

Epidemiological Profile of HIV Pregnant Women at the University Hospital Centre for Mother and Child Lagoon (Benin)

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Abstract

Objective: Vertical transmission of HIV remains the second mode of infection in Benin. To study the epidemiological aspects of HIV infection during the pregnancy at University Hospital Centre for Mother and Child Lagoon (CHU-MEL).

Patients and methods: We conducted a descriptive cross-sectional study at the Mother and Child Hospital in Benin from 1 January 2015 to 30 June 2017. The sampling was exhaustive. The selection criteria were: all pregnant or parturient seropositive who were taken care of during the study period at HOMEL. The data analysis was done with the Epi Info software, by calculating averages and standard deviations.

Results and conclusion: The prevalence rate of HIV amongst pregnant women was 1.9% (188/9554). The average age was 30 years old $\pm$ 5 years. They were married (45.6%), crafts women (67.7%), lived in a monogamous family (60.3%) and gave birth at least once (73.8%). The prevalence rate varied depending on the level of education; it was lower among the unschooled (17.5%), around (7.4%) among those who went to high school and higher among those with an intermediate level of education. HIV prevalence remains stable in the population of pregnant women. The education of young girls and the increasing purchasing power of women must be taken into consideration when drafting HIV control strategies.

Keywords: Prevalence; Pregnant; HIV; HOMEL

Introduction

In Benin Republic there is a general HIV epidemic with a stable prevalence of HIV infection since 2006. According to the 2011-2012 Demographic Health Survey (DHS), the HIV prevalence in the general population stands at 1.2%; 1.4% among women compared to 1.0% among men, with the stereotype of HIV1 representing more than 98% of the cases. In pregnant women, it is 1.86% [1].

Since 1980, sentinel surveillance of HIV among target populations (pregnant women, sex workers, Security men, long-distance truckers, men who have sex with men (MSM) etc.) provides important information on prevalence of HIV among the population in countries with generalized epidemics.

With the increasing coverage of HIV screening, the new directions of the World Health Organization and the Joint United Nations Program on HIV/AIDS rely on the implementation of a surveillance conducted among pregnant women attending prenatal consultations, based on data collected from the PTME program [2,3]. Benin has a national strategic plan to eliminate mother-to-child transmission, having made available 946 PTME sites in 2016.

The monitoring and evaluation of these strategies requires, among other things, not only the control of the incidence and prevalence of the infection, but also socio-demographic characteristics (age, occupation, educational level, marital status, etc.) to evaluate the impact of the disease of HIV prevention and care programs on the dynamics of the epidemic and to guide activities toward combatting

this epidemic and the infections associated with HIV infection. The objective of this study is to assess the HIV prevalence and socio-demographic profile of pregnant women in one of the largest hospitals in Benin.

Patients and Methods

It was a descriptive study conducted on data collected on a retrospective manner over a period of 18 months, i.e. from January 1st, 2015 to June 30th, 2017 at the "Hôpital de la Mère et de l'Enfant Lagune" hospital. The population studied consisted of records of gestational pregnant women received during prenatal consultation or labour, during the study period.

Inclusion criteria: All pregnant women who were tested for HIV with a positive outcome. The sampling was exhaustive.

HIV testing is done after counselling and getting the consent of the pregnant woman during the first meeting. The Terms of Reference allow for a sensitive test (determine). In case where the women are diagnosed positive, a second discriminative test (Bioline) is conducted to identify the type of HIV. In cases where the type of serology is "undetermined", a blood sample is sent to the reference laboratory for a new test made with ELISA and then Western blot; the serology test is done again after 6 weeks if the type of HIV remains undetermined. When the result remains the same, a search to determine the viral genome is carried out. In case of negativity, we conclude either to a false positive result (cross-reactions) or to an HIV2 or HIV1 variants (group N or O).

The variables studied were socio-demographic (prevalence, age, occupation, marital status, type of home, occupation, educational level). Data analysis was performed on the Epi Info software by comparing averages and standard deviations.

Ethical aspects

The study has been carried out with the approval of administrative authorities at different levels. Confidentiality and anonymity of the data have been respected.

Results

Prevalence of HIV infection amongst pregnant women

During the study period, 9554 women gave birth, out of whom 188 were HIV-positive, representing a prevalence of 1.9%. Our study involved 149 pregnant women.

Epidemiological distribution by age and marital status

The average age was 30 years old $\pm$ 5 years with extremes ranging from 15 to 43 years old. The proportion of HIV-positive pregnant women increases with regard to the age, with a minimum in the 15 to 19 years old age group (0.7%). It increases rapidly to reach 34.9% in the 30 to 34 years old group. Those aged less than 30 years old accounted for 42.9% of the study population. They were married in 45.6% of the cases and lived in a monogamous family in 60.3% of the cases (Table 1).

Epidemiological distribution by occupation and level of education

Half of the women only attended primary school (50.3%) and the most represented profession was craftswomen (67.7%). Most of the women came from urban areas (83.2%).

	Number (N=149)	Percentage (%)
Age		
15-19 years old	01	0.7
20-24 years old	20	13.4
25-29 years old	43	28.8
30-34 years old	52	34.9
35-39 years old	25	16.8
>40 years old	08	5.4
Marital situation		
Married	68	45.6
Living in couple	48	32.2
Single	11	7.4
Divorced	22	14.8
Type of family (n=68)		
Monogamous	41	60.3

Polygamous	27	39.7
Educational level		
Out-of-school	26	17.5
Primary school	75	50.3
Secondary school	37	24.8
High school	11	7.4
Profession		
Housewives	10	6.7
Students	7	4.7
Craft workers	101	67.8
Traders	8	5.4
Public servants	23	15.4
Living environment		
Urban	124	83.2
Rural	25	16.8

Table 1: Distribution of HOMEL pregnant women by socio-demographic characteristics.

Epidemiological distribution according to obstetrical history

The mean gravida was 3.2 with a maximum of 9. Gravida 2 to 3 dominated the series (45.6%). The average parity was 1.75 with extremes ranging from 0 to 6. Parity 1 to 3 accounted for 60.5% of the population (Table 2).

	Number (n=149)	Percentage
Gravidity		
Primigravida	24	16.1
Gravida 2 to 3	68	45.6
Gravida 4 to 6	44	29.5
Multigravida	13	8.7
Parity		
Nulliparity	39	26.2
Primiparity	33	22.2
Parity 2 to 3	57	38.3
Parity 4 to 6	18	12.1
Multiparity	2	1.3
Number of child alive		
0	42	28.2
1-3	97	65.1
≥ 4	10	6.7

Number of dead children		
0	125	83.9
1	20	13.8
2	4	2.7

Table 2: Distribution of pregnant women by obstetrical history.

Screening and serology status of husbands

Almost half of the husbands (41.6%) were not aware of their wives' HIV status. Among those who were informed, 88.2% had done their screening, out of which 51% were diagnosed negative (Table 3).

	Number (n=149)	Percentage (%)
Husbands informed or not on HIV		
Yes	51	34.2
No	62	41.6
Unspecified	36	24.2
Husbands HIV Status (n=51)		
Positive	19	37.2
Negative	26	51
Non-checked	06	11.8

Table 3: Screening of pregnant women regarding whether or not their spouses were informed.

Discussions

The prevalence of HIV during pregnancy in our study was 1.9%. The 2016 Demographic Health Survey (EDSB-IV) [1] reported a rate of 1.86%. The epidemic has remained stable for several years despite the high number of prevention policies implemented. This stability needs to be investigated as it could be a balance between high mortality and high incidence, reflecting failure of strategies in this context.

Higher rates are reported in Nigeria (6%) [3]; in Cameroon (7.6%) [4]. In contexts of low levels of consumption of prevention of mother-to-child transmission services. In 2013 the prevalence rate was 14.4% in Mozambique [5] and 6.7% in China [6]. In Brazil, a prevalence of 0.36% [7] was found in a population of 30,588 pregnant women.

The average age of our pregnant women was 30 years old $\pm$ 5 years with a higher prevalence of infection recorded with women aged 30 or less. The same is true of the 2012 sentinel survey in Cameroon, where nearly half of the pregnant women surveyed were young (49.3% aged between 15 and 24 years old), with 75.0% aged under 30. These figures reflect the fact that it is young women in full sexual activity who are most affected by HIV infection. The 2012 Demographic Health Survey (ESDB) reports a slightly higher prevalence of HIV when women first had sex at 16/17 years old than when they had sex at a later age (2.2% vs. 1.4% at 18/19 years old and 1.3% in their twenties). This remark is also true for the number of sexual partners. According to a study conducted by Chandana et al. [8], 13% of Beninese adolescents and young people have already had sex before the age of 15 with an average age of 14.75 years old $\pm$ 2.18 years at the time of the first sexual

contact. Inadequate communication between parents and teenagers and youth ($p=0.003$), father's level of education ($p=0.0021$), exposure to pornographic films ($p=0.025$), were significantly associated with early sexuality.

The vast majority of the pregnant women went to school (82.5%), out of which 91.1% reached primary or secondary levels and 8.9% higher levels. In Benin, the rate of non-education of women is 80.8% [1]. This observation is made in several countries in West Africa.

School-based sexual and reproductive health programs is a way of reducing high-risk sexual behaviour among adolescents, but according to Mason-Jones et al. [9], there is currently little evidence to suggest that educational programs are only effective in reducing cases of sexually transmitted infection or teenage pregnancies. Incentive-based interventions that focus on keeping youth, especially girls, in high school can reduce teenage pregnancy and sexually transmitted infection, but other higher quality screenings are needed to confirm this.

More than half of HIV-positive pregnant women were represented by craftswomen (67.8%) and 84.6% did not have a fixed income. Same observation was made by Takassi et al. [10]. Due to low purchasing power, financial and material dependence on men, women cannot exercise control over their sexual relations leading to situations of sex against material favours for their daily survival and that of their children [11].

The average parity was 1.75 and nearly $\frac{3}{4}$ of the women had given birth at least once (73.8%). Takassi et al. [10] in Togo made the same observation. According to the 4th pillar of PTME, all children under 5 years old, born from mothers diagnosed with HIV⁺ must be screened for HIV.

Coverage of HIV testing among men remains very low in low-income countries. In sub-Saharan Africa where HIV transmission is mostly heterosexual, screening for both members of the couple remains one of the major challenges for the prevention of sexual transmission within the couple and the mother-to-child relationship.

In our study, almost half (41.6%) of the husbands were not informed about the status of their wives. Among those who were informed, almost 9/10 (88.2%) agreed to be screened. A study conducted by Kabamba et al. [12] revealed that the majority of men consider that screening their wives informs them of their own HIV status, thus making detection of both members of the couple infrequent. Plazy et al. [13] shows that couples-oriented post-test counselling seems effective in improving marital communication around HIV. Integration of the couple into screening programs and PTME is therefore necessary.

Conclusion

Providing education to young girls, strengthening prevention programs aimed at young people, barely educated (primary level) and in the low income revenue sectors, integrating a couple approach in PTME programs are few aspects to consider when designing and implementing HIV control strategies.

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