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HERPES ZOSTER OPHTHALMICUS: CLINICAL PROFILE AND MANAGEMENT, A PROSPECTIVE STUDY AT A TERTIARY HEALTH CARE CENTRE, WESTERN ODISHA

Ophthalmology

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ABSTRACT

Purpose–To study the clinical profile and management of herpes zoster ophthalmicus over a period of two and half years in a tertiary health care centre. Material and methods- it is a prospective study done on 32 patients who were diagnosed with herpes zoster ophthalmicus clinically. Predisposing factors like diabetes mellitus, HIV, hepatitis B, Hepatitis C, anemia, patients having leukaemia and taking chemotherapy were evaluated. Result-Diabetes mellitus was commonest association. Common presentations were periorbital vesicular rash and corneal involvement. Conclusion: commonest presentation was periorbital vesicular rash. Systemic antivirals are efficacious in immunocompromised cases. . Patients were followed up for one year.

KEYWORDS

herpes zoster ophthalmicus, Diabetes mellitus, periorbital vesicular rash, antiviral agents

INTRODUCTION

Both Varicella (Chicken pox) and Herpes Zoster (shingles) are caused by the Varicella-Zoster virus (VZV). Herpes Zoster (HZ) results from the reactivation of the VZV which remains latent in the primary sensory ganglion like Gasserian ganglion. Of the three divisions of fifth cranial nerve, the ophthalmic division is involved 20 times more than the others[1].. HZ involving the Ophthalmic division of the Trigeminal nerve is called Herpes Zoster Ophthalmicus (HZO), irrespective of the presence or absence of ocular involvement[2,3,4] Upto 20% of the population will have HZ at sometime in life.

Approximately 50-72% of the patients with periocular zoster will have ocular involvement and sustain a moderate to severe degree of visual loss[5] HZ is more likely to occur in older individuals who have a linear decrease in cell-mediated immunity. Immunosuppressed organ transplant recipients, immunodeficient patients with cancer, leukemia and AIDS are at increased risk of HZ[6]

Ocular manifestations include uveitis, keratitis, conjunctivitis, chemosis, ocular muscle palsies, scleritis, retinal vascular occlusion and ulceration, scarring and even necrosis of the lids[7]. HIV positive patients have 15-25 times greater prevalence of Zoster compared to general population[8]. HZO may be initial clinical manifestation of HIV infection. HZO usually presents with a prodrome of systemic symptoms lancinating headache, malaise, fever, chills followed within days by localized neuralgic pain over the involved dermatome. Within 2-3 days of neuralgia multiple crops of clear vesicles erupt. The vesicles then become turbid and yellow and form deep eschars that commonly leave behind permanent pitted scars over the involved dermatome[9]

The present study aims to study the clinical profile and management of herpes zoster ophthalmicus over a period of two and half year in a tertiary health care centre in Western Odisha.

MATERIALS AND METHODS

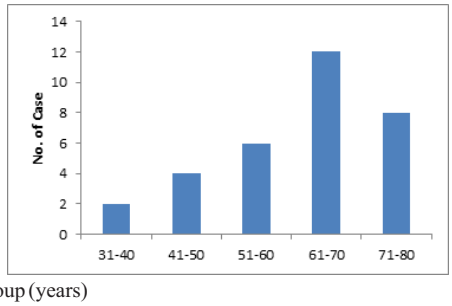
It is a prospective study including 32 patients clinically diagnosed with herpes zoster ophthalmicus in the ophthalmology department from July 2016 to December 2018. Healed cases of HZO were not included in the study. All patients underwent a comprehensive ocular examination which included visual acuity assessment (using snellen's chart), detailed slit lamp examination using fluorescein stain and posterior segment examination. The laboratory investigations included routine urine examination, complete haemogram, random/fasting blood sugar levels, Western blot test for HIV 1 and 2 and renal function tests.

RESULTS

This study comprised of 32 patients in the age group of 31 – 80 years with a mean age of 57.3 years with 62.5% (20) patients being male and 37.5% (12) being female. .

Table 1
Age Wise Distribution Of Cases (n=32)

AGE GROUP (YEARS)	n (%)
31-40	2 (6.2)
41-50	4 (12.5)
51-60	6 (18.6)
61-70	12 (37.2)
71-80	8 (24.8)



Age group (years)

In this study, it was found that the maximum incidence of HZO was in the age group of 61-70 years (37.2%).

All patients with zoster presented with skin lesions involving the ophthalmic division of the trigeminal nerve on affected side of face and head. Right side affected in 75% cases (24) as compared to left side i.e 25% (8).

No patient had bilateral involvement

The presenting clinical manifestations have been summarized in table 2 given below.

Table 2
Presenting Clinical Features

Observation	No Of Cases	Percentage (%)
Periobital rash	32	100
Lid edema	28	87.2
Conjunctival edema	18	56.25
Conjunctivitis	25	78.12
Scleritis	7	21.87
Superficial punctate keratitis	30	93.75

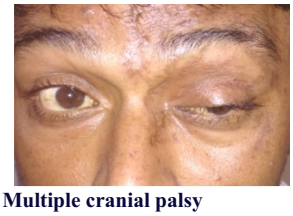
Stromal keratitis	20	62.5
Uveitis	18	56.25
optic neuritis	7	21.87
Post herpetic neuralgia	5	15.62
Secondary glaucoma	9	28.12
Ocular muscle palsy	2	6.25
PORN	2	6.25

The most common clinical feature was periorbital rash which was seen in32 (100%) patients. Visual acuity was variably impaired in all subjects. Conjunctival hyperemia and lid edema ranging from mild to severe was seen in all subjects in acute phase. Superficial punctuate keratitis was the commonest clinical sign followed by conjunctivitis and uveitis.

Hypoesthetic and dry corneal surface led to secondary bacterial keratitis.

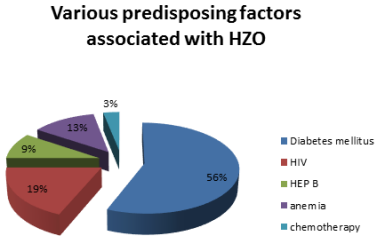
The different sequelae like cicatricial lid deformities, entropion, ectropion,focal loss of cilia ,eyelid scars and ptosis were present in some patients. Post herpetic neuralgia was present in 5 out of 32 patients at the end of 2 month follow up.

Dermatomal distribution of vescicular rash with scab



Multiple cranial palsy

The various predisposing factors associated with HZO are enlisted in figure 1



In our study,the most common association seen is Diabetes mellitus in 56% (18) of cases followed by HIV in 6 patients (19%)

The patients were treated with oral Acyclovir 800mg 5 times/day for 10 days and systemic Non-steroidal anti-inflammatory drugs like Diclofenac or Ibuprofen. The skin lesions were treated with cool compresses, calamine lotion and topical antibiotic ointment(silver sulphadiazine). Patients with keratitis were treated with topical Acyclovir 3% eye ointment 5 times/day, prophylactic topical antibiotics and cycloplegics (Atropine 1% or Homatropine 2% eye drops). Patients with uveitis received topical steroids (commonly Prednisolone acetate 1% eye drops) and topical cycloplegics which were tapered according to the clinical response.

In patients with raised IOP, oral Acetazolamide 250mg 3 times/day for 3 days and Timolol maleate(0.5%) eye drops 2 times/day was used.

Patients were followed up at regular intervals for at least one year and the response to treatment was evaluated.

At follow up patients were evaluated for improvement of visual acuity and ocular symptoms.

DISCUSSION

Herpes zoster is a severe, painful and debilitating ocular disease causing potential visual loss and socio-economic disability. The present study was a hospital-based observational study, which included 32 patients. In our study majority of the patients (12,37.2%) belonged to 61-70 years age group. This is in agreement with the studies done by Harding *et al* [10] , Naveen *et al*[11] and Maiya *et al*[12] Herpes zoster is uncommon in adults younger than 40 yrs of age and incidence of HZO increases with increasing age in fifth to seventh decade of life due to linear decrease in cell mediated immunity. Various other studies on HZO also show a peak incidence in the fifth to eighth decades of life.[13,14]

The present study showed male preponderance which is similar to study done in Ethiopia[15]. Harding *et al*.[10] also found a significant predominance of males among patients less than 60 years of age in their study. But Maiya et al[12] and Womack LW et al[13] showed a female preponderance. A few studies have not shown a gender predilection.[16]

Our study showed majority of patients (56%) had diabetes mellitus followed by HIV seropositivity (19%) due to increase in diabetes mellitus linearly above the age of 40 yrs now a days. Whereas other studies conducted by Harding *et al,* Maiya *et al* and Naveen *et al* showed the predominance of HIV seropositivity as the major predisposing factor.HZO was found to be an early clinical marker of HIV infection especially in patients aged <45 years.

Most common presentation in our study was peri-orbital rash and corneal involvement which was similar to studies done by Liesegang TJ et al[6] and Maiya et al [12] in which 65% patients had corneal involvement.

Patients responded well to systemic and topical anti-virals when started within 72-96 hours of onset of skin rash. This correlates with two prospective controlled clinical trials which have reported a beneficial effect of Acyclovir on ocular complications of HZO [17,18,19,20,21]

These data may suggest that early systemic antiviral therapy for acute HZO may decrease the probability of subsequent visual loss.

CONCLUSION

Our study outlines the varied clinical profile of herpes zoster ophthalmicus. Higher incidence of HZO was found with increasing age and in patients with diabetes mellitus in which there is linear decrease in cell mediated immunity. Commonest presentation was periorbital vesicular rash. Systemic anti-virals are efficacious in immunocompromised cases when started within 72-96 hr of onset of rash. So early diagnosis and prompt treatment resulted in lesser complication.

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