

News in Review

COMMENTARY AND PERSPECTIVES

MUST Shows Success In Uveitis Steroid Tx

Patients with uveitis—whether intermediate, posterior, or panuveitis—can achieve similarly favorable results with either fluocinolone acetonide implants or systemic corticosteroids,

often supplemented with immunosuppressive agents. These were the findings of a recent Multicenter Uveitis Steroid Treatment (MUST) trial, which identified factors linked to best-corrected visual acuity (BCVA) at baseline and 2 years later in 479 eyes from 23 clinical centers.¹

“There’s a common perception that uveitis patients do badly,” said John H. Kempen, MD, lead author and professor of ophthalmology and epidemiology at the University of Pennsylvania. “But this study shows that even severe cases, on average, do well with the ap-

propriate management.”

Predictive factors. Which patients had worse vision, and where did they end up? As expected, patients 50 and older had baseline BCVA that was worse than in younger patients. Patients with posterior uveitis also presented with significantly poorer vision than other categories of uveitis. However, both of these groups’ vision improved equally during the follow-up period of the study.

In fact, many patients with poor vision improved substantially. “Those with 20/50 vision or worse improved by 10 letters on



POSTERIOR UVEITIS. MUST results show that even severe forms of intermediate or posterior uveitis can have a good outcome with appropriate steroid treatment.

average,” said Dr. Kempen. “Patients with near-normal vision improved modestly, but they had little room for improvement,” owing to a ceiling effect.

Inflammation control. Eyes presenting with more prolonged or severe inflammatory damage had much worse VA at baseline. However, these patients also did more poorly during the follow-up even when being

treated aggressively according to the protocol, said Dr. Kempen. This observation made the researchers wonder whether earlier intervention might have improved their outcomes, he said. “We don’t have conclusive proof from this study, but there is a suggestion that early referral for state-of-the-art treatment might benefit these patients.”

It’s not a big surprise that

control of inflammation is beneficial, but published research suggests that an important number of ophthalmologists compromise on this, said Dr. Kempen. “They may be worried about risks of using corticosteroids and immunosuppressive drugs. However, the systemic therapy arm of the MUST trial showed that systemic side effects were remarkably modest and similar to those of the implant.” The implant does produce local side effects, such as elevated intraocular pressure, but these typically can be managed well when they occur, he

said, reinforcing the value of aggressive treatment.

Level of confidence. The study findings can provide fairly high levels of confidence for a variety of reasons, said Dr. Kempen. “We used gold standard methods for ascertaining visual acuity over time—a half-hour standardized refraction at every visit.” In addition, patients were followed using a common protocol that was strictly enforced across centers, and treatment regimens followed expert panel guidance.

Study limitations. The patients in the trial were

drawn from tertiary centers, so their uveitis might have been more severe than that generally seen by comprehensive ophthalmologists. Further, although MUST was a randomized trial, the analysis reported in this paper was not the question directly addressed by randomization, making this report similar to an observational study. Confirmation in another study would be desirable, according to Dr. Kempen.

Hopeful results. “This paper shows that patients do really well if we move on to the immunologic or

implant paradigm when it is justified,” said Dr. Kempen. This is particularly welcome news, given that uveitis can impact vision decades earlier than age-related diseases. “If we are not prepared to provide such treatment ourselves, we should send patients to someone who will.”

—Annie Stuart

1 Kempen JH et al. *Am J Ophthalmol*. Published online Sept. 16, 2015. doi:10.1016/j.ajo.2015.09.017.

Relevant financial disclosures: Dr. Kempen—National Eye Institute; S; Bausch + Lomb; S.

Cataract Controversy

NSAIDs Linked to Reduced Postop Macular Edema

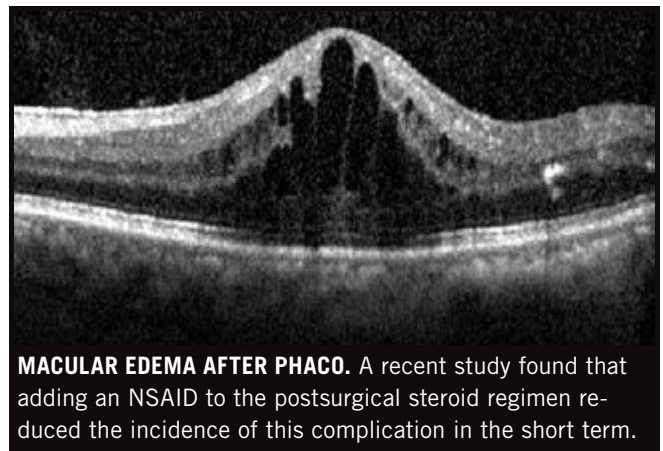
The risk of acute clinically significant macular edema (ME) after cataract surgery can be cut in half by adding a topical nonsteroidal anti-inflammatory drug (NSAID) to the patient’s postoperative regimen of steroid eye drops, a large retrospective cohort study has concluded.¹

Or, if “dropless” prophylaxis is the goal, an intraoperative subconjunctival injection of 2 mg of triamcinolone acetonide alone appears to have effects similar to a commonly used topical corticosteroid, prednisolone acetate, the researchers found.

An unexpected association. “Initially we started off wanting to look at the injection issue, but then a

surprising finding was that there was an association [between] adding NSAID to topical steroid and reduction in incidence of macular edema,” said Neal H. Shorstein, MD, study coauthor and cataract surgeon in the Kaiser Permanente health system, Walnut Creek, Calif. Dr. Shorstein also serves as the associate chief of quality for the system’s Diablo Service Area, in Northern California.

The researchers analyzed outcomes of prophylaxis against ME in 16,070 cataract surgeries performed in the service area from 2007 through 2013. Based on their personal preference, the 17 surgeons used 1 of 3 regimens: postop prednisolone eyedrops alone; pred-



MACULAR EDEMA AFTER PHACO. A recent study found that adding an NSAID to the postsurgical steroid regimen reduced the incidence of this complication in the short term.

nisolone drops plus a topical NSAID (diclofenac sodium, flurbiprofen sodium, or ketorolac tromethamine); or a subconjunctival depot injection of triamcinolone alone at the end of surgery.

Rates of postop ME. The analysis found 118 cases (0.73%) that met the study’s definition for acute clinically significant pseudophakic ME: presentation 5 to 120 days after surgery with a distance visual acuity of 20/40 or worse and with retinal thickening confirmed by optical coherence tomography.

Compared to prophylaxis with topical prednisolone alone, the adjunctive use of a topical NSAID was associated with a 55% lower risk of ME ($p < .05$; odds ratio [OR], 0.45; 95% CI, 0.21-0.95), they reported. When eyes with an ocular comorbidity or posterior capsular rupture were excluded, the risk for ME was reduced 65% ($p < .05$; OR, 0.35; 95% CI, 0.13-0.97).

These findings are important because previous studies supporting NSAID prophylaxis generally have suffered from small

size, inconsistent criteria for identifying cases and clinical significance, and dependence on ophthalmic industry sponsorship, Dr. Shorstein said.

Unanswered questions. The small number of total cases of ME made it impossible, however, to draw any conclusions about the relative efficacy of the 3 NSAIDs the surgeons used, he noted. “In addition, we still don’t know the effect of NSAID prophylaxis on late visual acuity.”

However, a recently

published AAO *Ophthalmic Technology Assessment* weighed in on that question. In an extensive literature review, it found no conclusive evidence that topical NSAIDs lead to better long-term visual outcomes.²

Dropless data? Because some Kaiser Permanente surgeons inject intracameral antibiotics as the primary prophylaxis for endophthalmitis, forgoing topical antibiotics, Dr. Shorstein said he had been hoping that this study would settle questions about another step

toward “dropless” cataract surgery: replacing topical corticosteroid drops with a subconjunctival injection of triamcinolone. However, the number of ME cases the researchers detected in triamcinolone eyes (15) was too small to achieve statistical significance, Dr. Shorstein said.

But he and his coauthors took reassurance from what they didn’t find. “We found no evidence that injected [triamcinolone] depot is less effective than topical administration of [pred-

nisolone] alone. ... Injection seems to be safe, as well; we found no diagnoses of globe perforation and no increase in the risk of postoperative (or rebound) iritis or differences in IOP spikes in the late postoperative period,” they wrote.

—Linda Roach

1 Shorstein NH et al. *Ophthalmology*. 2015;122(12):2452-2458.

2 Kim SJ et al. *Ophthalmology*. 2015;122(11):2159-2168.

Relevant financial disclosures—Dr. Shorstein: None.

Eye Bank Statistics

10-Year Transplant Trends

In the years spanning 2005 to 2014, the number of corneal transplants in the United States stayed relatively constant, edging up only slightly from 44,277 to 46,513. But indications for keratoplasty, as well as the types of surgical procedures performed, changed considerably over that time, according to a retrospective analysis of annual reports from the Eye Bank Association of America.¹

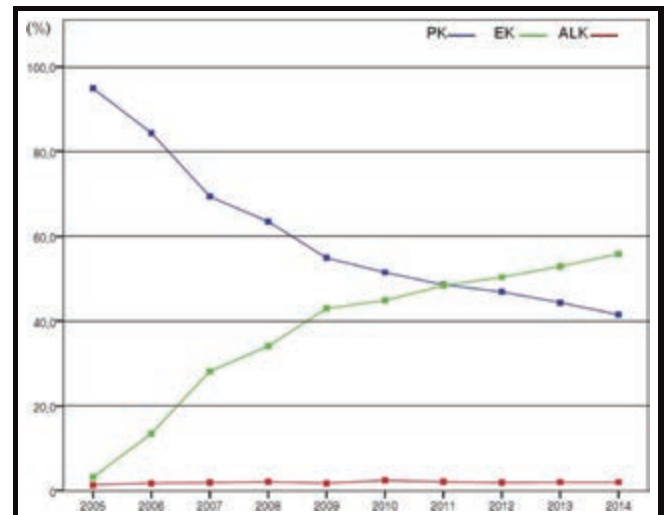
“This decade has not only signaled change, but a drastic one at that,” said Roy S. Chuck, MD, PhD, a report coauthor. “The field will never be the same again.”

Shifts in surgical techniques. Perhaps the biggest shift was the move by surgeons away from conventional penetrating keratoplasty (PK) to customized lamellar techniques subsumed under the

endothelial keratoplasty (EK) umbrella. PK, which 10 years ago accounted for nearly all transplantations (95%), fell to 42%, while lamellar techniques jumped from 5% to 58%.

Most notably, Descemet stripping endothelial keratoplasty (DSEK) went from almost nonexistent to being the dominant EK procedure. Greater access to eye bank precut tissue probably helped foster that trend, said Dr. Chuck, who is chairman of the department of ophthalmology at Albert Einstein College of Medicine, Montefiore Medical Center.

Fuchs dystrophy now #1. Indications for keratoplasty have also changed. Dr. Chuck called it surprising and heartening that Fuchs endothelial dystrophy has surpassed pseudophakic bullous keratopathy (PBK) as an indication for corneal transplantation, bolster-



CHANGING TRENDS. The Eye Bank Association of America statistics on domestic distribution of grafts show that endothelial keratoplasty has overtaken penetrating keratoplasty as the most common type of corneal transplant.

ing the notion that cataract surgery is becoming safer. Fuchs now ranks as the most common indication for all types of transplantation together (22%), followed by PBK (12%).

Looking ahead. Going forward, Dr. Chuck predicted that the technically difficult Descemet membrane endothelial keratoplasty (DMEK) “will gain great traction,” now that eye banks are beginning to sup-

ply prepared DMEK tissue.

He did not speculate further on future developments in transplantation. “All we know is things are finally starting to change quickly,” compared with the previously slower pace.

—Miriam Karmel

1 Park CY et al. *Ophthalmology*. 2015;122(12):2434-2444.

Relevant financial disclosures—Dr. Chuck: None.

Retina Report

AMD: Long-term Data

At 15 years after enrollment, 22.7% of the participants in the Blue Mountains Eye Study had developed early age-related macular degeneration (AMD), and another 6.8% had late-stage AMD, according to a recent report by this long-running Australian project.¹ After adjusting for competing risk of death, the incidence of early and late AMD was 15.1% and 4.1%, respectively.

Consistent with U.S. study. The age-standardized incident rates (13.1% and 3.3% for early and late

AMD, respectively) closely matched those that emerged several years ago from another large population-based study in the United States, the Beaver Dam Eye Study, the Australian group reported. Beaver Dam study investigators found 15-year risk-adjusted incidence rates of 14.3% for early AMD and 3.1% for late AMD.²

The consistency between the 2 studies suggests that these estimates of long-term AMD incidence are “robust,” said Blue Mountains Eye Study senior author Jie Jin Wang, MBBS, PhD, pro-

fessor of epidemiology and a senior research fellow at the University of Sydney Centre for Vision Research. “These long-term observations from an older Australian population provide useful information to understand not only the probabilities of various prognoses of this disease in the next 5, 10, and 15 years but also the factors that are associated with poor prognosis,” he said.

Factors affecting AMD risk. For instance, the researchers confirmed that:

- Current smoking at the time of the baseline exam was a stronger risk factor for developing late AMD than it was for early AMD over a 15-year period.
- After controlling for

age, sex, smoking, and AMD genetic susceptibility, late AMD incidence was significantly reduced among persons who ate 1 or more serving of fish per week compared with those who did not eat fish weekly (adjusted odds ratio, 0.48).

• If there was early AMD in one eye at baseline, 67% of the patients developed early AMD in the second eye at some time during the subsequent 15 years.

—Linda Roach

1 Joachim N et al. *Ophthalmology*. 2015;122(12):2484-2491.
2 Klein R et al. *Ophthalmology*. 2007;114(2):253-262.

Relevant financial disclosures—Dr. Wang: None.

For the financial disclosure key, see page 8. For full disclosures, including category descriptions, view this News in Review at www.eyenet.org.