

The Role of Corticosteroid in Management of Herpes Simplex Keratitis

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Short Communication

Herpes simplex virus can have many ocular manifestations, some of which are serious and vision-threatening with the potential to be chronic and recurrent, as well.

The classic presentation of the HSV epithelial keratitis is by development of dendrites or late by amoeboid or geographical ulcer which stains well by fluorescein and Rose Bengal. Debridement of the affected surface epithelium through scraping by a kimura spatula along with trifluridine drops are considered in the management of epithelial HSV keratitis. Oral acyclovir, valacyclovir and famciclovir, were the most commonly used treatments among cornea specialists.

Ganciclovir gel, is newly generated topical agent is found to have a good impact.

Another presentation of herpes simplex is dead viral particles on the cornea that elicit an immune response. Our body finds them and starts reacting to them. So, it's our own body that's causing edema and opacity in the cornea, this can be solely treated by steroids, but steroids can reactivate epithelial disease, so you can actually get the epithelial disease by treating the stromal disease. We use a steroid with an antiviral cover for prophylaxis.

Stromal keratitis comes in two varieties: necrotizing; and immune-mediated non-necrotizing. "Necrotizing is where active virus is actually eating away at the cornea. "Obviously, that would require high-dose treatment with oral acyclovir or valacyclovir. But, if it's the more common immune-mediated herpes simplex stromal keratitis, where it's mostly an inflammatory process, then

the treatment is topical corticosteroids to save the cornea before taking the decision by a therapeutic keratoplasty.

Patients with ocular herpes can also develop endotheliitis. "This causes corneal swelling because endothelial cells become stunned and don't work anymore. It's generally treated with both oral acyclovir as well as topical steroids for the inflammation [1], otherwise it may lead to permanent corneal endothelial decompensation.

Herpes Simplex Virus (HSV) stromal keratitis is a leading cause of corneal opacification and an important indication for penetrating keratoplasty. Based on several observational studies and clinical trials, the current standard of care includes topical corticosteroids and antivirals.

However, corticosteroids have significant side effects, and antivirals are only beneficial if replicating virus is present. High-quality clinical trials investigating therapies for HSV stromal keratitis beyond corticosteroids and antivirals are lacking. Immune regulatory drugs, such as cyclosporine A, present attractive alternatives to managing HSV stromal keratitis, given the immune-mediated pathogenesis of stromal disease. Also, inhibiting viral reactivation in the latently infected ganglia through therapeutic vaccination will likely be the most efficient avenue to reduce recurrent HSV ocular disease [2].

The diagnosis and optimal management of herpes simplex stromal keratitis can be problematic. Clinical features that should be evaluated include the status of the epithelium and the location and type of stromal inflammation. Both types (nonnecrotizing, or disciform, keratitis and necrotizing keratitis) may coexist and are sometimes

accompanied by iridocyclitis and secondary ocular hypertension. Laboratory evaluation is not usually performed, although, lacking a prior history of herpes simplex epithelial keratitis, testing should be considered to seek another cause of stromal inflammation.

A topical steroid is generally contraindicated in the presence of herpes simplex epithelial keratitis and has been implicated in prolonging the course of herpetic eye disease. However, judicious topical steroid therapy can be beneficial when used with protective antiviral cover for herpes simplex stromal keratitis without epithelial keratitis. Systemic antiviral therapy may prove to be a valuable adjunctive treatment, and further clinical trials are anticipated [3].

Herpes Simplex Virus (HSV) necrotizing stromal keratitis is a common type of Herpetic Stromal Keratitis (HSK). Antiviral medication alone cannot control the disease, and corticosteroid eye drops may aggravate the ulcer and result in corneal perforation. Amniotic membrane transplantation effectively treats superficial corneal ulcer resulting from necrotizing stromal HSK. However, the efficacy of this approach seems to be limited for more serious cases. Recent studies have presented the clinical treatment of severe HSV necrotizing stromal keratitis (ulcer depth greater than half of the corneal stroma) by conjunctival flap covering surgery in 25 patients (25 eyes) combined with antiviral and corticosteroid treatment at Shandong Eye Hospital from January 2007 to December 2013. Clinical results showed that the mean best spectacle-corrected visual acuity improved from preoperative 20/333 to postoperative 20/40 ($P < 0.05$). All patients recovered ocular surface stabilization. There was recurrence in two eyes, which was cured with antiviral medication. Conjunctival flap covering combined with antiviral and corticosteroid treatment is effective in treating severe HSV necrotizing stromal keratitis [4].

Multilayer AMT or conjunctival flaps combined with antiviral and corticosteroid therapy appears effective in treating herpes necrotizing stromal keratitis. It provides patients with marked scars and visual impairment an opportunity for subsequent keratoplasty by arresting the inflammatory response and reducing the graft bed diameter [5].

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