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HIV Infection in Patients Aged Over 50 in the Infectious Diseases Unit at Brazzaville University Hospital: Prevalence and Associated Factors

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ABSTRACT

Objective: The prevalence of HIV infection in people aged is of significant importance. We determined the prevalence of HIV infection with patients aged over 50 at the Brazzaville University Hospital and look for its associated factors.

Patients and Method: Cases of HIV infection in patients over 50 years admitted to the Infectious Diseases Unit of Brazzaville University Hospital were examined under cross-sectional descriptive and analytical study. This survey concerns the period going from January 1, 2019 to June 30, 2021.

Results: There were one hundred and ninety-four patients (8.2% of admissions). Their mean age was 57.40 ± 6.4 years [50-93], they were mostly female (n = 113; 58.2%). The most dominant population was the age group between 50-59 years (n = 136; 70.1%). They were single people (n = 80; 41.2%), without profession (n = 87; 44.8%), with a primary education level (n = 81; 41.8%), hypertensive (n = 27; 13.9%), diabetics (n = 15; 7.7%). HIV infection was discovered during hospitalization (n = 111; 57.2%), for deterioration of the general condition (n = 72; 37.1%), long-term fever (n = 56; 28.9%), chronic cough (n = 40; 20.6%). The patients were at WHO stage 3 (n = 133; 68.6%). The mean CD4 were 188.5 ± 11.7 / mm3 [19-433]. In 172 cases (88.7%), the patients had two sexual partners and did not use a condom (n = 189; 97.4%). The main opportunistic infections were tuberculosis (n = 74; 18.1%) and cerebral toxoplasmosis (n = 48; 24.7%). ART was made with the combination of TDF + FTC + EFV (n = 79; 40.7%). The observation was poor in 33% (n = 64) and unfavourable outcome in 47.4% (n = 92). These were IRIS (n = 5; 2.6%) and death (n = 85; 43.8%), due to anaemic shock (n = 17; 20%), septic shock (n = 8; 9.4%). Marital status (P = 0.04), WHO stage (p = 0.02), and non-compliance treatment (p = 0.0001) could have the link with the death patients.

Conclusion: HIV infection in people over 50 years is relatively common at Brazzaville University Hospital, especially among single women. The lethality remains high, unrelated to an opportunistic infection but rather with the notion of non-compliance with treatment and the advanced stage of HIV infection according to the WHO classification. This shows the interest in raising awareness among this population for early detection and the treatment of HIV.

Keywords

HIV infection, Elderly, Prevalence, Associated factors, CHU, Brazzaville.

Introduction

HIV/AIDS infection has become a chronic disease with the advent of highly active antiretroviral therapy. Elderly people with comorbidities experience this chronicity of the disease differently

[1]. Since the introduction of combination antiretroviral therapy, the decline in mortality from HIV infection is reflected in an increase in life expectancy and an aging of the HIV-positive population. These patients with early comorbidities and complications that are usually encountered in older patients reflect the concept of premature aging frequently mentioned [1]. According to the World Health Organization, 90% of people infected with HIV should know their HIV status, and among them, 90% should receive effective treatment and 90% of patients treated should have an undetectable viral load by 2030 in order to eliminate the transmission of this pandemic [2]. In Congo, according to partial data from the National AIDS Control Program (PNLS), 5,2 % of people infected with HIV are part of young adult population. However, the proportion of adults over 50 years old infected with HIV is not clearly defined because few studies have addressed this issue in geriatric settings; hence the present work, which had the general objective of determining the prevalence of HIV infection in adults over 50 years together with investigating its associated factors. The description of the epidemiological, clinical, therapeutic and evolutionary aspects is our specific objectives.

Patients and Method

This study was cross-sectional, descriptive and analytical. It is carried out in the Infectious Diseases Unit of the Brazzaville University Hospital during the period starting from January 2019 to June 2021. The patients included HIV infection sick persons, screened in pre- or intra-hospitalization, whatever the type, receiving or not receiving antiretroviral treatment and having stayed in the hospital during the study period.

The study variables were epidemiological (age, socio-economic level, marital status, profession), clinical (reason for hospitalization, time to treatment, history and / or comorbidities, different opportunistic conditions), Para clinical (type of HIV, CD4 number, viral load), therapeutic (time to diagnosis-initiation of treatment, type of antiretroviral treatment, chemoprophylaxis of opportunistic infections (OI)), progressive (length of hospitalization, recovery from OI, relapse, IRIS, death and cause of death).

We used pre-designed survey sheet to collect data. We used EPI software to analyse our data. Info 3.3.1 with the determination of qualitative and quantitative variables from statistical tests according to their criteria of applicability. For all the tests used, the significance level was set at <0.05.

Results

We had one hundred and ninety-four patients (8.2% of admissions),

their mean age was 57.40 ± 6.4 years [50-93], female (n = 113; 58.2%) and male (n = 81; 41.8%) The dominant age group covers 50-59 years (n = 136; 70.1%). Table 1 shows the distribution of patients by age group and sex. They were single (n = 80; 41.2%), and common-law (n = 47; 24.2%). Widows represented 18.1% (n = 35). They were unemployed (n = 87; 44.8%), retired (n = 39; 20.1%) and civil servants (n = 27; 13.9%). These patients had primary education level (n = 81; 41.8%), secondary (n = 62; 32%), they were hypertensive (n = 27; 13.9%), diabetic (n = 15; 7, 7%). In 3.5% of cases (n = 7), there was a history of pulmonary tuberculosis. Patients did not know their HIV status on admission (n = 111; 57.2%). They were hospitalized for deterioration of general condition (n = 72; 37.1%), long-term fever (n = 56; 28.9%), chronic cough (n = 40; 20.6%) and classified at WHO stage 3 (n = 133; 68.6%) and stage 4 (n = 33; 17%). The mean CD4 were 188.5 $\pm$ 11.7 / mm3 [19-433]. In 172 cases (88.7%), the patients had two sexual partners and did not use a condom (n = 189; 97.4%). The main opportunistic infections were tuberculosis (n = 74; 18.1%), cerebral toxoplasmosis (n = 48; 24.7%) and Neuromeningeal cryptococcosis (n = 17; 88%) (Figure 1). ART was made from the combination of TDF + FTC + EFV (n = 79; 40.7%), AZT + 3TC + NVP (n = 51; 26.3%) and TDF + 3TC + DTG (n = 5; 2.6%). On this treatment, adherence was poor in 33% (n = 64) and 40 patients (20.6%) had stopped the ART. The outcome was unfavourable in 47.4% (n = 92). These were IRIS (n = 5; 2.6%) and death (n = 85; 43.8%) due to anaemic shock (n = 17; 20%), septic shock (n = 8; 9.4%). The marital situation, in particular widowhood (P = 0.02), marriage (p = 0.04), the stage of WHO (p = 0.02) and therapeutic non-compliance (p = 0.0001) had a link with the occurrence of death in patients.
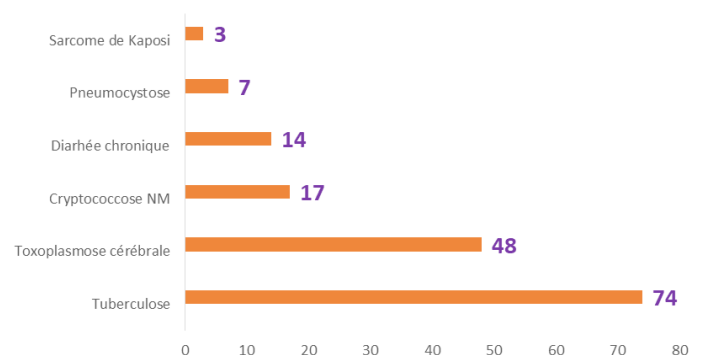
Figure 1: Different opportunistic infections found in patients aged above 50 years.

Table 1: Distribution of patients by age and sex.

| Age group | Sex | | | | Total | |
| | Male | | Female | | | |
	n	%	n	%	n	%
50-59 years	50	61,70	86	76,10	136	70,10
60-69 years	23	28,40	24	21,20	47	24,20
70-79 years	7	8,60	3	2,70	10	5,20
≥90 years	1	1,20	0	0,00	1	0,50
Total	81	100,00	113	100,00	194	100,00

Table 2: Associated factors.

	Evolution		OR	IC95%	P-value
	Death (n=85)	Recovered (n=102)			
	n (%)	n (%)			
Sex					
Male	34 (40,0)	45 (44,1)	0,8	0,4-1,5	0,5
Female	51 (60,0)	57 (55,9)	1,1	0,6-2,1	0,5
Age group					
50-59 years	56 (65,9)	75 (73,5)	0,6	0,3-1,3	0,2
60-69 years	23 (27,1)	22 (21,6)	1,3	0,6-2,6	0,3
70-79 years	6 (7,1)	4 (3,9)	1,8	0,5-6,8	0,3
≥80 years	0 (0,0)	1 (1,0)	0,0	-	0,3
Marital status					
Single	36 (42,4)	41 (40,2)	1,09	0,6-1,9	0,7
Free union	20 (23,5)	25 (24,5)	0,9	0,4-1,8	0,8
Married	7 (8,2)	19 (18,6)	0,3	0,1-0,9	0,04
Divorced	1 (1,2)	5 (4,9)	0,2	0,02-2,01	0,1
Widow	21 (24,7)	12 (11,8)	2,4	1,1-5,3	0,02
WHO stage					
II	7 (8,2)	20 (19,6)	0,3	0,1-0,9	0,02
III	62 (72,9)	68 (66,7)	1,3	0,7-2,5	0,3
IV	16 (18,8)	14 (13,7)	1,4	0,6-3,1	0,3
TARV Observance					
Good	8 (12,7)	31 (41,9)	0,2	0,08-0,4	0,0001
Poor	35 (55,6)	23 (31,1)	2,7	1,3-5,5	0,003
Stop	20 (31,7)	20 (27,0)	1,2	0,6-2,6	0,5

Discussion

The prevalence of HIV infection in patients over 50 years old is high in the Infectious Diseases Unit of Brazzaville University Hospital, as reported in the literature [3,4]. In Europe, HIV infection among seniors aged 50 and over has increased by an average of 2.1% each year since 2004. Rates of HIV diagnosis are on the rise among those over 50, according to the study by the European Centre for Disease Prevention and Control (ECDC-Sweden), presented in the Lancet HIV [5]. In the United States, the proportion of people infected with HIV aged 50 and over rose from 17% in 2001 to 24% in 2005 [6]. This is due to a higher propensity in this age group to have unprotected sexual contacts, and therefore an increase in the incidence of new infections compared to 12 years ago. In 2010, in the Swiss HIV cohort, 31% of patients were over 50 years old [1]. These people are over-represented in terms of reported AIDS cases. This proportion of elderly patients is increasing every year due, as already mentioned, to the combined effect of a decrease in mortality and an increase in new elderly cases [1]. In Cameroon, 14.1% of HIV patients were over 50 years old. They were less informed about the modes of transmission of the virus and their HIV status was most often discovered after an opportunistic infection [8]. The predominance of women in this study is linked to the feminization of HIV infection worldwide according to UN-AIDS data [2]. High blood pressure and diabetes were the most common comorbidities found in this adult population. These results corroborate those obtained in the Cardiology Unit in Congo and Cameroon, where arterial hypertension was the leading comorbid factor (54.5%) in HIV-positive people aged 50 and over

[8,9]. More than half of the patients did not know their serological status on admission, thus distorting the objective of the first 90 of the UN-AIDS which would require that 90% of the seropositive people know their serological status [2]. This is a late detection in this population category. There are several reasons to mention. The further we move away from the profile of the population at risk, the more the time between infection and screening increases. There is a flaw in the screening offer. In fact, people considered to be non-priority in terms of risk are less supported, this is particularly the case for French men, heterosexual over 50 years old, compared to younger people, men who have sex with other men [1,5]. The patients had two sexual partners and in over 97% of cases did not use a condom. Sexual intercourse is the main route of infection in older people, although they are not commonly considered to be sexually active [8].

Alteration of general condition associated with long lasting fever was the main reason for hospitalization as reported in the literature justifying advanced immunosuppression since 69% and 17% of patients were in WHO stages 3 and 4, respectively. The advanced immunosuppression with the mean CD4 counts at 188.5 ± 11.7 / mm3 [19-433] has as a corollary the appearance of opportunistic infections, the main ones found in this study were cerebral toxoplasmosis, pulmonary tuberculosis and neuromeningeal cryptococcosis. These results are similar to those already obtained in the same Unit in Cameroon and in Switzerland, where HIV serology was most often discovered during the occurrence of one of these opportunistic infections in the elderly [1,8,10]. The

main antiretroviral drug used in patients was TDF + FTC + EFV and adherence was poor with this treatment. In a not insignificant proportion, these patients had stopped this treatment. The new WHO recommendations on the treatment of HIV infection in young adults position the TDF + 3TC + DTG combination as first-line in order to benefit from good compliance and minimize the risk of failure and the Congo has just chosen Dolutegravir as a first-line treatment [2]. The immune restoration syndrome found in treated patients is not a new fact since it has already been mentioned in the same unit in Côte d'Ivoire in deeply immunocompromised patients starting a highly active triple antiretroviral therapy unmasking an evolving opportunistic infection until then at low noise [11,12].

The lethality of people aged over 50 who are HIV positive is high (43.8%) and this is linked to anaemia (20%). The lack of awareness within this category of the population, the late recourse to healthcare structures with its corollary, the appearance of opportunistic infections as well as the low standard of living of these populations for which the cost of treating OIs and associated comorbidities is beyond reach largely justify this high rate of death. Widowhood, marriage, advanced immunosuppression as well as treatment non adherence were statistically significant associated with patient deaths. These results suggest particular social attention among older people living with HIV, having lost either a spouse or living as a couple. The weak immunological response is also an associated factor of poor prognosis [13,14].
Yet, this study had some limitations due to its partly retrospective nature, in particular certain missing elements in the medical files. However, it has helped to lift the veil on the morbidity and mortality of HIV infection in geriatric settings at the Brazzaville University Hospital.

Conclusion
HIV infection in people over 50 years is relatively common at Brazzaville University Hospital, especially in patients who do not use a condom, mostly female. The lethality remains high unrelated to age or opportunistic infection, but rather to the notion of non-compliance with treatment and the advanced stage of HIV infection according to the WHO classification. This shows the interest in raising awareness among this population on prevention, screening and early management of HIV.

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