



THE OCULAR IMMUNOLOGY
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Dedicated to Eye Disease Cure and Education

Herpes Virus and the Eye

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Herpes! The first thought in most people's mind is venereal disease, sexual transmitted disease (STD). But, in fact most instances of herpes, at least those affecting the eye, are not sexually transmitted, and are not even the type of herpes that is usually associated with sexually transmitted disease.

The vast majority of cases of ocular herpes infection are caused by herpes simplex virus type 1 (HSV-1), the type of herpes virus that causes fever blisters and cold sores. Primary infection is usually acquired during childhood and may be asymptomatic or associated with only a mild viral illness. But the virus becomes dormant in the sensory ganglia of the fifth cranial nerve, remaining in a state similar to hibernation until provoked to wake up, multiply, migrate down nerves and establish clinically obvious infection in the area supplied by the nerve, for example, lip, tongue, nose, or, in some rare instances, around and in the eye.

Herpes simplex eye infection can involve the conjunctiva (conjunctivitis), sclera (scleritis), cornea (keratitis), middle layer of the eye (uveitis), or retina (retinitis). It is a potentially dangerous process even when it affects just conjunctiva, since infection in this area can in some instances result in spreading or inoculation into the cornea. Ocular herpes simplex infection can be sight-threatening when associated with keratitis, uveitis, or retinitis.

Therefore, accurate diagnosis and appropriate treatment are critical for preserving vision and preventing recurrent reactivation of the latent virus and re-establishment of active infection and secondary inflammation. Appropriate treatment during an episode of active infection with rapidly replicating virus consists of antiviral therapy. It can be topical or systemic (by mouth). In patients with recurrent infection and inflammation of the eye, prophylactic oral antiviral medication (for example, acyclovir, valacyclovir, or famciclovir) may be beneficial.

We first demonstrated the efficacy of prophylactic therapy in patients requiring corneal transplantation for corneal scarring caused by recurrent herpes simplex keratitis. We showed that long-term treatment with oral acyclovir resulted in a significantly higher success rate of corneal transplantation, a significantly lower rate of recurrence of herpetic keratitis, and a lower rate of irreversible corneal graft rejection. We have also demonstrated that this strategy is effective in patients with uveitis secondary to herpes infection.

It is important to note that systemic acyclovir can cause kidney toxicity. Therefore, monitoring of renal function (BUN and creatinine) every six months is recommended during treatment. Newer antiviral agents, such as valacyclovir and famciclovir, have higher bioavailability and a lower risk of kidney damage. These medications have largely replaced acyclovir in many outpatient settings.