



## Zoster Ophthalmicus with Zoster Meningoencephalitis

Kyle Rowe, M.D.<sup>1</sup> and Maha Assi, M.D.<sup>1,2</sup>

<sup>1</sup>University of Kansas School of Medicine-Wichita

Department of Internal Medicine

<sup>2</sup>Infectious Disease Consultants, Wichita, KS



fusion with left-sided facial rash for six days. He was seen by his primary care physician when the rash began and was started on oral acyclovir. He had never received vaccination against varicella zoster virus (VZV). He experienced multiple falls, worsening confusion, and deteriorating visual impairment of the left eye and he was brought to the hospital for further evaluation. On examination, he was disoriented to time and place, and family noted the patient to be experiencing intermittent visual hallucinations. He had a vesicular rash on an erythematous base with crusted lesions limited to the V1 distribution of the left trigeminal nerve. The left eyelids were edematous, and were unable to be opened, with conjunctival exudate. He was changed to IV acyclovir. Lumbar puncture was performed with cerebrospinal fluid (CSF) findings significant for 340 leukocytes/mm<sup>3</sup>, 25% lymphocytes, 71% monocytes, protein of 229 mg/dl, and glucose of 42 mg/dl. Rapid VZV PCR was positive. He was diagnosed with zoster ophthalmicus complicated by meningoencephalitis. His mental status, rash, and visual acuity subsequently began to improve on IV acyclovir. He was continued on IV acyclovir for two weeks and had full recovery.

### DISCUSSION

The incidence of zoster ophthalmicus is estimated to be 30.6 per 100,000.<sup>1</sup> Ocular complications include keratitis, corneal inflammation, uveitis, and eventually blindness which can occur in up to two-thirds of patients with late stage disease at presentation.<sup>2</sup> Almost half of patients with zoster ophthalmicus can have CSF pleocytosis, and near one-third can have positive VZV, even without symptoms of meningitis.<sup>3</sup> Monocytosis of the CSF is typical for VZV infection.<sup>4</sup> IV acyclovir has the best CSF penetration and is recommended for those with neurologic symptoms.<sup>5</sup> Lumbar puncture should be performed in zoster ophthalmicus if there is high clinical suspicion as it influences route and duration of therapy.<sup>4</sup> The Infectious Disease Society of America recommends treating VZV encephalitis with IV acyclovir at a dose of 10 - 15 mg/kg every eight hours for 10 - 14 days.<sup>6</sup>

### REFERENCES

- <sup>1</sup> Borkar DS, Tham VM, Esterberg E, et al. Incidence of herpes zoster ophthalmicus: Results from the Pacific Ocular Inflammation Study. *Ophthalmology* 2013; 120(3):451-456. PMID: 23207173.
- <sup>2</sup> Schaftenaar E, Meenken C, Baarsma GS, McIntyre JA, Verjans GM, Peters RP. Early- and late-stage ocular complications of herpes zoster ophthalmicus in rural South Africa. *Trop Med Int Health* 2016; 21(3):334-339. PMID: 26663773.
- <sup>3</sup> Dworkin RH, Johnson RW, Breuer J, et al. Recommendations for the management of herpes zoster. *Clin Infect Dis* 2007; 44(Suppl 1):S1-26. PMID: 17143845.
- <sup>4</sup> Grahm A, Studahl M. Varicella-zoster virus infections of the central nervous system - Prognosis, diagnostics and treatment. *J Infect* 2015; 71(3):281-293. PMID: 26073188.
- <sup>5</sup> Gildea D. Varicella zoster virus and central nervous system syndromes. *Herpes* 2004; 11(Suppl 2):89A-94A. PMID: 15319095.
- <sup>6</sup> Tunkel AR, Glaser CA, Bloch KC, et al. The management of encephalitis: Clinical practice guidelines by the Infectious Diseases Society of America. *Clin Infect Dis* 2008; 47(3):303-327. PMID: 18582201.

**Keywords:** herpes zoster ophthalmicus, varicella encephalitis, herpes zoster meningoencephalitis