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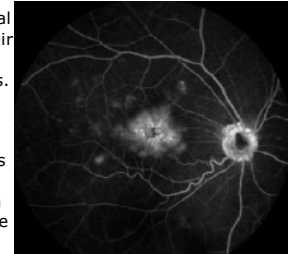
CATARACT

## Pharmaceutical focus

### Getting the scoop on NSAIDs for cataract surgery

by Maxine Lipner EyeWorld Senior Contributing Writer

When it comes to cataract surgery, NSAIDs today play an integral role, with most practitioners routinely incorporating them into their surgical regimens. Here is what leading practitioners told EyeWorld about their use of NSAIDs for phacoemulsification cases. With patients looking for premium outcomes, Eric D. Donnenfeld, MD, clinical professor of ophthalmology, New York University Medical Center, stressed that he uses NSAIDs in every cataract case. "The evidence shows that without the use of NSAIDs, there's about a 5% incidence of macular thickening that can be visually significant in patients," he said. "That not only can reduce Snellen visual acuity, but also reduces quality of vision, and steroids alone don't prevent this in every case."



**NSAIDs can knock down inflammation and potentially stave off a case of CME such as this one.**

**Source: Phillip Rosenfeld, MD**

#### Eye on inflammation

NSAIDs work to forestall any inflammation that may result from the surgery. "NSAIDs inhibit the production of prostaglandins, which begins the inflammatory cascade that leads to cystoid macular edema (CME) in susceptible patients," Dr. Donnenfeld explained.

Nick Mamalis, MD, professor of ophthalmology, John A. Moran Eye Center, University of Utah, Salt Lake City, also uses NSAIDs in most cataract cases to help calm postoperative inflammation. "What NSAIDs do is they help to more quickly reestablish the blood aqueous barrier in the anterior segment," Dr. Mamalis said. "The quicker you can calm the inflammation and get the blood aqueous barrier reestablished, the better you can prevent sequelae of inflammation." He pointed out that NSAIDs have been shown to help decrease the incidence of CME following cataract surgery. Elizabeth A. Davis, MD, managing partner, Minnesota Eye Consultants, and adjunct clinical professor, University of Minnesota, Twin Cities, Minn., said that in addition to reducing the incidence of CME, NSAIDs can have other benefits. "I do think they complement the anti-inflammatory activity in the anterior segment of the steroid," she said, noting that this can ultimately make for faster visual recovery.

#### NSAIDs in action

While the consensus here is to include NSAIDs in nearly all cases, the regimens employed vary. Dr. Donnenfeld stressed the need to get NSAIDs on board early. "Since we know that NSAIDs work by prohibiting the production of prostaglandins and don't affect the existing prostaglandins, I believe that it's important to pretreat these patients," he said. "Treating them the day of surgery doesn't give you sufficient anti-inflammatory effects, so I start my NSAIDs preoperatively." When possible, Dr. Donnenfeld chooses to start NSAIDs 3 days before surgery, but noted that even beginning these 1 day beforehand can make a big difference. He cited a September 2006 Journal of Cataract & Refractive Surgery study that he led that showed a negligible effect of adding NSAIDs an hour before surgery.

"We get a very good effect with 1 day and a little bit better effect with 3 days," Dr. Donnenfeld said. "Anywhere between 1 and 3 days (preoperatively) would be the right answer from my perspective." In routine cases, Dr. Donnenfeld continues these for 1 month postop. For high-risk patients, he recommends starting them on NSAIDs 1 week beforehand and continuing usage for 2 to 3 months postop, depending on the case. "For example, patients with epiretinal membranes are not as high a risk as those with proliferative diabetic retinopathy," Dr. Donnenfeld said. "For a patient with proliferative diabetic retinopathy, we start a full week before and go 3 months postoperatively." In addition, he carefully monitors these patients to see if they need intravitreal injections of anti-VEGF or steroids, depending on the retinal complication. He prefers the newer generation NSAIDs such as Prolensa (bromfenac, Bausch + Lomb, Rochester, N.Y.) and Ilevro (nepafenac, Alcon, Fort Worth, Texas), which are extremely potent, with a much better effect than older generation NSAIDs, he said. "They're reformulated to achieve additional penetration into the eye. They're also very gentle on the ocular surface." This, he finds, can play a major role from a patient compliance perspective. In addition, particularly for those with ocular surface toxicity, Dr. Donnenfeld believes that the once-a-day dosing of these agents coupled with their buffered vehicles

<http://www.eyeworld.org/article-getting-the-scoop-on-nsaids-for-cataract-surgery>

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can reduce the risk of keratitis and corneal melting. Sonia H. Yoo, MD, professor of ophthalmology, Bascom Palmer Eye Institute, Miller School of Medicine, University of Miami, likewise starts patients on NSAIDs 2 to 3 days preop and has had them continue until the bottle is empty—typically 2 to 4 weeks. She, however, typically uses the generic NSAIDs, dosed 4 times a day. "Since I use a corticosteroid, which I dose 4 times a day anyway, patients know to take both of them the same number of times, so it makes it easier," she said. "But for patients who have a vulnerable ocular surface where I think that the burning issue is going to be problematic or if I'm concerned about compliance, I might choose a branded NSAID."

In cases where patients are using generics, Dr. Yoo makes a point of letting them know that they might have some temporary burning upon installation. "That way they won't be afraid that they have something wrong or that they have some kind of allergy to the drops," she said. Dr. Davis routinely starts her patients on Prolensa on the day of cataract surgery, while they are in the preoperative area. "I don't have them start it at home unless there's a greater risk for macular edema, like diabetes or an epiretinal membrane," she said. In such high-risk cases, Dr. Davis will start patients on the NSAID 1 week before surgery and continue for 6 weeks postoperatively. She has found that her routine regimen, which also includes Vigamox (moxifloxacin, Alcon) and Pred Forte (prednisolone, Allergan, Irvine, Calif.) each 4 times a day, is effective. "Overall my incidence of CME with that regimen is very low," she said. "I find the more that you do in terms of complicating any medical regimen, the more likely patients are going to get confused about it." She prefers to use the brand name Prolensa because with this drug, she knows what she is getting, after about 10 years of experience with it. She finds that its infrequent dosing enhances compliance and comfort is increased. "It has anesthetic properties, so it is very comfortable to take," she said. Dr. Mamalis, on the other hand, tends to use generic NSAIDs for his patients. While he agrees that the brand-name agents have advantages, he finds that many of his patients do not have coverage for these. "In an ideal world, I would certainly recommend some of the newer NSAIDs that you don't have to use so often, but in my patient population, often the only medication that's covered is a generic ketorolac," Dr. Mamalis said. "This is efficacious, it works well, but it's 4 times a day, [and] it tends to burn a little more than some of the other drops."

While Dr. Mamalis agrees that there is evidence that using a preop NSAID makes sense pharmacologically, he finds this is not always practical. "I have difficulty getting my patients to adhere to that, so what we usually do is start the NSAIDs on the day of surgery," he said. "When we're giving them their preop dilating and antibiotic drops, we will give them the NSAID at that time."

In more vulnerable patients, including those with a history of uveitis or diabetes, Dr. Mamalis starts them on the NSAID a week prior to surgery with a slow taper. "We'll have them on a prolonged NSAID course following surgery that will often be several weeks long," he said. But in routine patients, he will stop the NSAIDs after 2 weeks. However, he pointed out that in Utah, most of the patients that he treats are Caucasian and of Northern European ancestry and tend to have less significant postop inflammation. "If I'm operating on patients who are Asian, Hispanic, or African American, they tend to have more inflammation postoperatively, so I may keep them on the NSAID longer before I taper them off," Dr. Mamalis said.

#### Into the future

Dr. Donnenfeld is very excited about the possibility of intracameral NSAIDs joining the armamentarium. Dr. Davis also looks forward to other delivery methods in the future for all postoperative drops. She hopes there will be ways to deliver combinations of medications after surgery to avoid complex drop regimens. "If there was some method in which we could inject something at the end of surgery that combines all of the medications so patients never have to take any drops or an insert that we could place in the conjunctival fornix that contained all the medication and would dissolve, I think that would be an improvement over what we have because older patients may not be very nimble," she said. "Some patients don't have a family member to help administer the drop, so the easier we can make it for them, the better."

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**Editors' note:** Dr. Davis has financial interests with Bausch + Lomb. Dr. Donnenfeld has financial interests with Alcon, Allergan, and Bausch + Lomb. Dr. Mamalis has no financial interests related to his comments. Dr. Yoo has financial interests with Alcon, Allergan, and Bausch + Lomb.

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