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Original Research Article

Epidemiological study of herpes zoster in a tertiary care hospital

Nekram Baghel, Sankalp Awasthi*, Sweta S. Kumar

Department of Dermatology, University of medical sciences (UPUMS), Saifai (Etawah), Uttar Pradesh, India

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***Correspondence:**
Dr. Sankalp Awasthi,
E-mail: dr.sankalp.avasthi@gmail.com

ABSTRACT

Background: Herpes Zoster, which presents as a localized, painful cutaneous eruption is a common clinical problem, caused by reactivation of latent Varicella Zoster Virus (VZV) and is usually self- limiting in healthy adults. In this era of HIV infection, HIV seropositive patients are at increased risk of severe or disseminated cutaneous or visceral involvement. Aim was to analyse the clinical pattern and epidemiological factors of Herpes Zoster and to know the HIV prevalence among patients with Herpes Zoster.
Methods: A total of 110 patients with Herpes Zoster attending dermatology department at Uttar Pradesh university of medical sciences (UPUMS), Saifai, Etawah, India from a period of July 2015 to July 2017 were included in the study.
Results: Out of 110 patients, 79 were males 31 were females. Age group varied from 8-80 years. Most common dermatomes involved were thoracic followed by ophthalmic division of trigeminal nerve. 33.6% of patients showed HIV seropositivity. Most commonly observed complication was post herpetic neuralgia which was encountered in 36% of the patients and most of these patients were above the age of 60 years. Post herpetic neuralgia was more commonly seen in seropositive individuals as compared to seronegative individuals.
Conclusions: Disseminated zoster and multi-dermatomal involvement were encountered in immuno-compromised individuals. Post herpetic neuralgia was seen in elderly patients, especially in case of ophthalmic zoster.

Keywords: Herpes zoster, HIV seropositivity, Post herpetic neuralgia, Trigeminal nerve

INTRODUCTION

Herpes zoster caused by the neurodermotropic virus called "varicella zoster virus" Varicella zoster virus (VZV) is found in a world wide geographic distribution, but annual epidemics are more prevalent in temperate climate and over 90 percent of adults in the United states have serologic evidence of VZV infection and are at risk for Herpes zoster. In India and certain other Asian countries overall seroprevalence of primary varicella infection is relatively low and late. This combined with variable climatic conditions may responsible for a different seasonal and morphological pattern in herpes zoster. This benign localized viral disease has been recognized as a distinct entity since ancient times Herpes zoster, which presents as localized, painful cutaneous eruption, is a common clinical problem, particularly among adults of above 50 years of age and immuno-compromised patients. It manifests as a result of reactivation of the virus laid dormant in the sensory ganglion following a clinical or sub clinical varicella (chicken pox) infection early in life or occasionally in utero.[1-3]

The reactivation of the virus may be due to immuno-suppression (inherited, acquired or iatrogenic), which in turn may be triggered by age, genetic predisposition, trauma, sunburn, exhaustion, physiological stress, irradiation or spontaneous. The first manifestation is usually pain accompanied by constitutional symptoms

and tenderness localized to the area of one or more dorsal nerve roots. This is followed by appearance of papules and vesicles in dermatomal pattern. In uncomplicated cases of spontaneous recovery occur in 2-3 weeks. But in presence of immunosuppression due to any because it runs protracted course causing severe cutaneous and systemic complication. Herpes zoster is the commonest cutaneous manifestation of immune restoration disease. It presents in diverse manner such as multi- dermatomal involvement, crusted, nodular or vesiculopustular, ulcerative, and ecthymatous lesions that may be widely disseminated or localized.[4-10] It is a cause of considerable morbidity, especially in the elderly and fatal in immunocompromised and critically ill patients.

METHODS

The study material consists of 110 patients who attended skin OPD, Uttar Pradesh university of medical sciences (UPUMS), Safai, Etawah from a time period of July 2015 to July 2017. A detailed history with reference to age, prodomal symptoms, season of occurrence, history of varicella, initial site, side, morphology and evolution of lesion and description of pain as noted by the patient. History suggestive of provocative factors such as drugs, recent trauma, surgery, irradiation, immuno-suppressive and cytotoxic chemotherapy, diabetes mellitus, pulmonary TB, HIV infections were inquired. A thorough dermatological examination regarding the segment of involvement, morphology, and pattern of the lesions, regional lymph node enlargement, motor complications, dissemination of the lesions in other areas of the body etc. were noted.

Whenever necessary, opinion from other specialists such as the ophthalmologist, chest physician, and the general physician were sought. At first reporting, the following investigations were carried out, Tzanck smear (in Leishman's stain) examination for ballooned epithelial cells and multinucleated giant cells, complete haemogram, blood sugar, and enzyme-linked immunosorbent assay test for HIV antibodies were conducted. All the patients were reviewed weekly for 1 month and monthly for two more months.

RESULTS

The observations of the study are as follows:

Table 1: Prevalence of HIV seropositivity among Herpes zoster cases.

HIV status	No. of cases	Percentage
Seropositive	37	33.6%
Seronegative	73	66.3%
Total	110	

According to this study, 37 patients (33.6%) out of 110 were seropositive and 73 patients (66.3%) were found to be seronegative.

Table 2: Age wise incidence of Herpes zoster.

Age group in years	No. of cases	Percentage
<20 years	07	6.3%
20-40 years	61	55.4%
40-60 years	34	30.9%
>60 years	08	7.2%

Out of 110 patients, maximum no. of patients i.e. 55% fall under age group 20-40 years followed by 30.9% patients in 40-60-years age group and least no. of cases 6.3% occur in age group below 20 years. Among the HIV positive cases maximum no. of cases occurred in 20-40-years age group and no case observed in patient below 10 years.

Table 3: Sex incidence of Herpes zoster.

Sex of the patient	No. of cases	HIV positive cases
Male	74 (67%)	28
Female	36 (33%)	14
Total	110	42

Among the study group of 110 patients, 67% were males and 33% were females. Among the 42 HIV positive patients, 28 were males and 14 were females, showing male preponderance.

Table 4: Dermatomal involvement.

Dermatome involved	No. of cases
Cranial	14
Cervical	23
Thoracic	55
Lumbo-sacral	18

In this study, thoracic dermatome was more frequently involved followed by cervical, lumbosacral and cranial dermatomes respectively. 55 cases presented with herpes zoster involving thoracic region.

Table 5: Multidermatomal involvement with reference to HIV status.

HIV status	No. of cases	Cases with multi dermatomal diseas	Percentage
Seropositive	37	33	89%
Seronegative	73	19	26%
Total	110	52	47.2%

In this study, while 89% of cases which were HIV seropositive had multi-dermatomal disease, only 26% of the seronegative cases had multi-dermatomal disease. Out of 110 patients 47.2% of cases had multi-dermatomal disease.

The most common complication in this study were secondary bacterial infections seen in 19% cases,

pigmentary disturbances in 13.6% cases, post herpetic neuralgia (PHN) was observed in 13.6% of the cases and 77% of these patients belonged to the age group of >60% years. A higher incidence of PHN (82%) was observed in patients with ophthalmic zoster which contrasts with study by Latheef A et al. Among these patients one of them progressed to trigeminal neuralgia as reported in one study.

Table 6: Complications.

Complications	No. of cases	Percentage
Secondary infection	21	19%
Pigmentary disturbances	15	13.6%
Post herpetic neuralgia	15	13.6%
Dissemination	01	0.9%
Milia	02	1.8%
Keloid	01	0.9%

Table 7: Incidence of PHN with reference to HIV status.

HIV Status	No. of cases	No. of cases with PHN
Seropositive	37	08 (21.6%)
Seronegative	73	07 (9.5%)
	110	15 (13.6%)

From the above Table, it can be observed that out of 37 seropositive patients, 21.6% patients developed post herpetic neuralgia (PHN), while in seronegative patients only 9.5% patients developed post herpetic neuralgia (PHN), this directly reflects that the chances of developing post herpetic neuralgia is more in patients with HIV.

DISCUSSION

HIV status

In the present study of 110 cases of Herpes zoster 33.6% patient were found to be HIV seropositive and 66.7% patient to be found seronegative. In this study, no other causes of immunosuppression or precipitating factors were found except for old age, and 5 of the were diabetic. The result of this study is comparable to the study of Laxmisha C et al, who reported an incidence of 35% of HIV seropositivity among zoster patients.[11]

Age wise incidence

In the present study, the highest no. of cases that is 55% occurred in 20-40 years age group, this was followed by 30% of cases in 40-60 years age group and 7% in more than 60 years age group. The least no. of cases 6% occurred in 10 years age group. This study is comparable with study of Das AL et al, who reported majority of cases in 20-40 yrs age group. A similar case reported by Jain A et al.[12,13]

Sex wise incidence

In the present study 78.1% were males, 21.8% were females. The M:F ratio being 3:1. The study is comparable with the studies of Mathur et al and Chaudhary SD et al, who reported a male preponderance with M:F ratio of 2:1 . Among HIV seropositivie patients M:F ratio was 2.6:1 in this study.[14,15]

Socioeconomic status

The higher incidence of zoster in middle and lower socioeconomic group in this study was due to more no of patients in these groups attending the government general hospital.

Prodomal symptoms

In the present study prodomal symptoms were present in 34% patients which is comparable with the study of Kumar AD et al who reported 30% incidence of prodromal symptoms.[16]

Dermatomal involvement

The pattern of dermatomal involvement in this study is comparable with the study of Nigam P et al. Multidermatomal involvement was observed in 52patients in this study. Out of these cases, 37 patients were HIV seropositive giving an incidence of 89%. Disseminated zoster was noted in 1 patient was a 65 years old male, diabetic and seronegative for HIV infection.

Complications

In this study, secondary bacterial infection was seen in 21 (19%), this is in contrast to the study of Shegal VN et al. And Chaudhary SD et al Who observed secondary bacterial infection in only 4.4% and 2.6% respectively.[15] This may be due the fact that most patient in this study didn't seek medical treatment in the early stage of disease. The 15% incidence of PHN is comparable with the study of Chaudary SD et al and Nigam P et al who reported an incidence of 14.3%.[15] Incidence of PHN among HIV seropositive was 25%.

Disseminated disease though common in immunosuppression was seen in one patient who was negative for HIV, while the study of Sehgal VN et al reported a 3% incidence. Pigmentary disturbances were seen in 13.6% of cases. This is similar to the study of Chaudhary SD et al.[15] Post herpes zoster scarring with Millia formation was seen in two cases and keloid was seen in one patient.

Tzanck test

This patient was positive in 60 patients only (54.5%). This can be explained by the fact that the yield obtained is lower in pustular and crusted lesions.

CONCLUSION

All patients presenting with severe herpes zoster should be screened for HIV seropositivity considered to be marker of undiagnosed HIV infection. In the present study, the prevalence of HIV seropositivity among zoster patients was 32%. Most cases were in the 20-40 years age group with increased incidence in middle and lower socioeconomic strata. Though the disease occurs with equal incidence in both sexes in this study. Male preponderance was noted (M:F was 2.2:1). Multi dermatomal pattern of the disease and the complications were only seen in HIV patients along with grater incidence of PHN. Most common complication was seen was secondary bacterial infections. Recurrent herpes zoster was seen in 2 cases and both of them were HIV positive. Thus, it can be observed from the present study that Herpes zoster runs a severe course in HIV positive person.

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