

## Herpes Zoster Ophthalmicus

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**A** 51-year-old woman presented to the hospital with severe left eye pain and a diffuse vesicular rash around the left eye and on the forehead.

**History and physical examination.** The woman was HIV-positive with a CD4 lymphocyte count of 573/ $\mu$ L, and she had a history of type 2 diabetes and hypertension. Initial examination revealed a diffuse, erythematous, papulovesicular rash affecting the skin around the left eye and the forehead without crossing the midline, producing severe inflammation of the upper eyelid.

**Treatment.** The patient received a clinical diagnosis of acute herpes zoster ophthalmicus (HZO) and was immediately started on intravenous acyclovir. She was evaluated by the ophthalmology service, and no abnormalities were seen on examination.

The vesicular lesions crusted on the third day of treatment, and the patient was discharged from the hospital on the fifth day with instructions to complete a total of 14 days of treatment with valacyclovir as an outpatient.



**Discussion.** HZO results from reactivation of the varicella-zoster virus along the ophthalmic division of the fifth cranial (trigeminal) nerve.<sup>1,2</sup> Of the 3 branches of the trigeminal nerve, the ophthalmic division is most commonly affected, with HZO representing 10% to 20% of all herpes zoster cases.<sup>2-4</sup> HZO can affect the periorbital area without involvement of ocular structures, or it can directly affect the eye, which occurs to some degree in 50% to 70% of patients with HZO.<sup>2</sup>

The incidence of HZO increases with age: It is more common in persons older than 65 years and those who are immunocompromised (eg, with HIV infection).<sup>1,2,4</sup> Other risk factors include cancer and the use of immunosuppressive drugs.<sup>4</sup>

In the initial phase of HZO infection, flulike symptoms, malaise, and low-grade fever can occur. These symptoms can last for up to 1 week before the appearance of a papulovesicular rash, which usually starts on the forehead and is associated with pain along the territory of the ophthalmic division of the trigeminal nerve.<sup>1</sup> The rash develops along a dermatomal distribution and progresses from papular to vesicular.<sup>1</sup> These lesions are considered infectious for 7 to 10 days, at which point they will have crusted over and have lost their infectivity.<sup>1</sup>

Pustular or vesicular involvement of the tip of the nose, known as the Hutchinson sign, is a strong predictor of direct ocular involvement.<sup>1,2</sup> The significance of the Hutchinson sign is based on the fact that the nasociliary branch of the ophthalmic division of the trigeminal nerve innervates not only the tip of the nose, but also the conjunctiva, sclera, iris, and choroid of the eye.<sup>1,2</sup>

Ocular complications include conjunctivitis with or without

superimposed bacterial infections, episcleritis, scleritis, keratitis, and uveitis.<sup>2</sup> Other infrequent complications are involvement of the third, fourth, and fifth cranial nerves; acute optic neuritis; and necrotizing retinopathy that often leads to permanent vision loss.<sup>2</sup> Some studies have suggested that patients with HZO and postherpetic neuralgia have a higher risk for stroke.<sup>4,5</sup>

HZO is an ophthalmologic emergency. Standard therapy involves initiating systemic antiviral therapy as soon as possible. Pharmacotherapy options include oral acyclovir, 800 mg 5 times a day; oral valacyclovir, 1000 mg 3 times a day; and oral famciclovir, 500 mg 3 times a day.<sup>2</sup> Intravenous acyclovir is recommended for immunocompromised persons.<sup>2</sup> The total duration of treatment is from 7 to 10 days.<sup>2</sup>

While the use of oral corticosteroids reduces the duration of pain during the acute phase, it has not been shown to decrease the incidence of postherpetic neuralgia, and it can exacerbate some ocular complications.<sup>2</sup> Ophthalmology consultation is mandatory before initiating corticosteroid therapy. ■

#### REFERENCES:

1. Anderson E, Fantus RJ, Haddadin RI. Diagnosis and management of herpes zoster ophthalmicus. *Dis Mon.* 2017;63(2):38-44.
2. Vrcek I, Choudhury E, Durairaj V. Herpes zoster ophthalmicus: a review for the internist. *Am J Med.* 2017;130(1):21-26.
3. Johnson JL, Amzat R, Martin N. Herpes zoster ophthalmicus. *Prim Care.* 2015;42(3):285-303.
4. Wang W-Y, Liu S-H, Lin M-Y, Lin C-C, Wang I-J. Initial presentation sites as predictors of herpes zoster complications: a nationwide cohort study. *PLoS One.* 2016;11(10):e0164019. doi:10.1371/journal.pone.0164019
5. Yang S-Y, Li H-X, Yi X-H, et al. Risk of stroke in patients with herpes zoster: a systematic review and meta-analysis. *J Stroke Cerebrovasc Dis.* 2017; 26(2):301-307.