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reciunisc@hotmail.com

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Santana Dantas, Renata; De Carvalho Rocha Moura, Juliane; de
Andrade Santos Silveira, Kamila Maria; Todt Aragão, Matheus
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Original Article

Epidemiological profile of HIV older adults who are patients in a reference center in Aracaju-SE

Perfil epidemiológico dos pacientes idosos com HIV em um centro de referência de Aracaju-SE.

Perfil epidemiológico de pacientes ancianos con VIH en un centro de referencia en Aracaju-SE.

Renata Santana Dantas¹ ORCID0000-0002-3116-8311

Juliane De Carvalho Rocha Moura¹ ORCID 0000-0002-2252-7781

Kamila Maria de Andrade Santos Silveira¹ ORCID 0000-0002-7630-6642

Matheus Todt Aragão¹ ORCID 0000-0002-3585-4562

¹Faculdade Bahiana de Medicina, Tiradentes University, Bahia, Brasil.

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E-mail: dantasrenata97@gmail.com

Address: AV. Murilo Dantas, 200, Universitária, Aracaju, SE, Brasil.

ABSTRACT

Background and objectives: Acquired Immunodeficiency Syndrome (AIDS) is a disease caused by HIV. 3% of the people living with HIV/AIDS in Brazil are 60 years old or over. Although older adults correspond to a small percentage, there has been a significant increase in the incidence in this group in recent years. Thus, HIV infection in older adults is a reality, however, literature hardly addresses this topic. The objective is to study the epidemiological clinical profile of older adults living with HIV monitored at a referral center. **Methods:** This is an observational, descriptive, cross-sectional study with data collection obtained from the medical records of the STI/AIDS outpatient clinic at a reference center. The data were sociodemographic, clinical and laboratory, collected from September 2018 to February 2019. **Results:** In the reference center, 309 older adults were registered, representing 6.7% of all patients registered in the service. Of these, 75.6% are men, 38% are married, 70% heterosexual and approximately 50% with low education. Comorbidities are associated, with dyslipidemia (54%) being the main one. At the time of diagnosis, 65.8% had detectable viral load and 62% had CD4 + cells <500 cells/mm³ and after therapeutic follow-up, only 20% had detectable viral load. Several therapeutic regimens are used, the main one being Tenofovir, Lamivudine and Efavirenz (35.3%). **Conclusion:** The epidemiological profile of the population served in the region follows national and global characteristics, with a predominance of men, heterosexuals, married and with low education.

Keywords: Acquired Immunodeficiency Syndrome. Older adults' Care. Epidemiology.

RESUMO

Justificativa e Objetivos: A Síndrome da Imunodeficiência Adquirida (SIDA) é uma doença causada pelo HIV. Das pessoas vivendo com HIV (PVHIV) no Brasil, 3% apresentam 60 anos ou mais. Apesar dos idosos corresponderem a um pequeno percentual, há aumento significativo da incidência nesse grupo nos últimos anos. Dessa forma, a infecção pelo HIV em idosos é uma

realidade, contudo, a literatura pouco aborda esse tema. O objetivo do trabalho é estudar o perfil clínico epidemiológico dos idosos vivendo com HIV acompanhados em um centro de referência. **Métodos:** Trata-se de um estudo observacional, descritivo, de corte transversal, com coleta de dados obtida através dos prontuários do ambulatório de IST/SIDA de um centro de referência. Os dados sociodemográficos, clínicos e laboratoriais, foram coletados no período setembro de 2018 a fevereiro de 2019. **Resultados:** No centro de referência, estão cadastrados 309 idosos, representando 6,7% de todos os pacientes matriculados no serviço. Destes, 75,6% são homens, 38% casados, 70% de orientação heterossexual e aproximadamente 50% com baixa escolaridade. Comorbidades estão associadas, sendo a dislipidemia (54%) a principal. No momento do diagnóstico, 65,8% apresentavam carga viral (CV) detectável, 62% tinham células CD4+ < 500 células/mm³ e após seguimento terapêutico apenas 20% apresentavam CV detectável. Vários esquemas terapêuticos foram utilizados, sendo o principal Tenofovir, Lamivudina e Efavirenz (35,3%). **Conclusão:** O perfil epidemiológico da população atendida na região segue as características nacionais e mundiais, com predomínio de homens, heterossexuais, casados e de baixa escolaridade.

Descritores: Assistência a idosos. Epidemiologia. Síndrome de imunodeficiência adquirida.

RESUMEN

Justificación y Objetivos: El Síndrome de Inmunodeficiencia Adquirido (SIDA) es una enfermedad causada por el VIH. De las personas que viven con el VIH (PVVIH) en Brasil, el 3% tiene 60 años o más. Aunque los adultos mayores corresponden a un pequeño porcentaje, en los últimos años se ha producido un aumento significativo de la incidencia en este grupo. La infección por VIH en los adultos mayores es una realidad; sin embargo, la literatura aborda poco este tema. El objetivo de este trabajo es estudiar el perfil clínico epidemiológico de adultos mayores que conviven con el VIH y se atienden en un centro de referencia. **Métodos:** Se trata de un estudio observacional, descriptivo, de corte transversal, con datos obtenidos de los registros de ETS/SIDA de un centro de referencia. Se recogieron datos sociodemográficos, clínicos y de laboratorio desde septiembre de 2018 hasta febrero de 2019. **Resultados:** En el centro de referencia están registrados 309 adultos mayores, que representan el 6,7% de todos los pacientes inscriptos en el servicio. De ellos, el 75,6% es del sexo masculino, el 38%, casado, el 70% con orientación heterosexual y aproximadamente el 50% con baja escolaridad. De las comorbilidades asociadas, la dislipidemia es la principal (54%). En el momento del diagnóstico, el 65,8% tenía una carga viral detectable (CV), el 62% tenía células CD4+ < 500 células/mm³ y después del seguimiento terapéutico sólo el 20% tenía CV detectable. Se utilizaron varios esquemas terapéuticos, siendo los principales el Tenofovir, la Lamivudina y el Efavirenz (35,3%). **Conclusión:** El perfil epidemiológico de la población atendida en la región sigue las características nacionales e internacionales, con predominio de hombres heterossexuales, casados y de baja escolaridad.

Descriptores: Cuidado de adultos mayores. Epidemiología. Síndrome de inmunodeficiencia adquirida.

INTRODUCTION

Acquired Immunodeficiency Syndrome (AIDS) is characterized as an infectious disease, of viral etiology. Two distinct types of the virus are recognized, HIV-1 and HIV-2, which are phylogenetically distant, the first being responsible for most infections, both belonging to the *Lentivirus* genus and the *Retroviridae* family. The main form of viral transmission is the sexual, through the virus entry in the anal mucosa and also in the vaginal mucosa. In addition, it can be transmitted through blood contact, in blood recipients or blood-derivative drugs, injecting drug users and by sharing syringes, there is also the vertical transmission, from mother to child, during pregnancy, childbirth or breastfeeding^{1,2}.

The HIV infection worldwide began in 1977 and 1978, when the first cases were discovered in the United States, Haiti and Africa. In 1980, the first case of the disease in Brazil was diagnosed. Currently, according to the United Nations program – UNAIDS – published in June 2019, 37.9 million people worldwide are living with HIV/AIDS. Of these, 1.7 million acquired the infection in the last year and 65% of new infections occurred in Latin America. In Brazil, according to the epidemiological bulletin (2018), 247,795 new cases were reported. The highest number of reports occurred in the Southeast (47.38%), while the Midwest region had the lowest number of reported cases (7.05%). The Northeast region reported 42,215 cases (17.03%), being the third region with more reports. About 3.8% of the cases in the Northeast occurred in the state of Sergipe³⁻⁵.

Although older adults correspond to a lower percentage among the age groups, there has been a significant increase in the incidence in recent years. Between 2007 and 2017, there was notable growth of HIV detection in individuals aged 60 years and over, from 10.3 cases per 100,000 inhabitants to 13.4/100,000 among men, and from 5.3/100,000 inhabitants to 6.5/100,000 among women. The aging of people living with HIV/AIDS (PLWHA), as well as the diagnosis in this age group, can be explained by some factors, such as the increase in unprotected exposure of this group and also the demographic transition^{6,7}.

In addition, with the advent of antiretroviral therapy (ART), mortality decreased and HIV infection became a long-term chronic disease, with an even greater growth trend in the coming years of the elderly population living with HIV. In Europe, a recent study showed that the age average of PLWHA receiving treatment will be 56.6 years old in 2030, and the proportion of patients aged 60 and over will increase from 8% in 2010 to 39% in 2030. Finally, the increase in older adults' patients with the infection raises the perspective that aging corresponds to a phase of great vulnerability, including infections by this virus, and there are

still many taboos related to the sexuality of older adults and, consequently, little clarification on prevention, transmission and other issues involving the disease⁸⁻¹¹.

As it is the reality of a portion of the Brazilian older adults' population, the need for further studies is recognized in order to develop preventive proposals, to provide care for people living with HIV/AIDS, and to control disability, thus guaranteeing autonomy and independence in carriers' old age. However, scientific literature hardly addresses this issue, making it necessary to better characterize this population. The present work aims to study the clinical and epidemiological characteristics of older adults living with HIV/AIDS at a regional referral center in order to provide information on this subject, still little discussed among health professionals¹².

METHODS

This is a cross-sectional, observational, and descriptive study, with data collection obtained from the medical records. This data collection was carried out at the STI and AIDS outpatient clinic of the Aracaju Medical Specialty Center (CEMAR), in Aracaju, in the state of Sergipe, the largest reference center for monitoring PLWHA in the region. Data collection was carried out from September 2018 to February 2019.

The sample used was calculated using sample size formula proposed by Gil was characterized by being consecutive. The sample included patients aged 60 years or older, with HIV and registered at the CEMAR clinic for sexually transmitted infections (STIs) and AIDS. Patients who had their medical records filled inappropriately or with illegible handwriting were excluded from the study¹³.

Epidemiological and clinical data were collected from patients, acquired via medical records, including: gender, age, education, sexual orientation, marital status, comorbidities, time of HIV/AIDS diagnosis, viral load (VL) and TCD4 + lymphocyte count in the moment of diagnosis and at the last consultation, an antiretroviral regimen in use and occurrence of opportunistic infections.

As for ethical aspects, we emphasize that the project was submitted to *Plataforma Brasil*, being approved with CAAE: 87587518.2.0000.5371 and through CEP: 3,246,329. Authorization was also requested from the Permanent Nucli for Education (PNE) from the Sergipe State Department of Health. The study strictly followed the recommendations of resolution No. 506/16 and the complementary resolutions of the National Health Council (CNS).

RESULTS

In the HIV/AIDS and STI referral center in the state of Sergipe, there were 4,584 registered patients diagnosed with HIV infection, with 3805 (83%) adults, 412 (9%) children, 309 (7%) older adults and 46 (1%) with no record of age. The medical records of 82 older adults diagnosed with HIV were evaluated, representing 26.8% of the total number of patients older than 60 years. Among the evaluated patients, 62 (75.6%) male and 20 (24.3%) female patients were observed, with an age average of 64.7 years, with a range of 60-80 years (Table 1). It was also noted that most patients (74.3%) had a diagnosis of chronic diseases, being dyslipidemia (54%), systemic arterial hypertension (SAH) (52.4%), diabetes mellitus (37.7%) and depressive or anxiety disorder (16%) the five most frequent comorbidities.

Regarding marital status, it was observed that 31 patients were married, 29 single, 5 divorced and 5 widowed. In relation to sexual orientation, 57 patients stated heterosexual orientation, 11 patients declared themselves exclusively homosexual and 11 patients claimed to be bisexual (Table 1).

As for education, it was observed that 13 (16%) individuals were illiterate, 27 (33%) had incomplete elementary school, 12 (15%) completed elementary school, 2 (2%) incomplete high school, 5 (6 %) complete high school, 2 (2%) incomplete higher education and 9 (11%) had complete higher education. The remainder (15%) did not have information on education described in the medical record.

Table 1. Epidemiological data of older adults living with HIV

Variable	N (%)
Age	
60-70 years	73 (89)
70-80 years	9 (11)
> 80 years	0 (0)
Gender	
Man	62 (75,6)
Woman	20 (24,3)
Sexual Orientation	
Homosexual	11 (13,4)
Heterosexual	57 (69,5)
Bisexual	11 (13,4)
No record in the medical record	3 (3,7)
Marital Status	
Single	29 (35,3)
Married	31 (37,8)
Divorced	5 (6)
Widowed	5 (6)
No record in the medical record	12 (15,9)

Among the investigated patients, 47 (57.3%) had a diagnosis of HIV infection in less than 10 years, with an average time of 8.9 years, age at diagnosis ranging from 34 to 74 years (average of 55.5 years).

It was established that the registry of the studied patients was carried out between the years 1991 and 2018, with the largest number being registered in 2015, with a reduction in registration in the reference service over the years.

In the medical records analyzed (Table 2), it was observed that, at the time of diagnosis, most patients (65.8%) had a detectable viral load, with values ranging between 84 and 1,937,227 copies/ml. Regarding the TCD4 + lymphocyte count at the time of the first serological examination, a variation of 7 to 1399 cells/mm³ was observed, obtaining an average of 310.74 cells/mm³ and a standard deviation of 279.96 cells/mm³, with 50% of patients with CD4 levels below 350 cells/mm³, who were then diagnosed with AIDS, according to CDC criteria. When we evaluated the VL and CD4 recorded in the last consultation of the patients, it was evidenced that 66 patients had an undetectable viral load (80%) and only 15 had a CD4 below 350 cells/mm³ (18.2%).

Table 2. Minimum and maximum values of TCD4 + cell count and viral load at diagnosis and after the introduction of ART.

	Minimum	Maximum
TCD4 + lymphocyte count		
At diagnosis	7	1399
On ART	98	1662
Viral load		
At diagnosis	84	1.937.227
On ART	< 50 copies	127.602

Regarding the use of antiretroviral therapy, all patients were on ART, with an average follow-up time of 8.9 years and an ambulatory dropout rate of approximately 5%. The main therapeutic regimens used were as follows: Lamivudine (3TC), Tenofovir (TDF) and Efavirenz (EFV), in 35.3% of the cases; Lamivudine (3TC), Tenofovir (TDF) and Atazanair (ATZ) associated with Ritonavir (r), in 18.29% of the cases; and Lamivudine (AZT), Zidovudine (AZT) and Efavirenz (EFV), in 10.9% of cases. The most current regimen, Lamivudine, Tenofovir and Dolutegravir (DTG), was being used in 9.7% of patients.

DISCUSSION

In the reference center studied, a prevalence of 6.7% of older adults was found among all patients diagnosed with HIV/AIDS, which mainly highlights the fact that the disease has become chronic, of long duration (due to the advent of ART), with decreased mortality. In Brazil, the number of HIV reports in patients aged 60 is around 3.6%, with recent studies estimating the increase of this proportion to 39% in 2030^{5,10}.

Regarding the epidemiological profile of older adults living with HIV, there was a significant predominance of male patients (75.6%), with an average age of 64.7 years, exclusively heterosexual (69.5%) and having incomplete primary education (32.9%). With the exception of the patients' gender, the other characteristics corroborate literature and the demographic transition process that occurred from the beginning of the 90s, in which heterosexualization, feminization, interiorization and impoverishment of HIV patients occurred. Despite the feminization process, in Brazil, we still see a higher prevalence of men with the infection, compared to women⁵⁻⁷.

The greatest challenge in the care and treatment of these patients is related to chronic comorbidities, which are more frequent than in young adults. The results found corroborate literature by demonstrating that approximately 75% of the studied patients had some chronic disease in addition to HIV infection, with SAH and dyslipidemia being the most frequently found. In addition to the complications and morbidities associated with the virus itself, there is also a lot of discussion about the possible drug interactions of medicaments in use to control these diseases and ART, as well as the toxicity potential of these associations, since both therapies will be used continuously and chronically^{14,15}.

Another relevant point is the mental health of older adults living with HIV. The elderly population with the infection in question is quite susceptible to facing psychiatric problems, with a predominance of depressive and anxiety disorders, as seen in the study in question. A lower prevalence than that found in literature was observed, with approximately 50% with depression and approximately 20% with a diagnosis of anxiety. This may reflect a low rate of diagnosis and a lack of adequate psychiatric follow-up^{8, 16}.

At the time of diagnosis, the vast majority of patients had VL detectable and low TCD4 + lymphocyte count, with an average CD4 + of 310 cells/mm³.

All cases studied were using ART, with 3TC, TDF and EFV being the most prevalent scheme (35.3%). It was observed that less than 10% of patients were using the therapeutic regimen recommended as first-line treatment by the Ministry of Health, which is composed of 3TC, TDF and DTG. Even with adequate treatment, about 10% of patients had detectable VL and TCD4 + lymphocyte count below 500 cells/mm³ (43%). As the aging of people living with

HIV/AIDS has been poorly studied and most randomized studies do not include older adults, it is not known for sure what would be the most appropriate therapeutic scheme, taking into account the physiological changes of aging, the frequent use of several medications for chronic comorbidities and treatment adherence^{9, 17,18}.

Finally, the prevalence of HIV/AIDS in older adults studied was 6.7%, with a predominance of men, heterosexuals, married and with low education. The presence of comorbidities was observed in most PLWHA, mainly dyslipidemia and SAH, and a considerable number of patients with psychiatric diseases were also observed. All patients were on ART, with 80% presenting undetectable VL, however, with a CD4 + count above 500 cells/mm³ in less than half of the patients.

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Authors' contributions:

Renata Santana Dantas, Kamila Maria de Andrade Santos Silveira and Juliane de Carvalho Rocha Moura equally contributed to the conception, design of the article, data collection and analysis, article writing and review;

Matheus Todt Aragão contributed to the design of the article, data analysis, review and final approval of the article;

All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.