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RESEARCH

HERPES ZOSTER IN GERIATRIC PATIENTS: CLINICAL COURSE AND COMPLICATIONS

Abstract

Introduction: Herpes Zoster is a skin disease which occurs following the reactivation of varicella zoster virus. Our aim was to investigate the incidence, clinical course and complications of herpes zoster in a geriatric population.

Materials and Method: Geriatric patients with the diagnosis of herpes zoster who admitted to our outpatient clinic during one-year period were recruited to this study. The incidence of patients with herpes zoster was calculated among all patients who admitted to our outpatient clinic. Additionally; age, gender, the presence and duration of prodromal pain, potential triggering factors and complications were noted. The severity of pain was measured with the Visual Analogue Scale.

Results: In total, 3386 geriatric patients were admitted to our dermatology outpatient clinic over the one-year period. Of these, 53 patients (1.56%) were diagnosed with herpes zoster. The highest frequency of herpes zoster was detected in July (3.31%), whereas the lowest frequency was detected in October (0.40%). Prodromal pain was observed in 28 patients (52.8%). The mean Visual Analogue Scale score was 5.98±2.71. There were triggering factors in 41 patients (77.4%). Complications of herpes zoster occurred in seven patients (13.2%). Visual Analogue Scale scores were significantly higher in patients who had prodromal pain ($p<0.05$).

Conclusion: The presence of prodromal pain in geriatric patients may be highlighted that the disease will be continued with severe pain.

Key Words: Herpes zoster; Geriatrics; Aged

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ARAŞTIRMA

GERİATRİK HASTALARDA HERPES ZOSTER: KLİNİK SEYİR VE KOMPLİKASYONLAR

Öz

Giriş: Herpes Zoster, varisella zoster virüsün reaktivasyonuyla ortaya çıkan bir deri hastalığıdır. Bizim amacımız, geriatrik hastalarda herpes zosterin insidansını, klinik seyrini ve komplikasyonlarını incelemekti.

Gereç ve Yöntem: Bir yıl içerisinde dermatoloji polikliniğine başvuran herpes zoster tanılı geriatrik hastalar çalışmaya alındı. Dermatoloji polikliniğine başvuran geriatrik hastalar içerisinde herpes zosterli olguların insidansı hesaplandı. Ayrıca yaş, cinsiyet, prodromal ağrı varlığı ve süresi, potansiyel tetikleyici faktör ve komplikasyonlar kaydedildi. Ağrı şiddeti Görsel Analog Skala ile değerlendirildi.

Bulgular: Bir yıl süresince dermatoloji polikliniğine 3386 geriatrik hasta başvurdu. Bu hastaların 53'ü (%1.56) herpes zoster tanısı aldı. En yüksek herpes zoster yüzdesi (%3.31) Temmuz ayında saptanırken, en düşük yüzde (0.40%) Ekim ayında saptandı. Yirmi sekiz hastada (%52.8) prodromal ağrı saptandı. Hastaların ortalama Görsel Analog Skala skoru 5.98±2.71 idi. 41 hastada (%77.4) tetikleyici faktör mevcuttu. Herpes zostere bağlı komplikasyon yedi hastada (%13.2) gelişti. Prodromal ağrısı olan hastaların Görsel Analog Skala skorları istatistiksel olarak anlamlı düzeyde yüksek tespit edildi ($p<0.05$).

Sonuç: Herpes zosterli geriatrik hastalarda prodromal ağrının varlığı, hastalığın şiddetli ağrı ile seyredeceğine işaret edebilir.

Anahtar Sözcükler: Herpes Zoster, Geriatri, Yaşlı

INTRODUCTION

Herpes Zoster (HZ) is a skin disease developed due to reactivation of varicella zoster virus (VZV) that remained dormant within dorsal root ganglia, often decades after initial exposure to the virus in the form of varicella (chickenpox) (1). In this disease lesions spread dermatomally. Characteristic lesions begin as erythematous, maculopapular lesions that progress into painful vesicular lesions (2). Patients with haematological malignancies, such as those Hodgkin lymphoma, non-Hodgkin lymphoma and chronic lymphocytic leukemia and patient with acquired immunodeficiency syndrome (AIDS), those receiving immunosuppressive therapies and the elderly, have an increased risk for the development of HZ (2,3). Geriatric patients are particularly prone to the development of HZ due to an immunological dysfunction at the cellular level. The number and function of T-cell responders to VZV tend to decrease with age (2). Extensive literature review revealed a distinct lack of prospective studies related to HZ in geriatric patients in Turkey to us.

This study aimed to to investigate the incidence of HZ, and observe the clinical course and complications of this disease in a geriatric population admitted to our dermatology outpatient clinic.

MATERIALS AND METHOD

Patients older than 65 years of age who admitted to our dermatology outpatient clinic with the diagnosis of HZ were included in this study prospectively between October 2015-November 2016. Age, gender, the month of the admission to the hospital, accompanying systemic diseases, alcohol intake, smoking habits, the presence and duration of prodromal pain, characteristics of pain/ pruritus, the time between the onset of skin lesions and hospital admission, possible triggering factors, presence and duration of prodromal pain, use of antiviral therapy and number of HZ attacks were recorded. The localization of the lesions and affected dermatome were determined. The severity of pain was measured and scored by Visuel Analog Scale (VAS). VAS is used to convert some numerically unmeasured values into numeric values. A 100-milimater horizontal line is drawn for evaluation and the end definition of the parameters (0 and 10) are written two ends of horizontal line. The patient is asked to mark this horizontal line at the point where it the symptom is appropriate. Meaning of "0" is no pain and meaning of "10" is most severe pain. (4).

All patients with HZ were followed up for potential complications of the disease. Statistical correlations between VAS and uppermentioned demographic and clinical variables were evaluated. The local ethic committee approval was obtained. (date: 04.08.2015 number: 538). The written informed consent forms were taken from the patients.

The Number Cruncher Statistical System (NCSS) 2007 (Kaysville, Utah, USA) was used for all statistical analyses and $p<0.05$ was accepted as statistically significant.

RESULTS

In total, 3386 geriatric patients were admitted to our dermatology outpatients' clinic within a one-year period. Of these, 53 patients (1.56%) were diagnosed with HZ. Twenty-two patients (41.5%) were male and 31 (58.5%) were female. Mean age of patients with HZ was 72.92±6.46 years (Range: 65–96).46 patients (86.2%) had one or more accompanying systemic diseases. The most common accompanying systemic disease was hypertension, followed by diabetes mellitus and coronary artery disease.

Six patients (11.3 %) were smokers, and seven patients (13.2 %) were ex-smokers. Only one patient (1.9%) had an alcohol habit. The highest number of HZ patients (11 patients, 2.26%) were admitted in January, and the lowest number in September (1 patient, 1.9%) and October (1 patient, 1.9%). However, the highest incidence was detected in July (3.31%) and the lowest incidence was detected in October (0.40%). Distribution of the number of patients with HZ and the incidence of HZ are shown in Graphic 1.

Prodromal pain was observed in 28 patients (52.8%). The mean duration of prodromal pain was 7.54±7.78 days (Range: 1 day–30 days). The mean VAS score was 5.98±2.71. Pain and/or pruritus were observed in 51 patients (96.2%). Only two patients (3.8%) had no symptoms.

The time between onset of skin lesions and the time of admission was 4.47±4.67days (1-30 days). Twenty-eight patients (52.7%) reported clear triggering factors, such as emotional stress (28 patients, 52.7%), infections (8 patients, 15.2%), malignancy (3, patients, 5.7%), history of surgery (1 patient, 1.9%) and history of dental surgery (1 patient, 1.9%). Forty-nine patients (92.5%) had first attack of HZ, four patients (7.5%) had second attack of HZ.

In total, 43 patients (81.1%) had taken systemic antiviral therapy. Complications due to HZ occurred in only seven patients (13.2%). Of those three patients had ocular involvement, three patients had post-herpetic neuralgia and one patient had segmental zoster paresis on the second and third fingers of the left hand. (Table 1). Lesions occurred in the thoracic dermatomes in 37 patients (69.6%), cervical dermatomes in 10 patients (19%), lumbal dermatomes in 5 patients (9.5%) and lumbo-sacral dermatoms in 1 patient (1.9%). Furthermore, lesions detected on the right side of the body in 28 patients (52.8%) and on the left side in 25 patients (47.2%).

Table 1. Distribution of complications of HZ in geriatric patient.

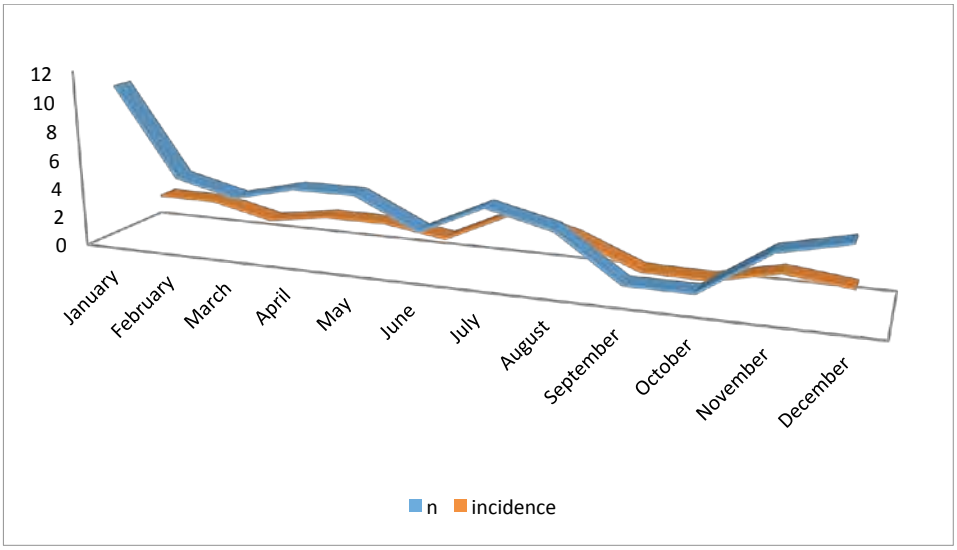
Complications of HZ	Number of Patient (%)
Ovular involvement	3
Post-herpetic neuralgia	3
Segmental zoster paresis	1

HZ:Herpes Zoster

VAS was significantly higher in patients who had prodromal pain ($p<0.05$; Table 2).

VAS scores showed a significant and negative correlation with the duration between the onset of skin lesions and hospital admission (r: −0.411, $p=0.002$).

There was no statistically significant relationship between VAS and gender, age or duration of prodromal pain ($p>0.05$). Furthermore, there was no significant relationship between VAS and smoking habits or the presence of a triggering factor ($p>0.05$).



Graphic 1. Distribution of number of patientswith HZ andincidence of HZ

n: Number of patient

Table 2. Relationshipbetween VAS andgender, smokinghabit, triggeringfactor, andprodromalpain

		VAS	p
Gender	Male	5.54±2.99	0.434[a]
	Female	6.29±2.50	
Smokinghabit	Absence	6.00±2.87	0.164[b]
	Presence	4.50±1.76	
	Exuser	7.14±1.95	
TriggeringFactor	Absence	5.75±3.19	0.864[a]
	Presence	6.05±2.60	
ProdromalPain	Absence	5.12±2.85	**0.028[a]**
	Presence	6.75±2.38	

aMannWhitney U Test bKruskall Wallis Test

DISCUSSION

Infection with VZV presents as two distinct entities: chickenpox as a primary infection and HZ as a secondary condition. Following VZV reactivation in the dorsal ganglia, HZ lesions begin to develop on the corresponding dermatomes of the involved ganglia. Lesions begin as maculopapules and progress to vesicles. HZ is more common in older patients, the incidence of the disease in patients older than 65 years of age is more than 1% (5). In our present

study, the incidence of HZ among geriatric patients in our dermatology outpatient clinic was 1.56%.

It is reported that HZ does not show a seasonal prevalance unlike varicella zoster, HZ appears sporadically throughout the year. (6). The frequency of HZ can vary throughout the year. For example, Küçükçakır et al. showed that HZ was most commonly encountered in January and August (7). In our study, we detected that most patients with HZ were admitted in January however the incidence was highest in July. Our study also showed a high incidence of HZ during August, which concurs with the existing literature. In another study, Karakoca et al. showed that number of patients attending to a dermatology outpatient clinic because of HZ was higher in April and November in Turkey (8).

Most patients with HZ experience prodromal pain, or abnormal sensation in the involved dermatome prior to the appearance of the characteristic skin lesions. Prodromal pain can last for several days; in one study, the duration of prodromal pain varied from 7 days to 100 days (3). The cause of prodromal pain may be due to viral degeneration of nerves (9). Goh et al. revealed that prodromal pain was observed in 42% of patients with HZ older than 50 years of age HZ. The incidence of prodromal pain was lower in younger patients (10). In our present study, 28 patients (52.8%) experienced prodromal pain, and mean duration of prodromal pain was 7.54±7.78 days (Range: 1 day–30 days). VAS scores were significantly higher in patients who experienced prodromal pain. Increase of perception of pain due to HZ in geriatric patients can be due to increment of neural degeneration with ageing.

In our study, we found that the time between onset of skin lesions and hospital admission ranged from 1 to 30 days, with a mean of 4.47±4.67days. Rozenek et al found that the time between appearance of skin lesions and diagnosis of the disease was 1-3 days in 53% of cases. In the same study, they found that 91% of patients received systemic antiviral treatment (11). It was 81.1% in our study. It may be due to late admission of patients to the hospital in the present study.

Immunosuppression, malignancy, ageing, emotional stress are known risk factors for HZ (12). In our study, we found some triggering factors in addition to ageing in 52.7% of patients. Emotional stress and infection were the most common triggering factors in this study. Physical trauma to the affected dermatome is other risk factor for HZ (5). In our study one patient (1.9%) had history of surgery and one patient (1.9) had history of dental operation on the affected dermatomes.

The incidence of complications associated with HZ increases with ageing. For example, the rate of post-herpetic neuralgia (PHN) is known to be higher in elderly patients (5).PHN develops in approximately 10%–18% of patients with HZ and ocular involvement has been observed in 10%–15% of patients with HZ (13). In the present study, seven patients (13.2%) had some complications. Most common complication was PHN and then ocular involvement. One of the patients developed segmental zoster paresis. In a previous study, they found that PNH was the most common complication of HZ in elderly as well (7).

HZ most commonly located in thoracic dermatomes (4). Similarly, we detected thoracic dermatomal involvement in 37 patients (69.6%).

In conclusion, we found that ageing in itself is a risk factor for the development of HZ. Additional triggering factors, such as emotional stressor and infection can lead to development of HZ in geriatric populations. Lesions usually occur in the thoracic dermatomes and on the right side of the body. The incidence of HZ in the geriatric population was higher in the summer months. The presence of prodromal pain highlighted the possibility of severe pain in elderly patients. VAS scores, which represent a measure of pain severity, are not affected by age, the duration of pain, or lift style habits such as alcohol and smoking. Finally, our data showed

that the most common complication of HZ in our geriatric population was PHN.

Consequently, geriatricians and dermatologists should take appropriate measures to manage this disease and consider that the presence of prodromal pain in elderly patients with HZ is associated with severe pain.

Conflict of Interest

The authors have no conflict of interest to declare.

REFERENCES

1. Joon Lee T, Hayes S, Cummings DM, et al. Herpes zoster knowledge, prevalance, and vaccination rate by race. J Am Board Fam Med 2013;26(1):45-51. (PMID:23288280).
2. Schmader K. Herpeszoster in theelderly: Issuesrelatedtogeriatrics. Clin Infect Dis 1999;28(4):736-9. (PMID:10825029).
3. Schmader KE, Dworkin RH. Natural historyandtreatment of herpeszoster. J Pain 2008;9(1):3-9. (PMID:18166460).
4. Fredy M. Thegraphicratingscale. Journal of Educational Psychology 1923;14:83-102.
5. Cohen KR, Salbu RL, Frank J, Israel I. Presentation andmanagement of herpeszoster (shingles)in geriatricpopulation. Pharmacy and Therapeutics 2013;38(4):217-27. (PMID:23785227).
6. Straus S, Oxman M, Schmader K. Varicella and herpes zoster. In: Wollf K, Goldsmith L, Katz S, Gilchrest B, Paller A, Leffell D, eds. Fitzpatrick's Dermatology in General Medicine. 7th ed. Vol.2 Newyork: Mcgraw Hill:2008, pp 1885-98.
7. Küçükçakır O, Aliağaoğlu C, Turan H, et al. Retrospective evaluation of patients with Herpes Zoster followed up in our department between 1999-2010. TURKDERM 46(4);186-90. (in Turkish).
8. Karakoca Y, Deniz E, Türker G, et al. Clinicalfeatures of herpeszosteranditsrelationshipwithvaricella virüs antibody. Turkish Clinics J Dermatol 2010;20(2):60-6. (in Turkish).
9. Patil S, Srinivas K, Reddy S, Gupta M. Prodromal herpes zoster mimicking odontalgia -a diagnostic challenge. Ethiop J Health Sci 2013;23(1):73-77. (PMID:25559842).
10. Goh CL, Khoo L. A retrospectivestudy of theclinicalpresentationandoutcome of herpeszoster in a tertiarydermatology out-patient referral clinic. Int J Dermatol 1997;36:667-72. (PMID:9352407)
11. Rozenek M, Romani A, Aronson S, et al. Herpes zoster in elderly adults in a community hospital in Buenos Aires. June 2013-May 2014. Medicina (B Aires). 2017;77(1):24-30. (PMID:28140307).
12. Akarsu S, İlknur T, Kibar M, Yılmaz Y, Fetil E. Risk factorsandaccompanyingclinicalfeatures in herpeszoster. Turkish Clinics J Dermatol. 2010;20(3):126-132. (in Turkish).
13. Wang WY, Liu SH, Lin MY, Lin CC, Wang IJ. Initialpresentationsites as predictors of herpeszostercomplication. A nationwidecohortstudy. PloS ONE 2016;11(10):1-11. (PMID:27711168).