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Evaluation of Demographic and Clinical Characteristics of Patients Diagnosed with Herpes Zoster

Herpes Zoster Tanılı Hastaların Demografik ve Klinik Özelliklerinin Değerlendirilmesi

Tuna SEZER [1], Zehra Şafak AĞIR GÜLER [1], Verdanur ÖZDEMİR [2]

Salih ÜLGER [2], Taif Mohammed JAWAD JAWAD [2], Tuğba UÇAR [2]

Gülistan Melda ÇALIŞIR [2], Eda ÖZKARGIN [2], Medine UYSAL [2]

[1] Department of Dermatology, Faculty of Medicine, Bolu Abant İzzet Baysal University, Bolu, Türkiye

[2] Faculty of Medicine, 2nd year student, Bolu Abant İzzet Baysal University, Ankara, Türkiye

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Abstract

Objective: Varicella-zoster virus (VZV) infections result in two distinct clinical entities: varicella (chickenpox) and herpes zoster (HZ). VZV, the causative agent of chickenpox, remains latent in the dorsal root or cranial nerve ganglia and reactivates due to suppression of the cellular immune system, leading to HZ. Risk factors for HZ include advanced age, stress, concomitant infections, use of immunosuppressive drugs, and comorbid conditions.

This study retrospectively evaluates patients diagnosed with HZ who presented to our hospital. The aim is to determine the frequency of herpes zoster based on age, gender, season, and months, as well as the accompanying diseases, complications, and treatments provided.

Materials and Methods: Patients diagnosed with HZ (ICD10 code B02) who presented to our hospital's dermatology outpatient clinic between December 1, 2022, and November 30, 2023, were included in this study using our hospital's automation system.

Results: A total of 211 patients were included in the study, consisting of 115 women (54.50%) and 96 men (45.50%), with a female/male ratio of 1.19. The average age of the patients diagnosed with HZ was found to be 53.38 years. It was observed that HZ occurred more frequently in march (12.32%), august (11.37%), and april (9.95%), and seasonally, it was more common in the spring (29.86%). The most commonly affected body region was the trunk (54.5%), and the most frequently involved dermatome was thoracic (46.4%). The most common comorbidities in patients diagnosed with HZ were hypertension (32.05%) and diabetes mellitus (12.82%). The most frequently administered treatment was valacyclovir (47.87%). Postherpetic neuralgia (PHN) was observed in 37 patients (17.53%) with HZ.

Conclusion: As the frequency of HZ increases with age, early recognition and treatment are crucial for reducing pain, viral spread, and complications. There is a need for large-scale studies on the clinical and demographic data of HZ.

Keywords: Varicella, Herpes, Zoster.

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Öz

Amaç: Varicella-zoster virus (VZV) enfeksiyonları varisella (suçiçeği) ve herpes zoster (HZ) olarak bilinen iki farklı klinik tabloya neden olur. Suçiçeği etkeni olan VZV dorsal kök veya kranial sinir gangliyonlarında latent halde kalır ve hücresel immün sistemin baskılanması sonucu reaktive olur ve HZ'ye yol açar. İleri yaş, stres, eşlik eden enfeksiyonlar, immunsupresif ilaç kullanımı, ek hastalıklar zona için risk faktörleri olarak sayılabilir.

Bu çalışmada hastanemize başvuran HZ'si olan hastalar retrospektif olarak değerlendirilmiştir. Herpes zosterin yaş, cinsiyet, mevsim ve aylara göre görülme sıklığının, eşlik eden hastalıkların, komplikasyonların ve verilen tedavilerin belirlenmesi amaçlanmıştır.

Gereç ve Yöntemler: Çalışmaya, 1 Aralık 2022 ile 30 Kasım 2023 tarihleri arasında hastanemiz dermatoloji polikliniğine başvuran ve HZ tanısı konulan (ICD10 B02 kodlu) hastalar, hastane otomasyon sistemi kullanılarak dahil edilmiştir.

Bulgular: Çalışmaya 211 hasta dahil edilmiştir. 115'i kadın (%54,50), 96'sı erkek (%45,50) olup kadın/erkek oranı 1,19 olarak saptanmıştır. HZ tanılı hastaların yaş ortalaması 53,38 olarak bulunmuştur. HZ'nin mart (%12,32), ağustos (%11,37) ve nisan (%9,95) ayında, mevsim olarak ise ilkbaharda (%29,86) daha sık görüldüğü saptanmıştır. Hastalığın en fazla tuttuğu vücut bölgesinin gövde (%54,5); en fazla tutuğu dermatomun torakal (%46,4) olduğu görülmüştür. HZ tanılı hastalarda en fazla görülen hastalıklar hipertansiyon (%32,05) ve diabetes mellitus (%12,82) olarak bulunmuştur. Hastalara en sık verilen tedavinin valasiklovir (%47,87) olduğu saptanmıştır. HZ hastalarının 37'sinde (%17,53) postherpetik nevralji (PHN) görüldüğü saptanmıştır.

Sonuç: Yaş ilerledikçe sıklığı artan HZ'nin erken tanınması ve tedavisi ağrıyı, viral yayılımı ve komplikasyonları azaltması açısından önem taşımaktadır. HZ'nin klinik ve demografik verileri açısından geniş çaplı çalışmalara ihtiyaç olduğu gözlenmektedir.

Anahtar Kelimeler: Su Çiçeği, Uçuk, Zona.

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[*] **Sorumlu Yazar (Corresponding Author):** Tuna Sezer, **e-mail**: tunasezer@yahoo.com

Introduction

Varicella-zoster virus (VZV) is a member of the Herpesviridae family, causing two distinct clinical entities known as varicella (chickenpox) and herpes zoster (shingles) (1).

Following primary infection (varicella), VZV becomes latent in nerve tissue. VZV has been identified in dorsal root ganglia, cranial nerve ganglia, various autonomic ganglia, and astroglia in the enteric nervous system (1). During reactivation, VZV replicates in neuron cell bodies. Subsequently, virus particles spread from the cell bodies to the nerve, reaching the dermatome corresponding to the affected nerve. In the affected dermatome, the virus causes inflammation and vesicle formation. Pain associated with VZV is due to the inflammation of the affected nerves (1,2).

The disease typically presents unilaterally, with grouped vesicles on an erythematous base in one or more dermatomes. Patients may present with symptoms such as pain, burning, stabbing, or itching. Early initiation of treatment within the first 72 hours in shingles patients, who may present not only to dermatology clinics but also to primary healthcare services, reduces pain, viral spread, and complications. In mild HZ cases, local wound care is sufficient. Systemic treatments include acyclovir, valacyclovir, famciclovir, and brivudin (1,3,4).

The most common complication following shingles is postherpetic neuralgia (PHN). PHN is defined as pain and altered sensory perception persisting for at least three months in the area affected by shingles and has an incidence rate ranging from 9% to 34% (5,6).

This study aims to determine the clinical and demographic characteristics, accompanying diseases, the affected dermatome, presenting symptoms, the month and season of hospital presentation, treatments provided, and the occurrence of PHN in patients with herpes zoster presenting to our hospital.

Materials and Methods

Patients diagnosed with HZ (ICD10 code B02) who presented to our hospital's dermatology outpatient clinic between December 1, 2022, and November 30, 2023, were included in this study using our hospital's automation system. The medical records of patients diagnosed with HZ were reviewed, and data on age, gender, presenting complaint, involved dermatome(s), affected body region, month and season of presentation, treatments administered, comorbid conditions, and the presence of postherpetic neuralgia (PHN) were recorded. All data were divided into categorical and numerical variables. Categorical data were described using count and percentage, while numerical data were described using the mean. Microsoft Excel was used for statistical analysis.

The study was approved by the Bolu Abant Izzet Baysal Unıversıty Clinical Researchıes Ethics Committee Approval (date: 05.12.2023 and approval number: 2023/413).

Results

A total of 211 patients were included in our study, with 115 females (54.50%) and 96 males (45.50%), resulting in a female-to-male ratio of 1.19. The average age of the patients was 53.38 years, with an average age of 54.47 years for female patients and 52.29 years for male patients. Of these patients, 12 were in the pediatric age group (<18 years), 79 were in the geriatric age group (>65 years), and the remaining 120 patients were between 18 and 65 years old. Pain was the presenting complaint in 152 patients (72%), burning in 33 patients (16%), and itching in 26 patients (12%) (Figure 1). The most frequent season of presentation was spring (63 patients, 29.86%), and the least frequent season was autumn (45 patients, 21.33%) (Figure 2). The months with the highest number of cases were March (26 patients, 12.32%), August (24 patients, 11.37%), and April (21 patients, 9.95%). The most commonly affected dermatome was thoracic (98 patients, 46.4%), followed by cervical (69 patients, 32.2%), and lumbosacral (46 patients, 21.3%) (Figure 3). The affected body regions included the trunk (115 patients, 54.5%), head and neck (50 patients, 23.69%), and extremities (42 patients, 19.9%), with genital involvement in 3 patients and disseminated involvement in 1 patient. Forty-nine different comorbid conditions were found in the patients included in the study. The most common comorbid conditions were hypertension (HT) in 50 patients (32.05%) and diabetes mellitus (DM) in 20 patients (12.82%). Malignancies were identified in 8 patients (5.12%), including ocular malignant neoplasm, leukemia, pancreatic cancer,

thymoma, colon cancer, breast cancer, stomach cancer, and lung cancer. The most commonly administered systemic treatment agent was valacyclovir (101 patients, 47.87%), followed by brivudin (66 patients, 31.28%), acyclovir (38 patients, 18.01%), and topical treatment agents (6 patients, 2.84%) (Figure 4). PHN developed in 37 patients (17.53%), with PHN observed in 17.39% (20 patients) of female patients and 17.71% (17 patients) of male patients. Among the patients diagnosed with PHN, 13 had no comorbid conditions, while hypertension was the most common comorbidity in 13 patients. One patient with PHN had pancreatic cancer.

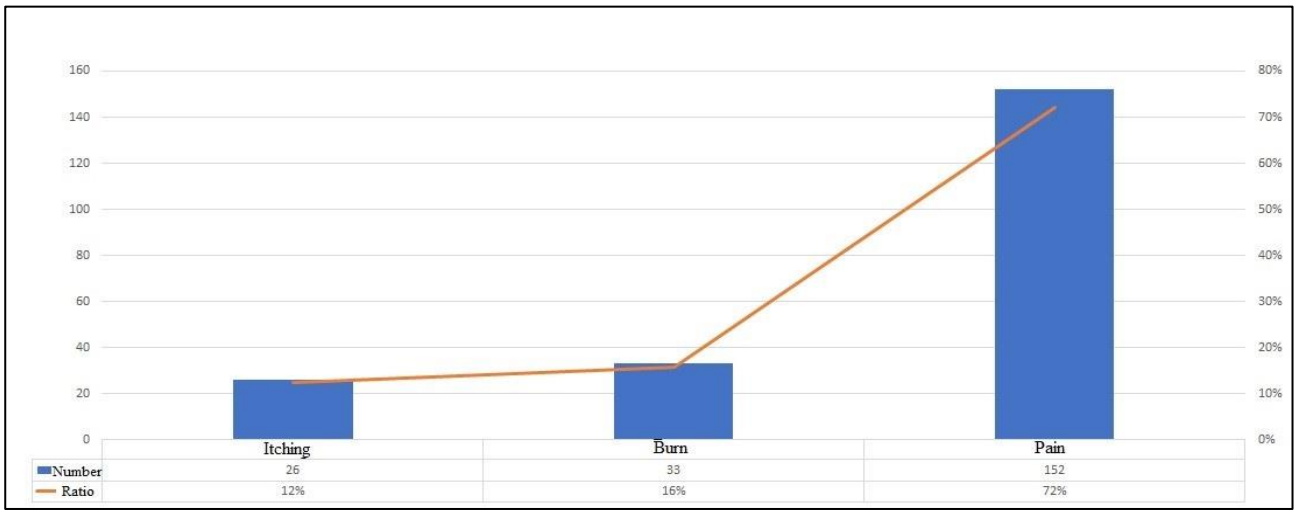

Figure 1. Complaints of Patients with HZ

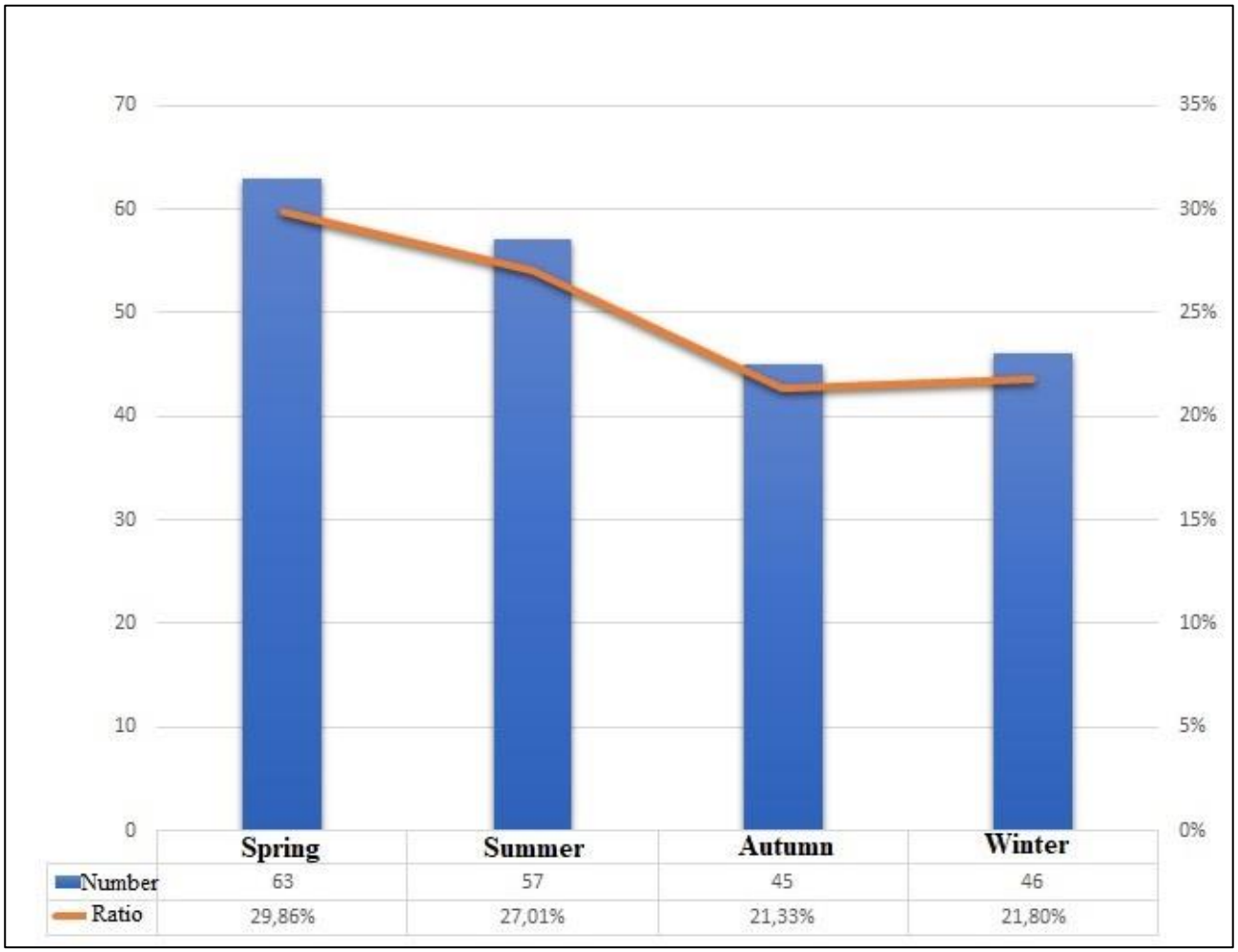

Figure 2. The Seasonal Distribution of HZ Patients

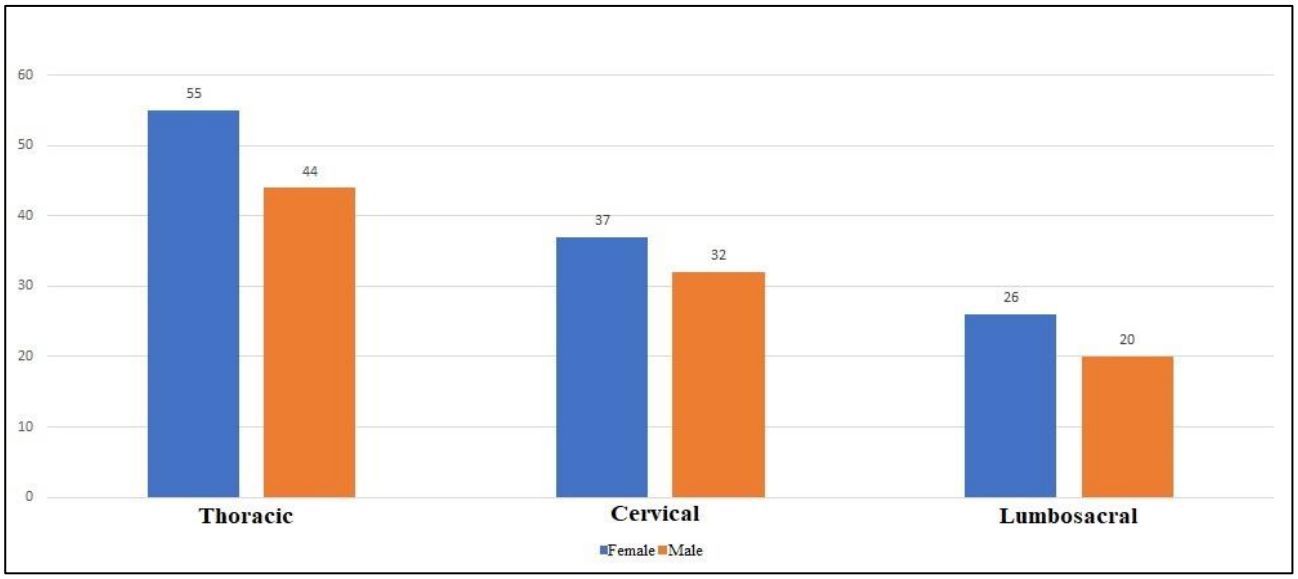

Figure 3. The Distribution of HZ Patients by Dermatome and Gender

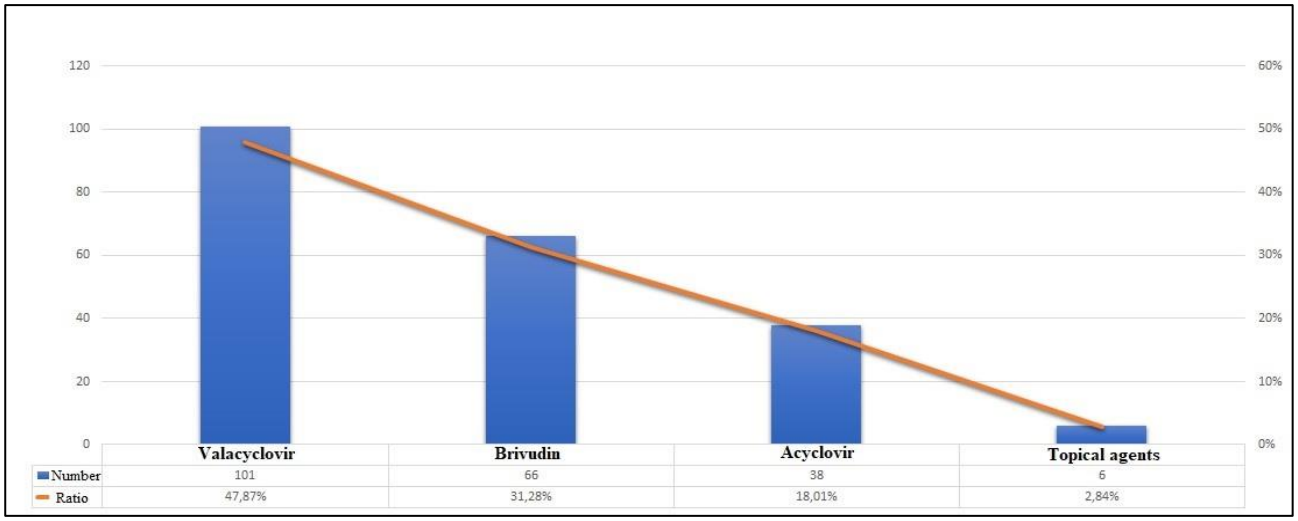

Figure 4. The Number and Rates of Treatments Given to HZ Patients

Discussion

The lifetime risk of developing shingles ranges between 10-20%. The annual incidence of shingles is estimated to be 1.5-3 per 1000 persons (2,3). A study by Van Oorschot et al. reported incidence rates of 6.6–9.03 per 1000 for North America, 5.23–10.9 per 1000 for Europe, and 10.9 per 1000 for the Asia-Pacific region (7).

Studies examining the demographic characteristics of HZ patients show variability in the female-to-male ratio. A meta-analysis by Zhang et al. and studies conducted in our country found a higher number of female patients, similar to our study (2,8,9,10). However, some studies have reported a higher incidence in male patients (5). These differences may be explained by the time period of the study, the number of patients included, and the differences in the immune system between males and females.

While HZ can occur at any age, its frequency increases with age, likely due to the decline in immunity with aging (1). The frequency of HZ is lower in children and young adults and may be associated with metabolic and neoplastic diseases (1). A study conducted in our country reported that 72.1% of shingles patients were over the age of 40 (11). In our study, the disease was most frequently observed in the 18-64 age group (56.9%), with an incidence rate of 5.6% in the pediatric age group and 37.5% in the geriatric age group. No comorbid conditions were detected in the pediatric age group.

Risk factors for HZ include being over the age of 50, immunosuppression, infections, and stress (4). The disease is also seen in healthy individuals (5). Acer et al. reported that at least one systemic disease accompanied herpes zoster in 54.8% of patients, with hypertension, diabetes mellitus, and coronary artery disease being the most common comorbidities (8). Similarly, Küçükçakır et al. identified hypertension and diabetes mellitus as the most frequent systemic diseases accompanying herpes zoster in their study (11). In our study, hypertension and diabetes mellitus were the most common comorbid conditions associated with herpes zoster. Malignancy was identified in 8 patients with HZ. Conversely, 110 patients (52.1%) had no systemic diseases accompanying herpes zoster.

Studies investigating the relationship between the disease and seasons or months, and the seasonal variations in the frequency and characteristics of HZ, are limited. It has been suggested that ultraviolet radiation during summer months may trigger VZV reactivation (12). Seasonal variations in HZ frequency may also be related to seasonal differences in immune system function (5,12). Berlinberg et al. reported that the frequency of HZ was higher in the summer (12). While some studies reported the opposite, there are also studies indicating no seasonal differences (5,8). In our study, HZ frequency increased in the spring and summer, particularly in March, August, and April. Larger series of cases are needed to elucidate seasonal and monthly differences.

HZ is frequently characterized by rashes that do not cross the midline of the trunk (13). In our study, the most common involvement was in the trunk and thoracic dermatomes, followed by cervical involvement. Similar findings were reported in studies conducted in our country, where thoracic dermatome involvement was commonly observed (8,10,11).

Pain is usually the first symptom in patients due to inflammation of the affected nerve in herpes zoster. As in our study, Etgü's study also identified pain as the most common symptom (2). In the study, pain was followed by complaints of itching and burning in HZ patients.

The standard treatment for HZ includes acyclovir, valacyclovir, and brivudin. If there is resistance to acyclovir, famciclovir can be used as an alternative (1). In our study, the most commonly administered treatment agent was valacyclovir, followed by brivudin. Similarly, Acer et al. found valacyclovir to be the most frequently chosen treatment agent (8).

Shingles is typically a self-limiting disease that resolves within 7-10 days with or without treatment. However, it can cause severe complications in some patients (1,5). Postherpetic neuralgia (PHN) is the most common complication associated with herpes zoster. Early initiation of treatment is crucial for pain control and prevention of PHN (1). The incidence of PHN increases with age. Advanced age, widespread rash, severe pain, and immunocompromised status are factors that may increase the likelihood of PHN (14). Alicino et al. reported that PHN incidence increases with age (15). Studies conducted in our country have reported PHN development rates of 27.7%, 4.7%, and 21.75% (8,10,11). In our study, PHN was detected in 17.53% (37 patients). The most common comorbid conditions in patients diagnosed with PHN were hypertension, asthma, and diabetes. The average age of patients who developed PHN was ... years. One patient with PHN had a malignancy.

Conclusion

In conclusion, there are few studies on the clinical and demographic characteristics of herpes zoster in our country. Our study presents the clinical and epidemiological features of HZ cases in the Bolu region. Given that our data cover a limited time period, more extensive studies are needed to investigate the clinical and demographic characteristics of HZ.

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Analysis/Interpretation: TU, VÖ, SA, TU; Literature Review: TU; Writing: TU; Critical Review: TU. The authors have accepted responsibility for the entire content of this manuscript and approved its submission.

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