

A prospective exploratory study of the factors associated with adverse health outcomes in older adults living with HIV

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Abstract

Introduction

Thanks to antiretroviral treatment in Western countries, human immunodeficiency virus (HIV) infection has become a chronic disease. Today, 50% of people living with HIV are over 50 years of age, and about 20% of new cases of this infection occur in this same age group. This study analyzed the clinical and sociodemographic factors associated with adverse health events (falls, emergency room visits, hospitalizations, and death) in a cohort of people over 55 years with HIV infection.

Methods

A prospective exploratory study with four years of follow-up. The study included people with HIV infection followed in the infectious disease clinics of two hospitals in Madrid. Sociodemographic data and clinical variables were collected. The functional, mental, and social status of the participants was evaluated. The number of falls, emergency room visits, hospitalizations, and deaths during the study period was reviewed in the patient's medical records.

Results

We included 117 patients with a mean age of 61.4 (SD 6.6) years and a median follow-up of 47 months (35 to 50). Of these subjects, 25% had depressive symptoms, and 10% had some degree of cognitive impairment at the baseline visit. The frequencies of adverse health events recorded were: falls (7.7%), emergency room visits (53%), hospitalizations (33.3%), and death (2.6%). Depressive symptoms were associated with falls and emergency room visits in the bivariate analysis. Factors related to hospitalizations were acquiring the infection by intravenous drug use, frailty, and being younger than 65. Multivariate analysis was performed for the outcome of hospitalizations with the variables that showed $p < 0.05$ in the bivariate analysis, and none of them reached statistical significance.

Conclusions

Symptoms of depression and cognitive impairment are highly prevalent in these patients, so screening for both should be performed systematically in this population group. Studies with more patients and longer follow-up times are needed to identify risk factors associated with adverse events in older people living with HIV.

MAIN MESSAGES

- ◆ Human immunodeficiency virus (HIV) infection is associated with premature aging.
- ◆ Knowing the factors associated with adverse health events in this population will allow us to design interventions that favor healthy aging in people living with HIV.
- ◆ This work identifies clinical and sociodemographic factors associated with adverse health events in people older than 55 living with HIV.
- ◆ One limitation of our study is that we did not calculate the sample size but rather used convenience sampling; This prevented us from reaching conclusions due to the sample size and the follow-up time.

INTRODUCTION

Human immunodeficiency virus (HIV) infection has become a chronic disease in Western countries due to active antiretroviral therapy. Currently, 50% of people living with HIV are over 50 years of age, and around 20% of new cases of HIV infection occur in this same age group [1]. According to data from the 2021 hospital survey of patients with HIV infection in Spain, those over 50 years of age represent 55.9% of all patients [2]. Smit's predictive model with data from the Athena cohort predicts an even greater aging of this population, estimating that by 2030 39% of people living with HIV will be over 65 years of age [3].

In the general population, anyone over 65 is defined as an older adult because of the association of this chronological age with occupational and social changes; in people living with HIV, aging appears 10 years earlier than in people without HIV infection [4]. HIV infection is associated with earlier aging than the general population and with age-related conditions such as increased comorbidities and polypharmacy [5–7]. Older adults have a greater risk of adverse health events than the general population, so it is essential to develop prevention tools [8]. Frailty is a good predictor of health events in people over 65 without HIV infection [9,10]. In recent years, data on frailty in people living with HIV show a higher and earlier prevalence than in the general population [11–13]. Existing studies on frailty in people living with HIV confirm HIV infection as an independent risk factor for presenting frailty phenotype [14]. This highlights the need to look for a specific frailty phenotype in people living with HIV to identify those at increased risk and design strategies to prevent adverse health events [15].

This study aims to identify clinical and sociodemographic factors associated with adverse health events, defined as falls, emergency room visits, hospitalizations, and death, and their frequencies in people older than 55 years of age living with HIV.

METHODS

STUDY DESIGN AND POPULATION

A prospective exploratory study with four years of follow-up. Participants were recruited from two tertiary or high complexity hospitals in Madrid, whose physician services serve approximately 880 000 people and regularly follow up 4589 patients with HIV infection. Inclusion criteria were having confirmed HIV infection, being 55 years of age or older at the time of inclusion, being under regular follow-up in the infectious disease clinic of these centers, and signing the informed consent form. Patients with any condition that prevented assessment of their functional status were excluded. Recruitment was carried out prospectively using convenience sampling, offering participation in the study to all patients who attended the infectious disease consultation at these hospitals for follow-up of their HIV infection and met the inclusion criteria and none of the exclusion criteria. Recruitment began on April 1st, 2014, and closed on March 31st, 2015. The participant's medical records were consulted for follow-up from inclusion until April 1st, 2018. Recruitment time defined the number of patients included in this study, and sample size calculation was not conducted.

VARIABLES DESCRIPTION

At inclusion, the following clinical and sociodemographic variables were collected to assess their association with adverse health events in the patients included in the study. The sociodemographic data of the participants included age, sex, and educational level. The clinical variables were: route of acquisition of the infection, body mass index, immunovirological status, co-infection with hepatitis C virus, polypharmacy (six or more drugs), number of comorbidities, toxic habits (more than three units of alcohol consumption per day and smoking). A comprehensive geriatric evaluation was also carried out, including assessing functional status, cognitive status, frailty, presence of depressive symptoms, and assessment of the patient's social situation. Functional status was assessed using the Functional Ambulation Classification (FAC), with six categories, from zero (inability to walk) to five (climbing stairs) [16]; and the Barthel

index, a questionnaire with 10 items providing a score from zero (totally dependent) to 100 (independent for self-care) [17]. The Mini-Mental State Examination (MMSE) assessed the participants' cognitive status. This test has 30 items divided into seven sections; a score of less than 24 reflects cognitive impairment [18]. Fried's frailty phenotype based on five criteria: unintentional weight loss, exhaustion, slow gait, low physical activity, and weakness (based on handgrip strength), was used to determine frailty status by categorizing patients as robust, pre-frail (meeting up to two frailty criteria), and frail (meeting three or more frailty criteria) [19]. The presence of depressive symptoms in patients was assessed using the Spanish version of the Short Geriatric Depression Scale (S-GDS) with 15 mood items. A score above six indicates depressive symptoms, and one above nine indicates depression [20]. Finally, social support was assessed using the Gijón socio-familial assessment scale (abbreviated and modified), with questions on cohabitants, social contacts, and use of support networks. A score above 10 implies high social risk [21].

Patient's medical records were reviewed from the baseline visit to March 31st, 2018, to track any adverse health effects during the study: number of falls, number of emergency room visits, number of hospitalizations, and number and cause of deaths.

A protocol for participant recall based on telephone contact was established in case of loss to follow-up of patients.

STATISTICAL ANALYSIS

For the descriptive analysis, the characteristics of the participants were presented as frequencies (percentages) for categorical variables and means, with their standard deviations for quantitative variables. We also calculated the incidence of adverse health events throughout the study period and the possible variables associated with these adverse events by calculating the Chi-square or Fisher's exact test when any of the frequencies was less than five in the two-by-two table. We also calculated the relative risks (with their confidence intervals) of suffering an adverse event with and without the reference category of the potentially associated variable. All variables were transformed into dichotomous variables for the analysis. Finally, a multivariate analysis was also carried out using a logistic regression model with those variables for which a statistically significant association ($p < 0.05$) was found in the bivariate analysis previously done. All the analyses in this study were carried out with the SPSS Version 26.0 statistical program.

ETHICAL ASPECTS

The present study was approved by the research ethics committees of the Hospital General Universitario Gregorio Marañón and the Hospital General Universitario Ramón y Cajal.

Table 1. Sociodemographics (n =117).

Variable	Frequency
Sex: male/female (% male)	95/23 (80.3)
Mean age in years (SD)	61.4 (6.6)
< 65 years	87 (74.4%)
Educational level	
Illiterate	0 (0%)
Basic	41 (35%)
High school	49 (41.9%)
University	27 (23.1%)

SD: standard deviation.

Source: Prepared by the authors based on the results of the study.

RESULTS

The study included 117 patients with HIV infection aged 55 years or older who met the previously defined inclusion and exclusion criteria. All participants attended the clinic regularly during the study period and completed the follow-up, except for three participants who died during this period.

BASELINE DATA

The mean age of the participants at the time of inclusion in the cohort was 61.4 years (SD 6.6). Of the total participants, 95 (80.3%) were men. Twenty-seven patients (23.1%) had completed university studies, and none were illiterate. Table 1 describes the baseline sociodemographic data of the sample.

The most frequent route of acquisition of HIV infection was unprotected sex, with 71 (60.7%) cases; 34 (29.1%) corresponded to heterosexual practices, and 37 (31.6%) to men who had sex with men. In our study, 55 (47%) participants were taking six or more different drugs in addition to antiretroviral treatment, 90 (76.9%) had at least one comorbidity, 26 (22.2%) had none, and 46 (40%) had antibodies against hepatitis C virus. All clinical characteristics, including those related to HIV infection, are presented in Table 2.

The functional status of patients, defined by the functional ambulation classification and the Barthel index, showed that all participants could walk and climb stairs without assistance and were independent for basic daily living care, with the maximum score in all cases. According to Fried's criteria, 18 patients (15.4%) were considered frail, 61 (52.1%) were pre-frail, and 38 (32.5%) were robust. In the cognitive status assessment using the Mini-Mental State Examination, 105 patients (89.7%) scored between 24 and 30 points, while 12 (10.3%) showed some degree of cognitive impairment with scores below 24. Regarding mood, 29 participants (24.8%) had symptoms of depression with scores above six on the Short Geriatric Depression Scale. As for the social assessment, only two patients (1.7%) were at high social risk. The results of the initial assessment are shown in Table 3.

Table 2. Clinical and immuno-virological status.

Clinical variables		n (%)
Toxic habits (n = 117)	Active smoker	44 (36.6)
	Active drinker	4 (3.4)
Risk practices (n = 117)	Parenteral drug abuser	33 (28.2)
	Heterosexual intercourse	34 (29.1)
	Men who have sex with men	37 (31.6)
	Unknown or blood products transfusion	13 (11.1)
	Unprotected sexual intercourse	71 (60.7)
	Taking ≥ 6 different drugs	55 (47)
Comorbidities (n = 116)	None	
	1	49 (44.2)
	2	26 (22.2)
	3	18 (15.4)
	4	5 (4.3)
Undetectable viral load	N (%)	116 (99.1)
CD4 T-cell count CD4 cells/mL (n = 115) ¹		638 (144 to 1871)
Current CD4/CD8 T-lymphocyte ratio (n = 113) ¹		0.79 (0.00 to 3.62)
CD4/CD8 T-lymphocyte ratio < 1 (n = 113)		76 (67.3)
Co-infection with hepatitis C virus (n = 115)	N (%)	46 (40)

cells/mL: cells per milliliter;

Notes: ¹Median and interquartile range.

Source: Prepared by the authors based on the results of the study.

FOLLOW-UP

The median follow-up was 47 months (interquartile range from 35 to 50). During this time, nine patients (7.7%) suffered a fall, 62 (53%) went to the emergency room at least once, and 39 (33.3%) required hospitalization for more than 24 hours on one or more occasions. Three of them died during follow-up. Causes of death were urinary sepsis in the context of a patient with an advanced oncologic process, dilated cardiomyopathy in another patient, and septic shock due to intestinal perforation in the third patient who died.

BIVARIATE ANALYSIS

For the analysis, all variables with more than two categories and continuous variables were transformed into dichotomous variables, as explained below.

Independent variables: age greater than or equal to 65 years (yes/no), higher education (yes/no), route of acquisition of infection by parenteral drug injection (yes/no), CD4/CD8 lymphocyte ratio less than one (yes/no), presence of cognitive impairment with Mini-Mental State Examination score less than 24 points (yes/no), frailty (yes/no), depressive symptoms with Short Geriatric Depression Scale score greater than 6 points (yes/no) and presence of social risk when the Gijon scale score is greater than 10 points (yes/no).

Table 3. Comprehensive geriatric assessment.

Variable		n (%)
Functional Ambulation Classification	Independent walking on level ground and stairs	117 (100)
Barthel Index	Fully independent	117 (100)
Minimental State Examination ^a	< 24 ^b	12 (10.3)
	24 to 30	105 (89.7)
Frailty ^c	Robust	38 (32.5)
	Pre-frail	61 (52.1)
	Frail	18 (15.4)
Short-Geriatric Depression Scale (S-GDS)	≥ 6 ^b	29 (24.8)
	0 to 5	88 (75.2)
Gijón Scale	No social risk	115 (98.3)
	With social risk	2 (1.7)

Notes: ^aLess than 24 indicates cognitive impairment. ^bIndicates depressive symptoms. ^cFried Fried's Frailty Criteria.

Source: Prepared by the authors based on the results of the study.

Dependent variables: at least one fall during the studied period (yes/no), at least one visit to the emergency room during the studied period (yes/no), and at least one hospitalization of more than 24 hours during the studied period.

The results of this analysis are shown in Table 4.

FALLS

No association was found between falls and age, sex, level of education, toxic habits, route of acquisition of HIV infection, polypharmacy, comorbidities, CD4/CD8 lymphocyte ratio, hepatitis C virus co-infection, cognitive impairment, frailty, or social risk. A statistically significant association was found between the presence of depressive symptoms and suffering a fall during follow-up. A score of six or more on the Short Geriatric Depression Scale multiplied the risk of suffering a fall by 3.8.

EMERGENCY ROOM VISITS

No association was found between visits to the emergency room and age, sex, level of education, toxic habits, route of acquisition of HIV infection, polypharmacy, comorbidities, CD4/CD8 lymphocyte ratio, hepatitis C virus co-infection, cognitive impairment, frailty or social risk. However, a statistically significant association was found between the presence of depressive symptoms and one or more visits to the emergency room. A score of six or more on the Short Geriatric Depression Scale increased the risk of making at least one visit to the emergency room by a factor of 1.5.

HOSPITALIZATIONS

No association was found between hospitalizations longer than 24 hours and sex, level of education, toxic habits, polypharmacy, comorbidity, CD4/CD8 lymphocyte ratio, cognitive impairment, or social risk. A statistically significant association was found between age, the route of acquisition of infection, and the presence of frailty. Bivariate analysis of these variables showed that patients over 65 were 42.6% less likely to be admitted than those under 65. Patients whose route of acquisition of infection had been parenteral drug use had a 1.7-fold increased risk of admission, and being a frail patient, according to Fried's criteria, had a 1.8-fold increased risk of admission.

DEATHS

No association was found between any of the variables and death.

MULTIVARIATE ANALYSIS

The adverse health effects of "falls" and "emergency room visits" only showed a statistically significant association with the presence of depressive symptoms at the baseline visit, so multivariate analysis could not be performed. In the case of

"hospitalization", multivariate analysis was performed with the variables that showed $p < 0.05$ in the bivariate analysis. None of them showed statistical significance (Table 5).

DISCUSSION

Our study found an association between having depressive symptoms at the baseline visit and experiencing at least one fall and at least one visit to the emergency room during the follow-up period. We also found an association between hospitalizations and being younger than 65 years, frailty, and having acquired HIV infection through intravenous drug use. However, in the multivariate analysis, none of these variables were associated with hospitalizations.

The increase in life expectancy of people living with HIV in recent decades has brought about new challenges for healthcare professionals in caring for these patients, one of the most relevant of which is to ensure the healthy aging of people living with HIV. In the general population, older adults are considered to be people over 65 in relation to their withdrawal from active working life. In our study, we chose to include adults older than 55 years since the onset of aging-related comorbidities occurs ten years earlier in people living with HIV compared to older adults without HIV infection [4]. In recent years, however, after completing our study design, the cutoff point for defining older adults with HIV infection has been set at 50 years [15,22].

The epidemiological and sociodemographic characteristics of the subjects included in our study were similar to those reflected in the hospital survey of patients with HIV infection conducted in Spain in 2022 [2]: four males for every female, 60% of the participants had secondary or higher education, and the most frequent route of acquisition of HIV infection was sexual, in around 60%. Given these data, we believe that our population is representative of patients treated in daily clinical practice and that our results can be extrapolated to people living with HIV over 55 years of age residing in Spain or similar settings.

With one exception, all our patients had undetectable HIV viral load and a median CD4 lymphocyte count of 638 cells per cubic millimeter, showing a good immuno-virologic response to antiretroviral therapy. However, 65% had a CD4/CD8 lymphocyte ratio of less than one, indicating that immune system function was not fully restored, as described in previous studies [23].

Forty-seven percent of the subjects in our study were taking six or more different drugs. This high prevalence of polypharmacy is related to the high prevalence of comorbidities in these patients. Thus 41.9%, in addition to HIV infection, suffered from two to four chronic conditions, making them susceptible to worse treatment adherence, higher probabilities of interactions and adverse reactions to medication, and, in the long term, a higher risk of adverse health effects [24]. These results align with Holtzman's study in a cohort of people living with HIV, in which 74% of subjects over 50 were taking five or more medications [25]. However, our study found no association

Table 4. Analysis of the association between risk factors and adverse health events.

Variables potentially associated with the adverse event ^b	Falls		Emergency room visit		Hospitalizations		N ^a
	N (%)	RR (95% CI)	N (%)	RR (95% CI)	N (%)	RR (95% CI)	
Age ≥ 65 years	3 (10)	0.69 (0.18 to 2.51)	15 (50)	0.92 (0.37 to 1.95)	5 (16.7)	0.42 (0.18 to 0.99)	30
Sex (male)	6 (6.4)	2.04 (0.55 to 7.56)	46 (48.9)	0.73 (0.50 to 1.02)	28 (29.8)	0.62 (0.36 to 1.05)	95
Higher education (no)	6 (6.7)	0.60 (0.16 to 2.24)	50 (55.6)	1.25 (0.78 to 1.98)	31 (34.4)	1.16 (0.60 to 2.22)	90
Active smoker (yes)	3 (6.8)	0.83 (0.21 to 3.15)	22 (50)	0.91 (0.63 to 1.31)	14 (31.8)	0.92 (0.54 to 1.58)	44
Acquisition of infection by parenteral drug use	1 (3)	0.31 (0.04 to 2.44)	18 (54.5)	1.04 (0.71 to 1.51)	16 (48.5)	1.77 (1.07 to 2.90)	33
Polyparmacy (yes)	5 (9.1)	1.40 (0.39 to 4.98)	32 (58.2)	1.20 (0.85 to 1.69)	19 (34.5)	1.07 (0.64 to 1.78)	55
CD4/CD8 ratio < 1	5 (6.6)	0.81 (0.20 to 3.21)	42 (55.3)	1.20 (0.80 to 1.80)	28 (36.8)	1.70 (0.86 to 3.36)	76
HCV co-infection	4 (8.7)	1.20 (0.34 to 4.80)	24 (52.2)	0.97 (0.68 to 1.38)	20 (43.5)	1.57 (0.95 to 2.61)	46
Cognitive impairment (yes)	1 (8.3)	0.97 (0.11 to 8.39)	7 (63.6)	1.22 (0.75 to 1.98)	3 (27.3)	0.80 (0.29 to 2.18)	12
Frailty (yes)	2 (11.1)	1.37 (0.31 to 5.95)	11 (61.1)	1.18 (0.78 to 1.79)	10 (55.6)	1.89 (1.13 to 3.17)	18
Depressive symptoms (yes)	5 (17.2)	3.79 (1.09 to 13.18)	21 (72.4)	1.55 (1.13 to 2.13)	12 (41.4)	1.34 (0.79 to 2.30)	26
Comorbidities (yes)	8 (8.2)	1.55 (0.20 to 11.69)	54 (55.1)	1.30 (0.75 to 2.28)	33 (33.7)	1.06 (0.52 to 2.18)	98
Total ^c	9		62		39		

CI: confidence interval; RR: relative risk.

Notes: ^aTotal persons with the category of the factor assessed. ^bShown is the category that makes up the numerator of the relative risk. ^cTotal persons with the adverse event. Source: Prepared by the authors based on the results of the study.

Table 5. Baseline variables associated with hospitalization, multivariate analysis.

Risk factors	OR (95% CI)
Age (\geq 65 years)	0.3 (0.12 to 1.22)
Parenteral drug use	1.2 (0.32 to 5.07)
Frailty	(0.78 to 6.71)

CI: confidence interval; OR: odds ratio.

Source: Prepared by the authors based on the results of the study.

between comorbidities, polypharmacy, and adverse health events, probably due to the small sample size and insufficient follow-up time.

All patients included in the study had optimal functional status, could walk unaided, and were autonomous in their daily living activities, despite which 15.4% were classified as frail and 52.1% as being pre-frail using Fried's criteria. Compared with other studies conducted in Spain in adults older than 65 without HIV infection, our prevalence of frailty was appreciably higher [26–28]. In the Fradea cohort, also in older adults without HIV infection, the prevalence of frailty was similar to that of our study. Still, we must consider that it included subjects over 70 years of age, of whom 27.8% were functionally dependent on daily living activities [10]. Our data confirms that people living with HIV older than 55 years are more likely to be frail than the general population.

Frailty is a good predictor of adverse health events in older adults without HIV infection [10]. In our study, frailty was associated with hospitalizations, but we found no association with falls, emergency room visits, or death. Patients older than 65 years were less likely to require hospitalization than those younger than 65 years; this may be because patients older than 65 years represent an age group that suffered the worst consequences of the period before effective HIV treatments and survived, being probably the strongest. Depression is one of the most frequent comorbidities in people living with HIV, and this infection increases the risk of developing depressive symptoms [29]. In our study, about 25% of patients had symptoms of depression at the baseline visit, and it was the only factor associated with increased falls and emergency room visits. In the Funcfrail study, depressive symptoms in people living with HIV older than 50 years were found to be associated with functional impairment [30].

One of the study's main limitations is that convenience sampling selected the sample for accessibility and feasibility reasons. The fact that we did not calculate the sample size prevents us from drawing conclusions. A larger sample with more follow-up time would likely have allowed us to find more factors associated with adverse health events and a different multivariate analysis. Undoubtedly, larger studies specifically designed for studying aging in older HIV-infected patients are needed.

RECOMMENDATIONS

Over the last few years, the characteristics of patients with HIV infection have changed dramatically; this is why professionals must adapt to this new reality by promoting a proactive, person-centered healthcare system through a multidisciplinary approach that includes a geriatric assessment.

Specifically, it is important to include in the routine follow-up of older patients with HIV infection the assessment of possible polypharmacy complications and screening for frailty, cognitive impairment, and depression to promote healthy aging in this population.

Notes

Contributor roles

MRS, MSC, FB: conceptualization, study design, fieldwork, database management and statistical analysis, first draft, and manuscript revision. MRS, AP, MSC, AP, FB: conceptualization, study design, and manuscript revision.

Competing interests

The authors declare no conflicts of interest.

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Ethics

The study was approved by the ethics committees of the hospitals where it was performed: Hospital Ramón y Cajal, approved in minute 06/2014, dated June 5th, 2014; and Hospital Gregorio Marañón, approved in minute 02/2015, dated February 23rd, 2015.

Data sharing statement

The database for this study is available upon request.

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Estudio exploratorio prospectivo de los factores asociados a eventos adversos en salud en personas mayores que viven con VIH

Resumen

Introducción

Gracias al tratamiento antirretroviral en Occidente, la infección por el virus de la inmunodeficiencia humana (VIH) se ha convertido en una enfermedad crónica. Hoy, el 50% de las personas que viven con VIH son mayores de 50 años y en torno al 20% de los nuevos casos de esta infección se dan en ese mismo grupo etario. Este trabajo tiene por objeto el analizar los factores clínicos y sociodemográficos asociados a eventos adversos en salud (caídas, visitas a urgencias, ingresos hospitalarios y muerte) en una cohorte de personas mayores de 55 años con infección por VIH.

Métodos

Estudio exploratorio prospectivo con cuatro años de seguimiento. Se incluyeron personas con infección por VIH seguidas en las consultas de enfermedades infecciosas de dos hospitales de Madrid. Se recogieron datos sociodemográficos y variables clínicas. Se evaluó la situación funcional, mental y social de los participantes. Se revisaron en las historias clínicas de los pacientes número de caídas, visitas a los servicios de urgencias, ingresos hospitalarios y muertes producidas durante el periodo estudiado.

Resultados

Se incluyeron 117 pacientes con una edad media de 61,4 (desviación estándar 6,6) años y una mediana de seguimiento de 47 meses (35 a 50). De estos sujetos, el 25% tenía síntomas depresivos y el 10% tenía algún grado de deterioro cognitivo en la visita inicial. Las frecuencias de eventos adversos en salud registradas fueron: caídas del 7,7%, visitas a urgencias del 53%, ingresos hospitalarios del 33,3% y muertes del 2,6%. Los síntomas de depresión se asociaron con caídas y visitas a urgencias en el análisis bivariado. Los factores asociados a ingreso hospitalario fueron haber adquirido la infección por consumo de drogas por vía parenteral, ser frágil y ser menor de 65 años. Se realizó análisis multivariado para el resultado de ingresos hospitalarios con las variables que mostraron $p < 0,05$ en el análisis bivariado y ninguna de ellas alcanzó significación estadística.

Conclusiones

Los síntomas de depresión y el deterioro cognitivo se presentan con una alta frecuencia en estos pacientes, por lo que debería realizarse tamizaje de ambos de forma sistemática en este grupo poblacional. Son necesarios estudios con más pacientes y mayor tiempo de seguimiento que permitan identificar los factores de riesgo asociados a eventos adversos en las personas mayores que viven con VIH.



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