%)	279
Total	63 (3.7%)	1619 (96.3%)	1682

From this table, it emerges that the health centre Kikula had the highest prevalence of all cases 4.4%. It is followed by the health centre Mulinzi with a prevalence of 4%; HGR Daco with 3.6% and finally 3% health centre Milumba. We see a slight difference between the prevalence, but it is not statistically significant (p> 0.05).

Profile of pregnant women

Table III: Distribution of pregnant volunteers in HIV test age

Age class	HIV positive
14-19	8 (19.5%)
20-24	15 (4.5%)
25-29	23 (4.1%)
30-34	8 (2%)
35-39	7 (3.5%)
40-44	2 (3.5%)
45-49	0
Total	63

From this table, we find that the age of HIV varies across 17 to 44 years. The mean age was 26.9 ± 6 years.
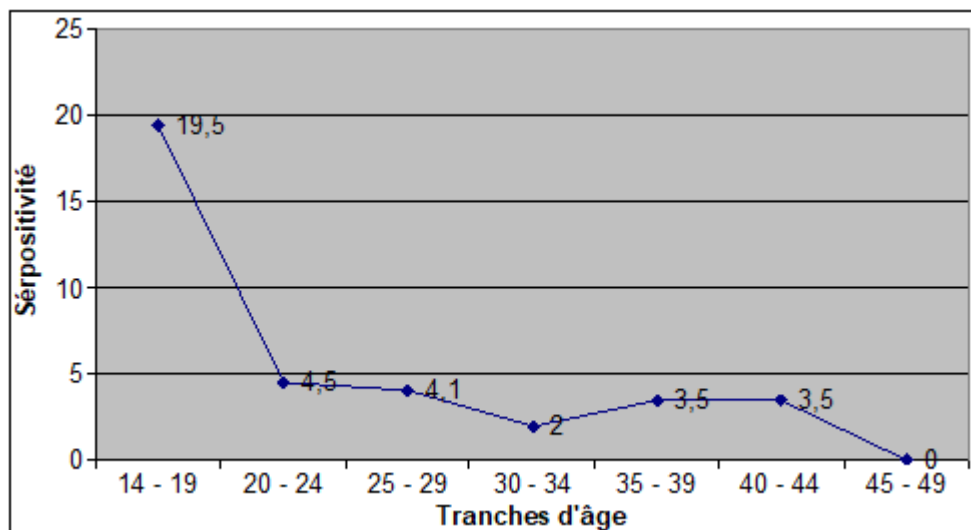

Figure 1: Distribution of HIV-positive pregnant by age groups

This figure shows that the curve rises to a peak for the age group of 14 to 19 years and then it decreases after 30 years to cancel from 44 years.

Table IV: Distribution of HIV-positive pregnant by parity

Parity	Hι	Total
0	8 (3.7%)	216
1	13 (7.3%)	179
2-3	22 (3.6%)	607
4-6	15 (2.5%)	592
7-9	5 (5.7%)	88
Total	63	1682

This table shows that first-time HIV-positive are more represented (7.3%); followed by women with 7-9 living children; nulliparous (3.7%) and paucipares (3.6%).

Board V: Distribution of HIV-positive pregnant according to gestity

gravidity	Hι	Total
1	6 (3.6%)	166
2-3	22 (4.7%)	465
4-6	26 (3.1%)	826
7-13	9 (4%)	225
Total	63 (3.7%)	1682

We find that 4.7% of seropositive focused 2-3 pregnancies and 3.6% for primiparous. The gestity seems statistically redundant variable. His analysis shows, moreover, it has no significant dependence with HIV infection.

Table VI: Distribution of HIV-positive pregnant according abortion

Abortion	Hι	Total
0	49 (3.4%)	1458
1	12 (7.2%)	167
2	2 (4%)	50
3	0	6
4	0	1
Total	63	1682

This table shows that 3.4% of pregnant HIV positive have not yet experienced abortion while 7.2% experienced one and 4% experienced twice.

Table VII: Distribution of HIV-positive pregnant according to civil status

Civil status	Hι	Total
Single	5 (25%)	20
Married	58 (3.4%)	1662
Total	63	1682

The civil status is statistically significant association with HIV infection ($p < 0.05$). Thus, among the tested pregnant, it gives off 25% of HIV positive among my unmarried and 3.4% of HIV among married.

Table VIII: Distribution of gHIV estantes by occupation

Occupation	Hι	Total
vendors	4 (8.7%)	46
Pupils	5 (33.3%)	15

household	54 (3.3%)	1621
Total	63	1682

The occupation of pregnant volunteers test is statistically associated with HIV infection in the city of Kolwezi (p <0.05). In HIV-positive pregnant, it emerges that 3.3% are housewives; 8.7% are vendors and 33.3% are students.

Table IX: Distribution of gHIV estantes by level instruction

Level	Hι	Total
Superior	2 (9.5%)	21
Secondary	18 (9.2%)	195
Primary	37 (3.3%)	1115
No	6 (1.7%)	351
Total	63	1682

The level of education is strongly associated with HIV infection (p <0.05). Our study shows that among pregnant primary, there is 3.3% of HIV followed by 9.2% of those of secondary and 9.5% for the next level.

STIs and HIV Association

Table X: Distribution of HIV-positive pregnant by the presence of sexually transmitted infections

HIV IST	Positive		Negative	Total
Positive	18	(28.6%)	143	161 (9.6%)
Negative	45	(71.4%)	1476	1521 (90.4%)
Total	63	(3.7%)	1619	1682

OR = 4.13, 95% CI = (2.3 to 7.3) chi-square = 27.3 p> 0.0000013

This table shows that 28.6% of pregnant HIV positive to have an STI. There, in Likasi, a strong statistically significant association between HIV and STIs. Individuals with STIs were 4.1 times more likely to contract HIV in Likasi and this risk is even higher in the municipality of Kikula. Note that these STIs were diagnosed by syndrome.

Analysis of risk factors

Table X: Distribution of significant variables and conditions associated with HIV infection

variables	HIV positive	seronegative	Chi-Square	p
Study level Less acceptable * Acceptable**	43 20	196 1423	156,82	0.0000
Occupation No household household	9 54	52 1567	21.28	0.000004
Civil status singles married	5 58	15 1604	25.36	0.0000005
Parity Primiparae: yes no	13 50	166 1453	6.87	0.00875
Age 14-20: yes 36-49: no	10 6	84 225	9.23	0,002
Abortion Yes No	49 14	1409 210	4.50	0.0339

*Less acceptable level = no study and primary ** Acceptable = secondary and tertiary*

Statistical analysis shows that HIV infection is statistically significant relationship with age (ages 14 to 20 years are more exposed compared to women aged over 36 years; p = 0.002). Primiparous are more exposed to infection compared to multiparous. In relation to education, less educated women are more likely than educated women (p = 0.0000) and civil status shows that single (unmarried mothers) are more exposed to infection than married women (p = 0.0000005). Women who have experienced abortion (p = 0.033) and non-household (p = 0.00000) are more likely than those who had at least one abortion and housewives.

We can, therefore, retain a significant association between the level of education, occupation, civil status, gender, age and abortion with HIV infection.

4. Discussion

Our study included women of reproductive age (15-49 years). The sex ratio for HIV infection in sub-Saharan Africa is 1 man 3 women (WHO, 2006), so the woman runs the risk of pus. The DRC has a generalized infection of HIV / AIDS that the adult prevalence exceeds 1% and transmission is primarily heterosexual (WHO, 2006).

In the city of Likasi, prevalence among pregnant women voluntary HIV testing is estimated at 3.7% (95% CI 2.8 to 4.6%). She seems less than that of the city of Lubumbashi (6.6% in 2006 according to NACP / Katanga). HIV testing is performed by two rapid tests which determined (1st line) and capillus (2nd line). If in doubt, confirmation is made by two readings in ELISA HGR / DACO

The reproductive health implies, now the question on HIV / AIDS. Our study identifies 19.5% of HIV among older pregnant 17 to 19 years. This proportion is more than 4 times that of other groups. In DRC, the striking characterization of the epidemic is its juvenilization and feminization. Our survey shows that girls under 20 are more exposed to infection (p <0.05). The level of statistical instruction is related to the HIV infection (p <0.05). Considering our study, among the "less educated", there are 58% women of primary and 10% of those with no level. These results are consistent with those of MICS2 (2001). High school students are met. Obstetric formula, we find a significant association between parity (PMI indicator required within WHO, 2000) and HIV infection with 7.3% of HIV positive primiparous. They are more exposed than multiparous women (p <0.05). The gestity is not connected to this epidemic in our study. So having failed at least once (especially illegal abortions) exposed to HIV (p <0.05). The abortions prove the non-responsible sexuality in addition to the practice of abortion which also exposes. Analysis of civil status shows that unmarried at high risk of infection (p <0.05); then that in itself would be a protective factor, if accompanied abstinence. The level of education is asset for the acquisition of knowledge about HIV / AIDS.

PMTCT is one aspect of comprehensive care that should receive the HIV-positive pregnant woman and a holistic approach regarding the duration of life. Vertical transmission is favoured by factors related to the virus, maternal factors

and factors related to the genetic susceptibility of the child (Chaix-Baudier, 1999). This vertical transmission is prevented by Névirapine® dose given to the mother during childbirth labour and to the baby after birth that would reduce the rate of transmission (Hoffman et al., 2005). Girard (2004) adds that this reduces the viral load in the genital compartment at the time of delivery. However, breastfeeding can completely cancel the protection. At the time of the survey, 65.1% of women in labour have taken and their children.

There is epidemiological synergy between the microorganisms responsible for sexually transmitted infections (STIs) and HIV (Girard, 2004). STIs are good epidemiological marker of the spread of HIV. In Likasi, people with STIs were 4.1 times more likely to be HIV infected and this risk is higher in the municipality of Kikula where the proportion is 11.1% (95% CI: 9.9 -12.3%) per month. The most dangerous STIs are those accompanied or genital mucosal inflammation erosions (with activation of macrophages and lymphocytes). The report of NAP (2006) shows that in DRC, 83% of cases of HIV infection were contracted through sexual intercourse with an infected partner STI co-infection.

5. Conclusion

Ultimately, our descriptive study shows the risk factors to be included in a comprehensive analytical study. The prevalence of HIV infection in Kolwezi is 3.7% (95% CI 2.8 to 4.6%). Parity (primiparity), civil status (single), occupation (non-domestic), educational level (zero and primary), age (less than 20 years), abortion (at least once) are statistically significant association with HIV infection. In addition, STI remain a risk factor associated with HIV (OR 4.1).

Abstract

The HIV infection is an outcome of development and public health. Our cross descriptive study has-been avocation at the prevalence calculation and determination of the profile of seropositive pregnant women as well as the determination of risk factors among the variables Studied. The transmission of HIV from mother to child is the major way of the new-born infant and contamination.

The voluntary screening of HIV counselling and the protection of the transmission of HIV from mother to child are therefore of great importance During Pregnancy. The investigation has-been the carried out in 1682 were queues of pregnant women for the voluntary screening of HIV in the city of Kolwezi; 63 boxes-have-been found seropositive (3.7%; 95% CI: 2.8 - 4.6%).
The infection is THUS real and present in pregnant women HAVING expected oven antenatal clinics where the protection of mother to child HIV transmission has-been established. The HIV infection is determined by civil status, occupation, educational level, parity, abortion, age and presence of sexual transmitted disease (STD).

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