

# Ocular Complications and Factors affecting Visual Outcome in Herpes Zoster Ophthalmicus

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**Abstract:** *To determine the spectrum of ocular complications, factors influencing visual prognosis and the effect of HIV-AIDS on the spectrum of ocular complications in patients with Herpes Zoster Ophthalmicus. Conclusion: HZO is more frequently presenting at a younger age, due to an increasing incidence of HIV positivity. Patients with nasociliary and lacrimal nerve involvement and the presence of Hutchinson's sign are more likely to have serious ocular complications. Visual loss is more likely in this group, warranting close follow-up and prompt treatment. The spectrum of ocular complications did not significantly differ from the immunocompetent patients. The overall good outcome in this study is due to the use of early intensive antiviral therapy proving their long term benefit in prevention of vision threatening herpes zoster ophthalmicus.*

**Keywords:** herpes zoster ophthalmicus, HIV, ocular complications

## 1. Introduction

Herpes Zoster Ophthalmicus (HZO) is a disease, which primarily affects the elderly. Other risk factors include haematological malignancies, those receiving immune-suppressive drugs, organ transplant recipients and HIV-AIDS patients. It affects all structures of the eye and adnexa and is often associated with severe ocular morbidity. Certain unusual clinical manifestations are more likely to occur in HIV positive patients than in immunocompetent individuals.

## 2. Aims and Objectives

To determine the spectrum of ocular complications, factors influencing visual prognosis and the effect of HIV-AIDS on the spectrum of ocular complications in patients with Herpes Zoster Ophthalmicus.

## 3. Materials and Methods

In this prospective observational study, all patients who presented to the Department of Ophthalmology within 4 weeks of the onset of active zoster-vesicle formation affecting the ophthalmic branch of the trigeminal nerve were included. Patients with pre-existing ocular disorders were excluded from the study.

## 4. Treatment

All patients received acyclovir (800 mg, five times daily) for 7-10 days. All of them also received 3 % topical acyclovir ointment, 5 times a day, for a total of 3 weeks. Antibiotic drops, cycloplegics and lubricating eye drops for ocular surface protection were also prescribed. Patients, who developed stromal keratitis or iridocyclitis, were started on topical steroids. If the skin involvement was severe, oral steroids were administered in the dose of 1mg/kg body weight.

## 5. Results

The independent sample (Student's) t test was employed to compare the means of two independent groups. When distributions were significantly abnormal (as in the case of visual acuity scores), quantitative variables were ranked and compared between (two) groups using the Mann-Whitney test with z corrected for ties.

The most common predisposing condition seen in this study was HIV infection, which was seen in 44.2% (19/43) of the patients. The frontal nerve was the most commonly involved 83.3% (36/43) branch seen in this study. The most common dermatomal presentation seen was that of the classic variety which involved the frontal, nasal and lacrimal branches together. A peak incidence was also seen in the younger age group, between 21-60 years. A positive Hutchinson's sign correlated significantly with the ocular manifestations of In the acute phase of ophthalmic zoster, conjunctival hyperaemia was seen in 41 (95.3%), which subsided within 2 weeks. Punctate keratitis was seen in 41 (95.3%) patients at the initial visit, it subsided by 4 weeks in most of the patients except in 3 patients in whom it was present even at 6 months. One of these patients showed severe upper lid scarification, which led to constant inferior keratitis. The other two patients had associated keratoconjunctivitis sicca. Acute dendritic keratitis was seen in most patients in the first 2 weeks, which gradually subsided. None of the patients had persistent dendritic keratitis. None of these patients demonstrated late corneal epithelial keratitis suggestive of prolonged viral activity. At 2 weeks follow-up, corneal stromal infiltration was seen in four patients and increased to six patients at 4 weeks. Among the six patients who developed stromal keratitis, four had nummular and two had disciform keratitis. This however subsided in all patients by 6 months.

None of these patients developed persistent corneal edema or neurotrophic ulceration. Uveitis was seen in 44.2% (19/43) of the patients. The visual outcome in most of the patients was good with 56.09% of the patients having no visual loss. Fifty-six percentage of the patients had no visual loss at 6 months follow-up. Twenty-eight percentage had mild-moderate visual loss and only 13.9% had severe visual loss.

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There were only 6 patients who had severe visual loss. Acute herpetic pain was seen in 97.7% (42/43) patients. Post-herpetic neuralgia was seen in 41.9% (18/43) patients. Fifty-three percent of the patients had no visual loss at 6 months follow-up, while 27.9% had mild-moderate visual loss and only 13.9% had severe visual loss. There were only 6 patients who had severe visual loss.



**Figure 1:** Classical Distribution of the HZO rash in an adult



**Figure 2:** Classical Distribution of the HZO rash in a child



**Figure 3:** Ophthalmic and Maxillary Dermatomal involvement

## 6. Conclusion

HZO is more frequently presenting at a younger age, due to an increasing incidence of HIV positivity. Patients with nasociliary and lacrimal nerve involvement and the presence of Hutchinson's sign are more likely to have serious ocular complications. Visual loss is more likely in this group, warranting close follow-up and prompt treatment. The spectrum of ocular complications did not significantly differ from the immunocompetent patients. The overall good outcome in this study is due to the use of early intensive antiviral therapy proving their long term benefit in prevention of vision threatening herpes zoster ophthalmicus.