Characteristics, treatment and complications of herpes zoster ophthalmicus at a tertiary eye hospital

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Herpes zoster ophthalmicus (HZO), a condition that affects the ophthalmic division of the trigeminal nerve, is caused by reactivation of latent varicella zoster virus;[1,2] about 10% of people with varicella zoster infections experience HZO.[1] Over the past decade, the number of emergency department presentations by people with herpes zoster in Australia has increased by 2–6% per year, and the number of people with herpes zoster managed in general practice has almost doubled.[3]

The purpose of our study was to develop a contemporary perspective of the clinical presentation, incidence of complications, and treatment practice for patients with HZO referred to an Australian tertiary eye hospital. We performed a retrospective audit of digital health records of the first 100 consecutive patients who presented to the Royal Victorian Eye and Ear Hospital (RVEEH) emergency department with HZO during July 2017 – July 2018. The investigation was approved by the Human Research Ethics Committee of the Hospital as a quality control project (reference, 18/1416HL).

The clinical features at the time of presentation of the 100 patients are summarised in the Box. Sixty-five patients initially presented to their general practitioner, 20 to a hospital emergency department, and 15 directly to the RVEEH. The mean time between rash onset and presentation to a GP or emergency department was 3.3 days (range, 0–14 days).

For 51 patients, treatment commenced before presentation to the RVEEH (famciclovir, 27; valaciclovir, 16; acyclovir, 6; two patients had received no topical treatment); treatment had commenced within 72 hours of the rash developing for 36 of these patients (71%). The recommended dose and frequency were prescribed for 16 of the 51 patients: famciclovir (500 mg three times a day), two patients; valaciclovir (1 g three times a day), 12 patients; acyclovir (800 mg five times a day), two patients. For 29 patients, antiviral therapy was prescribed at lower than the recommended dose (famciclovir, 21 patients; valaciclovir, two patients; acyclovir, two patients) or prescribed as a topical treatment (acyclovir, two patients); the prescribing information was not documented for five patients.

Nineteen of the 68 patients who attended follow-up 7–14 days after their initial presentation to the RVEEH presented with ocular symptoms regarded as late complications, including four with more than one complication. Eight of 29 patients (29%) who had not commenced systemic antiviral therapy within 72 hours of rash onset developed late complications, as did 13 of 71 patients (18%) who were treated within 72 hours (Fisher exact test: $P = 0.78$).

We found concerning variations in timing and practice of treating HZO, despite recognised clinical guidelines.[4,5] This may be partly explained by diagnostic uncertainty caused by the variability of clinical signs during the early stages of HZO,[6] and by an earlier discrepancy between the famciclovir dosing recommended by therapeutic guidelines (250 mg three times a day) and recommendations based upon the results of a clinical trial[4] (500 mg three times a day). This discrepancy has since been resolved in the therapeutic guidelines.[4]

Our findings suggest that education of all health care professionals involved in the care of patients with HZO needs to be improved. Clinical practice guidelines must provide clear and consistent information about managing HZO.

Demographic characteristics and clinical features of 100 consecutive people presenting with herpes zoster ophthalmicus to the Royal Victorian Eye and Ear Hospital, July 2017 – July 2018

Characteristic	
Sex (men)	52
Age at presentation (years), median (IQR)	59 (39–76)
Age at presentation (years), range	16–93
Clinical features at presentation	
Best-corrected visual acuity ≥ 6/12	62
Intra-ocular pressure (mmHg), mean (SD)	15.4 (5.9)
Rash	92
Pain	63
Conjunctivitis	62
Lid swelling	53
Skin erythema	41
Anterior uveitis	26
Keratitis	20
Other*	6
Late complications	19
Uveitis	11
Keratitis	5
Other†	3

IQR = interquartile range; SD = standard deviation. * Raised intra-ocular pressure, retinitis/choroiditis, optic neuritis, cranial nerve palsy. † Neuralgia, elevated intra-ocular pressure. ◆

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1 Davis AR, Sheppard J. Herpes zoster ophthalmicus review and prevention. *Eye Contact Lens* 2019; 45: 286–291.

2 Szeto SK, Chan TC, Wong RL, et al. Prevalence of ocular manifestations and visual outcomes in patients with herpes zoster ophthalmicus. *Cornea* 2017; 36: 338–342.

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3 Nelson MR, Britt HC, Harrison CM. Evidence of increasing frequency of herpes zoster management in Australian general practice since the introduction of a varicella vaccine. *Med J Aust* 2010; 193: 110–113. https://www.mja.com.au/journal/2010/193/2/evidence-increasing-frequency-herpes-zoster-management-australian-general.

4 Tyring S, Engst R, Corriveau C, et al; Collaborative Famciclovir Ophthalmic Zoster Research Group. Famciclovir for ophthalmic zoster: a randomised aciclovir controlled study. *Br J Ophthalmol* 2001; 85: 576–581.

5 Yawn BP, Wollan PC, St Sauver JL, Butterfield LC. Herpes zoster eye complications: rates and trends. *Mayo Clin Proc* 2013; 88: 562–570.

6 Herpes zoster ophthalmicus. In: Keratitis [Apr 2019], eTG complete [online]. Melbourne: Therapeutic Guidelines, 2019. https://www.tg.org.au (viewed Dec 2019). ■