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A CLINICO-EPIDEMIOLOGICAL STUDY OF HERPES ZOSTER IN A TERTIARY CARE HOSPITAL

Dermatology

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ABSTRACT

Back ground: Herpes Zoster is characteristic in its clinical presentations and history. Early treatment of it stands to be highly beneficial for the patients and can reduce various complications including the most common complication that is post herpetic neuralgia [PHN) **Materials and methods:** A total of 100 patients of herpes zoster attending the Department of Dermatology during the study period were enrolled in this study. After detailed demographic history, a past history of chicken pox, a detailed history with reference to onset, duration, site of eruption, prodromal symptoms and associated pain were recorded. A thorough physical examination of site of involvement, morphology of lesions, number of dermatomes involved, any associated lymphadenopathy and other associated features were recorded into a pre structured profora. **Results:** The mean age in the study was 48.9±18.3 years, with majority being males (62%), with dermatomal pain (56%) and had diabetes (15%). Majority of the patients had thoracic dermatomal involvement (57%), had post herpetic neuralgia (25%). PHN was significantly associated with advancing age and had thoracic dermatome involvement ($p<0.05$). **Conclusions:** The results of the clinical study conducted on herpes zoster provide valuable insights into the epidemiology, and risk factors.

KEYWORDS

Herpes zoster, Dermatome, HZV, Post Herpetic neuralgia

INTRODUCTION

Varicella zoster virus causes the benign localised viral neuro-dermopathic disease herpes zoster (HZ), also referred to as Shingles (VZV).[1] VZV is a common double-stranded DNA herpes virus with at least 70 gene products in its genome.[2] Clinically, it is distinguished by clusters of vesiculo-bullous eruptions that are restricted to dermatomes caused by reactivation of the latent virus established in one or more sensory root ganglia during primary clinical or subclinical infection early in life or occasionally in utero. The primary infection presents as chicken pox (CP).[3,4] The term "zoster" or "girdle" describes the disease's segmental distribution. [5] While the majority of cases of chicken pox affect people who are younger in age, herpes zoster is much more likely to affect people who are older.[6] It typically appears several years after the initial chicken pox infection or chicken pox immunisation.

Pain is typically present, and the continuation of that pain is problematic, especially in senior people. When someone has a damaged immune system, they develop a severe version of the disease. [5] An important risk factor for getting herpes zoster is being older. Immunosuppressive conditions (iatrogenic, hereditary, or acquired) like diabetes, cancer, and HIV infection may be the cause of the viral reactivation. The viral reactivation is also triggered by physiological stress, surgery, radiation, sunburn, and trauma.[10]There are surprisingly little research on the epidemiology, clinical characteristics, and knowledge and awareness among HZ patients in South Asia despite the fact that HZ is a common source of illness. In a busy tertiary care facility, this study was conducted to look into the clinico-epidemiological profile of this illness.

MATERIALS AND METHODS

It is a cross-sectional study design carried on patients attending the OPD of Department of Dermatology, at C.G. Hospital and Bapuji Hospital, attached to JJ.M. Medical College, Davangere, Karnataka. Research study was conducted for 24 months from October 2020 to October 2022.Inclusion criteria was patients with zoster less than 6 weeks duration of all age groups,pregnant women, HIV positive patient. The exclusion criteria was patients not willing to be included in the study,patients with zoster for more than 6 weeks duration attending for the first time. A sample of 100 cases of Herpes Zoster was studied .

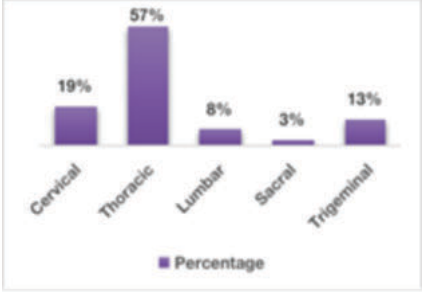
Ethical committee approval was taken.Informed consent was taken. According to a pre-structured proforma data was collected. Patient's age, sex, occupation, and address were noted. A detailed history regarding the prodromal symptoms, skin lesions, nature of pain, duration of illness at the time of presentation, provocative factors were recorded. Associated cutaneous disease, systemic disease and HIV infection were recorded. History of chicken pox and previous attack of zoster were elicited and time taken for complete resolution of lesions was noted. Complications of herpes zoster and association with HIV were also recorded.Each patient underwent detailed general physical and systemic examinations.

Data was entered in excel sheet and analyzed using the Statistical Package for the Social Sciences 20(SPSS Inc. Chicago). Chi square analysis was used in testing for significant differences between proportions and frequencies. T test was done in testing for significant differences between two means. The confidence interval was set at 95% limit, with level of significance, $p < 0.05$.

RESULTS

In a sample of 100 patients studied the foolowing were observed. The mean age in the study was 48.9±18.3 years. Majority of the patients were males (62%) compared to females (38%).Majority of the patients presented with dermatomal pain (56%) followed by burning sensation (11%).Majority of the patients in the study had diabetes mellitus (15%) followed by hypertension (6%).Majority of the lesions were grouped (99%) and only 1% of the patients had disseminated lesion.Majority of the patients had history of chicken pox (92%) and 8% of the patients did not have any history of chicken pox.Majority of the patients had thoracic dermatomal involvement (57%) followed by cervical involvement (19%).Majority of the patients had post herpetic neuralgia (25%) followed by secondary infections (7%).Majority of the patients with post herpetic neuralgia belonged to >60 years followed by 41-60 years (32%). The association was significant when applied chi-square test (<0.05).

Majority of the patients with PHN had thoracic dermatome involvement (52%) followed by cervical involvement (28%).The association was not significant when applied chi-square test (>0.05).Majority of the patients with PHN had diabetes mellitus (16%) followed by HIV (8%). The association was not significant when applied chi-square test (>0.05).



Bar diagram1 represents distribution of patients according to dermatomal involvement.

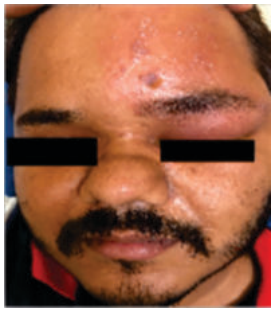


Figure 1 HZO involving left ophthalmic branch of the trigeminal nerve

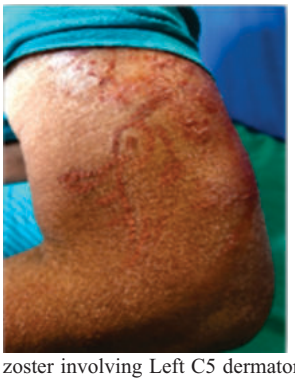


Figure 2 Herpes zoster involving Left C5 dermatome , also we can notice the topical application of mud in the form of the bird eagle which is a local belief as a remedy

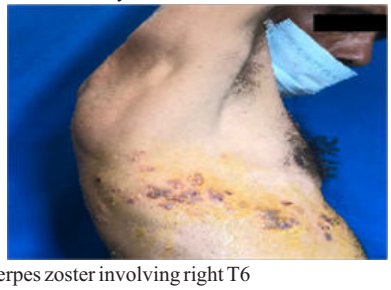


Figure 3 Herpes zoster involving right T6

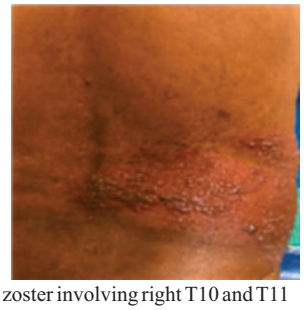


Figure 4 Herpes zoster involving right T10 and T11

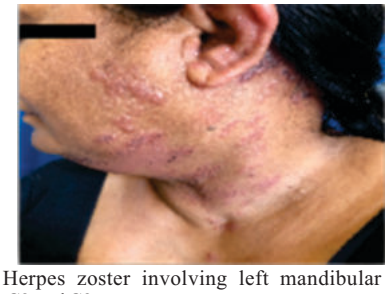


Figure 5 Herpes zoster involving left mandibular division of trigeminal , C2 and C3

DISCUSSION

Herpes zoster, also known as shingles, is a viral infection caused by the varicella-zoster virus, the same virus that causes chickenpox.

The mean age in the study was 48.9±18.3 years.The incidence of herpes zoster increases with age, and it is more common in older adults. A review published in the Journal of the Association of Physicians of India in 2013 found that the incidence of herpes zoster increased with age in India, and that it was more common in elderly patients compared to younger populations.Majority of the patients were males (62%) compared to females (38%) in our study.While herpes zoster can affect individuals of any age, gender, and race, several studies have suggested that there may be differences in the incidence of herpes zoster between men and women. Another study published in the Journal of Clinical and Diagnostic Research in 2015 found that the incidence of herpes zoster was similar in both men and women in India, with a slight female preponderance.Majority of the patients presented with dermatomal pain (56%) followed by burning sensation (11%).

The hallmark of herpes zoster is a painful skin rash, usually accompanied by a prodrome, which refers to symptoms that occur before the rash appears. A study published in the Journal of the American Medical Association in 1995 found that the most common prodromal symptoms in herpes zoster were pain, burning, and itching, which were experienced by over 80% of patients. Other common symptoms included paresthesias, headache, malaise, and fever. The authors noted that these symptoms were often misinterpreted as symptoms of other conditions, such as muscle pain or influenza.[9]Majority of the patients had thoracic dermatomal involvement (57%) followed by cervical involvement (19%).Dermatomal involvement is a hallmark feature of herpes zoster, a viral infection caused by the varicella-zoster virus, the same virus that causes chickenpox. Other commonly affected dermatomes included the lumbar and cervical dermatomes, which were involved in 20-30% of cases.[96]It was noted that the thoracic dermatomes were most commonly affected, followed by the lumbar and cervical dermatomes, and that the dermatomal involvement was often asymmetrical.[95]

Majority of the patients had post herpetic neuralgia (25%) followed by secondary infections (7%).The complications of herpes zoster can vary depending on several factors, including age, immune status, and the severity of the infection. Understanding the common complications of herpes zoster is important for managing this condition and reducing the risk of long-term effects.A study published in the Journal of the American Medical Association in 2003 found that the most common complications of herpes zoster included postherpetic neuralgia (PHN), a persistent pain that can last for months or even years after the rash has resolved, and ocular involvement, including conjunctivitis, iritis, and corneal ulcers. Other complications included motor deficits, which can result from involvement of the motor nerves, and encephalitis, which is a rare but serious complication of herpes zoster.[96]

It was noted that presence of comorbidities and immune status, could increase the risk of complications, including PHN.[97]A review published in the New England Journal of Medicine in 2008 found that the risk of PHN and other complications, including motor deficits and encephalitis, was highest in older adults, and that prompt and effective treatment of herpes zoster was important for reducing the risk of long-term effects. The authors also noted that the use of antiviral drugs and other therapies, such as pain management, could help to reduce the risk of complications.[95] Prompt and effective treatment of herpes zoster is important for reducing the risk of long-term effects.

We had 25% patients who had post-herpetic neuralgia, which was associated with older age.Post-herpetic neuralgia (PHN) is a common and often debilitating complication of herpes zoster, also known as shingles. PHN is characterized by persistent pain that can last for months or even years after the rash has resolved. Understanding the factors that influence the development of PHN is important for managing this condition and reducing the risk of long-term effects.Another study published in the Journal of Pain and Symptom Management in 2005 found that the severity of the pain experienced during the acute phase of herpes zoster was a strong predictor of the development of PHN. The authors also noted that the duration of pain was associated with the risk of PHN and that prompt and effective treatment of herpes zoster was important for reducing the risk of long-term effects.[97]A review published in the New England Journal of Medicine in 2008 found that the risk of PHN was highest in older adults, particularly those over the age of 60, and that prompt and effective treatment of herpes zoster was important for reducing the risk of PHN. The authors also noted that the use of antiviral drugs and other therapies, such as pain management, could help to reduce the risk of PHN.[95]In conclusion, PHN is a common and often debilitating

complication of herpes zoster. The incidence of PHN increases with age and is more common in patients with more severe cases of herpes zoster. Other factors, such as the presence of comorbidities and immune status, can also increase the risk of PHN. Prompt and effective treatment of herpes zoster is important for reducing the risk of long-term effects, including PHN.

CONCLUSIONS

In conclusion, herpes zoster is a common condition that affects a large number of individuals, particularly those over the age of 60. The disease is caused by the reactivation of the varicella-zoster virus and is characterized by a painful rash that can have serious complications, including post-herpetic neuralgia. The severity of herpes zoster and the risk of developing post-herpetic neuralgia are influenced by a number of factors, including age, comorbidities, and immune status.

The results of the clinical study conducted on herpes zoster provide valuable insights into the epidemiology, and risk factors. The study highlights the importance of prompt and effective treatment of herpes zoster, as well as the need for further research to identify new and innovative therapies that can improve outcomes for patients with this condition.

Overall, the clinical study on herpes zoster has significant implications for improving the management and outcomes of this condition, and will likely have a lasting impact on the field of dermatology and infectious diseases.Despite the problem's widespread prevalence and the significant economic impact and health morbidity it carries, clinico-epidemiological statistics are scarce. Patients have a poor understanding of the HZ and traditional religion, thus there needs to be an awareness campaign about the gravity of the condition and any related complications. For more precise findings about the clinical, epidemiological, and social behaviours of HZ, a larger and more comprehensive study would be required.

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