International Journal of Research in Dermatology
Velappan R et al. Int J Res Dermatol. 2019 Aug;5(3):641-645
http://www.ijord.com

DOI: http://dx.doi.org/10.18203/issn.2455-4529.IntJResDermatol20192071

Original Research Article

An analytical study on clinical patterns of herpes zoster in this era

Ravichandran Velappan, Sindhuja Ramasamy*, Kamalathan Nallu, Arulraja Ganapathi

Department of Dermatology, Chengalpattu Medical College, Tamil Nadu, India

Received: 12 April 2019
Revised: 23 April 2019
Accepted: 29 April 2019

***Correspondence:**
Dr. Sindhuja Ramasamy,
E-mail: dhunsi75@gmail.com

ABSTRACT

Background: Herpes zoster is a major health burden in all age groups. It is caused by reactivation of varicella zoster virus from dormant form. The immunity that plays a role in this reactivation is cell mediated immunity. Prodromal features like Fever, pain and itch are common before the onset of zoster rash. The most common complication associated with this disease is post-herpetic neuralgia. Complications associated with herpes zoster depend on the age, immune status, and the time of initializing treatment. Treatment with antiviral drugs within 72 hours of onset of rash onset has been shown to reduce severity and complications associated with zoster and the post-herpetic neuralgia.
Methods: We analysed 120 cases of herpes zoster patients who attended Dermatology OPD, in Chengalpattu Medical College Hospital from January 2018 to December 2018. The study design was descriptive study. A detailed history taking, thorough clinical examination and appropriate relevant investigations were done.
Results: The mean age group of the 120 patients (male-56, female-64) was 35 years. Segmental distribution: Thoracic-60%, cervical-6%, lumbosacral-2%, herpes zoster ophthalmicus-22%, herpes zoster oticus-10%. 34% were diabetic, 2% HIV, 4% following surgery/trauma, 10% on steroid therapy. 13% had history of native treatment. Prodromal symptoms in 34%, post herpetic neuralgia-60%, sepsis in 52%.
Conclusions: Herpes zoster occurs in dermatomes in which the rash of varicella achieves highest intensity. Herpes zoster can affect any age group with a higher incidence in elderly patients and in those with immuno-compromised status, treatment with antivirals within 72 hours of onset of rash has shown a reduction in severity and complications.

Keywords: Herpes zoster, Post herpetic neuralgia, Herpes zoster ophthalmicus

INTRODUCTION

Herpes zoster or shingles, occurs due to the reactivation of varicella zoster virus.[1] Zoster is derived from the greek word Zostrix meaning belt, Shingles from the latin word Cingulus meaning belt. Adults above 50 years are at an increased risk for developing herpes zoster, due to the immunosenescence associated with advancing age, but it can affect persons of any age group, especially patients with a suppressed cell mediated immunity due to any disease or drugs.[2,3] The most common complication is the post herpetic neuralgia, however complications due to the involvement of ophthalmic, splanchnic, cerebral, and motor nerves are reported in herpes zoster.[4] Wider use of varicella vaccination leads to reduced prevalence of varicella, thereby resulting in reduced chances of periodic re-exposure to varicella. This in turn can reduce natural boosting of immunity and lead to an increased incidence of herpes zoster.[5,6] Most common in individuals above 50 years of age. Peak incidence of herpes zoster is documented in the 60−69 age group.[7] Postherpetic neuralgia, bacterial infections, ocular involvement, neurological involvement, and disseminated herpes zoster are documented as common manifestations warranting hospitalization.[8,9]

METHODS

An analytical study of 120 cases of herpes zoster patients who attended Dermatology OPD, in Chengalpattu Medical College Hospital, Tamil Nadu, India from April 2018 to March 2019. A detailed history taking, thorough clinical examination and appropriate relevant investigations were done. Appropriate statistical analysis was done using SPSS software.

Inclusion criteria

Inclusion criteria were herpes zoster patients of either sex of all age groups; patients willing to give consent and for regular follow up.

Exclusion criteria

Exclusion criteria were pregnant and lactating women; patients not willing to give consent.

RESULTS

The mean age group of the 120 herpes zoster patients (male-56, female-64) was 35 years. 6% (7 cases) were between 20-30 years of age. 9 cases were between 30-40 years. 22 cases were between 40-50 years. 34 cases were between 50-60 years. 40% (48 cases) belongs to age more than 60 years. 47% were male and 53% were female. He following Segmental distribution were observed in our study. Thoracic-60% (72 cases), cervical-6% (7 cases), lumbosacral-2% (1 case), herpes zoster ophthalmicus-22% (26.4), herpes zoster oticus-10% (12 cases). The predisposing factors observed in our study were.34% (41 case) were diabetic, 2% (2 case) HIV, 4% (5 cases) following surgery/trauma, 10% (12 cases) on steroid therapy. 13% (16 cases) had history of native treatment. Prodromal symptoms were present in 34% (41 cases). Complications of herpes zoster seen in our study are post herpetic neuralgia-60% (72 cases), sepsis in 52% (63 cases), facial nerve palsy 2% (2 cases).

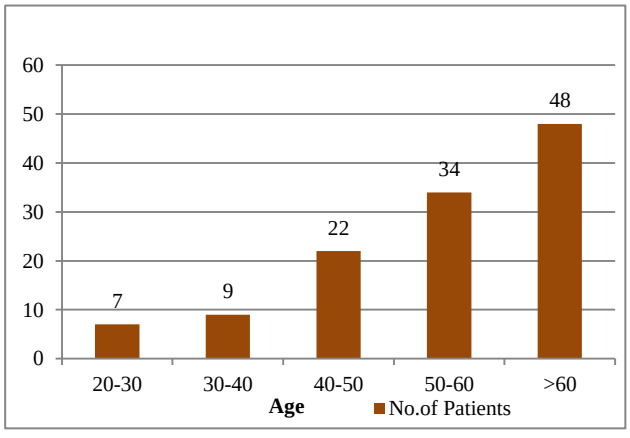

Figure 1: Age-wise distribution of patients with herpes zoster.

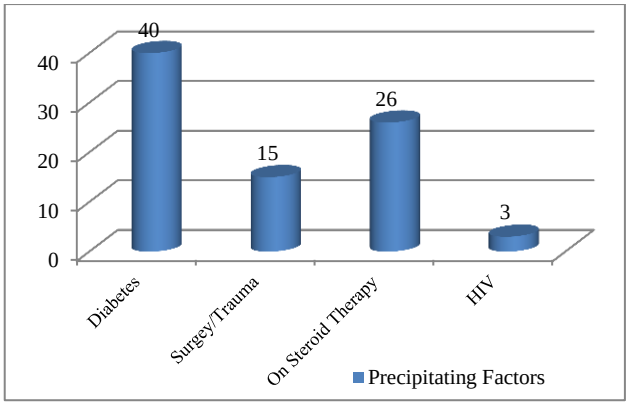

Figure 2: Precipitating factors of herpes zoster.

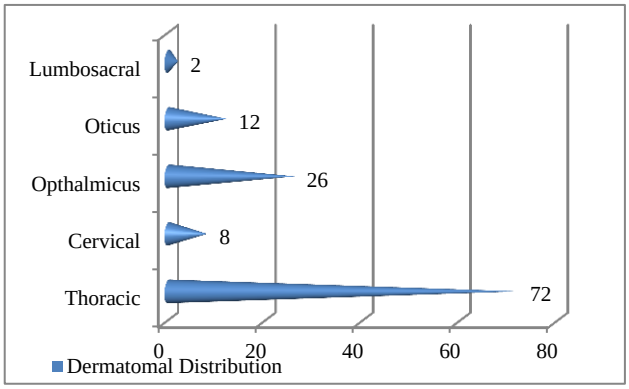

Figure 3: Dermatomal involvement of herpes zoster.

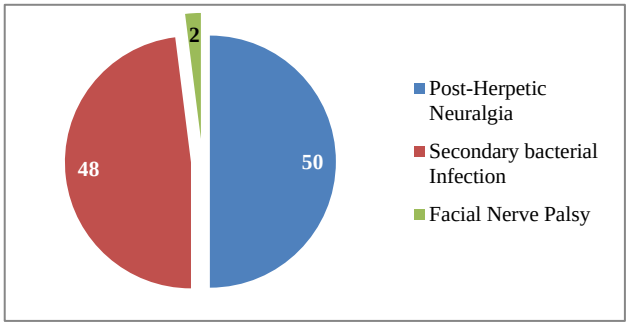

Figure 4: Complications of herpes zoster.

Figure 5: Herpes zoster of thoacic nerve (T1, T2) disribution.

Figure 6: Herpes zoster over lumbar nerve (L2, L3) distribution.

Figure 7: Herpes zoster ophthalmicus.

Figure 8: Ramsay-Hunt syndrome (facial nerve palsy).

Figure 9: HIV associated herpes zoster.

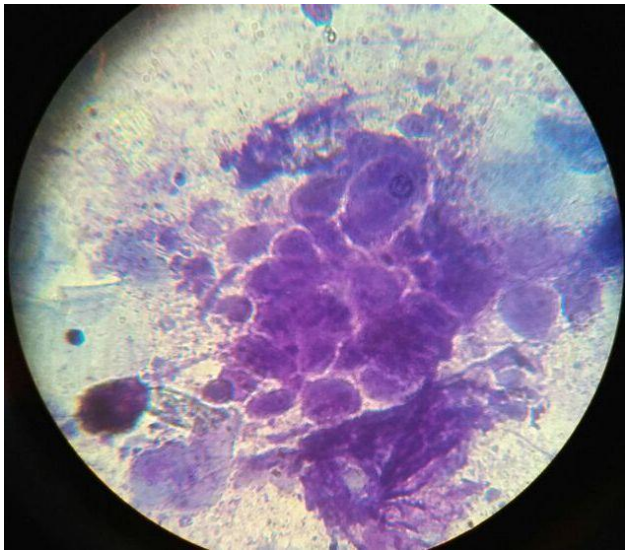

Figure 10: Multinucleated giant cells.

DISCUSSION

Varicella zoster virus remains in a neural ganglion while the patient has the general immunity to the virus. Herpes zoster occurs due to the reactivation of Varicella Zoster Virus (VZV) in patients who previously had clinical or subclinical varicella infection.[13] The most important factor is immune-suppression which can be due to HIV, lymphoma, leukemia, or due to chemotherapy. Local factors such has injury, irradiation, sun burn can trigger the zoster outbreak. In many patients the only risk factor is increasing age. Other factors such as infections like syphilis, small pox can stimulate zoster. In addition to these triggers, poisons such as arsenic and carbon monoxide have also been implicated.[14]

Clinical features

Zoster is generally a dermatomal disease. Usually the clinical features follow three phases.

Prodromal phase: In herpes zoster infection the prodromal illness precedes the rashes it include pain, fever, malaise, headache, itch and paresthesias followed by the rash by a few hours to several days in most of the patients. In some cases, there can be frequent itching or pain that develops even before the appearance of the rash - zoster sine herpete, where there can be a chance of delayed diagnosis of the disease.

Active phase: The active phase begins following the prodromal phase. This phase includes the characteristic skin lesions such as papules or macules with a erythematous base which progress to form vesicles within 12−24 hours the progressed again to form pustules in 1−7 days.[15] Usually new lesions continue to develop for 2 to 3 days. Some may be outside the dermatome. Involvement of three dermatomes is considered normal. Involvement of more than 20 lesions or a handful of lesions other than

the dermatomal lesions is considered as dissemination, but the time course of the disease must also be considered. The midline is always not crossed, but few lesions can be present over the lesion indicating the small nerve branches.[13,14]

Resolution phase: Finally the resolution phase comes where the crusting in the lesions occurs around 14−21 days.

Chronic phase: The chronic phase of the disease is associated with the development of post-herpetic neuralgia, involvement of cranial nerves / motor nerves and involvement of visceral organs.

Clinical variants of zoster: This includes ophthalmic zoster, oral zoster, cranial zoster, otic zoster, zoster in pregnancy.

Complications

Herpes zoster and its complications can impact patient's quality of life. Complications are more common among elderly individuals and immunocompromised individuals.

In our study, the incidence of herpes zoster is high in females (53%) similar to the study of Kim et al.[7] Predominantly affects people of elderly age group (>60 yrs-40%). 40% of our patients have been diabetic and 2% were HIV positive, previous study by Kim et al[7] showed 50% diabetic and 5% were HIV positive. 60% of our patients had post herpetic neuralgia and secondary bacterial infection in 52% in contrast to 50% and 35% of Kim et al study.[7] The dermatomal distribution of herpes zoster in our study in descending order is thoracic, ophthalmicus, oticus, cervical, lumbosacral which is similar to that of previous study by Kim et al.[7] Tzanck Smear showed multinucleated giant cells in 77% (Figure 10).

All patients were treated with Acyclovir 800 mg five times a day for 7 days. Corticosteroids started in acute zoster pain, Ramsay Hunt syndrome, and ocular complications. Steroids are more beneficial when combined with an antiviral agent. Early administration of acyclovir with steroids had shown better prognosis. Post-herpetic neuralgia is an important concern in this condition which is usually responsive to tri-cyclic antidepressants (TCA). Pregabalin, gabapentin and carbamazepine can be used for pain relief.

CONCLUSION

Herpes zoster is often mild in healthy young persons, older persons are at increased risk for pain and complications, including post-herpetic neuralgia, ocular disease, motor neuropathy, and CNS disease. In the vast majority of cases, the diagnosis can be made clinically. Antiviral therapy is most beneficial for persons who have complications of herpes zoster or who are at increased risk for complications, such as older persons and immune-compromised persons, and should be initiated as soon as possible, generally within 72 hours after the onset of the rash. Valacyclovir or famciclovir is preferred over acyclovir owing to the reduced frequency of dosing and higher levels of antiviral drug activity.

The patient described in the vignette should receive oral antiviral therapy, medication for pain (e.g., an opioid, with the addition of gabapentin if needed), and prompt referral to an ophthalmologist. Patients should also be advised to avoid contact with persons who have not had varicella or have not received the varicella vaccine until his lesions have completely crusted.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Gnann JW Jr., Whitley RJ. Clinical practice. Herpes zoster. N Engl J Med. 2002;347:340‑6.
2. Lal H, Cunningham AL, Godeaux O, Chlibek R, Diez Domingo J, Hwang SJ, et al. Efficacy of an adjuvanted herpes zoster subunit vaccine in older adults. N Engl J Med. 2015;372:2087-96.
3. Gershon AA, Gershon MD, Breuer J, Levin MJ, Oaklander AL, Griffiths PD, et al. Advances in the understanding of the pathogenesis and epidemiology of herpes zoster. J Clin Virol. 2010;48 Suppl 1:S2-7.
4. Ono F, Yasumoto S, Furumura M, Hamada T, Ishii N, Gyotoku T. Comparison between famciclovir and valacyclovir for acute pain in adult japanese immunocompetent patients with herpes zoster. J Dermatol. 2012;39:902‑8.
5. Schmid DS, Jumaan AO. Impact of varicella vaccine on varicella‑zoster virus dynamics. Clin Microbiol Rev. 2010;23:202−17.
6. Ogunjimi B, Van Damme P, Beutels P. Herpes zoster risk reduction through exposure to chickenpox patients: A Systematic multidisciplinary review. PLoS One. 2013;8:e66485.
7. Kim YJ, Lee CN, Lim CY, Jeon WS, Park YM. Population based study of the epidemiology of herpes zoster in Korea. J Korean Med Sci. 2014;29:1706‑10.
8. Koshy E, Mengting L, Kumar H, Jianbo W. Epidemiology, treatment and prevention of herpes zoster: A comprehensive review. Indian J Dermatol Venereol Leprol. 2018;84(3):251-62.
9. Stein AN, Britt H, Harrison C, Conway EL, Cunningham A, Macintyre CR, et al. Herpes zoster burden of illness and health care resource utilisation in the australian population aged 50 years and older. Vaccine. 2009;27:520‑9.
10. Li Y, An Z, Yin D, Liu Y, Huang Z, Xu. Disease Burden due to herpes zoster among population aged

≥50 years old in China: A community based retrospective survey. PLoS One. 2016;11:e0152660.
11. Chen SY, Suaya JA, Li Q, Galindo CM, Misurski D, Burstin S. Incidence of herpes zoster in patients with altered immune function. Infection. 2014;42:325-34.
12. Katz J, Cooper EM, Walther RR, Sweeney EW, Dworkin RH. Acute pain in herpes zoster and its impact on health‐related quality of life. Clin Infect Dis. 2004;39:342‐8.
13. Arvin AM. Varicella-zoster virus: overview and clinical manifestations. Semin Dermatol. 1996;15:4-7.
14. Kakourou T, Theodoridou M, Mostrou G. Herpes zoster. J Am Acad Dermatol. 1998;39:207-10.

Cite this article as: Velappan R, Ramasamy S, Nallu K, Ganapathi A. An analytical study on clinical patterns of herpes zoster in this era. Int J Res Dermatol 2019;5:641-5.