



## Original Article

# Dermato-Epidemiological Profile and HIV Seropositivity among Male Patients with Herpes Zoster

Authors

Col (Dr) Sehdev Singh<sup>1</sup>, Maj (Dr) Shekhar Neema<sup>2</sup>, Lt Col (Dr) Niloy Pathak<sup>3</sup>

<sup>1</sup>Assistant Professor and Senior Advisor, <sup>2</sup>Assistant Professor,

Dept of Dermatology, Venereology and Leprosy, Command Hospital Kolkata- 700027, West Bengal, India

<sup>3</sup>Assistant Professor, Department of Pathology, Command Hospital Kolkata- 700027, West Bengal, India

Corresponding Author

Col (Dr) Sehdev Singh

Email: [sehdevjaggi@gmail.com](mailto:sehdevjaggi@gmail.com), Mobile No.9051960034

## ABSTRACT

**Background:** Herpes zoster represents reactivation of the latent varicella-zoster virus in the sensory ganglia and forms a small subset of patients attending skin OPD. The study was conducted in Herpes zoster patients to find out the dermato-epidemiological profile and HIV (Human immunodeficiency virus) seropositivity among these cases.

**Methods:** Three hundred and sixty consecutive cases of Herpes zoster were recruited in the descriptive study over the period of three years. The diagnosis was based on the history and clinical examination. HIV screening was done by ELISA method in all the cases.

**Results:** The most common prodromal symptom was paresthesia seen in 22.5% followed by tingling in 17.5% of the cases. Most common presenting complaint was pain in 92.22% followed by localized itching in 6.12% of the patients. Classical herpes zoster were observed in 96-66% and necrotic/ulcerated and hemorrhagic lesions were seen in 3.34% cases only. Thoracic dermatome was the most frequently involved dermatome seen in 74.44% of the patients. Unidermatomal and multidermatomal involvement were noticed in 55.83% and 44.17% of the patients respectively. The seropositivity for HIV were found in 3.05% cases

**Conclusion:** Herpes zoster is a common cause of morbidity in younger population with commonest prodromal symptom of paresthesia and presenting symptom of pain. Though, unidermatomal involvement was more common, incidence of multidermatomal involvement was recorded much higher than earlier studies. HIV seropositivity has been recorded lower than reported incidence in the earlier studies.

**Keywords:** Herpes zoster; Dermatomes; seropositivity.

## Introduction

Herpes zoster is a localized viral infection characterized by unilateral radicular pain and grouped vesicular eruptions that are generally limited to the dermatome innervated by a single or

multiple spinal or cranial sensory ganglion. It occurs as a result of reactivation of varicella zoster virus (VZV) that had persisted in latent form within sensory ganglion following an earlier clinical or subclinical attack of varicella<sup>[1]</sup>. Herpes

zoster has traditionally affected older persons especially more than 60 years of age and also more common in patients with neoplasms especially Hodgkin's lymphoma. Recently, varicella zoster infections have been observed in young adults infected with human immunodeficiency virus<sup>[2]</sup>.

During varicella infection, VZV passes from skin lesions into cutaneous sensory nerve endings and ascends up the sensory fibers to the sensory ganglia, where it remains in the latent stage<sup>[3]</sup>. On reactivation, it travels back along the sensory afferents to the skin associated with hematogenous dissemination. Depending upon the rapidity of immune response, the presentation may vary from no clinical lesions, typical zoster, scattered vesicles, zoster sine herpete or disseminated zoster<sup>[4]</sup>. Reactivation may be triggered by trauma, sunburn, exhaustion, injection, immune-suppression or irradiation. We undertook this study to know clinic-epidemiological characteristics of herpes zoster and HIV seropositivity among these patients.

### Materials and Methods

A descriptive study was carried out in patients, attending skin OPD in large teaching and tertiary care hospital between Jan 2014 and Dec 2016 after taking clearance from institute ethical committee. Before the study was undertaken the written informed consent were taken and the patients who refused to give the consent were excluded from the study. Three hundred and sixty males patients including indoor, OPD and referred cases from other departments were recruited in the study. Diagnosis and symptoms were established clinically which consists of closely grouped erythematous papules or vesico pustules or vesicles on an erythematous base limited to the area of skin innervated by a sensory ganglion, which is nearly always unilateral and does not cross midline (Figure 1). Patient's age, prodromal symptoms, symptoms were evaluated by history and the dermatome distribution was evaluated clinically. Blood sample of all the patients were

sent to the laboratory for HIV serology and HIV status were recorded. Data of all patients was recorded and the results were analyzed.

### Results

A total of 34,902 new male cases attended skin OPD during the study period, thus the frequency of occurrence of herpes zoster amongst skin OPD male cases was 1.03 per cent. The mean age at presentation was 29.6 years. The youngest patient was 18 years old and oldest was 55 years old. The age wise summary of the patients is shown in Table 1. The most frequent age group involved was 21-30 years with total cases 260 (60%) followed by 31-40 years age group with total cases of 87 (24.18%).

Prodromal symptoms were recorded in 227 cases (Table 2). Most common prodromal symptom was paresthesia in 81 (22.5%) followed by tingling in 57(17.5%) cases. Most common presenting complaint was pain in 332 (92.22%) followed by localized itching in 22 (6.12%) cases (Table 3). Classical herpes zoster was seen in 348 (96.66%) cases, necrotic/ulcerative lesions (Figure 2) were seen in 09 (2.5%) cases and only 03(0-84) cases were having hemorrhagic lesions.

Thoracic dermatome was most frequently involved dermatome seen in 268 (74.44%) cases and cervical dermatome seen in 35 (9.72%) cases only (Table 4). Ophthalmic nerve involvement was seen in 24 (6.66%) cases. Unidermatomal involvement was seen in 201(55.83%) cases where as multidermatomal involvement was observed in 159 (44.17%) cases (Table 5).

Out of these Herpes Zoster cases only 11(3.05%) cases were seropositive for HIV. Nine cases were having multidermatomal involvement (Figure 3) and two case were having involvement of ophthalmic division of trigeminal nerve.



**Figure 1:** Grouped vesicular lesions on erythematous base in patient with Herpes zoster.



**Figure 4a:** Multidermatomal involvement before treatment in a HIV infected patient.



**Figure 2:** Photograph showing, necrotic and ulcerative lesions in patient with Herpes zoster



**Figure 4b:** Healed Herpes zoster in the same patient as Figure 4a.



**Figure 3:** Crusted grouped lesions of multidermatomal involvement in Herpes zoster patient.

**Table 1:** Age wise summary of patients

Age	No of cases	Percentage
Up to 20yrs	15	4.16%
21-30 yrs	216	60%
31-40yrs	87	24.18%
41-50yrs	36	10%
51-60yrs	06	1.66%
Total	360	100%

**Table 2:** Summary of prodromal symptoms

Prodromal symptom	No of cases	Percentage
Paresthesia	81	22.5%
Itching	63	17.5%
Tingling	57	15.83%
Burning	18	05%
Headache and fever	05	1.38%
Watering from eyes	03	0.83%
Total	227	100%

**Table 3:** Summary of symptoms

Symptom	No of cases	Percentage
Pain	332	92.22%
Itching	22	6.12%
fever	03	0.83%
Pain and Itching	03	0.83%
Total	360	100%

**Table 4:** Summary of dermatomal distribution of lesions

Dermatome	No of cases	Percentage
Cervical	35	9.72%
Thoracic	268	74.44%
Lumbar	27	7.53%
Sacral	06	1.65%
Ophth	24	6.66%
Total	360	100%

**Table 5:** Summary of dermatomal distribution of patients

Category	No of Cases	Percentage
Unidermatomal	201	55.83%
Multidermatomal	159	44.17%
Total	360	100%

**Table 6:** Summary distribution of HIV cases

S No	Age	Dermatome
1.	23	L1,L2 (Rt)
2.	26	T2,T3 (Rt)
3.	39	T10,T11 (Lt)
4.	25	T8,T9(Rt)
5.	32	T7,T8(Lt)
6.	27	T11-L2(Rt)
7.	38	Ophthalmic division of trigeminal nerve(Rt)
8.	33	T5-T6(Rt)
9.	28	L2-L3(Lt)
10.	36	C2-C3(Lt)
11.	34	Ophthalmic division of trigeminal nerve(Rt)

## Discussion

Herpes zoster is common among immune-compromised persons, so the elderly are at particular risk, because immunocompetence declines with age. Ragozzino M, et al<sup>[5]</sup>, reported that Herpes zoster afflicts 20% of general population during their life time, especially in elderly, although it may be seen in any age group. Few other studies have reported, approximately 30% of individuals develop herpes zoster over their lifetime<sup>[6],[7], [8]</sup>. In a similar study on herpes zoster the rate of occurrence is in the range of 3 to 5 per thousand persons per year<sup>[9]</sup>. In another study, the incidence of herpes zoster was estimated to be 1.5 to 4 cases per 1000 persons

annually<sup>[10,11]</sup>. More than two third of the reported cases occur in individuals over fifty years of age and less than ten percent occur in those under the age of twenty years.

The average age at presentation in our study was 29.6 years which is 08 years less than the findings of Dubey Anand Kumar, Jaisainkar TJ and Thappa Devinder Mohan<sup>[12]</sup>, and about 18 years less than the findings by Goh CL and Khoo L<sup>[13]</sup>. Majority (88.34%) of our cases were less than 40 years that is in contrast to older age groups in earlier studies. This may be explained by the fact that majority of our OPD patients are in age group of 21-40 years.

In our study, thoracic dermatome was involved in 268 (74.44%) cases which is significantly higher than the study conducted by Goh CL & Khoo L<sup>[13]</sup>, where the involvement was seen only in 45 % of the cases and by Dubey Anand kumar<sup>[12]</sup>, where the involment was only 54.81% of the cases. Cervical dermatome and ophthalmic nerve involvement in our study was 9.72% and 6.66% of the cases which was slightly less than the study by Dubey Anand Kumar where the involvement of the cervical dermatome and ophthalmic nerve was 15.8% & 9.3 % cases respectively. In our study, unidermatomal involvement was more common seen in 201 (55.83%) cases than multidermatomal involvement which was seen in 159 (44.17) and none had disseminated Herpes zoster. Mutidermatomal involvement was proportionatly very high in contrast to earlier study of Dubey Anand Kumar, Jaisainkar TJ and Thappa Devinder Mohan<sup>[12]</sup>, where unidermatomal involvement was proportionatly high seen in 75.7% cases and multidermatomal involvement was seen only in 16.8% cases. and 7.4% cases had disseminated herpes zoster.

In this group of 360 adult cases of herpes zoster, 11 (3.05%) cases were recorded seropositive for HIV (Figure 4a & Figure 4b). In a study conducted by Dubey Anand Kumar, Jai Sankar T J, and Thappa Devinder Mohan<sup>[12]</sup>, out of 46 cases HIV seroposivity recorded in 13.06% and Kar PK, Ramasastry CV<sup>[14]</sup> out of 115 cases

recorded seropositivity in 9.5%. The rate of HIV seropositivity was comparatively lower in our study. This may be explained due to better awareness amongst the population about HIV infection in recent times which has resulted in declining trend over the years and secondly also may be due to large sample size in our study compared to earlier studies, where sample size was relatively small. All cases who were seropositive for HIV had multidermatomal involvement except two case in which ophthalmic nerve was involved.

### Conclusion

Herpes zoster commonly occurred in younger population in our study with commonest prodromal symptom of paresthesia & symptom of pain. Thoracic dermatome was involved in three fourth of the cases. More than 40% of the cases were having multidermatomal involvement. Percentage of HIV in herpes zoster cases was seen in 3.05% which is lower than studies conducted earlier and may be explained due to better awareness amongst peoples in recent years and bigger sample size as recorded in our study.

**Conflict of interest:** There are no conflict of interest

**Source of support:** Nil

### References

1. Straus SE, Schmdar KE, Oxman MN. In: Freedberg M, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, editors. Fitzpatrick's Dermatology in General Medicine. 6th edition. New York: McGraw Hill, 2003; 2070-85.
2. Colebunders R, Mann JM, Francis H, et al. Herpes Zoster in African patients: A clinical predictor of human immunodeficiency virus infection. *J Infect Dis* 1988; 157(2): 314 -8.
3. Talwar S, Shrivastava VK. Herpes zoster ophthalmicus with total ophthalmoplegia. *Indian J Dermatol Venereol Leprol* 1991; 56: 454-5.
4. Talwar S. Herpes zoster associated with varicelliform eruption. *Indian J Dermatol Venereol Leprol* 1991; 57:62.
5. Ragozzino MW, Melton LJ III, Kurland LT et al. Population-based study of herpes zoster and its sequelae. *Medicine (Baltimore)* 1982; 61: 310-16.
6. Brisson M, Edmunds W, Law B, et al. Epidemiology of varicella zoster virus infection in Canada and the United Kingdom. *EpidemiolInfect.*2001;127(2):305-14
7. Buchbinder SP, Katz M,Hessol N, et al. Herpes zoster and human immunodeficiency virus infection. *J Infect Dis.* 1992;166(5):1153–56.
8. Hope-Simpson RE. The nature of herpes zoster: a long-term study and a new hypothesis. *Proc R Soc Med.* 1965;58:9-20.
9. Adams RD, Victor M, Ropper AH, editors. Syndromes of Herpes Zoster. In: Principles of Neurology, International edition. New York: Mc-Graw Hill 1997;756-9.
10. Ragozzino MW, Melton LJ, Kurland LT. Population based study of herpes zoster and its sequelae. *Medicine (Baltimore)* 1982; 6: 310 - 16.
11. Donahue JG,Choo PW, Manson JE, Platt R. The incidence of herpes zoster. *Arch Intern Med.* 1995;155(15):1605–09.
12. Dubey Anand Kumar, Jaisankar T J, Thappa Devinder Mohan. Clinical and morphological characteristics of herpes zoster in south India. *Indian J of Dermatology* 2005; 04: 203-7.
13. Goh CL, Khoo L. A retrospective study of the clinical presentation and outcome of herpes zoster in a tertiary dermatology outpatient referral clinic. *Int J Dermatol* 1997; 36:667-72.
14. Kar PK, Ramasastry CV. HIV prevalence in patients with herpes zoster. *Indian J of Dermatology, Venereology and Leprology* 2003; 69:116-19.