

## ORIGINAL CONTRIBUTIONS

### A CLINICO-EPIDEMIOLOGIC PROFILE OF HERPES ZOSTER IN NORTH INDIA

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A clinico-epidemiological study of 230 cases of herpes zoster revealed an overall incidence of 0.6 percent. Out of 230 patients, 160 were males and 70 females (male and female ratio being 2.2:1). The maximum incidence was noted in the second and third decades. A higher incidence was observed in the months of March, April, May and then in August, September and October. A confirmative history of chicken pox in the past was available in 34 (14.7%) patients only. There was no appreciable difference between right and left side involvement, except for the cranial segments, where the right side was predominantly involved. Thoracic segments were most commonly (55.2%) involved followed by cervical (19.5%), lumbo-sacral (13.9%) and cranial (11.3%) segments. Prodromal symptoms were recorded in 20% patients. Among the cranial nerves, ophthalmic branch of trigeminal nerve was most commonly (57.7%) affected. Post-herpetic neuralgia was noticed in 14.3% patients.

**Key words :** Herpes zoster, Clinical study.

A few reports on the clinical pattern and natural history of herpes zoster are available from India.<sup>1,3</sup> The present study was undertaken to reiterate the same with a special emphasis in its course and complications, and to observe the variations both temporal and geographical.

#### Materials and Methods

Herpes zoster patients attending our institution, formed the subject material for the study. A detailed history was recorded incorporating epidemiological details, prodromal features and the course prior to reporting. This was followed by a thorough clinical examination. The diagnosis was based primarily on the clinical features. The findings were recorded on a specially devised proforma.

#### Results

Of the total OPD attendance of 37231 in the past 4 years, 230 were found to have herpes zoster, giving an incidence of 0.6%. The patients of herpes zoster reported throughout the year, but, a definite increase was observed in the months of March, April, May and also in August, September and October (Table I). There were 160 males and 70 females. The male to female ratio was 2.2:1 (Table II). The youngest patient was an eight-month-old female baby, while the oldest was an 80 years female. Majority of the cases had the disease in the second and third decades. The sex incidence in children was equal, while in adults, males predominated.

One case each of asthma, pemphigus vulgaris and systemic lupus erythematosus developed herpes zoster during their treatment with corticosteroids. One patient each had associated pulmonary tuberculosis, contact dermatitis,

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Table I. Month-wise distribution of cases having herpes zoster.

	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total cases	Total OPD cases
1982	6	4	6	4	6	3	2	4	4	6	2	4	51	10,010
1983	4	5	14	11	6	5	8	9	5	6	3	4	80	12,001
1984	5	4	8	7	7	2	4	5	5	6	2	2	57	8,110
1985	3	3	2	5	6	5	2	3	4	5	2	2	42	7,110
Total	18	16	30	27	25	15	16	21	18	23	9	12	230	37,231

Table II. Age and sex incidence of cases having herpes zoster.

Sex	Number of cases in the age (in years) range							Total
	0—10	11—20	21—30	31—40	41—50	51—60	Above 60	
Male	4	47	43	18	20	22	6	160
Female	11	15	20	8	5	8	3	70
Total	15	62	63	26	25	30	9	230

leprosy, malnutrition, hypertension and enlarged calcified thyroid gland.

Majority (75%) of the patients sought medical advice within 3-5 days of the eruption, while 25% reported within 10 days of eruption or with post-herpetic neuralgia. Pre-eruptive prodromal symptoms—itching, formications, burning sensation or pain were recorded in 46 (20%) patients. During the eruptive stage, the symptoms—pain, burning sensation and skin eruptions were recorded in majority 179 (77.8%) of the patients. In 5 (2.1%) patients, however, the eruptions were asymptomatic, four of these cases were children and one young adult male. Pain appeared simultaneously with the eruption in 106 (46%) patients while it followed in 73 (31.7%). The severity of pain was pronounced in elderly patients, but it did not correspond with the severity of the eruption. Malaise, high temperature and body-aches were noted in 26 (11.3%) patients. In addition, 10 (4.3%) patients had moderate headache. Ocular manifestations such as watering, photophobia and pain in the eyes were noted in 5 (2.1%) patients

having herpes zoster ophthalmicus, involving naso-ciliary branch. Difficulty in speaking, swallowing of solid or liquid foods and earache were recorded in one patient who had vesicles on the cranial surface of right ear; and mucosae of throat, larynx and epiglottis of the right side was congested and swollen.

Involvement of multiple dermatomes was noted in 193 (84%) patients, and single dermatome in 37 (16%). Erythematous papules, vesicles, bullae and sometimes pustules were a salient feature in the majority and were seen arranged in small groups along the dermatomal distribution, affecting usually one side of the body. Papular eruptions alone were noted in 10 (4.3%), vesicular lesions in 5 (2.1%) and haemorrhagic bullae in one. Severe erythema and oedema were recorded in 20 (8.6%) patients. Regional, tender, lymphadenopathy was found in 165 (71.7%) patients. The incidence of involvement of the body segments was, cranial 26 (11.3%) patients, cervical 45 (19.5%), thoracic 127 (55.2%) and lumbo-sacral 32 (13.9%). There was no appreciable difference between

the right and left side involvement, except for the cranial segments, where right side was predominantly involved.

Among the cranial nerves, trigeminal (V) nerve was most commonly (22 patients) involved. Facial (VII) nerve alone was involved in 2 patients. One patient had involvement of the V, VII and X cranial nerves simultaneously, while another case was having involvement of V and VII cranial nerves. Ophthalmic division of trigeminal nerve was the most often (15 cases) affected followed by maxillary division (5 cases), and mandibular division (2 cases). Of the 15 cases of ophthalmic division, supra-orbital branch was affected in all, and naso-ciliary branch in 5 cases. Conjunctivitis was present in 3 patients and kerato-conjunctivitis in 2 patients. Ophthalmic and maxillary divisions together were affected in 2 patients.

Five cases had both herpes zoster and varicelliform eruptions. In 2 cases of chicken pox, herpes zoster developed on the second and the third day respectively of chicken pox. Of these, one patient was a 6-year-old male who developed chicken pox lesions first and then grouped vesiculo-bullous lesions on an erythematous base in a dermatomal distribution involving the back of left thigh, leg and left side of penis and scrotum with regional tender lymphadenopathy. The chicken pox lesions were present in various stages of evolution over the face, trunk and extremities. The second case was an 8-month-old child who developed chicken pox with mild fever, and on the third day developed typical lesions of herpes zoster involving the left T 3, 4, 5 segments. It is possible that in these cases, the virus had attacked the posterior root ganglia without giving time to the body to develop immunity against it. In other three cases of herpes zoster, discrete vesicles had appeared on other parts of the body with mild constitutional symptoms. One of these patients was a 50-year-old male who had deve-

loped haemorrhagic bullae also. In 2 patients, unilateral vesicles were present on the tongue.

#### Course

To begin with, herpes zoster lesions, in most of the patients appeared as erythematous patches over which soon papules, papulo-vesicles or bullae developed, and turned into pustules in 24-72 hours. The lesions continued to appear for 3-5 days in 60% cases. In 30% these did not progress further after the first eruption, while in 10% these kept on appearing upto 8-10 days. The time taken for healing of the lesions was directly proportional to the duration of appearance of the lesions, the lesions which did not progress after the first eruption healed within 7-10 days, the lesions which kept on appearing for 8-10 days healed in 4-5 weeks. In 5 patients, the eruption was very severe and produced superficial gangrene of the skin. In 6 patients, secondary infection was present. In some older patients and those having associated diseases, the lesions took longer to heal. Maximum time taken was 2 months in one patient having malnutrition. There was a direct correlation between increasing age and severity of the disease.

#### Complications

Post-herpetic neuralgia was the major complication noticed in 33 (14.3%) patients, of which 19 were females and 14 males. Dorsal segments were involved in majority of the patients, followed by cranial (trigeminal neuralgia) nerves. Usually it took 6 months to one year to subside, but in 2 patients it persisted for over four years. In 2 patients facial nerve paralysis occurred. One case developed nebular opacity in the cornea. Well-marked, depressed hyperpigmented or hypopigmented scars on the skin at the sites of eruptions, were seen in 35 patients.

#### Comments

The present study revealed the incidence of herpes zoster to be 0.6 percent in the hospital population which is in agreement with the

observations of Burgoon et al.<sup>4</sup> However, the incidence reported by Sehgal et al.<sup>3</sup> was 0.24 percent. Herpes zoster occurs sporadically throughout the year while chicken pox is an epidemic disease with a definite seasonal incidence. Sehgal et al.<sup>3</sup> did not find any seasonal variations of herpes zoster. However, Mathur et al.<sup>1</sup> observed the increased incidence of herpes zoster in March, August and December in their study of 62 cases, and Nigam et al.<sup>2</sup> during March, April, August, September and December. In the present study also, a higher incidence was noted in the months of March, April, May and then in August, September and October. This increase in incidence is most likely related to the increased incidence of chicken pox during these months of the year. Simpson<sup>7</sup> recorded a higher incidence of herpes zoster among chicken pox contacts and commented that the provocation of dormant varicella virus may occur during the out-break of an epidemic in the surroundings.

In the present study, maximum number of cases were in the second and third decades of life, whereas other authors from India<sup>1,3</sup> have recorded maximum number in the third and fourth decades. Higher incidence of herpes zoster in older age groups has been noted in reports from United States<sup>4</sup> and Bulgaria.<sup>6</sup> The predominance of men in the present study is in agreement with the other reports.<sup>1,3</sup> On the other hand, Burgoon et al.<sup>4</sup> and Profirov and Dessev<sup>6</sup> did not find any significant sex difference.

Involvement of dorsal segments was recorded by us in majority of the cases, followed by cervical, lumbo-sacral and cranial segments which is also in conformity with other reports.<sup>1,4,6,7</sup>

Post-herpetic neuralgia occurred in 33 (14.3%) patients, a comparatively lower incidence than reported by others,<sup>2,8</sup> but sex-wise it was slightly higher in women. It occurred rarely below the age of 40 years. Only one case was

of herpes zoster oticus and laryngis, which seems to be a very rare occurrence. Das<sup>9</sup> also reported a similar case.

There are a very few reports on varicelliform eruptions and herpes zoster occurring together. We observed this combination in 5 cases. The case reported by Ambady et al.<sup>10</sup> was thought to be due to some local application and intake of oral medicine; while that of Vassa et al.<sup>11</sup> was suffering from tuberculous lymphadenitis with cold abscess. However, no such associations were found in our cases.

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