

Point/Counterpoint:

Are Topical Steroids Necessary

Potent topical nonsteroidal anti-inflammatory drugs are creating a paradigm shift in the management of cataract surgery.

BY KEITH A. WALTER, MD



Since the FDA's approval of Bromday (bromfenac 0.09%; Ista Pharmaceuticals, Inc.) for cataract surgery in October 2010, I have stopped using topical steroids after surgery. I have no regrets, and I am convinced that it is a safer, better, and less-expensive approach. In this article, I discuss why I believe this to be true. The take-home message is that topical steroids are antiquated, add to the expense of cataract surgery, and inhibit patients' compliance.

INTRODUCTION AND BACKGROUND

Topical Nonsteroidal Anti-inflammatory Drugs

Several articles have been published in which topical nonsteroidal anti-inflammatory drugs (NSAIDs) were used exclusively for the control of pain and inflammation after cataract surgery.¹⁻⁴ In addition to bromfenac 0.09%, three other NSAIDs are FDA approved for use surrounding cataract surgery. Diclofenac sodium ophthalmic solution 0.1% (Voltaren; Novartis Pharmaceuticals Corporation) was the first agent to be approved for the treatment of postoperative inflammation at a dosage of four times a day. Nepafenac 0.1% ophthalmic suspension (Nevanac; Alcon Laboratories, Inc.) is indicated for the treatment of pain and inflammation associated with cataract surgery at a dosage of three times a day. Ketorolac has been manufactured under four different trade names in three concentrations. Ketorolac 0.50% and 0.45% (Acular and Acuvail PF; both from Allergan, Inc.) are the only concentrations approved for the treatment of postoperative inflammation in patients who have undergone cataract extraction, and they are dosed four times a day and twice a day, respectively. Ketorolac 0.40% and 0.50% (Acular LS and Acular PF; both from Allergan, Inc.) are dosed four times a day in the operated eye as needed for pain and burning/stinging for up to 4 days following corneal refractive surgery. Because Acular LS and PF are not indicated after cataract surgery, they will not be discussed here.

Corticosteroids

Surgical trauma from cataract surgery causes a cascade of inflammatory events due to the release of arachidonic

“NSAIDs irreversibly inhibit the COX enzymes, thereby halting the production of prostaglandins.”

acid and the production of prostaglandins by the activation of cyclooxygenase (COX)-1 and -2 enzymes. Clinical symptoms caused by the release of prostaglandins include pain, hyperemia, miosis, light sensitivity, and decreased vision due to cystoid macular edema (CME).⁵ Corticosteroids, when used properly, interfere with the release of arachidonic acid and inhibit the production of all byproducts, including prostaglandins. Although corticosteroids are currently considered the gold standard for the treatment of ocular inflammation, they are also associated with numerous adverse events, including the inhibition of the immune system, delayed wound healing, and increased IOP.⁶

NSAIDs irreversibly inhibit the COX enzymes, thereby halting the production of prostaglandins. In addition to the drugs' indicated use of controlling pain and ocular inflammation, many surgeons have also advocated the off-label use of NSAIDs for preventing or treating CME. Wittpenn et al found that, with the use of steroids alone, the incidence of macular swelling was 12% versus 0% with ketorolac 0.50%.⁷ In one of the first studies that documented the beneficial effects of topical NSAIDs for cataract surgery, the investigators found that patients using topical steroids had a 12% incidence of developing postoperative CME. In that study, patients treated with diclofenac sodium ophthalmic solution 0.1% pre- and postoperatively avoided the development of CME.⁸

MY EXPERIENCE

I have tried all of the topical NSAIDs in my perioperative cataract patients. I have found that they are all effective at reducing pain and inflammation; I was mainly

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in Modern Cataract Surgery?

The proper use of both steroidal and nonsteroidal therapies in cataract surgery helps ensure optimal results and patients' satisfaction.

BY DAVID A. GOLDMAN, MD



Since the 1950s, corticosteroids have been used in ophthalmology for the control of ocular inflammation. Through their interference with phospholipase A2, these agents are able to inhibit the arachidonic acid cascade and reduce the inflammatory response. Corticosteroids can be delivered systemically and/or topically, and currently, there are approximately 10 ophthalmic corticosteroid preparations available. When used after cataract surgery, they have been demonstrated to prevent inflammation, hasten the recovery of visual acuity, and decrease postoperative pain. Nonsteroidal anti-inflammatory drugs (NSAIDs) are also useful postcataract surgery, and several studies have shown them also to be effective in reducing inflammation and pain. Based on this, should NSAIDs be used alone? I believe that a combination of steroidal and nonsteroidal therapy is paramount to achieving successful outcomes.

INCREASED EXPECTATIONS

We surgeons must do all that we can to meet our patients' expectations, which include good-to-excellent vision and as little pain as possible postoperatively. Although NSAIDs have been shown to reduce inflammation and improve postoperative comfort, they are not 100% successful. Several studies have been performed using an NSAID exclusively to control pain and inflammation, but what do the results of these investigations tell us? As seen in the Table, when an NSAID was used alone—even when dosed before surgery—the outcomes were not as impressive as one would hope. Although not all of the NSAID trials were designed the same, in most, patients were still not inflammation free at 2 weeks, and some of the inflammation scores are somewhat forgiving (ie, a score of 0 for ≤ 5 anterior chamber cells). To me, this is unacceptable, and it is one of the main reasons why I believe that both a steroid and an NSAID should be part of a perioperative regimen in cataract surgery.

Based on the results shown in the table, if an NSAID is used alone, it appears inevitable that some patients will require steroids as rescue therapy. Those patients may think that something has gone wrong with their surgery, because they now must purchase another medication they did not

“Steroids and NSAIDs work at different levels of the arachidonic acid cascade and therefore will provide a synergistic effect.”

think was necessary. Furthermore, steroids and NSAIDs work at different levels of the arachidonic acid cascade and therefore will provide a synergistic effect, allowing even more postoperative comfort than either drop alone could provide.

IOP AND CYSTOID MACULAR EDEMA

Cystoid macular edema (CME) is a serious and potentially sight-threatening consequence of uncontrolled inflammation. Depending on how it is defined—angiographically or clinically—and what study is referenced, the rates of CME postsurgery are anywhere from 3% to 30%. This means that CME is at least 10 to 100 times more common than endophthalmitis. I would propose that no surgeon would take a chance with endophthalmitis, and the risk of CME should be no different. There have been many other trials showing that the combination of a steroid and an NSAID is better than either agent alone in preventing CME. These studies, conducted by Wittppenn, Heier, and others, corroborate the synergistic mechanisms of steroids and NSAIDs (in these trials, ketorolac [Acular; Allergan, Inc.] was used).^{1,2}

Regarding risks of steroids, the most concerning adverse event is elevated IOP. This has been shown to occur in approximately 8% of patients. As ophthalmologists, however, we are very comfortable treating elevated IOP. Our steroidal regimens are also becoming shorter and shorter, further decreasing the possibility of steroidal-responsive elevated pressure. NSAIDs are not without risks, and by combining NSAIDs and steroids I find I am able to lessen the dose of each and still maintain excellent efficacy.

COST IS A FACTOR

Cost is another factor that must be weighed: do the benefits of adding a steroid justify the added cost? My response

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using them for the prevention of CME. Most recently, I was using bromfenac in an off-label fashion as an adjunct to the topical steroids that I had been using since my residency. My rationale was that not every patient needed an NSAID, but it might help prevent CME in those with diabetes or be useful in cases of excessive iris manipulation (eg, intraoperative floppy iris syndrome). I would also add bromfenac to the treatment regimen for any patient who showed clinical or spectral tomographic signs of CME, which meant I would have to play “catch up” in its often-difficult management.

After reviewing the data that Ista Pharmaceuticals obtained for the FDA approval, I considered the benefit of using bromfenac 0.09% once daily—as it is labeled—and using a corticosteroid as an adjunct only if needed. My thought was that it would be easier for my patients and their families, possibly aid in their compliance, and lessen my chair time explaining the dreaded steroidal taper or why they had CME.

EFFICACY OF BROMFENAC ALONE

Once approved by an institutional review board, I conducted a small prospective trial evaluating 42 patients (84 eyes) undergoing bilateral surgery. Surgery on the second eye was performed approximately 2 weeks after the first. The purpose of the study was to see if bromfenac 0.09%, dosed once daily commencing 2 days before surgery and continuing 4 weeks after, would control pain and inflammation adequately without the use of additional topical steroids. (I decided to use bromfenac in this off-label manner to provide patients with an extra dose preoperatively, as all NSAIDs are more effective for preventing the production of prostaglandins than for treating their sequelae. The 4-week regimen was to ensure that all inflammation had completely resolved.) Patients were asked to rate their pain intra- and postoperatively on a scale from 1 to 10 and also to compare the pain between eyes. If patients had persistent cell and/or flare after 2 weeks, the protocol allowed the addition of topical steroids.

The average intraoperative pain score was 0.44 for the first eye and 0.52 for the second; the average pain score postoperatively was 1.00 for the first eye and 0.98 for the second. Only 26% of patients indicated that the second eye was more painful than the first, and neither eye was associated with a statistically significant difference in pain-perception scores. No eyes in the study required additional steroidal treatment, had evidence of CME, or had worse-than-expected BCVA.

I would like to believe that my expert surgical skills created such a low incidence of pain, inflammation, and

CME, but my previous experience dictates otherwise. My rate of CME for my mostly white patients using the steroid-only treatment would be around 5% to 10%. My experience has also been that patients have more complaints of pain or discomfort after surgery on their second eye. I had previously attributed this to a sympathetic reaction, having had the first eye operated on 2 weeks earlier. Recently, Ursea et al found that there was a subtle increase in pain in the second surgery relative to the first.⁹ Based on this small study, my conclusion is that bromfenac 0.09% used as monotherapy effectively prevented pain, inflammation, and CME, and it kept my patients and me happy.

PATIENT- AND DOCTOR-FRIENDLY REGIMEN

A recent study that electronically monitored patients after cataract surgery revealed that any plan that requires patients to administer treatments more than twice daily significantly decreases their compliance.¹⁰ In that study, compliance was 50.2% overall, and 20.0% of patients took only 25.0% of their required drops. Certainly, therapy prescribed three or more times daily drastically reduces the patient's and/or his or her family's ability to comply.

Since I began prescribing bromfenac 0.09% once daily as a single anti-inflammatory therapy for my cataract patients, I have enjoyed not explaining to patients and their families the complicated tapering regimen of steroids, and not having to write a specific schedule for them to follow. My patients have repeatedly expressed gratitude for this simplification.

MINIMIZING UNWANTED SIDE EFFECTS

Corticosteroids are notorious for increasing IOP, delaying wound healing, and suppressing immune function, all of which are undesired and avoided with the use of NSAIDs alone. Recently, a patient was referred to me for a second opinion after having elevated IOP 2 weeks following routine cataract surgery. In speaking with the patient, I learned that she was frustrated with her care regimen after the first surgery, and she requested that I operate on her second eye. Naturally, for her postsurgical treatment, I avoided the use of topical steroids by prescribing bromfenac 0.09% alone and hence avoided the steroidal response and her previous unpleasant experience. In a study by Duong et al, the only group that did not show a postoperative spike in IOP was the NSAID-only group.¹¹

AVOIDING CME

Multiple studies have shown the benefits of NSAIDs for preventing CME.^{1-5, 7,8,12} Corticosteroids block the arachidonic pathway and prevent prostaglandin formation; however, when used alone, they do not prevent

CME.^{7,8} It is unclear why, but compliance and/or inadequate penetration are likely culprits. Most cataract surgeons realize that steroids alone are limited in their ability to prevent CME, as supported by a 2009 online survey in which 62% of surgeons responded that they used an NSAID as an adjunct to the traditional use of corticosteroids.¹³ Recent evidence suggests that retinal thickening from CME is associated with a slight decrease in the permanent quality of vision and contrast sensitivity.¹⁴ Thus, the benefits of using an NSAID to prevent CME are numerous, including not only the prevention of retinal thickening but also the chair time associated with explaining this potential sight-threatening complication. In addition, there is the added benefit that patients will share their positive experience by communicating their results with other potential patients.

ARE STEROIDS REDUNDANT?

Both NSAIDs and corticosteroids block the production of prostaglandins, albeit in slightly different ways. With the advent of more potent topical NSAIDs such as bromfenac 0.09%, topical steroids are unlikely to offer any additional benefit. Enhancing its inhibitory nature, the bromine atom on the bromfenac molecule makes the drug more lipophilic and therefore more effective at penetrating ocular tissues. Bromfenac is the most potent of the approved ophthalmic NSAIDs: it is 3.7 times more potent than diclofenac, 6.5 times more than amfenac, and 18 times more than ketorolac at inhibiting the COX-2 enzyme.¹²

LOWER COSTS?

If more surgeons are adding an NSAID to their corticosteroid regimen, then the up-front costs will obviously be higher. However, these costs are offset by the lower suspicion of CME, and hence, a reduced likelihood of ordering optical coherence tomography or having to treat CME with steroidal injections and/or a referral. In my small study of 84 eyes using bromfenac 0.09% alone, none of my patients required optical coherence tomography. Further investigation is needed, but I believe using bromfenac 0.09% alone for inflammation, pain management, and CME prevention may ultimately be less costly for the patient. Most surgeons use an NSAID as an adjunct, but by using bromfenac 0.09% alone, the patient is not required to purchase two drugs for the same effect.

TRADITION

It is difficult to change tradition, but is tradition reason enough to continue using topical steroids in light of the increasing evidence that they have become obsolete for cataract surgery?

Thomas Kuhn, author of *The Structure of Scientific Revolution*, defined and popularized the concept of the paradigm shift.¹⁵ Kuhn argued that scientific advancement is not evolutionary but rather is a “series of peaceful interludes punctuated by intellectually violent revolutions,” and in those revolutions, “one conceptual world view is replaced by another.” We have known (at least for the past 518 years) that the earth is round and not flat, as believed by academics for the 2,000 years prior. Throughout history, we have continued to evolve and to change our way of thinking. This, of course, is not by accident but by our realization that there is a more enlightened way to see and do things through scientific research and discovery, as well as to overcome our socially conditioned nature.

I have found that using bromfenac 0.09% once daily beginning 2 days before surgery and continuing through the completion of the bottle (eg, 4-5 weeks postoperatively) benefits my patients and my practice. This regimen effectively treats pain and inflammation, prevents CME, simplifies the schedule of postoperative drops, and reduces costs, all while avoiding the risks and complications of topical steroids. I simply cannot find a downside—which is rare in the practice of medicine. ■

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- Lane SS, Modi SS, Lehmann RP, Holland EJ. Nepafenac ophthalmic suspension 0.1% for the prevention and treatment of ocular inflammation associated with cataract surgery. *J Cataract Refract Surg.* 2007;33(1):53-58.
- Price MO, Price FW. Efficacy of topical ketorolac tromethamine 0.4% for control of pain or discomfort associated with cataract surgery. *Curr Med Res Opin.* 2004;20(12):2015-2019.
- Donnenfeld ED, Holland EJ, Stewart RH, et al; Bromfenac Ophthalmic Solution 0.09% (Xibrom) Study Group. Ophthalmic solution 0.09% (Xibrom) for postoperative ocular pain and inflammation. *Ophthalmology.* 2007;114(9):1653-1662.
- Miyana M, Miyai T, Nejima R, et al. Effect of bromfenac ophthalmic solution on ocular inflammation following cataract surgery. *Acta Ophthalmol.* 2009;87(3):300-305.
- Perry HD, Donnenfeld ED. An update on the use of ophthalmic ketorolac tromethamine 0.4%. *Expert Opin Pharmacother.* 2006;7(1):99-107.
- McGhee CN, Dean S, Danesh-Meyer H. Locally administered ocular corticosteroids: benefits and risks. *Drug Saf.* 2002;25:33-55.
- Wittpenn JR, Silverstein S, Heier J, et al. A randomized, masked comparison of topical ketorolac 0.4% plus steroid vs steroid alone in low-risk cataract surgery patients. *Am J Ophthalmol.* 2008;146:554-560.
- McColgin AZ, Raizman MB. Efficacy of topical Voltaren in reducing the incidence of post operative cystoid macular edema. *Invest Ophthalmol Vis Sci.* 1999;40(suppl):S289.
- Ursea R, Fen MT, Zhou M, et al. Pain perception in sequential cataract surgery: comparison of first and second procedures. *J Cataract Refract Surg.* 2011;37(6):1009-1014.
- Hermann MM, Ustündag C, Diestelhorst M. Electronic compliance monitoring of topical treatment after ophthalmic surgery. *Int Ophthalmol.* 2010;30(4):385-390.
- Duong HQ, Westfield KC, Singleton IC. Comparing three postop regimens for management of inflammation post uncomplicated cataract surgery. Are steroids really necessary? *J Clin Experiment Ophthalmol.* 2011;2:163.
- Cho H, Wolf KJ, Wolf EJ. Management of ocular inflammation and pain following cataract surgery: focus on bromfenac ophthalmic solution. *Clin Ophthalmol.* 2009;3:199-210.
- Local EyeSite.com. 2009 Cataract Drops Survey Results. <http://localeyesite.com/about/2009-cataract-drops-survey-results>. Accessed September 12, 2011.
- Donnenfeld ED. CME from the anterior segment surgeon's perspective. *Retina Today.* November 2008;3(6):60-62.
- Kuhn T. *The Structure of Scientific Revolutions*. Chicago, IL: University Of Chicago Press; 1970.

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TABLE. TRIALS USING AN NSAID ALONE TO PREVENT POSTOPERATIVE INFLAMMATION				
Drug/Trial	Design	Endpoints	Results	Reference
Bromday (Ista Pharmaceuticals, Inc.) Safety and efficacy of bromfenac ophthalmic solution dosed once daily for postoperative ocular inflammation and pain	<ul style="list-style-type: none"> • 872 subjects (584 assigned to bromfenac; 288 assigned to placebo) • No steroid 	SOIS = 0 (AC cells = 0 plus AC flare = 0)	Proportion of subjects at each visit with an SOIS score of 0: day 15, 51.1% (bromfenac) vs 27.4% (placebo)	Henderson BA, et al. ³
Xibrom (Ista Pharmaceuticals, Inc.) Bromfenac ophthalmic solution 0.09% for postoperative ocular pain and inflammation	<ul style="list-style-type: none"> • 527 subjects (356 assigned to bromfenac; 171 assigned to placebo) • Dosed b.i.d. day after surgery and continued for 14 days for total of 28 doses • No steroid 	SOIS = 0 (AC cells ≤ 5 plus AC flare = 0)	Proportion of subjects at each visit with an SOIS score of 0: day 3, 8.4% (bromfenac) vs 1.2% (placebo) • Day 8: 34.8% (bromfenac) vs 13.5% (placebo) • Day 15: 59.3% (bromfenac) vs 26.9% (placebo)	Donnenfeld ED, et al. ⁴
Nevanac (Alcon Laboratories, Inc.) Nepafenac ophthalmic suspension 0.1% for the prevention and treatment of ocular inflammation associated with cataract surgery	<ul style="list-style-type: none"> • 476 subjects (243 assigned to nepafenac; 233 assigned to placebo) • Dosed t.i.d. 1 day before surgery and then for 14 days • No steroid 	Clinical cure: AC cells ≤ 5 plus AC flare = 0 (same as bromfenac 0.09% study) • Primary endpoint = 0 cells + 0 flare	Clinical cure: • Day 1: 11.5% (nepafenac) vs 1.3% (placebo) • Day 3: 36.6% (nepafenac) vs 5.6% (placebo) • Day 7: 63% (nepafenac) vs 11.6% (placebo) • Day 14: 81.9% (nepafenac) vs 25.3% (placebo) Primary endpoint: • Day 1: 0.4% (nepafenac) vs 0.0% (placebo) • Day 3: 6.6% (nepafenac) vs 3.0% (placebo) • Day 7: 29.6% (nepafenac) vs 3.0% (placebo) • Day 14: 62.6% (nepafenac) vs 17.2% (placebo)	Lane SS, et al. ⁵
Acular (Allergan, Inc.) Ketorolac tromethamine 0.5% ophthalmic solution in the treatment of moderate-to-severe ocular inflammation after cataract surgery: a randomized, vehicle-controlled clinical trial	<ul style="list-style-type: none"> • 102 subjects (51 assigned to ketorolac; 51 assigned to placebo) • Dosed q.i.d. 1 day after surgery • No steroid 	AC cell grade = 0 (no cells) plus AC flare score = 0	• Day 14: 29% (ketorolac) vs 8% (placebo)	Heier J, et al. ⁶

Abbreviations: SOIS, summed ocular inflammation scale; AC, anterior chamber.

is a resounding yes. Prednisolone acetate is available as a generic agent that costs \$10 to \$25 per bottle. Difluprednate ophthalmic emulsion (Durezol; Alcon Laboratories, Inc.), a more potent benzalkonium chloride-free steroid emulsion, costs \$35 per bottle on average with the support of a manufacturer's rebate, and it also has improving tier 2 coverage on many Medicare Part D plans. The NSAID that I use most often is nepafenac ophthalmic suspension 0.1% (Nevanac; Alcon Laboratories, Inc.), which has predominantly Tier 2 coverage and the copayment is about \$40. I administer these medications using an off-label schedule (ie, b.i.d. for 2 weeks then decreasing the steroid to q.d. for 2 weeks while maintaining the b.i.d. NSAID for an additional 2 weeks). I have witnessed no adverse events, and my patients have had excellent control of inflammation and pain. One bottle of each agent will last the entire course of therapy and cost the patient less than \$100. In contrast, to prescribe a 4-week course of bromfenac 0.09% (Bromday; Ista Pharmaceuticals, Inc.) would require two bottles, each of which often costs more than \$100. My patients are extremely pleased with the ease of b.i.d. dosing, and their postoperative outcomes have been outstanding.

Ultimately, when considering patients' expectations, the

frequency of adverse events, and cost, the decision to use a steroid and an NSAID following cataract surgery is well worth the investment. Proper use of both medications can ensure excellent postoperative outcomes with continued practice growth. ■

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1. Wittppenn JR, Silverstein S, Heier J, et al; Acular LS for Cystoid Macular Edema (ACME) Study Group. A randomized, masked comparison of topical ketorolac 0.4% plus steroid vs steroid alone in low-risk cataract surgery patients. *Am J Ophthalmol.* 2008;146(4):554-560.
2. Heier JS, Topping TM, Baumann W, et al. Ketorolac versus prednisolone versus combination therapy in the treatment of acute pseudophakic cystoid macular edema. *Ophthalmology.* 2000;107(11):2034-2028; discussion:2039.
3. Henderson BA, Gayton JL, Chandler SP, et al; Bromfenac Ophthalmic Solution (Bromday) Once Daily Study Group. Safety and efficacy of bromfenac ophthalmic solution dosed once daily for postoperative ocular inflammation and pain [published online ahead of print July 16, 2011]. *Ophthalmology.* doi:10.1016/j.ophtha.2011.104.035.
4. Donnenfeld ED, Holland EJ, Stewart RH, et al; Bromfenac Ophthalmic Solution 0.09% (Xibrom) Study Group. Bromfenac ophthalmic solution 0.09% (Xibrom) for postoperative ocular pain and inflammation. *Ophthalmology.* 2007;114(9):1653-1662.
5. Lane SS, Modi SS, Lehmann RP, Holland EJ. Nepafenac ophthalmic suspension 0.1% for the prevention and treatment of ocular inflammation associated with cataract surgery. *J Cataract Refract Surg.* 2007;33(1):53-58.
6. Heier J, Cheetham JK, Degryse R, et al. Ketorolac tromethamine 0.5% ophthalmic solution in the treatment of moderate to severe ocular inflammation after cataract surgery: a randomized, vehicle-controlled clinical trial. *Am J Ophthalmol.* 1999;127(3):253-259.



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