Hospitalizations of the elderly for reasons related to human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) infection, Rondônia, Brazil, 2010–2018

Hospitalizações de idosos por motivos relacionados à infecção por vírus da imunodeficiência humana (HIV)/síndrome da imunodeficiência adquirida (AIDS), Rondônia, Brasil, 2010–2018

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ABSTRACT

Introduction: For the elderly, cultural factors and social paradigms predispose to the rejection of condom use, which favors human immunodeficiency virus (HIV) transmission. The North region was the last area for the spread of HIV in Brazil. Rondônia, although with a slight decline in the HIV detection rate in recent years, is still among the states with high mortality rate due to HIV/acquired immunodeficiency syndrome (AIDS) in Brazil. **Objective:** To describe the demographic and clinical characteristics of the elderly patients who were hospitalized for reasons related to HIV infection in the state of Rondônia, Brazil. **Methods:** Descriptive study of secondary data recorded from 2010 to 2018. The cause of hospitalization was identified in the field referring to the main and secondary diagnoses of the hospitalization authorization form. **Results:** Between 2010 and 2018, Rondônia recorded 1,073,932 hospitalizations for any cause in the state's public hospitals. Out of these, 183,803 (17.1%) were of elderly patients over 60 years of age and 249 (0.13%) were due to HIV/AIDS. There was a progressive increase in the number of hospitalizations during the study period, as well as a predominance of younger elderly men (67.1±6.0 years old). The mean length of hospitalizations was 21.3±21.1 days and 57 (24.1%) elderly patients died. **Conclusion:** Despite all the progress made in HIV prevention and treatment, the state of Rondônia still has a progressive increase in hospitalizations of elderly people for reasons related to HIV/AIDS. HIV transmission prevention strategies should be emphasized in the elderly population in the state.

Keywords: aged; HIV infection; acquired immunodeficiency syndrome; hospitalization.

RESUMO

Introdução: Fatores culturais e paradigmas sociais predispõem o idoso à rejeição do uso de preservativo, o que favorece a transmissão do vírus da imunodeficiência humana (HIV) nesse grupo. A região Norte foi a última área alvo da disseminação do vírus no Brasil. Rondônia, embora com discreto declínio na taxa de detecção nos últimos anos, encontra-se entre as unidades federativas com mortalidade superior à média nacional. **Objetivo:** Descrever as características demográficas e clínicas dos idosos que se internaram por motivos relacionados à infecção pelo HIV em hospitais públicos de Rondônia. **Métodos:** Estudo descritivo de dados secundários registrados no período de 2010 a 2018. A causa da hospitalização foi identificada nos campos referentes aos diagnósticos principal e secundário da autorização de internação hospitalar (AIH). **Resultados**: Entre 2010 e 2018, o estado de Rondônia registrou 1.073.932 internações por todas as causas nos hospitais públicos/conveniados do SUS. Desse total, 183.803 (17,1%) foram de idosos maiores de 60 anos, das quais apenas 249 (0,13%) foram motivadas por HIV/síndrome da imunodeficiência adquirida (AIDS). Embora de baixa magnitude, observou-se aumento progressivo do número das hospitalizações durante período estudado. Houve um predomínio de internações de idosos do sexo masculino e na sexta década de vida (67,1±6,0 anos). O tempo médio de internação foi de 21,3±21,1 dias e 57 (24,1%) dos idosos evoluíram para óbito. **Conclusão:** Apesar de todo o progresso obtido na prevenção e tratamento do HIV, o estado de Rondônia ainda apresenta elevação progressiva das hospitalizações de idosos por motivos relacionados ao HIV/AIDS. Estratégias de prevenção da transmissão do HIV devem ser enfatizadas para a população de idosos.

Palavras-chave: idoso; infecções por HIV; síndrome da imunodeficiência adquirida; hospitalização.

INTRODUCTION

The Brazilian population has one of the fastest aging rates, and it is estimated that the percentage of elderly will increase to 29.6% in 2050[1]. Although the highest concentration of cases of acquired immunodeficiency syndrome (AIDS) in Brazil is between 25 and 39 years old, a change in the course of the epidemic has been observed in recent years[2]; this phenomenon of aging is also occurring in the population with human immunodeficiency virus (HIV) infection[3]. In addition, the epidemiological profile has shown a significant increase in cases per year in the age group of 50 and older, in both sexes[4].

The aging of the population, although it is humanity's great triumph, also represents one of its great challenges[5]. With the increase in the elderly population and the decrease in the fertility rate, there is an inversion of the population pyramid, which starts to have a narrower base at the top. This change in the population's age profile also brings with it economic and social challenges[6]. One of them is the increase in HIV transmission, which is becoming increasingly frequent in the elderly population[4]. For this age group, cultural factors and social paradigms predispose to the rejection of condom use, favoring the spread of the virus[7]. Despite having some knowledge about the virus, in general, the elderly do not know how it is transmitted, and therefore tend to have unprotected sex[6].

Currently, there is an increasing effort to improve the quality of life of patients with chronic infectious diseases in Brazil. However, increased life expectancy, greater access to health services,

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improved nutrition, and advances in medicine and pharmacology, which make available on the market drugs that improve erection capacity and increase libido, allow the population over 60 years to have improved quality of life and consequently enhanced sexual activity. Despite all the benefits that these measures bring to this age group, they can promote greater exposure to sexually transmitted infections (STIs)[7].

Among the elderly, HIV infection and AIDS have increasing incidences in various regions and population groups[8,9]. Reports on this epidemiological profile, such as the study by Gross[10] in Rio de Janeiro, emerged right after the turn of the millennium. The North region of Brazil was the last geographic area targeted for the spread of HIV in Brazil[11]. The state of Rondônia, although with a slight decline in the global HIV detection rate between 2007 and 2017, was among the states with mortality above the national average in the same period, and epidemiological data showed an increase in the number of cases of the disease in individuals over 50 years of age in the capital Porto Velho[12]. In a previous study, AIDS among the elderly had already reached 15% of the total number of cases registered in the capital from January 2000 to August 2011[13]. The state now has nearly 2 million inhabitants, distributed in 52 medium- and small-sized municipalities. Due to its recent demographic growth, caused mainly by internal migration flows in the country, and also by the incipient structuring of health services[14], information on the distribution of HIV infection and AIDS in this region is scarce, especially regarding the impact of these diseases on the health of the elderly.

OBJECTIVE

To describe the clinical characteristics, epidemiological profile and mortality of the elderly hospitalized in the state of Rondônia for reasons related to HIV/AIDS infection in the period of 2010 to 2018.

METHODS

This was a descriptive study where the unit of analysis concerned the hospitalizations that occurred in all public hospitals or those associated with the SUS in the state of Rondônia, during the period of 2010 to 2018. Data were obtained from the Hospital Information System of the SUS (SIH-SUS), through which a data sheet was generated from the selection of the causes of admissions, using the respective international disease codes (ICD-10). The identification of hospitalizations due to HIV/AIDS was based on the main and secondary diagnoses (ICD-10 from B20 to B24) declared by the physicians when filling out the hospital admission authorization (HAA) request form. Using the Tabwin application (version 3.5), developed by the SUS Informatics Department (DATASUS) of the Ministry of Health, the clinical and epidemiological profiles of patients were described, restricting themselves to the variables contained in the HAA form.

The present study was not submitted to the evaluation of a Research Ethics Committee as it was based on secondary data in the public domain, in accordance with the National Health Council/Ministry of Health resolution No. 510 of April 7, 2016, notwithstanding the norms in force regarding ethics in research with human beings in Brazil. Data were analyzed specifically for this research in a global way, without individual identification of people registered in the hospital admissions information system.

RESULTS

In the period from 2010 to 2018, there were 1,073,932 admissions for any reason in public and SUS hospitals in the state of Rondônia. Of this total, 183,803 were elderly patients over 60 years old, and 249 (0.13%) elderly hospitalizations were for reasons related to HIV/AIDS. There was an increasing trend in the number of hospitalizations for HIV/AIDS during the study period. Evolution to death was declared for 57 (22.9%) of patients hospitalized for HIV/AIDS (**Figure 1**).

A predominance (72.3%) of hospitalizations of elderly males between 60 and 70 (76.3%) can be observed. As expected, the state capital, Porto Velho, was the city with the highest numbers, registering 207 admissions (83.1%), followed by small municipalities, such as Ouro Preto do Oeste, with 6 admissions (2.4%), and Guajará Mirim and Candeias do Jamari, each with 5 (2.0%). All the other 48 municipalities in the state totaled 31 hospitalizations. The municipality of Cacoal, which now has more than 80,000 inhabitants, did not register hospitalizations due to HIV/AIDS during the study period (**Table 1**).

As for the length of stay, 107 (43.0%) of the patients remained in the hospital for ten days or less, while 109 (43.8%) remained 11 to 40 days. The other 33 (13.2%) patients were hospitalized for more than 41 days (**Table 1**).

DISCUSSION

In the present study, the frequency and profile of elderly patients hospitalized for reasons related to HIV/AIDS in the period after the use of highly effective antiretroviral therapy (HAART) in public hospitals in the state of Rondônia was evaluated. In the period between 2010 and 2018, there were 249 hospitalizations of elderly people for reasons related to HIV/AIDS in the state. It is noteworthy that

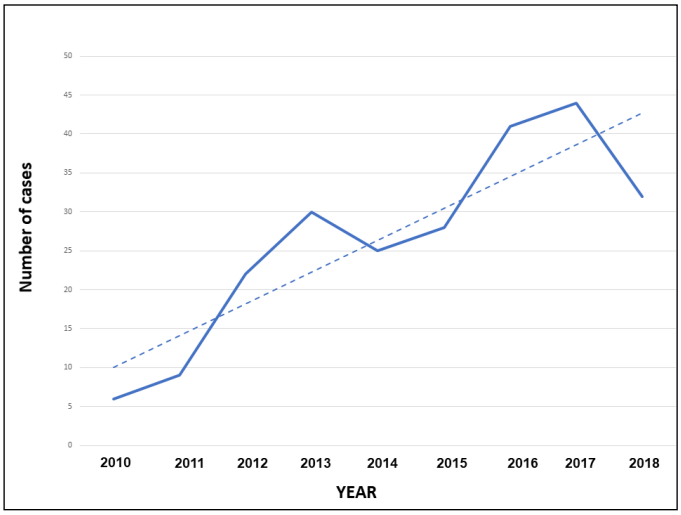


Figure 1 – Evolution of the absolute frequency of hospitalizations of elderly people in Rondônia for reasons related to the human immunodeficiency virus/acquired immunodeficiency syndrome, 2010–2018.

Table 1 – Demographic and clinical characteristics of the elderly in Rondônia hospitalized for reasons related to human immunodeficiency virus/acquired immunodeficiency syndrome, during the period of 2010 to 2018.

Characteristics		n	(%)
Sex	Male	180	72.3
	Female	69	27.7
	Total	249	100.0
Age (years)	60 to 70	190	76.3
	71 to 80	48	19.3
	81 to 89	11	4.4
	Mean (SD): 67.1 (5.9)		
Year of hospitalization	2010	8	3.2
	2011	12	4.8
	2012	23	9.2
	2013	34	13.6
	2014	27	10.8
	2015	28	11.2
	2016	41	16.4
	2017	44	17.6
	2018	32	12.8
Evolution to death	No	192	77.1
	Yes	57	22.9
City of residence	Porto Velho	207	83.1
	Outros estados	8	3.2
	Ouro Preto do Oeste	6	2.4
	Guajará-Mirim	5	2.0
	Candeias do Jamari	5	2.0
	Ji-Paraná	4	1.6
	Ariquemes	2	0.8
	Machadinho d'Oeste	2	0.8
	Vilhena	2	0.8
	Itapuã do Oeste	2	0.8
	Jaru	1	0.4
	Nova Brasilândia d'Oeste	1	0.4
	Rolim De Moura	1	0.4
	Alto Alegre dos Parecis	1	0.4
	Mirante da Serra	1	0.4
	Vale do Paraíso	1	0.4
Hospitalization time (days)	0–10	107	43.0
	11–20	52	20.9
	21–30	35	14.1
	31–40	22	8.8
	41–50	13	5.2
	51–60	5	2.0
	61–70	6	2.4
	71–80	3	1.2
	81–90	3	1.2
	>90	3	1.2
Reason for hospitalization	Acquired immunodeficiency syndrome	133	53.4
	Opportunistic infectious diseases	105	42.2
	HIV-associated encephalopathy	10	4.0
	HIV-associated cancers	1	0.4

SD: standard deviation; HIV: Human immunodeficiency vírus.

the public hospital network in Rondônia is vast, ensuring coverage of more than 60% of the population[15].

Considering the nine years of observation, this number, although apparently low in the context of the reality of the disease in Brazil, is higher than that found by Pio et al.[16] in Ribeirão Preto (SP), whose population was close to 2.5 million inhabitants at the time of the study, and in which 95 hospitalizations of individuals over 50 years of age for HIV/AIDS were found in a period of four and a half years of evaluation.

There was a growing trend towards the need for hospitalization of elderly people for reasons related to HIV/AIDS during the study period, with a high proportion of deaths. After the beginning of the availability of HAART by SUS, many publications on HIV/AIDS showed changes in the behavior of the disease in Brazil, in agreement with observations from other countries, such as a decrease in mortality, stabilization of the incidence rate, decrease in vertical transmission and new characterization of the profile of causes of hospitalization among people with HIV and AIDS[17,18]. It is worrisome that this profile has not yet been observed in the elderly population that required hospitalization in the state of Rondônia.

There is already evidence of an association between the number of CD4+ T lymphocytes at levels above 350 cells/mm^3 and the use of antiretroviral drugs as a protective measure for hospitalization among HIV/AIDS patients[19]. Even considering the great advance observed in the prevention and treatment of HIV infection[18,20], the early diagnosis of this condition in elderly people does not represent a factor that favors a less severe evolution of the disease in this group of patients. In fact, younger age contributes as a protective factor to the hospitalization of individuals with HIV/AIDS, when compared to people who had the diagnosis after the age of 50[16].

On the other hand, it has been observed that late diagnosis of HIV/AIDS is related, among other factors, to being over 50 years of age[18,21]. In addition, HIV/AIDS infection in the elderly adds an important profile of severity to this age group, which is already vulnerable to several other critical health problems[6]. All these aspects of negative impact of HIV/AIDS infection among the elderly can explain the high need for hospitalization and the high frequency of deaths observed in this study, in the context of advances in disease prevention and control measures worldwide[18,20]. It is also plausible to assume that, during the asymptomatic phase of HIV infection, the elderly are slower in seeking a diagnosis, and when they do, they are already in a more vulnerable condition for the complications of immunodeficiency, resulting in the need for hospitalization[19].

An important aspect was the observation, in this study, of a greater proportion of elderly people between 60 and 70 years of age hospitalized for HIV/AIDS, as well as a predominance of males. One explanation for this would be the current availability of drugs that improve sexual performance, especially among men[21]. In Uganda, a cross-sectional descriptive study investigated the sexual behavior of men and women living with HIV over the age of 50, finding that only 14% of women reported being sexually active, compared with 49% of men[22]. Also in Brazil, it was observed that most sexually active elderly did not use condoms, and that no woman over 60 years old reported being sexually active, although men over 60 years old reported similar sexual activity to younger men[23].

The higher frequency of HIV/AIDS infection among elderly people aged 60 to 70 years can be explained by infection that has occurred previously, when exposure is more intense, as suggested by other authors[24]. Seeing elderly people over 80 years old living with HIV is a surprising fact. It is noteworthy that, until the end of the 1990s, it was not possible to imagine that people with HIV would reach this age. Certainly, the availability of HAART, the improvement in diagnosis, public policies to raise awareness about the disease, the reduction of prejudices and taboos and better adherence to treatment made people with the disease seek help earlier, enabling them to live longer and with better quality of life[18,20].

The high frequency of deaths and the long hospital stay observed for a significant portion of the elderly was probably due to the problems that generally lead to the need for hospitalization of people with HIV/AIDS infection[25]. In fact, this study showed that the main causes of hospitalization during the period evaluated were opportunistic infectious diseases, many of them defining AIDS, followed by neoplasms and encephalopathies. This finding suggests that the elderly may have been hospitalized with severe immunosuppression before starting HAART. But other factors, for example, low adherence to the use of medications, cannot be ruled out. There are several studies showing that adherence to antiretroviral treatment and prescribed care for HIV/AIDS is low worldwide[26,27], especially among the elderly[28].

Porto Velho is the largest and most populous city in the state, as well as the one that has the largest public hospitals in Rondônia. It functions as the state referral center for all secondary and tertiary health care. It is likely that the high frequency of hospitalizations of elderly people for HIV/AIDS during the study period was a consequence of this better established capacity to deal with this complex health problem.

Strengths

Knowledge of the clinical-demographic profile of these patients can be useful for the formulation of specific strategies for the age group, aimed at preventing HIV transmission, timely access to diagnosis and treatment, and better adherence to antiretroviral treatment, with a view to ensuring the same good prognosis of HIV disease achieved in younger people living with HIV in recent years.

Limitations

The main limitation of this study was the use of secondary data from SIH-SUS, which provides information of questionable quality, mainly due to its incompleteness and the non-coverage of the hospital network not financed by SUS[29].

CONCLUSION

The frequency of hospitalizations of the elderly for reasons related to HIV/AIDS was high, showing a progressive tendency to increase in recent years. In addition, the frequency of hospitalized individuals who progressed to death was also high, even after the introduction of HAART, which began in Brazil in 1996. Elderly males with infectious complications prevailed among individuals hospitalized for HIV/AIDS.

Participation of each author

Administration of the project: Fontes, C. J. F. Formal analysis: Gomes, L. T. Conceptualization: Fontes, C. J. F.; Burgarelli, W. R.; Serigiolli, L. A.; Marmentini, G. P.; Gomes, L. T. Data curation: Burgarelli, W. R.; Serigiolli, L. A.; Marmentini, G. P.; Gomes, L. T. Writing – first draft: Burgarelli, W. R.; Serigiolli, L. A.; Marmentini, G. P. Writing – revision and editing: Fontes, C. J. F.; Gomes, L. T.

Funding

The authors declare not having any grant or other funding for the support of the study. This research was funded exclusively by the authors.

Conflict of interest

No conflict of interest to declare by the authors.

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Received on: 01/09/2020
Approved on: 10/18/2021

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