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2734 17 Avenue SW,
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Canada
+15878858911
editorial-office@sciformat.ca

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HERPES ZOSTER OPHTHALMICUS: CLINICAL SPECTRUM

Magdalena Natalia Nowak (Corresponding Author, Email: magda.nowak2001@gmail.com)
Cardinal Stefan Wyszyński University in Warsaw, Collegium Medicum, Warsaw, Poland
ORCID ID: 0009-0002-1010-3364

Konrad Oskar Wiśniewski
Cardinal Stefan Wyszyński University in Warsaw, Collegium Medicum, Warsaw, Poland
ORCID ID: 0009-0007-1076-6471

N. Sara Kuśmierowska
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0006-7572-0282

Milena B. Polak
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0007-6148-5354

Dominika Karolak
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0007-1131-9171

Grzegorz Słomkowski
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0003-3854-0248

Monika Kuś
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0009-6445-5593

Tymoteusz Białowąs
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0001-0889-2635

Kacper Cholewiński
Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0004-7185-5310

Daria Valipur Kolti
University Clinical Centre, Medical University of Warsaw, Warsaw, Poland
ORCID ID: 0009-0005-9900-4419

ABSTRACT

Objective: Herpes zoster ophthalmicus (HZO) is a severe manifestation of varicella-zoster virus reactivation affecting the ophthalmic branch of the trigeminal nerve. The aim of this review is to present the clinical spectrum of HZO and emphasize the importance of early diagnosis and treatment.

Methods: A narrative review of the literature concerning epidemiology, pathophysiology, and ocular manifestations of HZO was conducted. Published clinical studies and reviews describing ocular complications and therapeutic strategies were analyzed.

Results: HZO may involve multiple ocular structures, including eyelids, conjunctiva, cornea, uveal tract, sclera, retina, and optic nerve. The most common manifestations include blepharoconjunctivitis and keratitis, while severe complications may include uveitis, scleritis, acute retinal necrosis, optic neuritis, and cranial nerve palsies. Early antiviral therapy significantly reduces the risk of ocular complications and chronic disease.

Conclusions: Herpes zoster ophthalmicus presents with a broad spectrum of clinical manifestations that may lead to permanent visual impairment if untreated. Early recognition, prompt antiviral therapy, and appropriate ophthalmologic management are essential for improving patient outcomes. Preventive vaccination plays an important role in reducing the incidence of the disease.

KEYWORDS

Herpes Zoster Ophthalmicus, Varicella-Zoster Virus, Keratitis, Uveitis, Antiviral Therapy

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Abbreviations

HZO – Herpes zoster ophthalmicus

VZV – Varicella-zoster virus

PHN – Postherpetic neuralgia

RZV – Recombinant zoster vaccine

ARN – Acute retinal necrosis

PORN – Progressive outer retinal necrosis

Introduction

Herpes zoster ophthalmicus (HZO) is a form of herpes zoster resulting from reactivation of the varicella-zoster virus (VZV) within the trigeminal ganglion, involving its ophthalmic branch. It is estimated that HZO occurs in approximately 4–20% of patients with herpes zoster, and nearly half of them develop ocular complications affecting both superficial and deeper ocular structures.

The disease primarily affects elderly individuals and patients with impaired cell-mediated immunity. The risk of HZO increases with age, chronic systemic diseases, and the use of immunosuppressive therapy. Hutchinson's sign, characterized by vesicular lesions on the tip of the nose, is considered an important clinical predictor of ocular involvement.

After primary infection with varicella (chickenpox), VZV remains latent in sensory ganglia. Under certain conditions such as aging, immunosuppression, or systemic illness, viral reactivation may occur. The virus then travels along sensory nerve fibers to the skin and ocular tissues, causing inflammation and tissue damage within the dermatome of the ophthalmic nerve.

Ocular involvement in HZO has significant clinical implications because it may lead to permanent visual impairment. Severe complications include keratitis, uveitis, secondary glaucoma, acute retinal necrosis, neurotrophic keratopathy, and cranial nerve palsies. Early recognition and rapid initiation of antiviral therapy are essential to reduce the risk of complications.

Methods

This article is a narrative review based on previously published scientific literature regarding herpes zoster ophthalmicus. Relevant clinical studies, systematic reviews, and ophthalmological reports were analyzed to summarize the epidemiology, clinical manifestations, complications, and management of the disease.

Results

Clinical Presentations of Herpes Zoster Ophthalmicus

HZO presents with a wide spectrum of clinical manifestations involving both cutaneous and ocular structures. The disease typically begins with prodromal symptoms such as neuropathic pain, paresthesia, headache, fatigue, and low-grade fever. Within several days, a unilateral vesicular rash develops in the dermatome of the ophthalmic nerve, typically affecting the forehead, eyelid, and nose.

Ocular symptoms usually develop within one to two weeks after the onset of the rash but may occur earlier or be delayed. Common symptoms include ocular pain, redness, tearing, photophobia, and decreased visual acuity. The severity of the disease varies depending on host immune status and the extent of viral reactivation.

Blepharitis and Conjunctivitis

Blepharitis and conjunctivitis represent the most common ocular manifestations of HZO. Vesicular lesions, erythema, and edema may appear on the eyelids. Conjunctival involvement typically presents as unilateral hyperemia accompanied by irritation and foreign body sensation. Chronic inflammation may lead to cicatricial changes, trichiasis, and dry eye syndrome.

Keratitis

Corneal involvement is a frequent complication of HZO and may occur in several forms. Early manifestations include punctate epithelial keratitis, which may progress to pseudodendritic lesions characteristic of HZO. In more advanced cases, stromal keratitis develops, leading to corneal infiltrates, edema, and scarring.

The most severe corneal manifestation is neurotrophic keratopathy resulting from sensory nerve damage. This condition may lead to persistent epithelial defects, secondary infections, corneal ulceration, and even perforation.

Keratouveitis

Keratouveitis typically occurs several weeks after the onset of the cutaneous rash. It is characterized by inflammatory cells and flare in the anterior chamber, accompanied by ocular pain, photophobia, and sometimes increased intraocular pressure. Chronic inflammation may lead to posterior synechiae, iris atrophy, and secondary glaucoma.

Episcleritis and Scleritis

Episcleritis and scleritis occur less frequently but are associated with significant ocular discomfort, tenderness, and diffuse redness of the eye. These inflammatory conditions may coexist with other ocular manifestations of HZO.

Posterior Segment Complications

Posterior segment involvement represents one of the most severe consequences of HZO. Acute retinal necrosis (ARN) is characterized by rapidly progressing peripheral retinal necrosis and carries a high risk of retinal detachment and permanent visual loss.

In severely immunocompromised patients, progressive outer retinal necrosis (PORN) may develop, an aggressive form of retinal infection often affecting both eyes. Other complications include optic neuritis and cranial nerve palsies affecting ocular motility, which may present with diplopia or ptosis.

Postherpetic Neuralgia

Postherpetic neuralgia (PHN) is a common and debilitating complication, particularly among elderly patients. It is characterized by persistent neuropathic pain that may last for months after the resolution of skin lesions.

Discussion

The management of HZO requires prompt initiation of antiviral therapy. The highest therapeutic efficacy is observed when treatment begins within the first 72 hours after rash onset.

Oral antiviral medications include acyclovir, valacyclovir, and famciclovir, which inhibit viral replication. In severe cases or in immunocompromised patients, intravenous acyclovir may be required.

Ophthalmologic treatment depends on the specific ocular manifestations. Topical corticosteroids may be used in combination with antiviral therapy to control inflammation. Additional management may include intraocular pressure-lowering medications, intensive lubrication therapy, and treatment of neurotrophic keratitis. Severe corneal complications may require advanced procedures such as tarsorrhaphy or amniotic membrane transplantation.

Patients with HZO should undergo urgent ophthalmological examination including slit-lamp evaluation and intraocular pressure measurement. Posterior segment complications often require hospital-based management.

Preventive strategies also play an important role. Vaccination against VZV, particularly with recombinant zoster vaccine, significantly reduces the incidence of herpes zoster and its ophthalmic complications.

Conflict of Interest Statement: The authors state no conflict of interest.

REFERENCES

1. Johnson, J. L., Amzat, R., & Martin, N. (2015). Herpes zoster ophthalmicus. *Primary Care*, 42(3), 285–303. <https://doi.org/10.1016/j.pop.2015.05.007>
2. Litt, J., Cunningham, A. L., Arnalich-Montiel, F., & Parikh, R. (2024). Herpes zoster ophthalmicus: Presentation, complications, treatment, and prevention. *Infectious Diseases and Therapy*, 13, 1439–1459. <https://doi.org/10.1007/s40121-024-00990-7>
3. Puri, L. R. (2011). Ocular manifestations in herpes zoster ophthalmicus. *Nepalese Journal of Ophthalmology*, 3(1), 165–168. <https://doi.org/10.3126/nepjoph.v3i1.4289>
4. Kedar, S., Jayagopal, L. N., & Berger, J. R. (2019). Neurological and ophthalmological manifestations of varicella zoster virus infection. *Journal of Neuro-Ophthalmology*, 39(2), 220–231. <https://doi.org/10.1097/WNO.0000000000000724>
5. Hakim, F. E., et al. (2023). Pediatric herpes zoster ophthalmicus: Systematic review. *Graefe's Archive for Clinical and Experimental Ophthalmology*. <https://doi.org/10.1007/s00417-023-06167-2>