







## Caracterización clínica de pacientes con herpes zoster Clinical Characterization of Patients with Herpes Zoster

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### RESUMEN

**Introducción:** El herpes zóster, es una enfermedad viral aguda, se provoca por la reactivación del virus de la varicela-zóster. En Cuba, existe una tendencia a su incremento, relacionado con el envejecimiento de la población, la incidencia de los tumores malignos y la infección por el virus de la inmunodeficiencia humana. **Objetivo:** Caracterizar a los pacientes con herpes zoster. **Métodos:** Se realizó un estudio descriptivo, de corte transversal, en el Policlínico Luis Li Trigent, en el periodo de septiembre de 2023 a septiembre de 2024. La población de estudio fueron los 64 pacientes que acudieron a la Consulta de Dermatología y se les diagnosticó por el método clínico, un herpes zoster. Mediante el consentimiento informado, los pacientes mostraron su voluntad para participar en el estudio. Las variables estudiadas fueron: La edad, el sexo, la localización anatómica, los factores predisponentes y las complicaciones. Se aplicó la estadística descriptiva, para cada variable. **Resultados:** El grupo de 70 a 79 años aportó el mayor número de pacientes con un 34.3 y un 53.1 % fueron mujeres, la forma intercostal se presentó en el 60.9 % de los pacientes. En el 53.1 % la causa precipitante fue el estrés y la neuralgia posherpética se presentaron en un 18.7 % **Conclusiones:** El herpes zoster es una enfermedad viral que afecta con mayor frecuencia a los adultos con estrés mantenido u otra causa de inmunodepresión, sobre todo, en el tórax. La neuralgia posherpética predomina como complicación del HZ en la serie estudiada.

**Palabras clave:** herpes zoster, inmunodepresión, neuralgia

**Descriptores:** herpes zoster; inmunidad celular; tolerancia inmunológica; neuralgia

### ABSTRACT

**Introduction:** Herpes zoster is an acute viral disease caused by the reactivation of the varicella-zoster virus. In Cuba, there is a tendency to its increase, related to the aging population, the incidence of malignant tumors, and infection by the human immunodeficiency virus. **Objective:** To characterize patients with herpes zoster. **Methods:** A descriptive cross-sectional study was conducted at the Luis Li Trigent Polyclinic from September 2023 to September 2024. The study included 64 patients who attended the Dermatology Clinic and were diagnosed with herpes zoster through clinical methods. They expressed their willingness to participate in the study through informed consent, after being explained what it entailed and the confidentiality of the results. The variables studied were: age, sex, anatomical location, predisposing factors, and complications. Descriptive statistics procedures were performed for each variable through percentage calculation. **Results:** The 70 to 79 age group provided the highest number of patients with 34.3%, and 53.1% were women. The intercostal form occurred in 60.9% of patients. In 53.1%, the precipitating cause was stress, and postherpetic neuralgia occurred in 18.7%. **Conclusions:** Herpes zoster is a viral disease that most frequently affects adults subjected to stress or other causes of immunosuppression, especially in the thoracic region. Postherpetic neuralgia predominates as a complication of HZ in the studied series.

**Keywords:** herpes zoster, immunosuppression, neuralgia

**Descriptors:** herpes zoster; immunity cellular; immune tolerance; neuralgia

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## INTRODUCTION

Herpes Zoster (HZ) is an acute viral infectious disease with dermatological manifestations associated with neurological conditions. It is caused by the reactivation of the varicella-zoster virus that remains latent in the sensory ganglia since the primary infection. The decline in cellular immunity, whether due to aging or treatments or diseases that induce immunosuppression, leads to viral reactivation.<sup>(1)</sup>

In developed countries, it is estimated that up to 30% of the population will develop HZ during their lifetime, and up to 50% in people aged 85 or older.<sup>(2)</sup> Worldwide, it affects people of any race and sex, being more common in individuals over 45 years of age. In Cuba, there is a tendency towards an increase in HZ, which is related to population aging, the incidence of malignant tumors, and infection by the Human Immunodeficiency Virus (HIV).<sup>(3)</sup>

HZ is a unilateral condition characterized by the appearance of grouped vesicles on an erythematous base, located within one or more dermatomes, associated with intense pain that may precede the lesions by 48 to 72 hours.<sup>(4)</sup> The most frequent complication is postherpetic neuralgia, which is considered when neuropathic pain persists beyond three months after the diagnosis of HZ. Other complications include bacterial superinfection, peripheral facial paralysis, systemic involvement (pneumonitis, hepatitis, arthritis, myocarditis, pericarditis, aseptic meningitis, meningoencephalitis, transverse myelitis, multifocal vasculopathy), and auditory and visual impairments.<sup>(5)</sup>

The treatment of the disease aims to reduce its severity and duration, the incidence of postherpetic neuralgia, and the frequency of serious complications in immunocompromised patients. Therapy is based on oral antiviral drugs (acyclovir, famciclovir, valacyclovir).<sup>(6)</sup>

There is a worldwide distribution increase and a rising incidence of HZ in Cuba; therefore, conducting research on this topic is considered necessary to enable timely treatment and prevent complications. This study is carried out with the objective of characterizing patients with herpes zoster.

## METHODS

A descriptive cross-sectional study was conducted at the Luis Li Trijent Polyclinic in the

municipality of Güines, Mayabeque province, from September 2023 to September 2024.

The study population consisted of 64 patients who attended the Dermatology Clinic and were clinically diagnosed with herpes zoster.

The variables studied were:

-Age: 0 to 9, 10 to 19, 20 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89

-Sex: according to biological sex, female or male.

-Anatomical location: cervical herpes zoster, intercostal herpes zoster, herpes zoster of the ophthalmic branch, herpes zoster of the geniculate ganglion, lumbosacral, dorsofemoral, sacroischiatic, disseminated herpes zoster.

-Predisposing factors: stress, malignant diseases, treatment with immunosuppressants, unknown cause.

-Complications: postherpetic neuralgia, bacterial superinfection, eczematization, keratitis, corneal ulcers, facial paralysis, meningitis, pneumonia, hepatitis.

The data obtained were processed in a database created for this purpose, using the InfoStat statistical package (V10.0). Descriptive statistics procedures were used for each variable through percentage calculation.

The study complied with ethical aspects; patients provided their informed consent, thus showing their willingness to participate in the study, after being explained what it entailed and the confidentiality of the results.

## RESULTS

The distribution of patients according to age is shown. One was an infant, accounting for 1.5%. There were no inclusions in the 10 to 19 or 20 to 29 age groups. The highest percentage corresponded to the 70 to 79 age group with 34.3%, followed by the 80 to 89 age group with 26.5%, Table 1.

**Table 1.** Distribution of patients affected by herpes zoster, according to age group

Group ages	Total	
	No.	%
0 to 9	1	1.5
30 to 39	1	1.5
40 to 49	1	1.5
50 to 59	6	9.4
60 to 69	16	25
70 to 79	22	34.3
80 to 89	17	26.5
Total	64	100

## Clinical Characterization of Patients with Herpes Zoster

According to sex, females predominated with 53.1%, while males represented 46.8%, as shown in Table 2.

**Table 2.** Distribution of patients affected by herpes zoster, according to sex

Sex	No.	%
Female	34	53.1
Male	30	46.8
Total	64	100

The predominant anatomical location of the lesion was the intercostal form, at 60.9 %, followed by the cervical form at 20.3 %; the least frequent was the one affecting the geniculate ganglion at 3.1%, Table 3.

**Table 3.** Distribution of patients according to the anatomical location of herpes zoster

Anatomical location	No.	%
Cervical	13	20.3
Intercostal	39	60.9
Ophthalmic branch	10	15.6
Ganglio geniculado	2	3.1
Total	64	100

In more than half of the patients (53.1 %), the cause of origin of herpes zoster was stress, while in 29.6 % of patients no apparent cause was found. Treatment with immunosuppressants accounted for 12.5 %, and malignant diseases for 4.6 %, as shown in Table 4.

**Table 4.** Distribution of factors according to predisposing factors for herpes zoster

Predisposing factors	No.	%
Stress	34	53.1
Treatment with immunosuppressants	8	12.5
Malignant diseases	3	4.6
Unknown	19	29.6
Total	64	100

Of the patients studied, 25 % showed complications. Postherpetic neuralgia stood out at 18.7 %, superinfection at 4.6 %, and one patient who presented with herpes zoster of the ophthalmic branch of the trigeminal nerve developed keratitis, accounting for 1.5 %, Table 5.

**Table 5.** Distribution of patients according to complications of herpes zoster

Complicationd	No.	%
Postherpetic neuralgia	12	18.7
Bacterial superinfection	3	4.6
Keratitis	1	1.5
Without complications	48	75
Total	64	100

## DISCUSSION

In the present study, there was a predominance of patients over 70 years of age, which corresponds with authors who state that herpes zoster is a more frequent disease in adults and the cause may be related to the decline in cellular immunity against the varicella-zoster virus.<sup>(7)</sup> Similar results have been found by other researchers<sup>(8)</sup> and differ from a study that found a predominance of the group over 57 years of age.<sup>(9)</sup>

It is useful to note that more cases of herpes zoster are appearing daily in childhood and adoles-

cence.<sup>(10)</sup> In the studied sample, it is significant that an infant was included. The infant's history includes the mother having varicella during the second trimester of pregnancy (26 weeks), a condition that predisposes the infant at this age to develop herpes zoster. Maternal varicella during the second trimester of gestation is a risk factor due to the immaturity of the fetal immune system, which does not develop a lasting response against the virus.<sup>(11)</sup>

Regarding sex, females were the most affected, which coincides with other authors.<sup>(3,8,9,12)</sup> According to studies in Cuba, for every man, 1.05 women become ill with herpes zoster, meaning that for every 100 men, 105 women become ill.<sup>(8)</sup> Other authors<sup>(9,13)</sup> find a predominance of the male sex in herpetic eye conditions; this does not correspond with the results of the present study.

Hormonal changes during the transition to menopause affect women's immune responses. Estrogen secretion decreases at this stage, and it is known that estrogens play an important role in stimulating the initial antiviral immune response. Therefore, it is considered that the risk of contracting viral infections, such as HZ, increases in women.<sup>(14)</sup>

Regarding the affected region, the literature states that herpes zoster occurs in the thorax in 59.2 % of cases and in 35 % can involve the head and neck;<sup>(15)</sup> in the present study, these figures are slightly higher. Other authors<sup>(3)</sup> also found the intercostal form to be the most frequent.

Factors that predispose to herpes zoster include conditions affecting the immune system, whether due to immunosuppression, autoimmune or oncological diseases, and immunodeficiencies caused by drugs (corticosteroids, immunosuppressants, chemotherapy, radiotherapy) and infections such as Human Immunodeficiency Virus (HIV).<sup>(16)</sup>

Half of the patients relate the onset of herpes zoster to stress. Evidence suggests that psychological stress can alter various immune parameters, both humoral and cellular. Chronic stressors generate an anti-inflammatory state, with a decrease in the proliferation and differentiation of TCD3+CD4 lymphocytes, as well as the activity of natural killer (NK) cells, production of interleukin 2 (IL-2) and Interferon (IFN), and the expression of the IL-2 receptor, among other aspects of the immune response.<sup>(17,18)</sup> Viral infections are frequent in immunocompromised patients, including vari-

cella-zoster virus, due to the decreased antiviral response mediated by natural killer lymphocytes and CD8 cytotoxic T cells.<sup>(19)</sup>

Although studies<sup>(10,16)</sup> have reported cases in immunocompetent children and adolescents, in other studies<sup>(8,12)</sup> the percentage of patients affected by malignant diseases and immunosuppressive treatments is higher than in the present study.

The most frequent complication is postherpetic neuralgia, which corresponds with that reported by other authors<sup>(12)</sup> and is referred to in this way by the literature.<sup>(14)</sup> In an epidemiological study on herpes zoster in Latin America, it was found that postherpetic neuralgia appears in 18 % of immunocompetent patients and in 22 % of immunocompromised patients; the results of this study are similar.<sup>(20)</sup> However, Arce in his series found that impetigo is the most frequent complication and no cases of patients with postherpetic neuralgia were reported.<sup>(16)</sup>

It is concluded that herpes zoster affects adults subjected to some cause of immunosuppression with higher incidence, located on the thorax, presenting postherpetic neuritis as a complication.

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