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RESEARCH ARTICLE

PREDICTIVE MODEL OF THE EXIT OF PATIENTS LIVING WITH HIV FROM THE TREATMENT CIRCUIT IN MBUJIMAYI, DEMOCRATIC REPUBLIC OF CONGO

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ABSTRACT

The abandonment of treatment is a major problem in low-resource settings and the monitoring of the effectiveness of antiretroviral therapy (ART) in low-resource settings is difficult due to a high rate of follow-up after initiation of treatment. The aim of this study was to identify the factors influencing the output of the patients who started ART treatment processing circuit.

Methods: This study was analytical type unmatched case-control. Were considered cases (patients observed a therapeutic interruption of 3 consecutive months or more) and patients still on ART were considered witnesses. The study was conducted in three health areas including: Bipemba, Mpokolo and Nzaba City Mbujimayi. The period of thisour study from 19 to 26/06 / 2017. The significance level was set at $p < 0.05$.

Results: The risk factors identified in this study were the false wrong belief of HIV / AIDS as a curse; lack of knowledge of the risks non observing PLWHA; from the drug to the last contact; difficulty meeting the social worker; the staff of the unavailability of the treatment taking site, the unstable housing and consumption of toxic substances (drugs and alcohol).

Conclusion: This study showed that the remarks made by the patients having interrupted at one-point antiretroviral treatment are diverse and varied as regards the reasons for the breakup.

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INTRODUCTION

HIV infection requires ongoing long term treatment that requiresregular treatment. More than 95% of prescription drug doses are considered essential to the stability of the patients' health status (Paterson *et al*., 2000). With over 60% of people infected with HIV globally, sub-Saharan Africa is severely affected by the HIV epidemic; in 2007 alone, 76% of the estimated 2.1 million AIDS-related deaths occurred in the region. The advent of highly active antiretroviral therapy (HAART) has dramatically changed the clinical course and management of HIV / AIDS, leading to comparable virological and immunological outcomes in HIV-infected patients in high-income and high-income countries (Tsague Landry *et al*, 2008). Although retention in HIV care programs, particularly of ART patients is an important factor in ensuring satisfactory clinical outcomes, a systematic review of patients who started antiretroviral therapy in sub-Saharan Africa found that about 25% are no longer supported one year after initiation, a figure up (40%) after two years (Rosen, Fox, and Gill, 2007; Sterne *et al*., 2005).

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At the individual level, the absence or discontinuation leads to more severe clinical, biological and immunological condition deterioration than in patients still on treatment (V*et al* Kouassi Kan, 2014). The studies that have sought to understand the factors related to the associated leaving the processing circuit in developing countries revealed that economic factors such as those related to poverty, including frequent medical visits and transportation costs are important considerations that hinder retention in the processing circuit (Brinkhof and Al, 2009). In addition, factors related to clinical condition such as low CD4 value at initiation, weight loss, or more generally improvement or deterioration of the health status during treatment as well as the side effects of treatment may also influence the leaving treatment(Miller and Al Ketlhapile, 2010) .

According to one of the few studies conducted in Kinshasa, two factors had exposed caused patients to discontinue treatment: this especially poverty and the stage of the disease (Tshingani Koy and Al, 2014). While regular and sustainable medical follow-up is recommended for people living with human immunodeficiency virus(HIV), some of the break for several months or even several consecutive years, thusjeopardizing the stability of their of their state of health and the success of future treatments. The extent and determinants of patient retention in HIV treatment system vary considerably across regions and health systems. Few studies have described the profile of patients lost to ARTin Democratic Republic of Congo in general and in the Mbujimayi city in particular. The objective of this study is to identify factors influencing the exit of patients who started ART processing circuit.

MATERIALS AND METHODS

Setting Study

The present study was conducted in the Democratic Republic of Congo in the Kasai Oriental province / city Mbujimayi in 3 urban health areas zones which Bipemba, Mpokolo and Nzaba.

Type study period

This study is analytical case-control. The period of our research goes from 19 to 26/06/2017.

Study population and sample

The study population is composed of HIV-infected patients aged 15 years and older who have started antiretroviral therapy. Two groups of patients were selected: patients lost to follow-up (cases) and patients still on ART during data collection (controls). The patients lost to follow-up included in the analysis were those who observed a therapeutic interruption of 3 months or more at the time of the data collection. The ART patients still in the treatment circuit whowere included in this analysis are the patients who have never observed a therapeutic interruption. The selection of sites and patients has been exhaustive. Data collection and analysis: The data were collected using a questionnaire interview guide with the complicity of an association of people living with HIV. The data were encoded and entered using the Excel version 2008 software, processed and analyzed using the SPSS20 software. The Yates chi-square test was used. Oddsratio (OR) and its 95% confidence interval (95% CI) were calculated. The significance level was set at $p < 0.05$.

Ethical considerations

Participants in this study were provided with an explanation of the purpose of the research, the nature, extent and duration of their participation, the assurances regarding the confidentiality of their participation in the study, and the responses provided during the study. Interview, the right to anonymity, confidentiality and the right of withdrawal of the participant at any time.

RESULTS

Descriptive Analysis

Table 1. Distribution of respondents by socio-demographic and cultural categories

Characteristics	Effective (n = 276)	Percentage
agein year		
17 - 27	104	37.7
28 - 38	116	42.0
39 - 49	34	12.3
≥50	22	8.0
Sex		
male	249	90.2
Female	27	9.8
Civil status		
married	22	8.0
single	176	63.8
divorced	45	16.3
widower	22	8.0
concubinage	11	4.0
occupation of respondent		
state worker	56	20.3
trader	34	12.3
Private sector official	61	22.1
unemployed	55	19.9
other	70	25.4
Study level		
no	4	1.4
primary	104	37.7
secondary	144	52.2
superior	24	8.7

Characteristics	Effective (n = 276)	Percentage
dwelling place		
rural area	0	0
urban area	276	100
lack of transport time to reach the decision-load structure		
Yes	83	30.1
No	193	69.9
have a stable home		
Yes	34	12.3
No	242	87.7
number of Km traveled to reach the support structure		
lessthan 5 Km	37	13.4
5 Km more	239	86.6
have changed the dwelling during recent months		
Yes	137	49.6
No	139	50.4
lack of consideration on the part of his entourage		
Yes	76	27.5
No	200	72.5
non-participation in decision-making in the family, environment, labor and other		
Yes	41	14.9
No	235	85.1

The analysis of this table shows that: 42, 0% of respondents were aged between 28 to 38 years; 90.2% were men, 63.8% single, 20.3% had official status and 52.2% had completed secondary study. In light of this table, the observation is that 100% of the respondents lived in urban areas; 30.1% missed transportation by the time to reach the care structure, 87.7%

did not have a stable home; 86.6% traveled 5Km and more distance to wait for the care structure, 49.6% had changed the house within 6 months, 27.5% declared to have no consideration of their surroundings and 14, 9% were excluded in decision-making in their family.

$$= \frac{e^{-2,05-0,69x1+1,92x2+1,26x3+0,66x4-0,90x5+1,71x6+1,53x7+1,77x8-1,23x9}}{1+e^{-2,05-0,69x1+1,92x2+1,26x3+0,66x4-0,90x5+1,71x6+1,53x7+1,77x8-1,23x9}}$$

Table 2. Distribution of respondents according to the beliefs, knowledge and attitude -to live with HIV / AIDS

Characteristics	Effective (n = 276)	Percentage
religion		
Christian	176	63.8
Muslim	46	16.7
animist	21	7.6
other	33	12.0
belief in God's punishment as a result of AIDS		
Yes	247	89.5
No	29	10.5
AIDS belief as a curse etc.		
Yes	101	36.6
No	175	63.4
belief in the existence of ARVs		
Yes	261	94.6
No	15	5.4
belief in the efficacy of ARVs		
Yes	125	45.3
No	151	54.7
belief in the benefits of ARVs		
Yes	242	87.7
No	34	12.3
have the habit of consuming alcohol and déroques		
Yes	42	15.2
No	234	84.8
knowledge of the risk that we will court when the treatment is not followed		
Yes	116	42.0
No	160	58.0

Table 3. Factors associated with the release of PLHIV / AIDS ARV treatment circuit

Factors explaining the output of the circuit care	B	ES	p	Exp (B)	CI for Exp (B) 95%	
					Inferior	Superior
Christian religion	-0.693	0,181	0,000	0,500	351	714
HIV / AIDS is a curse	1,919	0.436	0,000	6.815	2,901	16.007
Lack of knowledge of the risks that you are exposed if treatment is not followed	1,262	0,432	0,003	3,533	1,515	8.239
Out drugs last time	657	0.229	0,004	1,930	1,232	3,023
be informed by the medical staff	- 902	0.367	0.014	0.406	0.198	0.833
Difficulties to meet the social worker	1,711	0.441	0,000	5,536	2,333	13.138
Unavailability of staff on site at all times	1,534	0.461	0,001	4,635	1,879	11.434
Housing Instability	1,770	0.734	0.016	5,871	1,393	24,737
taking toxic substances (drugs and alcohol)	0.667	0.232	0,004	1,948	1,236	3,070

According to this table, 63.8% of respondents were Christians, 89.5% believed in God's punishment as a consequence of AIDS, 36.6% believed in bad luck as the origin of AIDS, 94.6% believed in the existence of ARTs among which 45.3% believed in their effectiveness, 15.2% of the respondents consumed the toxic substances and 42.0% did not know the risk that we run when the treatment is not well followed

Results of multivariate logistic regression analyzes stepping down

The results of this table show that in Multivariate analysis by logistic regression (stepwise step), adjust on all variables, the output of PLHIV / AIDS ART circuit is influenced by the following factors: bad belief of HIV / AIDS as a bad thing; lack of awareness of the risks faced by non-observant PLWHA; breaking the drug intake for the last time; the difficulties of meeting the social worker, the unavailability of staff at the site of treatment, the instability of housing and the consumption of toxic substances (drugs and alcohol) .Thus, the model of prediction of the exit of d a PVVH of the care circuit can be

written in the following way

P= (exit from the care circuit/ X=xi)

DISCUSIÓN

The results show that in multivariate analysis by logistic regression (stepping down), adjusting for all variables, the output of PPVIH / AIDS from the ART circuit is influenced by the following factors: the unavailability of staff at citation of treatment, resulting in insufficient communication; this factors According to the literature contributes to the output of the treatment circuit of patients on ARV, let us quote here the study of Costagliola and Al in 2001, which revealed in his study that the patient's discharge from the care circuit was influenced the low interaction and communication between patient and caregiver, fear of discrimination in the workplace, use of non-medical therapies and financial and logistical constraints (Costagliola *et al* 2001). However, few studies have examined the health system-related factors that influence retention. The long waiting times and the organization of the services the unavailability and the non-respect of the meeting schedule on the city of care and the lack of integration or coordination of the various services were cited as factors influencing the release of patients living with HIV from the treatment circuit in Cote d'Ivoire and other countries (Dahab M, Charalambous S, Hamilton R, *et al*, 2008). This study also reveals that the bad belief and disbelief of HIV / AIDS (as a bad spell) is a factor associated with the lost status of seen in

the antiretroviral therapy circuit in our environments that factors according to the literature contributes to the Out of the treatment circuit for ARV patients, a similar study revealed that the patient's discharge from the care circuit was influenced by the disbelief of HIV and ARVs. This situation in our communities is explained by the fact that belief in the existence of witchcraft, bad luck, fetishism and ancestral practices are the most respected customs in our environment and in the families of the habitats. From the city of Mbujimayi, all the great sick episodes are attributed to a lack of respect for any of these customs. This situation is the undeniable cause in this environment and is at the root of much of this situation in our environment (Tourette-Turgis and Rcbillon, 2000). Another factor revealed in this study is consumption of toxic substances (drugs and alcohol); the taking of toxic substances is also revealed in the literature as a behavior related to the lost status of view. (Spire, Duran, *et al*, 2001). Beliefs such as the use of traditional medicines are also related to the status of lost sight. (Reid and Al, 2008). This situation is explained in our environment by the simple fact that the sale is uncontrolled of all these substances, alcohol and some toxic substances such as hemp and other substance known as KAHONDA are found in every corner of the street without prohibition. And the uncontrolled taking of these toxic substances by the authorities could be the basis of this situation. Difficulties to meet the social worker; and the instability of the dwelling were explanatory factors of lost status of view in this study. It should be noted that economic factors such as poverty, migration movements including frequent medical visits and transport costs are important considerations that impede retention in the processing circuit (Brinkhof, MWG, and Al2009). In a similar study conducted in Côte-d'ivoire, almost 30% of patients reported having interrupted treatment because of travel or travel (Boubou Kante, Daniel Ekra, Nandjui B, 2011). The non-possibility of taking ARVs in a site other than the enrollment site therefore seems to be one of the major reasons for leaving the care system, patients are not allowed to take ARVs on other sites outside their enrollment site except in the case of transfer. Lack of knowledge of the risks of non-observant PLWHA to ARV treatment has been a risk factor for leaving the health care system. This situation would be due in the middle of this study due to inaccessibility of information in due time in the population since this environment has as many geographical barriers as ravines, roads in bad condition etc

Conclusion

At the end of this study, which established relationships between a number of factors and the patient's withdrawal from antiretroviral therapy, it has been shown that the bad belief of HIV / AIDS is a bad thing; lack of awareness of the risks faced by non-observant PHAs; breakage of drugs at last contact; the difficulties of meeting the social worker, the unavailability of staff at the site of treatment, the instability of the home and the consumption of toxic substances (drugs and alcohol) were the factors that favor the exit of the patients from the circuits antiretroviral treatment. This study could then help stakeholders in the field of caring for people living with HIV / AIDS to better understand the problems behind antiretroviral treatment and to act more for the benefit of this vulnerable population.

REFERENCES

Boubou Kante, Daniel EKRA and Nandjui, B. 2011. Factors associated with noncompliance anti retroviral treatment in Yelimane Sanitary District in Mali in 2011.

Brinkhof, MWG, Pujades-Rodriguez, M., and Egger, M. 2009. Mortality of Patients Lost to Follow-Up in Antiretroviral Treatment Programs in Resource-Limited Settings: Systematic Review and Meta-Analysis. PLoS One, 4 (6): 1-9. doi: 10.1371 / journal.pone.0005790

Costagliola, D. and Barbarossa, C. 2001. How to measure compliance? ln: D Bessette, Bunguener M, Costagliola D, Flori Y, Matheron S, Morin M, *et al*. Adherence to treatments against VIHlSIDA Measurement, determinants, evolution. Paris: ANRS; 2001. P 33-42.

Dahab, M C., haralambous, S., Hamilton, R., *et al*., 2011. "That is why I stopped the ART": patients 'and providers' perspectives on barriers to and enablers of HIV treatment adherence in a South African workplace program. *BMC Public Health*, 2008; 8: 63.25, Number 1.

Kouassi Kan, V., Coly, N'Guessan, J., Dobé S., Agbo, S, T., Zimin, DY. and Ackah, A TV. 2014. Influencing Factors Output Patients Living with HIV Treatment System in Ivory Coast (p. 42). Ivory Coast.

Landry Tsague, Sinata S Koulla Alain Kenfak Charles Kouanfack Mathurin Tejikem, Therese Abong Madeleine Mbangue Yacouba Njankoua Mapoure Claudine Essomba, Jembia Mosoko Regis Warbler Louis Menyeng, Helene Epee, Carno Tchuani Anne Cecile Zoung-Kanyl and Lucienne Assumpta Bella, LZ 2008. Determinants of retention in care in an antiretroviral therapy (ART) program in urban Cameroon, 2003-2005. *Pan African Medical Journal,* 8688 (1) 2003-2005.

Miller, CM, Ketlhapile, M., Rybasack-Smith, H. and Rosen, S. 2010. Why are antiretroviral treatment patients lost to follow-up? A qualitative study from South Africa. Tropical Medicine and International Health, 15 (june), 48-54. doi: 10.1111 / j.1365-3156.2010.02514.x

Paterson, DL., Swindells, S., Mohr, J., *et al*., 2000. Adherence to protease inhibitor therapy and outcomes in patients with HIV infection, Annals of Internal Medicine, 133, 21-30.

Reid, SE., Mulenga, LB., Folk, WR., Tambatamba, BC. and Chi, BH. 2008. Abandonment of antiretroviral therapy: a potential barrier to scale-up in sub-Saharan Africa. South *African Medical Journal,* 98 (6), 448-50.

Rosen, S., Fox, MP, and Gill, CJ. 2007. Patient Retention in Antiretroviral Therapy Programs in Sub-Saharan Africa: A Systematic Review, 4 (10). doi: 10.1371 / journal.pmed. 0040298

Spire, B., Duran, S. M., Souville Oak, G., Leport, C., Raffi, F., *et al.,* 2001. Adherence to multi therapies for people infected with HIV: the predictive approach to dynamic approach. Paris: ANRS; 2001. P 43-56.

Sterne, JAC., Hernán, MA., Ledergerber, B., Tilling, K., Weber, R., Sendi, P. and Robins, JM. 2005. Long-term effectiveness of potent antiretroviral therapy in Preventing AIDS and death: a prospective cohort study, 366.

Tourette-Turgis, C. and Rcbillon, M. 2000. Support and monitoring of people on antiretroviral therapy. Paris: How to say.

Tshingani Koy Henry Mukumbi Ghislain Lubangi Muteba Malandala Philippe Donnen, MW 2014. comparative and evolutionary profile of people infected with HIV on ART in Kinshasa, Democratic Republic of Congo. *Pan African Medical Journal*, 8688, 1-13. doi: 10.11604/ pamj.2014.19.388.4287

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