

## A STUDY ON CLINICAL PROFILE AND MANAGEMENT OF PATIENTS OF HERPES ZOSTER OPHTHALMICUS IN DURGAPUR, WEST BENGAL

Arvind Ram<sup>1</sup>

<sup>1</sup>Associate Professor, Department of Ophthalmology, IQ City and NH Medical College, Durgapur, West Bengal.

### ABSTRACT

#### BACKGROUND

To analyse and compare the clinical profile and management of Herpes Zoster Ophthalmicus (HZO) in Durgapur, Barddhaman district, West Bengal population. The main aim of this study was to know the clinical profile of HZO with management and effect of the present line of treatment on the course of the disease.

#### MATERIALS AND METHODS

The study was carried out in the department of ophthalmology, IQ City Medical College, Durgapur from November 2015 to April 2018. The details of the patients were enrolled in pre-designed proforma. Diagnosis of HZO was made on clinical grounds, confirmed by corneal staining with fluorescein strip as and when required.

#### RESULTS

Total of 60 patients of herpes zoster were examined in eye department, some of them were referred from different departments like emergency department, medicine department and dermatology department of IQ City Medical College. Out of 60 patients, 49 patients (81.67%) were male and 11 patients (18.33%) were female. For the purpose of study, patients were grouped clinically as skin lesions only and skin lesion with ocular involvement.

#### CONCLUSION

Overall visual outcome was good. Early diagnosis and prompt treatment were key in preventing the ocular complications and promoting rapid healing of skin lesions.

#### KEYWORDS

Herpes Zoster Ophthalmicus, Acyclovir, Corticosteroids.

**HOW TO CITE THIS ARTICLE:** Ram A. A study on clinical profile and management of patients of herpes zoster ophthalmicus in Durgapur, West Bengal. J. Evid. Based Med. Healthc. 2018; 5(40), 2808-2811. DOI: 10.18410/jebmh/2018/575

#### BACKGROUND

Herpes zoster is an acute and recurrent infection of Gasserian ganglion of the trigeminal nerve by the varicella zoster virus.

While Varicella is typically a disease of childhood, herpes is one of the old age, being common after the age of fifty years. The disease may, however, occur at any age.

The varicella zoster is a neurotropic DNA virus that is similar in structure to the virus of herpes simplex. Herpes zoster usually occurs in persons who had chicken pox several years earlier.

The virus remaining latent in the sensory ganglia, may leak out at times but is usually held in check by the residual immunity. Years after the initial infection, when the immunity has waned, the virus may be reactivated and triggered by some precipitating stimulus, travel along the

sensory nerve to produce zoster lesions on the area of skin or mucosa supplied by it. The most common sites are the area innervated by spinal cord segments D3 to L2 and trigeminal nerve, particularly, its ophthalmic branch termed as HZO.

HZ affects about 20% of the world population at least once in their lifetime, with nearly 20% of these showing an ophthalmic involvement.<sup>1</sup>

Overall rate of occurrence of HZ is 3.40 cases per 1000 persons while in children <10 years, it is 0.74/ 1000.<sup>2</sup> The attack rate during the seventh decade is approximately 7 times the attack rate in the first two decade of life.<sup>3</sup> Childhood HZ was thought to be an indicator for an underlying malignancy or immunosuppression.<sup>4</sup>

#### Aims and Objectives

The main aim of this study was to know the clinical profile of HZO and management & effect of the present line of treatment on the course of the disease.

#### MATERIALS AND METHODS

Full clinical evaluation regarding the ocular involvement was done. Stress was given to examine conjunctiva for any congestion or discharge and cornea for any Keratitis. Cornea was examined with fluorescein stain. The patients were divided into two groups as follows:-



Group I: Patients with skin eruptions only.

Group II: Patients with skin eruption plus involvement of eye.

General treatment given to all groups of patients as Bed rest, Balanced diet, Assurance to the patient, Pain killer like tab Ibuprofen or Ketorolac, Tab Diazepam 5 mg at bed time orally. Neurovitamin therapy: Tablet of vitamin B1, B6 & B12 daily orally, topical antibiotic eye drop Moxifloxacin 1 drop 4 times daily in the affected eye, Carboxymethyl cellulose for lubricating the eye, 1 drop thrice daily.

#### **Supportive Measures in Group I Patients**

Systemic antibiotics - capsule Ampicillin & cloxacillin (500mg) thrice daily, orally for 7 days to prevent superinfection. Those patients, who were sensitive to the above antibiotic were given cotrimoxazole tablet twice daily.

#### **Supportive Measures in Group II Patients**

Systemic antibiotic same as group I with Atropine sulphate 1% eye ointment to be applied locally twice daily, Methyl cellulose eye drop 1 drop 4 times daily, regular measurement of IOP and use of dark glass to prevent external injurious influences.

#### **Use of Specific Drugs**

In this study, which includes clinical trials of ("Acyclovir alone" and "Acyclovir- Corticosteroid combination") on the patients were done. To suffice this purpose Acyclovir alone was given in 25 out of 60 patients. 13 Patients in group I and 12 patients from Group II were given only oral acyclovir and acyclovir ointment. Acyclovir tablet (800mg) was given orally (4-5) times daily for 1-2 weeks along with topical acyclovir skin cream 5% & eye ointment 2% was also given in case of skin & eye involvements. This was called "Acyclovir alone"

Similarly, next 35 patients out of 60 were given a combined regime of acyclovir plus corticosteroids. Acyclovir was given mentioned previously. In addition to it, Corticosteroid in the form of Prednisolone (60mg) loading dose orally in the morning (after breakfast) was given and it was tapered (5mg) every 4 days. Along with systemic corticosteroid therapy, topical corticosteroid plus antibiotic ointment e.g. TerraCort Oint. was used. This regime was called "Acyclovir – Corticosteroid Combination "regime.

To know the effect of Therapy, clinically, it was evaluated in the form of GR, MR, & PR during every follow up visit of the patient.

#### **GR (Good Response)**

Complete relief of symptoms & signs regarding pain, redness, Skin rash, drying, diminished skin scar, improvement of vision.

#### **MR (Moderate Response)**

Partial relief of the above mentioned symptoms & signs.

#### **PR (Poor Response)**

No relief

The patient was observed throughout the course of treatment. The effect of "Acyclovir alone" and "Acyclovir-corticosteroid combination" regime was compared & analysed on clinical ground.

#### **RESULTS**

Age in Years	No. of Patients	Percentage
0-10	Nil	Nil
11-20	Nil	Nil
21-30	3	5
31-40	12	20
41-50	30	50
50 onwards	15	25

**Table 1**

Age in Years	Males	Percentage	Females	Percentage
0-10	Nil	Nil	Nil	Nil
11-20	Nil	Nil	Nil	Nil
21-30	3	5	Nil	Nil
31-40	9	15	3	5
41-50	27	45	3	5
50 onwards	10	16.67	5	8.33
Total	49	81.67	11	18.33

**Table 2**

Aetiological Factors	No. of Cases	Percentage
1. Past history of chicken pox or other viral disease	12	20
2. Past history of chronic debilitating diseases	6	10
3. History of contact with active cases	–	–

**Table 3**

Site of Vision	No. of Cases	Percentage
Involvement of skin only	27	45%
Involvement of skin & eye	33	55%

**Table 4**

<b>Drugs</b>	No.	<b>Group I</b>			
		No. of Patient 13	GR	MR	PR
Acyclovir alone		7	2	4	
	%	53.9%	15.38%	30.76%	
<b>Group II</b>					
Acyclovir + Corticosteroid	No.	No. of Patient 14			
		GR	MR	PR	
		9	3	2	
		%	64.28%	21.42%	14.28%

**Table 5**

<b>Drugs</b>	No.	<b>Group II</b>			
		No. of patient 12			
Acyclovir alone		GR	MR	PR	
	%	6	2	4	
<b>Group II</b>					
Acyclovir + Corticosteroid	No.	No of patient 21			
		GR	MR	PR	
		15	2	4	
		%	71.4%	9.5%	19.04%

**Table 6**

No case was found between the age of 0-20 yrs. Maximum (50%) of cases belonged to between 41-50 years group as revealed in table no.1.

Male comprised 81.67% (49 cases) and Female comprised 18.33% (11cases) in the present study as revealed in table no.2

Out of 60 cases, 12 cases (20%) had past history of chicken pox or other viral diseases whereas only 6 cases (10%) had definite past history of chronic debilitating diseases as shown in table 3.

Out of 60 cases, 27 cases (45%) had involvement of skin only whereas 33 Cases (55%) had involvement of skin plus eye shown in table 4.

Good response (GR) were seen in 53.9% of cases, Medium response (MR) were observed in 15.38% of cases and poor response (PR) were seen in 30.76% of cases embedded in group I where Acyclovir alone was prescribed whereas good response (GR) were seen in 64.28% of cases, Medium response (MR) were observed in 21.42% of cases and poor response were seen in 14.28% of cases embedded in group I where Acyclovir + Corticosteroid was prescribed as shown in table 5.

Good response (GR) were seen in 50% of cases, Medium response (MR) were observed in 16.6 % of cases and poor response 33.33% embedded in group II where Acyclovir alone was prescribed whereas good response were seen in 71.4% of cases, Medium response (MR) were observed in 9.5% of cases and poor response (PR) were seen in 19.04% of cases embedded in group II where Acyclovir + Corticosteroid was prescribed as shown in table 6.

The skin lesions run the usual course of stage of macule, papule, vesicles and pustules. Cornea was involved in 20

cases in the form of keratitis. 17 cases of conjunctivitis and 6 cases of uveitis were found. All the supportive measures were taken according to the clinical presentation.

## DISCUSSION

Herpes zoster, also called Shingles, occurs due to reactivation of varicella zoster virus (VZV) or the human herpes virus 3 infections. Following the primary varicella (Chicken pox) infection, the virus remains dormant in dorsal root or other sensory ganglia. Reactivation usually occurs due to decline in the specific cell mediated immunity to VZV with aging, immunosuppression, or both.<sup>5</sup>

Ocular involvement occurs in about 50% of patients with HZO.<sup>6</sup>

Herpes zoster occurs less frequently among children typically causing mild diseases with minimal pain.<sup>7</sup>

Our study showed male preponderance similar to Malik et al.<sup>8</sup> study and in contrast to Prabhu et al.<sup>9</sup> study which showed female preponderance.

In our study, only 20% patients had past history of chicken pox, however it was 31% in Malik et al study.

In present study eyes were involved in 33 out of 60 patients which was nearly 55% of all patients almost similar to Liesengang et al<sup>10</sup> study. Jain B.S.et al.<sup>11</sup> reported that high dose of oral prednisolone in combination with oral Acyclovir reduces acute pain of HZO.

In our study topical corticosteroid were used to control local inflammatory reactions. Marsh et al.<sup>12</sup> used topical corticosteroid to control iritis and found favourable result and reduction of both iritis and secondary glaucoma.

Appleman D.H.<sup>13</sup> concluded that corticotrophin shortens the acute phase of HZO, diminishes pain and helped in preventing complications.

Lauvin R. et al<sup>14</sup> reported that HZO mainly involves the ophthalmic nerve and its branches, so there is definite role of neurovitamins therapy like B<sub>1</sub>, B<sub>6</sub>, B<sub>12</sub>.

Incidence of post herpetic neuralgia in childhood is rare as the nature of HZ in children is mild however it is the most common chronic complication of herpes zoster infection and accounting 9%-45% of cases.<sup>15</sup>

## CONCLUSION

The incidence and severity of herpes zoster ophthalmicus increased with advancing age. The management of HZO usually involved a multidisciplinary approach aiming to reduce both complications and ocular morbidities. Early diagnosis and prompt treatment were the key in preventing the devastating ocular complications and promoting rapid healing of the skin lesion without the formation of massive crusts.

## REFERENCES

- [1] Pavan-Langston D. Herpes zoster antivirals and pain management. Ophthalmology 2008;115(2 Suppl):S13-20.
- [2] Jain A, Singal A, Baruah MC. Herpes zoster in a 9 month old infant. Indian J Dermatol Venereol Leprol 1999;65(6):294-295.

- [3] Hope-Simpson RE. The nature of herpes zoster: a long term study and a new hypothesis. *Pro R Soc Med* 1965;58(1):9-20.
- [4] Kakourou T, Theodoridou M, Mostrou G, et al. Herpes zoster in children. *J Am Acad Dermatol* 1998;39(2):207-210.
- [5] Sanjay S, Huang P, Lavanya R. Herpes Zoster ophthalmicus. *Curr Treat Options Neurol* 2011;13(1):79-91.
- [6] Harding SP. Management of ophthalmic zoster. *J Med Virol* 1993;Suppl 1:97-101.
- [7] Whitley RJ. Varicella zoster virus. In: Mandell GL, Bennett JE, Dolin R, eds. *Principles and practice on infectious diseases*. 7<sup>th</sup> edn. Philadelphia: Churchill Livingstone/Elsevier 2011:1963-1970.
- [8] Malik LM, Azfar NA, Khan AR, et al. Herpes zoster in children. *J Pak Assoc Dermatologists* 2013;23(3):267-271.
- [9] Prabhu S, Sripathi H, Gupta S, et al. Childhood herpes zoster: a clustering of ten cases. *Indian J Dematol* 2009;54(1):62-64.
- [10] Liesegang TJ. Herpes zoster ophthalmicus natural history, risk factors, clinical presentation and morbidity. *Ophthalmology* 2008;115 (2 Suppl) S3-S12.
- [11] Jain S. Management of Herpes zoster ophthalmicus. *J Int Med Asso* 1995;42(3):119-122.
- [12] Marsh RJ, Cooper M. Acyclovir and steroids in herpes zoster Keratouveitis. *Br J Ophthal* 1984;68(12):904-905.
- [13] Appelman DH. Treatment of HZO with corticotrophin: *N Engl J Med* 1995;253(16):693-695.
- [14] Lavin P. HZO and motor involvement. *Journal of Neuro-Ophthalmology* 1984;4(2):75-80.
- [15] Pavan-Langston D. Herpes zoster ophthalmicus. *Neurology* 1995;45 (12 Suppl 8): S50-S51.