

Advanced

OCULAR CARE

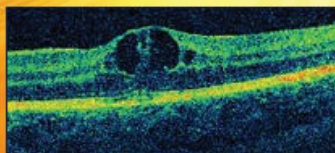
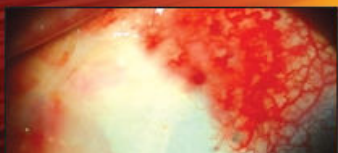
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Combating Inflammation

EXPERT ADVICE ON DIAGNOSIS, PREVENTION, AND TREATMENT.



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NSAIDs and Newer Therapies May Overcome Atypical Inflammation

Physicians should take advantage of the available preparations to benefit their patients.

BY BARRY A. SCHECHTER, MD

Ocular inflammation can challenge the skills of even the most talented physicians as well as test patients' forbearance. This article shares my pearls for combating inflammation, a common endpoint of many ocular conditions and surgical procedures that can lead to poor outcomes, limited visual acuity, and a variety of complaints regarding patients' sensations and the appearance of their eyes. In addition to using the classic medications for various inflammatory conditions, such as topical prednisolone acetate and topical cyclosporine, there are also cases in which topical non-steroidal anti-inflammatory drugs (NSAIDs), topical azithromycin (an antibiotic with anti-inflammatory properties), bepotastine (a new topical antiallergy medication), or diflupredinate (a new, potent topical steroid) can have a significant effect.

DRY EYE

Dry eye is recognized as one of the most underdiagnosed yet prevalent ocular diseases. The condition becomes more common as individuals age. Because many patients express vague or contradictory symptoms (eg, "My eyes tear all the time"), clinicians must take the time to establish the correct diagnosis and prescribe proper treatment.

Studies have repeatedly shown that dry eye is an inflammatory condition with a neuronal feedback loop.¹ Conjunctival inflammation reduces the formation of a

properly balanced tear film, which in turn leads to further inflammation. It is up to the eye care professional to help the patient break the vicious circle with appropriate treatment (eg, punctal plugs, tear supplements, cyclosporine, and neutraceuticals).

The Delphi panel, an international consortium of dry eye experts, has offered a preferred practice pattern to designate appropriate treatments for the varying levels of disease. If a patient remains symptomatic despite instilling artificial tear supplements up to four times a day, medicated drops are usually indicated. It has become popular to initiate treatment of dry eye with topical cyclosporine and a "soft" steroid (ie, loteprednol etabonate 0.5%). Due to the concomitant findings of ocular and adnexal bacterial colonization, however, I have been reluctant to use steroids that locally suppress the immune response in a patient with an already compromised ocular surface. I have had excellent success with topical NSAIDs when initiating a course of therapy with topical cyclosporine. While awaiting the full clinical effects of cyclosporine (usually several weeks), the NSAID acutely reduces the patient's discomfort due to its analgesic effect and has even been shown to reduce inflammatory signs.² My NSAID of choice is bromfenac 0.09% due to its potency, twice-daily dosing, and tolerability for patients. Ista Pharmaceuticals, Inc. (Irvine, CA), is currently investigating a lower concentration of bromfenac for dry eye disease. I will be presenting a head-to-head com-

parison of bromfenac versus ketorolac for the treatment of dry eyes at the upcoming ASCRS meeting in Boston.

A new preservative-free formulation of ketorolac utilizing carboxymethyl cellulose (Acuvail; Allergan, Inc., Irvine, CA) as its vehicle may also hold promise for the treatment of ocular surface pain.

It is important to note that, before using NSAIDs in dry eye patients, clinicians should identify rheumatoid arthritis and other autoimmune diseases, because these patients may have a higher propensity for adverse corneal events.

CATARACT SURGERY

NSAIDs have also been shown to be invaluable in cataract surgery. My group found that the addition of a topical NSAID to a topical steroid vastly reduces the occurrence of cystoid macular edema and macular thickening postoperatively to result in better visual acuity. Macular thickness of more than 300 μm was associated with reduced acuity even in the absence of clinical cystoid macular edema.³

With the increasing public acceptance of presbyopia-correcting IOLs due to direct-to-consumer marketing and word of mouth, improved surgical outcomes and comfort for patients are paramount. Controlling perioperative pain and inflammation in this group of patients with very high expectations who are paying out of pocket is vital. As baby boomers are becoming presbyopic, the Tecnis Multifocal IOL (Abbott Medical Optics Inc., Santa Ana, CA), AcrySof IQ Restor IOL +3.0 D (Alcon Laboratories, Inc., Fort Worth, TX), and the Crystalens (Bausch + Lomb Incorporated, Rochester, NY) are welcome additions to the surgical armamentarium. My "three S's rule" helps to ensure a successful surgical outcome and a happy patient when I am implanting these premium IOLs. A surgeon must always consider surface, sphericity, and psychology of the patient. (These S's will be discussed in greater detail in a future article.) Patients who have decided to have these lenses implanted should be started on a topical NSAID at least 1 day preoperatively to reduce the chances of developing postoperative cystoid macular edema and to reduce symptoms stemming from the ocular surface. NSAIDs can also help reduce patients' discomfort from the incision site or any prior corneal surface disease, such as dry eye. This overall reduction in patients' discomfort and potential side effects helps to reinforce the impression of a premium experience for the patient.

OCULAR SURFACE DISEASE

Dry eye, blepharitis, ocular allergy, and other adnexal diseases must be treated prior to any ocular surgery. When anterior or posterior blepharitis (an infectious disease with a formidable inflammatory component) is present, lid

"Blepharitis is commonly seen in dry eye patients because an intact tear film exhibits many anti-infective properties."

scrubs and topical antibiotics such as azithromycin are invaluable. Even the mucoadhesive polymer Durasite (InSite Vision Incorporated, Alameda, CA) that is used as a vehicle for Azasite (azithromycin; Inspire Pharmaceuticals, Durham, NC) has been shown to have anti-inflammatory and anti-infective properties.⁴

Blepharitis is commonly seen in dry eye patients because an intact tear film exhibits many anti-infective properties. I typically ask patients to place a drop of Azasite on their fingertips and massage it into the base of their lashes at bedtime for 10 nights. Due to its formulation, the antibiotic distributes into the ocular tissues at a high concentration with a long half-life to improve meibomian gland function and reduce potential infection. Many ocular surface disorders involving the tear film, eyelids, and adnexal structures are associated with chronic, low-grade bacterial infection and may lead to decreased vision due to disruption of the homeostasis of the cornea and tear film. Topical macrolide antibiotics are commonly used with variable clinical effects. In my patients, I have noted the long-lasting antibacterial and additional anti-inflammatory properties of topical azithromycin might offer an effective alternative treatment option.⁵

HERPETIC KERATITIS

Dendritic keratitis can be a mild or severe manifestation of ocular herpetic infection. Dendrites, however, represent inflammation of the corneal nerves. The epithelial breakdown typically causes photophobia, foreign body sensation, and/or pain. Repeated episodes may lead to deep stromal herpetic infection, which can become debilitating.

Early aggressive treatment with topical or oral antiviral medications and, anecdotally, topical NSAIDs help to promote healing with fewer recurrences. I typically treat patients with appropriate antivirals and an NSAID for comfort.⁶

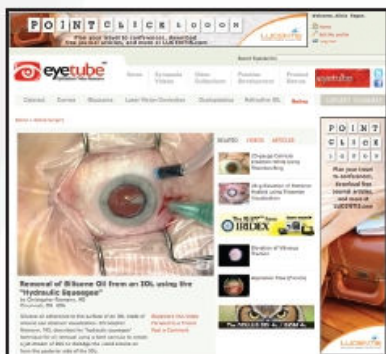
ALLERGIC CONJUNCTIVITIS

Ocular allergy is a multifactorial disease process characterized by an early phase of mast cell degranulation with histamine release and later by proinflammatory mediators. Topical NSAIDs have been indicated for the treatment of this condition. A new topical antihistamine,

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COVER STORY

bepotastine besilate (Bepreve; Ista Pharmaceuticals, Inc.), has been very helpful to my patients, because it works as an H1-receptor antagonist, it has mast cell-stabilizing capabilities, and it inhibits leukotrienes, IL-5, and various other mediators.

The drug is dosed twice daily and, when instilled topically in the eye, may even alleviate symptoms of allergic rhinitis.

PTERYGIUM

I have prescribed NSAIDs along with diflupredinate for my ocular surface reconstruction and pterygium excision patients with great success. Diflupredinate has been shown to be at least as effective as current steroids such as Pred Forte⁷ (prednisolone acetate ophthalmic suspension; Allergan, Inc.), and it is the first steroid approved for pain relief. Diflupredinate helps to suppress conjunctival inflammation, and the NSAID, due to its cyclooxygenase activity, limits recurrent growth of the neovascular vessels. Using conjunctival stem cells in the graft in addition to placing an amniotic membrane graft has kept my recurrence rate to less than 2%.

With smaller lesions, or when patients elect to defer surgery, the use of topical cyclosporine has been shown to reduce the irritating symptoms and to reduce the redness associated with these lesions.⁸

CONCLUSION

Desite the availability of older, dependable drugs, newer potent pharmaceutical agents are now available to help physicians control ocular inflammation. These newly formulated agents help to relieve patients' pain and improve surgical outcomes and experiences. ■

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