



A retrospective analysis of clinical profile and presentation of herpes zoster amongst patients of Tripura, India.

KEYWORDS

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ABSTRACT Herpes zoster (HZ) acute viral infection characterized by vesicular skin lesions caused by the reactivation of latent infection with varicella zoster virus (VZV) after primary varicella infection over a dermatome. The present study retrospectively analysed herpes zoster cases to know the age and sex distributions, variations and morphological characteristics, severity and presence predisposing factors of herpes zoster in our part of this country. Out of 149 cases, 98 were males and 51 were females with a male to female ratio of 1.92:1 and mean age of incidence of 55 years. Almost 98% of our cases had segmental neuralgia some times during the course of herpes zoster with varying intensity from mild to severe. Thoracic dermatome was commonly (64; 42.95%) affected followed by cranial, cervical, lumbar, and sacral. Twelve (8.05%) patients had more than one dermatome involvement and all of them had precipitating factors in the form of pre-existing disease with or without immunosuppressive therapy. However, HIV associated herpes zoster was minimal in this part of country as compared to other studies.

Introduction:

Herpes zoster (HZ) is caused by the reactivation of latent infection with varicella zoster virus (VZV) after primary varicella infection. It is an acute viral infection characterized by vesicular skin lesions, which are usually distributed over several unilateral adjacent sensory dermatomes.¹ It causes chicken pox and then remains latent for decades in cranial nerve, dorsal root, and autonomic nervous system ganglia along the entire neural axis.

The reactivation of the virus results from depression of specific cell-mediated immunity, which in turn may be triggered by age, genetic predisposition, trauma, sunburn, exhaustion, psychological stress, immunosuppression or irradiation.⁶ The clinical expression of the disease from mild to disseminate is related to the rapidity of immune response that is very variable in different people.²

Although in most cases the manifestations are classical, there are occasions, particularly of visceral involvement that can challenge the knowledge of even an experienced physician. Another important and most troublesome complication is post herpetic neuralgia (PHN), which is very difficult to the patient as well as to the physician³ and to date there, is no single effective drug to cure this troublesome complication.

Herpes zoster is one of the opportunistic infections occurring in HIV seropositive patients. The incidence of herpes zoster is greatly increased in persons infected with HIV. In HIV, it presents in diverse manner such as multi-dermatomal involvement, crusted, nodular or

vesiculo-pustular, ulcerative, and ecthymatous lesions that may be widely disseminated or localized.⁴⁻⁸

We undertook this study to know the age and sex distributions, variations and morphological characteristics, severity and presence predisposing factors of herpes zoster in our part of this country.

Materials and Methods:

It's a retrospective analytical study. The study material consists of 149 patients of Herpes Zoster who attended Dermatology and Ophthalmology outpatient Department of Tripura Medical College & Dr.B.R. Ambedkar Memorial Teaching Hospital over a period of 4 years (w.e.f. 2012 to 2015). Details were noted with reference to age, sex, onset, prodromal symptoms, history of varicella, initial site, morphology of initial lesions as noted by patient, description of pain and evolution from the case record sheet. Also enquired about the known precipitating factors like any past or present illness, physical or emotional stress, any surgical procedure or irradiation and history of drug intake were noted. Occupation, socio-economic status was also ascertained. Details of family history and personal history were also noted. Also noted any special investigation was performed specially in cases admitted in the ward.

| Distribution of cases according to age and sex | | | | | |
|--|-----------|------|--------|-------|------------|
| Serial No. | Age Group | Male | Female | Total | Percentage |
| 1. | 0 – 10 | 1 | 1 | 2 | 1.34 |
| 2. | 11 – 20 | 2 | 0 | 2 | 1.34 |
| 3. | 21 – 30 | 15 | 7 | 22 | 14.76 |
| 4. | 31 – 40 | 22 | 7 | 29 | 19.46 |
| 5. | 41 – 50 | 34 | 23 | 57 | 38.25 |
| 6. | 51 – 60 | 15 | 7 | 22 | 14.76 |
| 7. | 61 – 70 | 6 | 3 | 9 | 6.04 |
| 8. | 71 – 80 | 1 | 1 | 2 | 1.34 |
| 9. | 81 – 90 | 2 | 1 | 3 | 2.01 |
| 10. | 91 – 100 | 0 | 1 | 1 | 0.67 |
| | Total | 98 | 51 | 149 | 100% |

Table-1: Age and sex distribution of herpes zoster

| Involvement of Various Segments | | | | | |
|---------------------------------|------------------|------|--------|-------|------------|
| Serial No. | Segment Affected | Male | Female | Total | Percentage |
| 1. | Cranial | | | 42 | 28.18 |
| | A)Trigeminal | | | | |
| | a)Ophthalmic | 17 | 5 | | |
| | b)Maxillary | 8 | 3 | | |
| | c)Mandibular | 5 | 2 | | |
| | B)Facial | 2 | 0 | | |
| 2. | Cervical | 9 | 6 | 15 | 10.16 |
| 3. | Thoracic | 34 | 30 | 64 | 42.95 |
| 4. | Lumbar | 10 | 3 | 13 | 8.72 |
| 5. | Sacral | 3 | NIL | 3 | 2.01 |
| 6. | Multi dermatomal | 10 | 2 | 12 | 8.05 |
| | Total | 98 | 51 | 149 | 100 |

Table-2: Segmental distribution of herpes zoster**Results and observations:**

Out of 149 cases, 98 were males and 51 were females with a male to female ratio of 1.92:1. The age ranged from 10–100 years with a mean age of 55 years. The youngest case was of 10 years and oldest of 100 years. One hundred and twelve cases were below 50 years and only 37 were above 50 years of age. The maximum number of cases was in the age group of 41–50 years (38.25%), which is followed by 31–40 years (19.46%), and 51–60 years (14.76%). Minimum number of cases was observed in the age group of 1–10 years and 71–80 years (1.34% and 0.67% respectively). (Table-1)

Out of 149 cases, 80 (53.69%) had definite history of chicken pox and half of them were within 40 years of age and in 69 cases (46.30%) no history could be elicited.

Fifty (33.55%) cases had one or more suspected precipitating factors. Fifteen patients were on systemic corticosteroids for various diseases like pemphigus vulgaris, exfoliative dermatitis, rheumatoid arthritis, systemic lupus erythematosus, costochondritis.

Three patients had underlying malignancies (two cases of lymphoreticular malignancies, one bronchogenic carcinoma) and were on chemotherapy/radiotherapy or on both,

Twenty two patients were diabetic, 01 patient had HIV infection and two patients had pulmonary tuberculosis and nine cases of alcoholic liver diseases

Only 21 (14.09%) patients had significant constitutional symptoms such as headache, malaise, body ache, arthralgia, and fever 2-3 days prior to or concurrently with the onset of eruptions.

Almost 98% of our cases had segmental neuralgia some times during the course of herpes zoster with varying intensity from mild to severe.

In 82 (55.03%) cases, pain preceded the eruption of zoster vesicles. Concurrently started with the vesicles in 52 and followed by 2–3 days in 4 patients. And one patient had pre-herpetic itching started 2–3 days prior.

Thoracic dermatome was commonly (64; 42.95%) affected followed by the Trigeminal nerve. (30; 20.13%) Two cases of facial nerve (1.34%) involvement with Ramsay hunt syndrome were present. Fifteen patients had cervical, 13 lumbar, and 03 had sacral nerve involvement. (Table-2)

Twelve (8.05%) patients had more than one dermatome involvement and five (3.35%) cases had aberrant vesicles in distant areas other than dermatome.

Discussion:

Our study revealed that majority of cases (38.25%) in the age group of 41–50 years of age and overall 75.16% of cases are below 50 years of age which is similar as observed by Goh et al where mean age of herpes zoster was 48.8 years.⁹ However, three other Indian studies reported age range in the 4th decade.¹⁰⁻¹²

In Our study, male to female ratio is 1.92: 1 which is in concordance with other Indian studies by Abdul et al & Aggarwal SK et al.^{12,13} On the contrary, western studies recorded no sex preponderance.^{9,14,15} This discrepancy may due to more frequent outdoor and occupational exposure of Indian males compared to females in a third world scenario like India.

Eighty patients (53.69%) had definite history of chicken pox, most of them within 40 years of age and in 69 cases (46.30%) no history could be elicited. This shows reactivation of active infection is more relevant in younger age groups.

Fifty (33.55%) cases had one or more suspected precipitating factors. The commonest precipitating factors were systemic corticosteroids for various diseases like pemphigus vulgaris, Exfoliative dermatitis, rheumatoid arthritis, systemic lupus erythematosus, costochondritis followed by diabetes, alcoholic liver diseases, underlying malignancies on chemotherapy/ radiotherapy or both, Pulmonary tuberculosis and HIV. Depressed or altered cell mediated immunity associated with all the above cited conditions could be the probable explanation for developing herpes zoster.^{15, 16, 17}

In the present study, Only 21 (14.09%) patients had significant constitutional symptoms such as headache, malaise, body ache, arthralgia, and fever 2-3 days prior to or concurrently with the onset of eruptions are comparable to the studies by Abdul et al (10.7%).¹² However, prevalence of prodromal symptoms reported by Dubey Anand Kumar et al and Grandhiusha et al is higher (30% & 34% respectively).^{18,19}

Almost 98% of our cases had segmental neuralgia some times during the course of herpes zoster with varying intensity from mild to severe.

In 82 (55.03%) cases, pain preceded the eruption of zoster vesicles. Concurrently started with the vesicles in 52 and followed by 2–3 days in 4 patients. And one patient had pre-herpetic itching started 2–3 days prior. The observation is almost similar with earlier Indian study by Abdul et al.¹² However zoster associated pain was found to be less in studies by Aggarwal SK et al where incidence of zoster cases was more in younger side of age.¹³

In concordance with Abdul et al, in our study also thoracic dermatome was most commonly affected followed by the cranial nerves, lumbar and sacral. However, Nigam P et al²⁰ and Grandhiusha et al have observed that thoracic dermatomes were most frequently involved followed by the cervical, lumbosacral and cranial dermatomes. Amongst cranial nerves trigeminal was mostly affected and its ophthalmic branch was the most favoured site in our study.

In this study two cases (1.34%) of facial nerve involvement

with Ramsay hunt syndrome were present. Similar observations were also earlier noted by Abdul et al & Aggarwal SK et al (1.46% & 1.1% respectively).^{12,13}

Twelve (8.05%) patients had more than one dermatome involvement and five (3.35%) cases had aberrant vesicles in distant areas other than dermatome and all of them had precipitating factors in the form of pre-existing disease with or without immunosuppressive therapy. Although herpes zoster is considered as a marker of immunosuppression, single case of HIV did not show any atypical presentation in this study.^{15,16,17} Overall the prevalence HIV is very low in this part of country which may be the cause of less or almost minimal number of cases either in multi-dermatomal or atypical cases herpes zoster was noted.

Conclusion:

The study shows a higher age of incidence of herpes zoster in our part of this country with a male preponderance. Zoster associated pain and segmental involvement are comparable to other Indian studies. Incidence of atypical presentation and HIV associated herpes are very low as compared to other parts of the country.

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