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Brief communication

Epidemiology and clinical characteristics of herpes zoster in a tertiary care hospital in Brazil

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ABSTRACT

Background: There is little information on herpes zoster from hospital registries in South America. The aim of this study was to describe the epidemiological and clinical aspects of herpes zoster (HZ) in hospitalized patients.'

Methods: We searched for hospital-based records during the period from March 2000 to January 2017 in a 700-bed tertiary-care hospital located in southern Brazil. The medical records of all eligible patients were reviewed, and data regarding demographics, medical history, clinical and laboratory characteristics, treatment regimens, and clinical outcomes were collected. Patients were also evaluated for mortality.

Results: There were 801 records of herpes zoster according to the proposed criteria. Most patients with HZ presented a cutaneous clinical form of the disease with involvement of a single dermatome ($n = 589$, 73.5%). Additional clinical characteristics included postherpetic neuralgia (22.1%), ophthalmic HZ (7.6%) and meningoencephalitis (2.7%). Most patients presented immunocompromised conditions (64.9%) including HIV, administration of immunosuppressive agents, and malignant neoplasms. During this period, there were 105 (13.1%) deaths, which were mostly unrelated to HZ. Five deaths were related to HZ meningoencephalitis.

Conclusion: The results of this study demonstrate a high burden of HZ disease in a Brazilian tertiary care hospital in the HZ vaccination era. Awareness of the incidence and comorbidity factors associated with HZ in Latin American countries such as Brazil contribute for adoption and implementation of strategies for immunization in this area.

Herpes zoster (HZ), which is caused by reactivation of latent varicella zoster virus (VZV), afflicts about 30% of the global population overall and is accompanied by substantial morbidity.[1–3] However, there is little information on herpes zoster from hospital registries in Brazil. The aim of this study was to describe the clinical presentation of herpes zoster in hospitalized patients.

We retrospectively searched for hospital-based records of B02 code (ICD-10) between March 2000 and January 2017 in a 700-bed tertiary-care university hospital located in southern Brazil. The medical records of all eligible patients were reviewed, and data regarding demographics, medical history, clinical and laboratory characteristics, treatment regimens, and clinical outcomes were collected. The study was approved

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Table 1 – Characteristics of 801 patients with herpes zoster attending a tertiary-care hospital in Brazil.

Age, years; mean (range)	48.8 (1–97)
Age≥50 years; *n* (%)	423 (52.8)
Sex, female *n* (%)	448 (55.9)
Outpatient care, *n* (%)	26 (3.2)
Admission through the emergency room, *n* (%)	179 (22.3)
Inpatient care, *n* (%)	596 (74.4)
Time of hospitalization,in days; mean (range)	6.65 (1–87)
Clinical manifestations	*n* (%)
Cutaneous involvement of single dermatome	589 (73.5)
Cutaneous involvement >1 dermatome	129 (16.1)
Ophthalmic	61 (7.6)
Meningoencephalitis	22 (2.7)
Postherpetic neuralgia	178 (22.1)
Ramsay-Hunt syndrome	14 (1.7)
Immunosuppression conditions, *n* (%)	520 (64.9)
HIV	248 (30.9)
SOTR	76 (9.4)
Hematologic transplant recipientes	20 (2.4)
Chemotherapy for malignancy	130 (16.2)
Other immunosuppressant drugs	150 (18.7)
Characteristic HIV-infected patients	*n* (%)
CD4, cells/mm^3 mean (range)	223 (8–1555)
Diagnosis during hospitalization, *n* (%)	33 (4.1)
Receiving HAART, *n* (%)	90 (11.2)
Vertical transmission of HIV, *n* (%)	32 (4)
Common comorbidities	*n* (%)
Chronic kidney disease	91 (11.4)
Diabetes mellitus	90 (11.2)
Autoimune diseases	84 (10.4)
Treatment	*n* (%)
Oral acyclovir	320 (39.9)
Parenteral acyclovir	440 (54.9)
All-cause mortality, *n* (%)	105 (13.1)

SORT, solid organ transplant recipient; HAART, highly active antiretroviral therapy.

by the local ethics committee. Data were entered and analyzed using SPSS software, version 18. Descriptive statistics were produced for all variables studied.

There were 801 records of herpes zoster according to the proposed criteria. Characteristics of the patients are described in Table 1. Most patients were women (*n* = 448; 56%), with an average of 48.8 years (standard deviation of 22.2). Most herpes zoster diagnosis occurred in hospitalized patients (74.4%). The average length of hospitalization was 7 days (range 1–87 days). Most patients presented cutaneous herpes zoster involvement of a single dermatome (*n* = 589, 73.3%). Disseminated cutaneous herpes zoster with involvement of two or more dermatomes was infrequent in this cohort. Additional clinical manifestations included postherpetic neuralgia, ophthalmic herpes zoster, and meningoencephalitis. The majority of patients with herpes zoster presented with underlying immunocompromised conditions including HIV, taking immunosuppressive agents and malignant disease. The patients were followed for a median of 28.2 (2.8–77.5) months. During this period, there were 105 (13.1%) deaths, which were mostly unrelated to HZ. Five deaths were related to herpes zoster meningoencephalitis.

In a prospective, observational study conducted in a primary hospital's emergency room in São Paulo, Brazil, one-hundred forty-six zoster patients were enrolled.[4] The mean (SD) age was 69.9 years old, and the majority were female (64.4%). At baseline, 78.1% of patients presented with a herpes zoster rash. Approximately half of the patients (49.3%) experienced post herpetic neuralgia. The most commonly affected site was the thoracic region (38.4%), followed by the cervical (15.1%) and lumbar (13.7%) regions. Underlying conditions of the patients were not described in the study. A recent study in Iran evaluated herpes zoster cases admitted in a university hospital.[5] Most patients were males (60.4%). Head and neck involvement occurred in 78 people (59.1%), thoracoabdominal region in 37 cases (28%), and extremities in 16 cases (12.1%). Predisposing factors included diabetes mellitus, malignancy, immunosuppressive medication, HIV infection, radiotherapy, and tuberculosis. In our study, herpes zoster was diagnosed in most hospitalized patients ≥50 years, with immunosuppressive conditions including HIV infection, malignancy, and administration of immunosuppressive medications. Despite the high rate of immunosuppressive conditions of our patients, cutaneous involvement of a single dermatome was the most frequent clinical manifestation. Similar to our findings, unusual manifestations of herpes zoster such as central nervous and ophthalmic involvement were rarely reported.[6,7]

The overall all-cause mortality rate of our patients with herpes zoster was relatively low (13%) when considering the comorbidity conditions of the patients. The data from the World Health Organization (WHO) database has shown that the estimates for the overall herpes zoster mortality incidence in those aged ≥50 years varied widely between the countries. In the European (WHO) database, the overall mortality ranged from 0 to >0.07/100,000.[8,9] A similar increase with age was seen for the hospital fatality rate; 0.6% in those 45–65 years in the UK and 7.1% in those ≥80 in Spain. Although the available data on herpes zoster-associated mortality are too heterogeneous to allow inter-country comparisons, they demonstrate that the mortality rate for herpes zoster is not high. Awareness of the incidence and comorbidity factors associated with HZ in the elderly and immunocompromised population in Latin American countries such as Brazil contribute for adoption and implementation of strategies for immunization in this area. *Limitations of our study includes* the *retrospective* design, *hospital*-based, and short follow-up of the patients.

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Conflicts of interest

The authors declare no conflicts of interest.

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