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ADHERENCE TO ANTI-RETROVIRAL DRUGS IN PREGNANT AND LACTATING HIV POSITIVE WOMEN IN BRAZZAVILLE

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ABSTRACT

***Background*: Anti-retroviral drugs reduce morbidity and mortality due to HIV and prevent transmission from mother to child. But compliance on anti-retroviral treatment is an essential element for the success of therapeutic goals.**
***Objective*: To assess the level of compliance of anti-retroviral treatment in pregnant and lactating HIV women and identify factors of non-compliance in Brazzaville.**
***Design*: An analytical and transversal study conducted in three specialised centres from March to June 2014.**
***Setting*: Three support centres for HIV patients in Brazzaville, Republic of Congo.**
***Subjects*: It had interested pregnant and lactating HIV women and having given consent. The variables studied were: socio-demographic, related to treatment and linked to the health system. Five statistic tests were used: Yates' chi², Fisher, Student, Kruskal-Wallis and Bartlett.**
***Results*: One hundred and thirty patients were included, the mean age was 32 years, 92.3% had good education level, and 72.3% lived as couple. The adherence to anti-retroviral treatment within seven days before the survey was 77.7%. Factors significantly influencing non-adherence were: ignorance of HIV status by the partner (RR = 2.10 (1.12 - 3.92)), traditional treatment (RR = 1.77 (0.92 - 3.41), forgetfulness to take drugs (RR = 5.10 (2.07 - 12.55), and discomfort with side effects (RR = 2.12 (1.13 - 3.95).**
***Conclusion*: Several factors influence the non-adherence of anti-retroviral treatment. Improving compliance with treatment requires multi-sectoral participation.**

INTRODUCTION

Today, there is still no cure available that can definitely eliminate HIV / AIDS. However, it is recognised that anti-retroviral (ARV) drugs administered correctly, can reduce morbidity and mortality due to HIV and improve the quality of life of patients (1-2). But compliance with anti-retroviral treatment (ART) is an essential element for the success of therapeautic goals. Treatment adherence is a key success factor to prevent vertical transmission (from mother to child) of HIV.

In Congo the document on Standards and Procedures for the Prevention of Mother to Child Transmission (SPPMCT) contains several recommendations, among others those relating to the psychological support to HIV positive women achieve their treatment adherence (3). Despite the gratuity of ART for all persons living with HIV, the Congo is one of sub-Saharan African countries whose tendency of vertical prevention has been declining since 2009 (4). This survey aimed to examine the various underlying causes of non-adherence to treatment by pregnant and lactating HIV women, and make necessary corrections that will help reduce vertical transmission.

MATERIALS AND METHODS

It was a cross-analytical and multicentre study, conducted in three support centres for HIV patients (SCHP) of Brazzaville: the gynecology-obstetrics department of the University Hospital of Brazzaville, the ambulatory treatment centre and the Maternity of Talangaï Hospital. The study was conducted from March 1 to June 30, 2014. The approval of the ethic committee was obtained

Were included in the study, pregnant and lactating women followed on ART having given their consent to participate. The study did not include women with mental impairment and serious opportunistic infections. Data were collected using a questionnaire by direct interview between the patient and the investigator in a room that ensures confidentiality.

The variables studied were:

- socio-demographic: age, socio-educational situation (educated women with at least secondary level and uneducated with at most a primary education, marital status integrating women in couples and those living alone), and professional status;
- related to treatment and SCHP: understanding the goal of ART, duration of anti-retroviral therapy, the number of anti-retroviral tablets taken daily, the perception of side effects, the measures taken in case of side effects;
- related to the patient: knowledge by spouses of HIV status of their women, family support, the use of traditional medicine;
- related to the disease: treatments for other chronic diseases, the attitude of the entourage;
- related to the observance: irregularity in taking ART, jumping and /or forgetfulness of ART
- linked to the health system: the lack of ARV in the pharmacy, acceptance of the health centre distance by women, the quality of relationships between women and healthcare providers.

The analysis and management of different variables were performed on PC using the software Epi INFO7. Search for risk factors between the independent variables and non-adherence to anti-retroviral treatment was performed using contingency table 2 x 2. The existence or not of the association was measured by reading the relative risk (RR) and its confidence interval (CI) at 95% with its probability (p). Whenever they were needed, the following statistical tests were used: Yates corrected $\chi 2$, Fisher's test, Student-t test, Kruskal-Wallis' test and Bartlett's test.

RESULTS

The study population consisted of 130 women, 80 pregnant (61.54%) and 50 lactating (38.46%). All lived with HIV and followed in the SCHP. The average age was 31.9 ± 6.3 years (17 years - 44 years). There was no significant difference in mean age between patients with good compliance and those not (31.8 vs. 32 years, p = 0.9). The level of good compliance by ART within seven days before the survey was 77.7%. Adherence was not influenced by socio-demographic factors (Table I).

Table 1
Socio-demographic factors and compliance

	Non-adherence		RR (CI 95 %)	P-value	Signification
	Yes	No			
Age group					
<25 years	3	14	0.76 (0.26- 2.26)	0.76	NS
>25 years	26	87	1.30 (0.44- 3.84)	0.85	NS
Marital status					
Single	10	26	1.37 (0.70- 2,66)	0.48	NS
married	19	75	0.90 (0.72- 1.13)	0.48	NS
Uneducated	3	7	1.38 (0.50- 3.78)	0.69	NS
Unemployed	12	28	1.58 (0.83- 3.00)	0.23	NS

S = significant, NS = no significant, VS = very significant, RR = relative risk. CI = confidence interval, P = probability

Factors related to the treatment and SPPMCT significantly influencing non-adherence were: non information of husband of his wife's HIV status and the use of traditional treatment (Table II).

Table 2
Factors related to treatment, SPPMCT and compliance

	Non-adherence (Average)		RR (CI 95 %)	p	Signification
	Yes	No			
Not Informed of the goal of ART by the Doctor	3	5	0.79 (046- 1.37)	0,53	NS
No acceptance SPPMCT	5	7	0.73 (0.45- 1.20)	0,20	NS
Spouses uninformed about ART	14	26	2.10 (1.12 – 3.92)	0,03	S
ART duration					
1 year and more	19	68	0.93 (0.47- 1.84)	0.96	NS
Dosage					
2 Tablet or more	24	77	1.3 (0.57- 3.29)	0.62	NS
Number of doses per day					
Twice or more	24	76	1.44 (0.60- 3.44)	0.55	NS
Side effects	7	20	1.06 (0.83- 1.35)	0.80	NS
lack of assistance when taking	17	52	0.92 (0.77- 1.10)	0.51	NS
Lack of reminder tools	19	51	0.86 (0.71- 1.03)	0.17	NS
Existence of beliefs	5	20	0.97 (0.78- 1.21)	0.96	NS
Traditional treatment	6	5	1.77 (0.92- 3.41)	0.01	S
Other chronic diseases	3	9	1.03 (0.73- 1.46)	0.72	NS

NS: No significant, S: Significant , RR: relative risk, P: probability

In Table III we reported the factors related to the patient and disease that influenced adherence to ART.

Table 3
Factors related to the patient, the disease and the compliance

	Non-adherence		RR (CI 95 %)	p	Signification
	Yes	No			
Forgot of ART	24	39	5.10 (2.07- 12,55)	0.00	VS
Embarrassment to the people	13	23	2.12 (1.13- 3.95)	0.03	S
Repellent family circle	2	11	0,66 (0.17- 2.48)	0,73	NS
Health Centre Distance					
≤10 km	3	11	0.95 (0.33- 2.75)	1.00	NS
> 10 km	6	30	0.68 (0.30- 1.53)	0.47	NS

VS: very significant
NS: no significant
S: significant
P: probability
RR: relative risk

DISCUSSION

In terms of methodology, having found the lack of a universal method for the assessment of compliance (5), we used the method based on the statements of the patients. According to Laniece (6) the statements of patients for the evaluation of adherence are perfectly adaptable in the African context. This is a simple, inexpensive and accessible. However, reliability of this method is conditional, since patients tend to overestimate their adherence. Thus, we used to support follow-up registers of different recruitment centres; better, the confidence intervals were given to each modality to estimate the margin of error. Furthermore, the study was conducted in Brazzaville; we could not establish a link between compliance and biological parameters, in particular viral load, much less used in Africa because of its cost.

As regards the level of compliance, taking into account the existence or not of ART or oblivion making jumps in the seven days preceding the survey, our rate is below the standard set by the WHO (7) which is 95%. However, this rate was higher than that obtained by Tanon (8) in Ivory Coast which has evaluated 48%. The difference in level of compliance depends on the sample size of the target populations, and financial constraints related to the management of AIDS in the African context. Also, context of free ART in our country brings us closer adherence rates of 77% obtained by Ahmed in Djibouti (9) and 89.2% by Roux in Benin (10).

Whatever the factors related to the treatment, namely the number of tablets ingested daily, adverse reactions or duration of treatment are deemed to have a great impact in the occurrence of poor adherence (11). It did not exist in our study any relationship between these variables and noncompliance. Tanon and Ahmed (8, 9) identified adverse effects and treatment duration, as the cause of non-compliance. Like in many studies (12-14), the impact of factors related to the patient and disease such as the attitude of the people around and beliefs affect treatment and quality compliance. The ability of patients to take the treatment before the entourage will be informed of their status is very important to assess the quality of the compliance. These results confirm those of Ahmed (9). Forgetting is recognized as very important factor of poor compliance in the AIDS (9). Our results, like those of the literature (6, 15) show that the use of traditional treatment is known as one of important factor of nonadherence of ART in African environment.

It was not found a negative relationship between the nonadherence and the health system. Some authors (11, 16) observed that the bad conditions of the health system create additional causes of poor compliance among patients. The reasons for the lack of convergence of these results reside in the context of free ART of our country.

In conclusion, the level of good compliance is low. Factors influencing non compliance are the lack of knowledge by women of their HIV status, traditional treatments, forgetfulness, fear and shame generated by AIDS in society. An effort should be made in communication and education to improve the SPPMCT.

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