Modulating effect

Cyclosporine may be new treatment option for pterygia

Offers alternative to topical corticosteroids, may reduce or delay need for surgery

By Lynda Charters
Reviewed by Barry A. Schechter, MD

Boynton Beach, FL—Topical cyclosporine ophthalmic emulsion 0.05% (Restasis, Allergan) may be a new treatment option for patients with inflamed pterygia that are refractory to conventional therapy of topical steroids and emollients. The immunomodulating effect of the drug also may reduce or delay the need for excision of pterygia, according to Barry A. Schechter, MD.


Dr. Schechter

Elastoic degeneration of collagen and fibrovascular proliferation with an overlying cover of epithelium is the characteristic finding in patients with pterygia.

The incidence of pterygia varies, and they may occur more frequently in the lower latitudes in the United States.

"A relationship is thought to exist between increased prevalence and elevated levels of ultraviolet light exposure in the lower latitudes," explained Dr. Schechter, director, Department of Cornea and External Diseases, Florida Eye Microsurgical Institute, Boynton Beach.

Symptoms vary substantially and can range from none to substantial redness, swelling, itching, irritation, and blurring of vision, Dr. Schechter explained.

Treatment of pterygia is either surgical or medical; however, even after surgery, recurrences are possible. Artificial tears, nonpreserved ointments, and short-term use of topical corticosteroid drops may reduce intense symptoms during flare-ups.

Take-Home Message

Topical cyclosporine ophthalmic emulsion 0.05% (Restasis, Allergan) may be a new treatment option for patients with inflamed pterygia that are refractory to conventional therapy of topical steroids and emollients. The modulating effect of the drug also may reduce or delay the need for excision of pterygia.

"These treatments, however, provide palliative relief of symptoms and do not address the underlying inflammatory mechanism usually associated with pterygia. The presence of inflammatory cells such as CD-4 and CD-8 subpopulations of T-lymphocytes may play a role in the pathogenesis of moderate to severe pterygia," Dr. Schechter pointed out.

In light of this, he tested the efficacy of cyclosporine 0.05% because the drug, in addition to being used in patients with dry eye, has been reported to reduce significantly the number of activated T-lymphocytes within the conjunctiva.

He conducted a prospective, open-label 4-month study of patients with symptomatic pterygia that had not responded to the conventional medical therapy. Forty-one eyes of 26 patients were included; patients instilled one drop of cyclosporine 0.05% twice daily into the affected eye. Eleven eyes of eight patients served as controls; they received the lubricant eye drops (Refresh Endura, Allergan).

Participants were evaluated monthly for 4 months.

The study outcome measures included the ocular surface disease index (OSDI), the size of the pterygia, tear film break-up time, staining with lissamine green, and a subjective evaluation of patient pain using a scale of 0 to 4, with 0 indicating no pain and 4 indicating severe pain.

Dr. Schechter reported that by 1 month after the onset of treatment with cyclosporine, the mean OSDI scores improved by 8.6 points ($p \leq 0.012$), and Schirmer's scores also improved ($p \leq 0.015$). Cyclosporine also significantly reduced pain and staining ($p < 0.001$), and tear breakup time increased. The control patients did not show any significant differences from baseline.

"In addition, there was no progression

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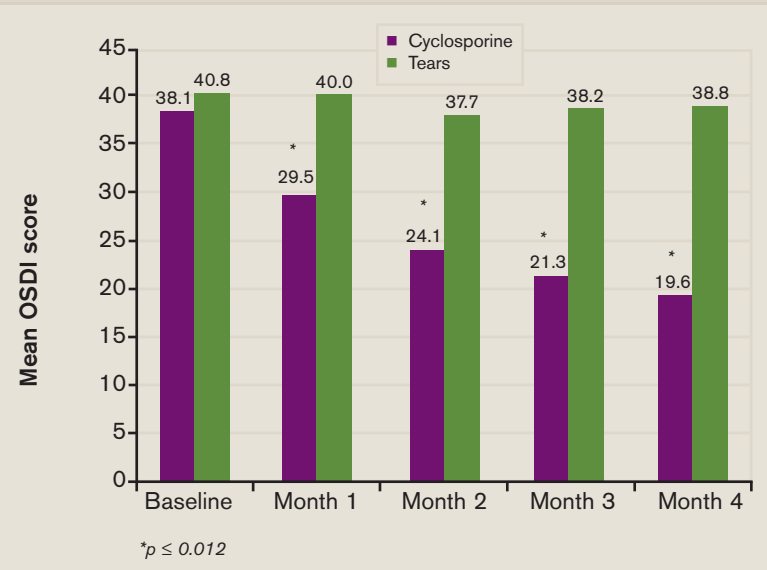
Figure 1 OSDI and topical cyclosporine treatment



OT Graphic

Ophthalmology Times / Source: Barry A. Schechter, MD

Synergistic activity

NSAID-prednisolone combo reduces post-cataract CME

Study finds significantly lower rate when nepafenac is added following surgery

By Lynda Charters
Reviewed by Richard E. Braunstein, MD

Vail, CO—Administration of a topical nonsteroidal anti-inflammatory drug (NSAID), nepafenac (Nevanac, Alcon Laboratories), and prednisolone resulted in a significantly lower rate of pseudophakic macular edema following cataract surgery compared with the rate in patients who received only prednisolone, according to Richard E. Braunstein, MD.

NSAIDs inhibit the cyclooxygenase pathway, which limits prostaglandin formation, a major cause of postoperative inflammation and cystoid macular edema (CME). Administration of both corticosteroids and NSAIDs provides synergistic activity that results in more rapid resolution of symptomatic CME, Dr. Braunstein explained. He reported his results at the Current Concepts in Ophthalmology meeting, Vail, CO. The meeting was sponsored by Johns Hopkins University School of Medicine, Baltimore, and *Ophthalmology Times*.

"CME, the most common cause of visual loss after uncomplicated cataract surgery, usually occurs 4 to 6 weeks postoperatively. Angiographic CME may occur in 20% to 30% of cases and clinical CME in 1% to 6.9%," he said. Dr. Braunstein is the Miranda Wong Tang Associate Professor of Clinical Ophthalmology and chief, Division of Anterior Segment, Edward S. Harkness Eye Institute, Columbia University Medical Center, New York.

Take-Home Message

Administration of nepafenac (Nevanac, Alcon), a topical nonsteroidal anti-inflammatory drug, and prednisolone resulted in a significantly lower rate of pseudophakic macular edema following cataract surgery compared with the rate in patients who received only prednisolone.

In Dr. Braunstein's practice, he recounted, from 1994 to 1998, NSAIDs alone were used in all cases of cataract surgery. From 1998 to 2002, corticosteroids were added for high-risk cases, such as patients with diabetes, iris manipulation, those patients who had undergone a previous surgery, and those with uveitis. From 2002 to 2005, however, only corticosteroids were given. Dr. Braunstein noted that his change in NSAID use was influenced by the report by Guidera et al., who reported on severe corneal complications of NSAIDs that occurred in 18 eyes of 16 patients. These were individual case reports that were combined for a single paper, rather than a study group. The complications included severe keratopathy, ulceration, corneal or scleral melt, and corneal perforation. Five of the patients had associated systemic conditions, i.e., rheumatoid arthritis, Sjögren's syndrome, and rosacea; the majority of patients did not have associated autoimmune disease. Additional risk factors noted by the authors included the concurrent use of topical steroids and epithelial keratopathy in the early postoperative period.

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Pterygia

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of pterygia growth or change in the lesion size in patients treated with cyclosporine. This lack of progression, however, is likely due to the short-term follow-up period," he said.

One patient who received cyclosporine scheduled surgery as compared with seven of the eight patients who were treated with the lubricant eye drops.

"Topical cyclosporine significantly improved OSDI scores, reduced pain and staining, and increased the tear film breakup time and Schirmer scores," Dr. Schechter stated. "Cyclosporine was superior to artificial tears for all outcome measures evaluated. This is especially meaningful because the control group used [the lubricant eye drops], a high-viscosity emulsion that is similar to the vehicle for topical cyclosporine ophthalmic solution. These findings suggested that cyclosporine is responsible for its demonstrated efficacy in the treatment of pterygia and that this is not just a palliative effect."

'Cyclosporine offers a safe alternative to topical corticosteroids for the treatment of inflamed pterygia.'

Barry A. Schechter, MD

The immunomodulating properties of cyclosporine may be responsible for the improvement in the signs and symptoms of pterygia, he said.

"Cyclosporine offers a safe alternative to topical corticosteroids for the treatment of inflamed pterygia. There is no cataractogenic effect or associated elevation of IOP associated with the use of topical cyclosporine," Dr. Schechter added.

The results of this study must be viewed cautiously, he said, because a larger patient cohort and longer follow-up times are needed.**OT**

FYI

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Dr. Schechter has no financial interest in any product mentioned in this report.

Post-cataract CME

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Dr. Braunstein also cited an article by Weisz et al. that showed the benefit of ketorolac (Acular, Allergan), an NSAID, in the treatment of pseudophakic CME that developed more than 2 years after cataract surgery. In that study, 10 eyes of nine patients were treated following cataract surgery performed a mean of 59 months previously. After ketorolac therapy, seven of the eyes improved a mean of 3.2 lines of visual acuity, two eyes remained unchanged, and one eye worsened by one line of visual acuity.

'CME, the most common cause of visual loss after uncomplicated cataract surgery, usually occurs 4 to 6 weeks postoperatively.'

Richard Braunstein, MD

Dr. Braunstein and colleagues conducted a study in which they evaluated the efficacy of nepafenac 0.1% suspension, the amide analog of the NSAID amfenac, in preventing pseudophakic macular edema. In that retrospective chart review of patients who had undergone cataract surgery, 240 patients were treated with prednisolone alone and 210 patients were treated with both prednisolone and nepafenac. Postoperatively, prednisolone was given four times a day for 1 week, three times a day for 1 week, twice daily for 1 week, and then every day for 1 week; nepafenac was given three times daily for 4 weeks. The patients also were given moxifloxacin four times daily for 8 days starting 1 day before the surgery.

The study endpoints were suboptimal Snellen visual acuity 1 month postoperatively, no substantial corneal disease or capsular opacification, and CME that was confirmed by optical coherence tomography (OCT).

All patients had undergone uncomplicated phacoemulsification with implantation of an IOL. All surgeries were performed by Dr. Braunstein, who used the same phaco machine (Infiniti, Alcon). No significant differences existed in the characteristics of the patients.

"The patients who had visually significant CME were the five who received only prednisolone after surgery. No patients who were given both nepafenac and prednisolone had visually significant CME," Dr. Braunstein reported. This result was statistically significant ($p = 0.03$).

No significant adverse events were seen in either of the groups. One patient who was initially in the nepafenac and prednisolone group was taken off of nepafenac because of a corneal epithelial defect. This patient later developed CME that was documented by OCT. This patient was not counted in the CME group.

The investigators concluded that patients who were treated with a postoperative regimen of concomitant prednisolone and nepafenac had a significantly lower incidence of pseudophakic CME than patients treated with prednisolone alone.

Dr. Braunstein pointed out that, in his practice, patients receive a topical corticosteroid that is tapered over 4 weeks. A topical NSAID is prescribed for 4 weeks for all patients who undergo cataract extraction; the NSAID is used cautiously in those patients with an underlying immune-mediated disease. Patients at high risk receive an NSAID for up to 8 weeks postoperatively.**OT**

FYI

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Dr. Braunstein is a member of the Alcon speaker's bureau.