



Clinical-epidemiological analysis of HIV positive patients hospitalized in a Burn Therapy Unit

Análise clínico-epidemiológica de pacientes HIV positivos internados em uma Unidade de Terapia de Queimados

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■ ABSTRACT

Introduction: HIV infection and burns are common public health issues, especially in low- and middle-income countries. There is a paucity in the literature evaluating the epidemiology of burns hospitalization in HIV patients. This study aims to evaluate the clinical and epidemiological profile of HIV-positive patients hospitalized in a Burn Therapy Unit. **Methods:** A retrospective analysis of burn patients diagnosed with HIV was performed at the Therapy Unit of the State Hospital of Bauru between 2008 and 2018. **Results:** 2,364 medical records were reviewed, and 14 (0.6%) patients were diagnosed with HIV. The mean age was 43.1 years. Regarding gender, nine (64.3%) were male, and five (35.7%) were female. The most common mechanism was direct flame in 11 (78.7%) cases. The etiology was alcohol (42.9%) in six patients, in three explosions (21.5%), and the others were gasoline, cigarettes and contact with exhaustion, all with one (7.1%) case. When the cause of these burns was evaluated, nine (64.3%) were due to accidents, either at work or home, two (14.3%) for attempted murder, one (7.1%) self-extermination, and two (14.3%) cases had no information. Regarding total burn surface area, five (37.5%) had burns of 0-10%, three (21.4%) 11-20% and five (35.7%) greater than 20%, and one was unknown. Four (28.6%) showed airway lesions. Two (14.3%) patients died. **Conclusion:** The prevalence of burned HIV-positive patients admitted to a specialized unit for this treatment is like the national one, with similar characteristics concerning age and gender.

Keywords: Burns; HIV Infections; Public Health; Epidemiology; Prevalence; Burn units.

■ RESUMO

Introdução: A infecção pelo HIV e as queimaduras são um problema comum de saúde pública, principalmente em países de baixa e média renda. Há uma escassez na literatura sobre a epidemiologia de pacientes HIV positivos hospitalizados em unidades de queimados. O objetivo deste estudo é avaliar dados clínico-epidemiológicos de pacientes HIV positivos internados em uma Unidade de Terapia de Queimaduras. **Métodos:** Realizada análise retrospectiva de pacientes com diagnóstico de HIV internados na Unidade de Terapia de Queimados do Hospital Estadual de Bauru entre os anos de 2008 e 2018. **Resultados:** No total, foram revisados 2364 prontuários e encontrados 14 (0,6%) pacientes com diagnóstico de HIV. A idade média foi 43,1 anos. Quanto ao gênero, nove (64,3%) eram masculinos e cinco (35,7%) femininos. O mecanismo mais comum foi por chama direta em 11 (78,7%) casos. A etiologia foi álcool (42,9%) em seis pacientes, em três explosão (21,5%) e os demais foram gasolina, cigarro e contato com escapamento, todos com um (7,1%) caso. A causa mais comum foi acidente, em nove (64,3%) casos, dois (14,3%) tentativa de homicídio, um (7,1%) autoextermínio e dois (14,3%) casos sem informação.

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Em relação à superfície corporal queimada (%SCQ), cinco (37,5%) apresentavam queimaduras de 0-10%, três (21,4%) de 11-20% e cinco (35,7%) maiores que 20%, e em um era desconhecida. Quatro (28,6%) apresentaram lesões de vias aéreas. Dois (14,3%) pacientes foram a óbito. **Conclusão:** A prevalência de pacientes HIV positivos queimados internados em uma unidade especializada para este tratamento se assemelha à nacional, com características semelhantes em relação a idade e gênero.

Descritores: Queimaduras; Infecções por HIV; Saúde Pública; Epidemiologia; Prevalência; Unidades de queimados.

INTRODUCTION

Brazil is one of the most organized countries regarding the treatment of HIV-positive patients, with its policy of universal health access and drug distribution as highlights, resulting in reduced lethality and increased survival^{1,2}. However, even with the structured program, there has been an increase in the incidence of HIV in recent years, mainly in the North and Northeast regions, with a higher percentage of infected women and internalization of the disease³.

Like HIV, burn injuries are an important public health issue, especially in low- and middle-income countries. In Brazil, approximately 100,000 accidents are estimated per year, with an average of 40,000 hospitalizations⁴. These injuries can cause functional disability to patients, stigmatizing aesthetic changes, psychological sequelae and death⁵.

Despite the above factors, there is no report in the literature on the prevalence of HIV patients in Burn Therapy Units in Brazil. The importance of knowing epidemiological data, such as incidence and prevalence, is to analyze the extent of this problem and identify the characteristics of involvement and causes, helping to allocate resources better and create prevention programs⁶.

OBJECTIVE

This article aims to analyze the clinical-epidemiological data of HIV-positive patients hospitalized in a Burn Therapy Unit.

METHODS

This descriptive, cross-sectional and retrospective study seeks to analyze the prevalence of patients diagnosed with HIV admitted to the Burn Therapy Unit of the Hospital Estadual de Bauru between 2008 and 2018.

The Burns Unit (BTU) is located at the Bauru State Hospital in Bauru, SP. It was founded in 2004 and is one of the 19 burn treatment units in São Paulo and a reference for patients in the 645 municipalities in the

state. The Burn Center comprises an intensive care unit (ICU) and a ward with 4 and 12 beds, respectively, and has the structure to treat all age groups.

All patients at the time of admission to the BTU are tested for HIV.

The variables analyzed in the medical records were age, sex, location, comorbidities, etiology of burns, body surface burned, anatomical regions involved, need for an ICU bed, inhalation injury, number of surgical interventions, complications and mortality.

Data were collected in an Excel table and analyzed descriptively.

All procedures performed in this study followed the 1964 Declaration of Helsinki and its subsequent amendments. The local Ethics Committee approved this study (protocol number: 35971220.4.0000.5411).

RESULTS

Two thousand three hundred sixty-four medical records were reviewed, and 14 (0.6%) patients were diagnosed with HIV (Figure 1). The mean age was 43.1 years. As for gender, nine (64.3%) were male, and five (35.7%) were female (Table 1).

The mechanism was by the direct flame in 11 (78.7%) cases, one (7.1%) by scalding, one (7.1%) by contact and one (7.1%) unknown. The etiology was alcohol (42.9%) in six patients, in three explosions (21.5%) and the others were gasoline, cigarettes and contact with exhaust, all with one (7.1%) case, in addition to one not informed (Table 2).

When the cause of these burns was evaluated, nine (64.3%) were due to accidents, either at work or home, two (14.3%) due to attempted murder, one (7.1%) due to self-extinction, and two (14.3%) cases had no information.

Regarding comorbidities prior to hospitalization, two (14.3%) patients were crack users, one also had hepatitis C, and two (14.3%) were alcoholics.

As for the body surface burned (%BSB), the average was 16.9%. Five (37.5%) had burns of 0-10%, three (21.4%) of 11-20%, five (35.7%) of more than 20%, and one was unknown. Airway injuries were diagnosed in four (28.6%) patients.

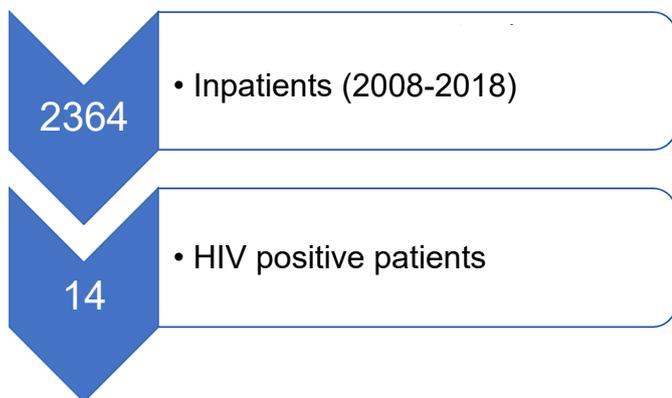


Figure 1. 2364 medical records of patients admitted to the Burn Therapy Unit were reviewed, and 14 (0.6%) were found to be diagnosed with HIV.

Table 1. General data of HIV-positive patients admitted to the Burn Therapy Unit of the Hospital Estadual de Bauru.

General data	
Ages (Mean)	43.1 (30 - 56)
Gender	
Men	9 (64.3%)
Women	5 (35.7%)
Comorbidities	
Yes	4 (28.6%)
No	10 (71.4%)
%BSB	
Average	16.90%
0-10%	5 (35.7%)
11-20%	3 (21.4%)
>20%	5 (35.7%)
Unknown	1 (7.14%)
Airway Injury	4 (28.6%)

The anatomical sites that presented the most injuries were the upper limbs (10), followed by the trunk (9), face/neck (4) and lower limbs (4).

Surgical treatment, debridement or grafting was required in ten patients (71.4%) and admission to the intensive care unit in nine (64.3%).

Six (42.9%) patients had complications during hospitalization, the most common being pneumonia, in four (24.6%) cases. Two (14.3%) patients died.

DISCUSSION

This is the first Brazilian study to analyze the prevalence of HIV-positive patients in a BTU. Another seven articles in the literature addressed this issue, most of which were carried out on the African continent - South Africa, Malawi, Uganda, Zambia, Zimbabwe

Table 2. Data on the mechanism and etiology of burns in HIV-positive patients admitted to the Hospital Estadual de Bauru.

Characteristics of Burns	
Mechanism	
Fire	11 (78.7%)
Scald	1 (7.1%)
Contact	1 (7.1%)
Unknown	1 (7.1%)
Etiology	
Alcohol	6 (42.9%)
Water	1 (7.1%)
Explosion	3 (21.4%)
Cooking Gas	1 (7.1%)
Cigarette	1 (7.1%)
Exhaust	1 (7.1%)
Unknown	1 (7.1%)
Cause	
Accident	9 (64.3%)
Suicide attempt	1 (7.1%)
Assassination attempt	2 (14.3%)

and Uganda, with a prevalence between 0.5-33.3%⁷⁻¹³. This variance can be explained by the difference in HIV prevalence in the general population between countries, with South Africa and Uganda presenting 22% and 6.5%, respectively^{7,12}. The prevalence is approximately 0.5% in Brazil, a value similar to our study, 0.6%¹⁴.

The mean age of the patients evaluated was 43.1 years, higher than the mean reported in the literature, which ranged between 28.4 and 39.47-9.12. Regarding gender, there was a predominance of males in 64.3% of the patients, unlike what was reported in six other studies, in which between 57.6% and 100% were female^{7,11,12}. Two reasons can explain the difference in age and sex. Due to the higher prevalence in Brazil of HIV patients aged between 30-49 years and male¹⁵, and the predominance of hospitalizations for burns in men in the national territory, as reported by Arruda et al.¹⁶, 61.3% of hospitalized patients were male.

The main burn mechanism was flames in 78.7% of the patients. In the literature, four studies on HIV burns reported the etiology, and this was the most common in all, ranging between 41.2% and 100%^{7,11,12}. Among the causes, 21.4% of the cases were due to aggression, whether self-extermination or homicide, which exposes the social and psychological vulnerability that the population living with HIV faces, such as stigma, prejudice, stress and unfavorable economic conditions¹⁷.

Alcohol consumption and crack use were the most prevalent comorbidities in our study, with 14.3% each. Ikeda et al.¹⁸ demonstrated a prevalence of alcoholism of 5.6% in the HIV-infected population, lower than in the general population. This difference can be explained because burns related to alcohol consumption have increased worldwide, ranging from 1-50%^{19,20}. Regarding crack use, Carvalho & Seibel²¹ showed a prevalence of 6.6% of HIV patients in this population, but we did not find data on the possible relationship between burns and crack use.

Mortality was 14.3%, higher than that described by Santos et al.²² when analyzing the general Brazilian population hospitalized for burns, 8.3%. However, within the range of values found in the literature in burns studies in HIV-positive patients - 9.6% to 50%. HIV is not described as a risk factor for mortality, but the state of the patient's immune system, such as CD4^{10,12} count.

This work is not excluded from limitations. The retrospective character through the collection of data in medical records limits the scope of the information collected, and the form of descriptive analysis does not allow statistical correlations. We did not access the patients' CD4 and viral load values. The sample is restricted, but this is a characteristic of the study of burns in this population, where n ranged from 5 to 73 individuals⁷⁻¹³.

CONCLUSION

The prevalence of HIV-positive burned patients admitted to a BTU and characteristics such as gender and age are like the rates of seropositive patients in Brazil. The importance of this article is the possibility of using these data to focus on prevention campaigns and resource allocation concerning burns in this population.

COLLABORATIONS

MSS	Analysis and/or interpretation of data, Data Collection, Conceptualization, Conception and design of the study, Project Management, Writing - Preparation of the original, Supervision, Visualization.
BFMN	Data Collection, Writing - Preparation of the original.
ABPMO	Data Collection, Conceptualization, Writing - Preparation of the original.
MMC	Analysis and/or interpretation of data, Data Collection, Methodology.
LBC	Analysis and/or interpretation of data, Data Collection, Writing - Preparation of the original.

WRM	Data Collection, Methodology, Writing - Preparation of the original.
CR	Data Collection, Writing - Review and Editing, Supervision.
AAP	Writing - Review and Editing, Supervision.

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