Profile of users living with HIV/AIDS assisted at a Counseling and Testing Center in the countryside of Bahia state: a longitudinal retrospective study

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ABSTRACT

Objective: To characterize the clinical and epidemiological profile of users living with HIV/AIDS treated at a Counseling and Testing Center (CTC) located in the municipality of Paulo Afonso, in the countryside of Bahia. **Casuistry and methods:** A retrospective, observational study, based on secondary data obtained by consulting the records of users registered within the service, during the period from 2002 to 2019. The data were treated and analyzed using descriptive and inferential statistics. **Results:** 301 individuals living with HIV/AIDS were identified, corresponding to a mean of 12.4 ± 9.5 cases/year; 58.4% were male with a mean age of 40.6 ± 13.8 years. The most affected individuals had incomplete primary education and came from peripheral neighborhoods. Of the 226 individuals evaluated in the laboratory, 49 (21.7%) were diagnosed in the AIDS phase. Significant differences were observed in the $CD4^+$ T lymphocyte count, ratio between $CD4^+$/$CD8^+$ T lymphocytes and $CD45^+$ T lymphocytes between individuals living with HIV and those diagnosed in the AIDS phase ($p<0.001$). **Conclusion:** The detection rate of people living with HIV/AIDS has increased in recent years in the municipality of Paulo Afonso, Bahia. This increase in the number is possibly due to advances in diagnostic methods, as well as the implementation of CTC in the region. The profile of the individuals evaluated follows the national tendency, with a predominance of young men with incomplete elementary education. As expected, individuals diagnosed in the AIDS phase have different laboratory results from individuals living with HIV.

Keywords: Acquired Immunodeficiency Syndrome; HIV; Epidemiology; Health Profile.

INTRODUCTION

The acquired immunodeficiency syndrome (AIDS) is a condition caused by the human immunodeficiency virus (HIV), which is characterized by a profound immunological deficiency, the main consequences of which are the emergence of opportunistic infections and malignant neoplasms[1,2]. The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that there are about 37.9 million individuals living with HIV/AIDS around the world[3]. In Brazil, 966,058 cases were reported from the beginning of the epidemic until June 2019[4].

According to the Health Surveillance Secretariat (SVS), between 2007 and 2019, there was an increase of 300,496 new cases of HIV infection reported in the Notifiable Diseases Information System (SINAN), with the Southeast regions (45.6%), South (20.1%) and Northeast (18.3%) the most affected in the country[4]. Although detection rates remain high, it is noted that in recent years, the global number of cases detected in the country has decreased considerably, with a drop of 17.6% between the years 2008 and 2018. However, the incidence of cases is not evenly distributed among the states and regions of the country. The North and Northeast regions have shown a significant increase in the number of cases. Between the years 2008 to 2018, the detection rate in the North region increased from 20.6 to 25.1 cases per 100,000 inhabitants, with an estimated increase of 21.8%. In the Northeast, in the same period, the rate varied from 13.5 to 15.8 cases per 100,000 inhabitants, showing an increase of 17%[4].

Amorim and Schlemper (2019)[5] believe that the change in the epidemiological scenario is due to the transition from the incidence of large urban centers to the countryside of the country, which has made HIV/AIDS infection more prevalent among individuals with low income and/or low level of education. The current scenario reflects the internalization and impoverishment of the disease[6]. Although there are studies on the epidemiological profile of HIV/AIDS infection in individuals living in the capitals[7-9], the data referring to populations living in the countryside of the states are limited, including

the municipality of Paulo Afonso, located in the northeast of the state of Bahia, 471 km from the capital Salvador[10].

The municipality is part of the São Francisco da Bahia Mesoregion, bordering the states of Pernambuco, Alagoas and Sergipe. According to the Brazilian Institute of Geography and Statistics (IBGE) of 2018, Paulo Afonso occupies a territorial area of 1,545,191 km^2, with an estimated population of 117,782 inhabitants[10]. Specialized assistance for people living with HIV/AIDS started in the municipality in 2002, with the implantation of the Counseling and Testing Center (CTC), six years after the first official record of HIV/AIDS cases in the municipality [11].

Although HIV infection initially occurred predominantly in men who have sex with men, it is observed that the detection rate among heterosexual men and women is increasing[12]. Currently, the detection rate between men and women in Brazil is 2.3[4]. Soares, Armindo e Rocha (2014)[13] demonstrated that unprotected sexual intercourse, sharing of syringes with infected individuals, blood transfusions, accidents with contaminated sharps, and/or via the maternal-infant route, in which infected mothers transmit the virus to their child during natural childbirth or through breastfeeding, represent the main forms of transmission. In the bloodstream, the virus preferentially infects CD4$^+$ T lymphocytes, which results in significant destruction and reduction of circulating lymphocyte titers[14]. Considering the importance of these cells in the fight against infectious diseases and/or neoplasms, a severe immunodepression develops that leads to opportunistic diseases and other complications. This stage of infection characterizes AIDS and can be demonstrated in the laboratory by counting CD4$^+$ T lymphocytes below 200-350 cells/mm^3 and elevated plasma viral load[1,13].

In view of the challenge of preventing and controlling this epidemic and, considering the internalization and impoverishment of HIV, knowledge of the epidemiological distribution patterns of the disease in different Brazilian regions is essential to understand the health-disease process, as well as the development of strategies aimed at increase prevention, case detection, treatment and control of HIV/AIDS in

several regions. On the contrary, the absence of more specific prevention policies can accentuate the interiorization of the epidemic, reaching more and more smaller cities that are away from large centers. In this sense, the present study aimed to characterize the clinical and epidemiological profile of users living with HIV/AIDS treated at a CTC in the municipality of Paulo Afonso, located in the country of the state of Bahia.

CASUISTRY AND METHODS

This is a longitudinal, retrospective, observational study, based on secondary data obtained by consulting the records of users registered in the computerized system of the Counseling and Testing Center / Specialized Assistance Service (CTC/SAS), during the period from 2002 to 2019, in the municipality of Paulo Afonso, Bahia. CTC/SAS is monitoring sexually transmitted infections center (STIs), including HIV/AIDS, which carries out prevention, care monitoring and treatment actions for referral users and/or those who seek care at the center.

The studied population consisted of 301 users registered at CTC/SAS who received a positive diagnosis for HIV/AIDS in the period from 1996 to 2019. It was applied as an exclusion criterion, the non-completeness of data essential to the study in the medical records. The project was approved by the Research Ethics Committee (REC) of the Federal University of Vale do São Francisco (UNIVASF), under the background n° 3,451,026, in compliance with Resolution nº 196/96 the National Health Council.

The instrument used for the collection of data in the medical records was a non-validated form, but it was prepared based on the CTC/SAS admission forms. The variables used in the form corresponded to the information collected at the time of diagnosis, which were related to sex, age, neighborhood, municipality, marital status, education, year of diagnosis, viral load (copies/mL), absolute and relative value of the $CD4^+$ T, $CD8^+$ T, $CD45^+$ T lymphocyte count and $CD4^+/CD8^+$ T lymphocyte ratio. The data were collected by a single researcher, trained to extract information from the medical records of CTC/SAS users, which

were typed and consolidated in the Microsoft® Office Excel 2003 program, with double entry and consistency check.

The data obtained were analyzed using the GraphPad Prism v.8 software (GraphPad Software, San Diego, CA, USA). For descriptive analysis of categorical variables, maps and tables were used, informed in absolute (n) and relative (%) frequency. Quantitative variables were described by the mean and standard deviation (SD). Chi-square tests or Fisher's exact test were used to assess the association between categorical variables. Pearson's test was used to analyze the correlation between laboratory results. To analyze the differences between the groups studied, the Student T test was used. The differences were considered statistically significant for values of $p < 0.05$.

RESULTS

301 admission records at CTC/SAS were analyzed, diagnosed in the period from 1996 to 2019 and corresponding to a mean of 12.5 ± 9.6 cases/year. It is observed that over the years there has been a significant increase in the diagnosis of HIV/AIDS, especially after the implementation of CTC/SAS in 2002, in the municipality of Paulo Afonso ($r=0.862$, $p < 0.001$, Figure 1).
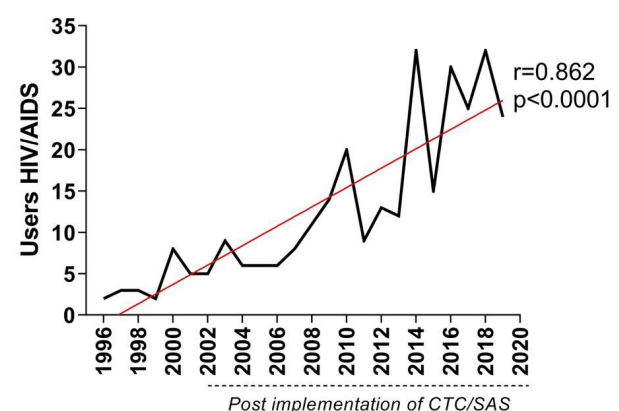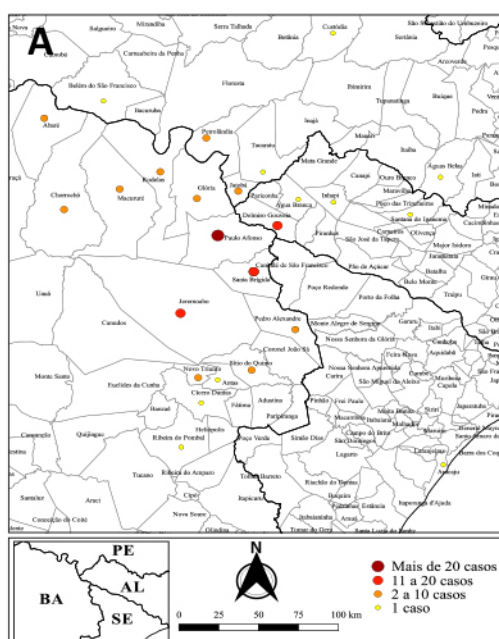

Figure 1: Users living with HIV/AIDS registered at CTC/SAS in the municipality of Paulo Afonso-BA, according to the year of diagnosis (N=301). HIV = Human Immunodeficiency Virus; AIDS = Acquired Immunodeficiency Syndrome; CTC= Counseling and Testing Center; SAS= Specialized Assistance Service.

One hundred (33.2%) of the 301 individuals living with HIV, live in nearby cities. Most cases came from the cities of Jeremoabo (n=18, 18%), Delmiro Gouveia (n=15, 15%) and Santa Brígida (n=11, 11%), all located 85.5 km, 39.1 km and 59.8 km away from Paulo Afonso, respectively (Figure 2A). Two (0.7%) cases had no data regarding the place of residence. The remaining cases (n=199, 66.1%), had a fixed residence in the municipality of Paulo Afonso. The neighborhoods Centro and Tancredo Neves III concentrate the largest number of individuals living with HIV, with 27.14% (n=54) and 19.6% (n=39), respectively. The neighborhoods with the lowest rate of confirmed cases were Amaury Alves de Menezes, Benone Resende, General Dutra, Jardim Aeroporto, Jardim Bahia, Oliveira Lopes, Santa Inês, Siriema II and Vila Nobre with only one case in each location (0.5%), as evidenced by Figure 2B.

For the following analyzes, individuals with more than 5% of non-completeness of the information in the electronic medical records were excluded. Thus, from 301 cases, 75 (24.9%) were excluded. However, no statistical difference was observed between the two groups in the variables sex, age, marital status, and education (p>0.05).

From the 226 (75.1%) records analyzed, there was a prevalence of 58.4% (n=132) of male individuals, with a ratio of (1.4:1), mean age of 40.6 ± 13.8 years, with the most frequent age group being 31 to 45 years old. Regarding marital status, 51% (n=107) were single, 42.5% (n=91) had incomplete primary education and 70.5% (n=158) had a fixed residence in the municipality of Paulo Afonso (Table 1). Analyzing the municipality of residence, it is observed that 76.9% (n=100) and 37.1% (n=46) of men live in Paulo Afonso and have incomplete elementary education. While 61.7% (n=58) and 50% (n=45) of women live in the same municipality and have incomplete primary education. This difference between the sexes was statistically significant, p=0.023 and p=0.015, respectively (data not shown).

From the 226 individuals living with HIV, 49 (21.7%) cases were diagnosed in the AIDS phase, with a CD4+ T lymphocyte count lower than 200 cells/mm^3, mean of 121.9 ± 56.1 cells/mm^3. On the other hand, 177 (78.3%) had a CD4+ T lymphocyte count greater than 200 cells/mm^3, mean of 559.6 ± 338 cells/mm^3, which demonstrated a statistically significant difference between the groups (p<0.001, Table 2).

Paulo Afonso	Total, N=199 n (%)
Alves de Souza	2 (1,01)
Amaury Alves de Menezes	1 (0,5)
Barroca	4 (2,01)
Benone Resende	1 (0,5)
BTN 1	6 (3,02)
BTN 2	21 (10,55)
BTN 3	39 (19,6)
Caminho dos Lagos	2 (1,01)
Centro	54 (27,14)
Centenário	15 (7,54)
CHESF	7 (3,52)
Cleriston Andrade	3 (1,51)
General Dutra	1 (0,5)
Jardim Aeroporto	1 (0,5)
Jardim Bahia	1 (0,5)
Moxotó	4 (2,01)
Oliveira Lopes	1 (0,5)
Perpétuo Socorro	4 (2,01)
Prainha	9 (4,52)
Rodoviários	3 (1,51)
Santa Inês	1 (0,5)
São Vicente	2 (1,01)
Siriema I	3 (1,51)
Siriema II	1 (0,5)
Vila Nobre	1 (0,5)

*Quatro (2,01%) voluntários foram registrados como moradores de rua e oito (4,02%) não possuíam registro do bairro de moradia em Paulo Afonso.
BTN = Bairro Tancredo Neves; CHESF = Companhia Hidrelétrica do São Francisco.

Figure 2: Distribution of users living with HIV/AIDS registered at CTC/SAS, according to the municipality of residence (A) and neighborhood in the municipality of Paulo Afonso-BA (B).

Table 1

Sociodemographic characteristics of users living with HIV registered at CTC/SAS in the municipality of Paulo Afonso, according to viral load.

Characteristics	< 200 (cells/mm3) n=49	> 200 (cells/mm3) n=177	Total N=226	P-value
		n (%)		
Sex				
Male	25 (51)	107 (60.5)	132 (58.4)	0.248
Female	24 (49)	70 (39.5)	94 (41.6)	
Age				
1 to 15 years old	-	4 (2.3)	4 (1.8)	0.166
16 to 30 years old	8 (16.3)	41 (23.2)	49 (21.7)	
31 to 45 years old	18 (36.7)	79 (44.6)	97 (42.9)	
46 to 60 years old	16 (32.7)	43 (24.3)	59 (26.1)	
> 60 years old	7 (14.3)	10 (5.6)	17 (7.5)	
Municipality of residence[a]				
Paulo Afonso	35 (71.4)	123 (70.3)	158 (70.5)	0.862
Other places	14 (28.6)	52 (29.7)	66 (29.5)	
Marital status[b]				
Single	21 (45.6)	86 (52.4)	107 (51)	**0.003**
Maried/Stable union	13 (28.3)	67 (40.9)	80 (38.1)	
Widow/widower	3 (6.5)	3 (1.8)	6 (2.8)	
Divorced	9 (19.6)	8 (4.9)	17 (8.1)	
Schooling[c]				
Illiterate	8 (16.7)	8 (4.8)	16 (7.5)	0.061
Incomplete basic education	19 (39.6)	72 (43.4)	91 (42.5)	
Complete basic education	2 (4.2)	18 (10.8)	20 (9.3)	
Incomplete high school	3 (6.2)	9 (5.4)	12 (5.6)	
Complete high school	9 (18.7)	43 (25.9)	52 (24.3)	
Higher education	7 (14.6)	16 (9.7)	23 (10.8)	

[a]Two users with > 200 cells/mm³ did not have the municipality of residence registered in the medical record.

[b]Three users with < 200 cells/mm³ and 13 with > 200 cells/mm³ did not have the marital status registered in the medical record.

[c]One user with < 200 cells/mm³ and 11 with > 200 cells/mm³ did not have the schooling registered in the medical record.

Table 2

Laboratory characteristics of users living with HIV/AIDS registered at CTC/SAS in the municipality of Paulo Afonso, according to CD4^{+} T lymphocyte count.

Laboratory tests	< 200 (cells/mm3) n=49	> 200 (cells/mm3) n=177	Total N=226	p-value
		Mean ± SD		
CD4^{+} T (cells/mm³)	121.9 ± 56.1	559.6 ± 338.0	464.7 ± 350.3	**<0.001**
CD8^{+} T (cells/mm³)	930.2 ± 519.8	1,090 ± 582.4	1,056 ± 572.1	0.083
Ratio CD4^{+}/CD8^{+} T	0.2 ± 0.14	0.6 ± 0.6	0.5 ± 0.6	**<0.001**
CD45^{+} T (cells/mm³)[a]	1,424 ± 620.5	2,277 ± 910.5	2,087 ± 924.4	**<0.001**
Viral load (copies/mL)[b]	99,366 ± 325,430	36,580 ± 174,074	53,405 ± 225,336	0.127

[a]Six users with > 200 cells/mm³ did not have the CD45^{+} T lymphocyte count recorded in the medical record.

[b]Eight users with < 200 cells/mm³ and 65 with > 200 cells/mm³ had undetectable viral load.

SD = Standard desviation.

Furthermore, it is observed that 40.9% (n=67) and 28.3% (n=13) are married/stable union between those with lymphocyte count > 200 and < 200 cells/mm^3, respectively. This difference between the groups was statistically significant with p=0.003. On the other hand, no difference between sex, age, municipality of residence, and education was observed between individuals living with HIV and those who were diagnosed with AIDS at the time of admission on CTC/SAS (p>0.05, Table 1).

In addition to the CD4$^+$ T lymphocyte count, other significant differences can be observed, such as the CD4$^+$/CD8$^+$ T lymphocyte ratio and CD45$^+$ T lymphocyte count, both with p<0.001, among individuals with lymphocyte count > 200 and < 200 cells/mm^3 (Table 2). Interestingly, when evaluating laboratory tests stratified by sex, it is observed that men have a statistically significant difference in the total CD8$^+$ T lymphocyte count (men: 1,126 ± 595.2 cells/mm^3; women: 955.9 ± 525.2 cells/mm^3) and among those who have > 350 CD8$^+$ T lymphocytes/mm^3 (men: 1,153 ± 584.4 cells/mm^3; women: 994.7 ± 512.7 cells/mm^3) with p=0.027 and p=0.04, respectively. There are also significant differences in the CD45$^+$ T lymphocyte count (men: 2,278 ± 989 cells/mm^3; women: 1,856 ± 878.5 cells/mm^3; p=0.001; data not shown).

As expected, the variables, CD4$^+$ T lymphocyte count (absolute and relative value) and ratio between CD4$^+$/CD8$^+$ T lymphocytes demonstrated a negative linear association when compared to the patient's viral load (r=-0.163, p=0.043; r=-0.206, p=0.01 e r=-0.189, p=0.018, respectively; Figure 3). On the other hand, a positive linear association is observed when assessing CD8$^+$ T lymphocyte count (cells/mm^3) (r=0.165, p=0.04).
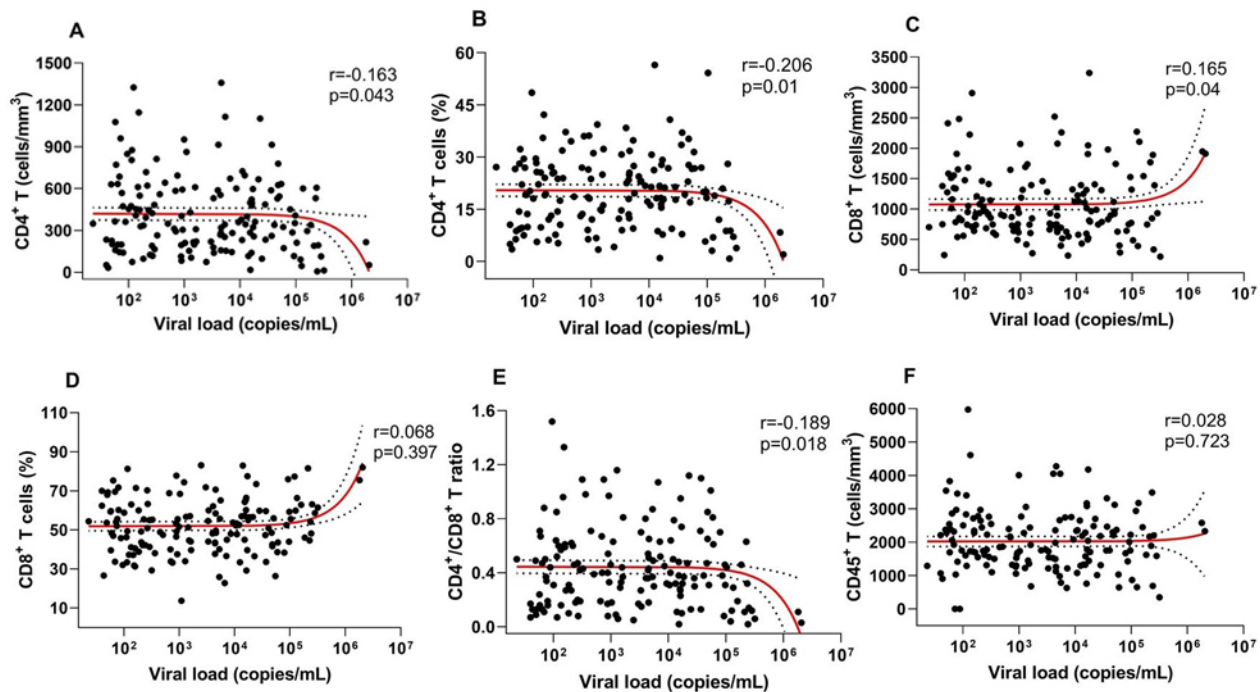

Figure 3: Correlation between viral load and laboratory results of CD4$^+$ T cells (A and B), CD8$^+$ T cells (C and D), CD4/CD8$^+$ T ratio (E) and CD45$^+$ T cells (F).

DISCUSSION

The present study allowed us to evaluate the profile of users of a Specialized HIV/AIDS Care Service in the municipality of Paulo Afonso, located in the countryside of the state of Bahia. Paulo Afonso is a medium-sized municipality that has just over than 100 thousand inhabitants. However, its privileged location, bordering three states in the Northeast, makes it a reference center for small neighboring cities. According to studies by Oliveira et al. (2019)[15] and Prado and Castilho (2009)[6], it is observed that, as occurred in Paulo Afonso, there was an increase in the number of positive cases for HIV/AIDS in the countryside of the states of São Paulo and Sergipe, respectively. Together, these results confirm the tendency towards the interiorization of the HIV/AIDS epidemic, especially in small and medium-sized cities, resulting in the greater spatial spread of HIV in the Brazilian territory. In addition, these findings are in line with the regional tendency, with a 17% increase in case detection in 2018 compared to 2008[4].

This phenomenon presents itself as an important public health problem, causing new difficulties in controlling the HIV/AIDS epidemic, since these places are more unassisted and have lower per capita income[5,16]. Although there is an increase in the number of cases, other possibilities for this increase should be considered, such as underreporting, migration of cases to the capital in previous years, the implementation of CTC/SAS and the use of the quick test as a screening method initial in 2009; achievements that made it possible to expand health care and the efficiency of the diagnoses provided[17].

In relation to gender, there was a predominance of males, which can also be evidenced by the global tendency of the country (69%)[4] and in other studies reported in the literature[5,15]. his reality is justified by the fact that men have a more susceptible behavior, with a greater number of sexual partners and less adherence to condom used[12,16]. Nevertheless, there is a growing tendency in the detection of women living with HIV/AIDS, reducing the ratio of men and women with HIV, as in the results found in the study. This tendency is reported by several authors, in which there is a feminization of the epidemiology of HIV/AIDS[16,18,19].

This theory shows that, contrary to what happened at the beginning of the epidemic, in which the segment most affected were homosexual and bisexual men, at present, women have higher rates of infection, reflecting the progressive national drop in the sex ratio, reducing from 6:1 in 1990 to 2:3 in 2018[4,16,18]. The feminization of the HIV/AIDS epidemiology can be explained by several factors, including sexual violence, a greater number of sexual partners and heterosexualization of the profile of people living with HIV/AIDS, the main group currently affected[19]. In addition, society is still culturally marked by the subservience of women to men, which often prevents them from having autonomy over themselves and their relationships, not guaranteeing the right to choose the use of condoms, as well as enjoying faithful relationships[20]. Another point that must be emphasized is the high rate of married women living with HIV. This result reinforces female vulnerability in the face of unfaithful and abusive relationships, which promote the false idea that there is no risk for STIs and prevent women from taking the necessary care[7,20].

When analyzing the most prevalent age group among the cases, it is observed that individuals between 31 and 49 years old were prevalent, presenting a small disagreement with the national values evidenced by the epidemiological bulletin of the Ministry of Health[4], whose predominant age group was between 20 and 34 years old. However, the results obtained are similar to those presented by Amorim and Schlemper (2019)[5], in a study conducted in the municipality of Joaçaba, Santa Catarina, whose most prevalent group were males between 31 and 50 years old. According to Brito, Castilho and Szwarcwald et al. (2001)[16], the population segment between 20 and 40 years of age represents the majority of sexually active individuals, therefore, they would be more susceptible to HIV infection, since the main route of infection today is sexual. In addition, several authors report a current tendency, especially among young adults, to underestimate the severity of the disease and, consequently, reduce care, due to the evolution of antiretroviral therapy that increasingly allows living with HIV/AIDS as a chronic disease with less serious problems quality of life, in addition to the current recommendation for pre-exposure prophylaxis[8].

When related to the number of cases with education and socioeconomic conditions, it was observed that the predominant profile was that of individuals with low education (42.5%; incomplete primary education) and socioeconomic conditions, evidenced by an important concentration of cases in neighborhoods peripheral areas (Tancredo Neves I, II and Prainha neighborhood). This result is consistent with the current phenomenon of impoverishment, characterized by an increasing proportion of individuals living with HIV/AIDS and who have a lower level of education and social condition[5,16]. This tendency to impoverish the profile of individuals living with HIV/AIDS can be justified by the fact that these individuals have less health care, greater susceptibility due to risky behavior (injecting drug use and non-adherence to condom use), less access to information on prevention and treatment, earlier initiation of sexual activities and, therefore, less maturity and autonomy in the face of a relationship[7,12,16,21].

When observing the number of individuals living with AIDS in the study, it is noticed that the number of cases represented less than a quarter of the sample (21.7%), which shows a greater awareness of people to seek health services early and self-care, as well as showing a good effectiveness of CTC/SAS in making early diagnoses through community activities, in which rapid tests are offered to the entire target population[22]. Furthermore, it is noted that 40.8% of individuals seen at CTC/SAS have a follow-up period that varies between seven and 19 years (data not shown), which demonstrates an important increase in the survival of these patients. Although the disease still remains lethal, scientific advances and new approaches in antiretrovrial therapy have contributed to the chronic condition of HIV/AIDS[16,23].

This increase in life expectancy and reduction in AIDS cases is similar to other studies that show that such achievements were possible thanks to technological and scientific advances in relation to HIV/AIDS, allowing greater efficiency in prevention with educational policies and post-exposure prophylaxis, early diagnosis through the implementation of quick tests, introduction of antiretroviral therapy (ART) concomitant to the diagnosis of HIV infection, comprehensive and holistic assistance to these individuals[16,19,24].

It was found that the levels of CD8+ T lymphocytes were directly related to viral load and this is due to the important role of these cells in combating infections caused by viruses. Therefore, in an attempt to eliminate the virus, the higher the viral load, the higher the levels of these cells will be detected[1,25]. CD4+ T cells, in turn, showed an inversely proportional relationship with viral load, which can be justified by the natural history of HIV infection, in which these lymphocytes are the main targets of infection by the virus[1,13].

Studies have shown an important disparity in the proportion of T lymphocytes due to the variables of sex, age and ethnicity[26]. This fact can be evidenced by the present study, in which significant laboratory differences were identified between the levels of CD8+ T and CD45+ T lymphocytes in the approach by sex. According to the study carried out in the Chinese province, Yunnan, from the analysis of the cell count by sex, the mean of the absolute values of CD4+ T lymphocytes and CD45+ T lymphocytes were higher in women than in men living with HIV/ AIDS[25,27]. The literature on the immunological behavior of HIV between different sexes is not yet fully understood. However, such differences may result from specific gene expressions associated with genes located on the X chromosome [27].

Regarding the ratio of CD4+/CD8+ T lymphocytes among the individuals studied, it is clear that it was below one in most cases. According to Passos et al. (2020)[25], the lowest ratio (or <1) between CD4+/CD8+ T lymphocytes is an indicator of persistent immune dysfunction and would be the result of a continued expansion of new, highly specialized and senescent T lymphocytes that would lead to a delayed recovery rate the number of virgin CD4+ and CD8+ T lymphocytes and worsening of the stages of immunosuppression. Thus, although the absence of CD4+ T lymphocytes causes functional impairment, the expansion of CD8+ T lymphocytes would be more important in the CD4+/CD8+ lymphocyte ratio[25].

Knowledge about individuals living with HIV/AIDS, such as the number of cases, adherence, greater access to ART and viral load control are goals recommended by UNAIDS as strategies to control transmission and reduce cases[28]. In addition to the measures discussed above, another valid point that should be highlighted in the creation of

public policies for the eradication of HIV/AIDS is the need to know the neighborhoods with the highest number of cases within a municipality, information that represents one of the pillars of the current job. Thus, the results obtained, although incipient, can enrich the CTC/SAS service, allowing the unit to expand its field of action and develop actions that really assist the groups of individuals most affected. Furthermore, it is plausible to consider that the results found in the study can be extrapolated to other cities with characteristics similar to Paulo Afonso. However, it is important that the data be interpreted with caution, as some limitations were observed in the study, such as the absence of data on the treatment and evolution of these patients, the non-validation of the data collection instrument and the data collection performed by a single researcher.

Finally, the study brings important contributions to science, confirming the national tendency of internalization and impoverishment of the disease, signaling the need to expand knowledge about the health situation of a given region to direct more effective health care actions, especially within the scope of the Brazilian Public Health System. In addition, it constitutes an important source of data for health professionals who are in practice, acting directly in the prevention and care of people with HIV/AIDS. From these results, it is clear the importance of investing in research that evaluates the treatment and the evolution of patients treated at CTC/SAS.

CONCLUSION

There has been an increase in the rate of detection of people living with HIV/AIDS in the last 24 years in the municipality of Paulo Afonso, Bahia, with the male population being the most affected group. This increase was possibly the result, in large part, of advances in diagnostic methods, as well as due to the installation of CTC/SAS in the region. The epidemiological characteristics of HIV/AIDS in the municipality follow the national tendency of internalization, feminization and impoverishment of the profile of individuals living with the disease. This reality highlights the need to create more effective and comprehensive public policies aimed at this group of individuals.

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Authors' contributions
Medeiros DA and Takenami IO contributed to the conception and design of the study, analysis and interpretation of the data; relevant writing or critical review of the manuscript's intellectual content. Palácio MAV and Gois LL contributed to the writing or relevant critical review of the intellectual content of the manuscript. All the authors approved the final version of the manuscript and declare themselves responsible for all aspects of the work, ensuring its accuracy and integrity.

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