

Therapy applied directly inside the eye best for treating uveitic macular edema

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Delivery of corticosteroids directly into the eye is more effective than injections adjacent to the eye, according to results from a comparative clinical trial of macular edema in patients with noninfectious uveitis. The study was funded by the National Eye Institute (NEI), part of the National Institutes of Health. The results were published online today in the journal *Ophthalmology*.

Uveitis—a collection of inflammatory conditions that affect internal eye tissues—is a leading cause of blindness in the United States and can be chronic. About 40 percent of people with [uveitis](#) affecting the middle or back of the eye develop [macular edema](#), a build-up of fluid in the macula, which is the region of the retina responsible for central vision. Systemic corticosteroids, which help reduce inflammation, typically are used to treat chronic uveitis. But additional treatment with regional corticosteroid injections is often needed to treat macular edema.

"Macular edema is a significant structural ocular

complication of uveitis, which causes loss of [visual acuity](#)," said Jennifer E. Thorne, M.D., Ph.D., professor of ophthalmology and epidemiology at the Wilmer Eye Institute, Johns Hopkins Medical Institutions and the lead author of the study, "so it's important to be able to treat this condition effectively in order to restore central acuity and prevent retinal damage."

The researchers compared three commonly used corticosteroid treatments for macular edema in patients with uveitis: periocular (adjacent to the eye) injection of triamcinolone acetonide (Kenalog); intravitreal (inside the eye) injection of triamcinolone acetonide (Triesence); and intravitreal injection of a dexamethasone implant (Ozurdex), which slowly releases the drug inside the eye over several months. The clinical trial included 192 people with uveitis, ranging in age from 18 to 87 years old, who were randomly assigned to one of the three treatments. Participants were evaluated at several timepoints for macular thickness; macular edema; visual acuity; and high intraocular pressure (IOP), a common side-effect of corticosteroid therapy.

At the eight-week primary outcome visit, all treatment groups had improvements in macular edema when compared to baseline. However, the two intravitreal groups had larger reductions in macular edema when compared to the results in the periocular treatment group. Reduction from baseline was 46 percent, 39 percent, and 23 percent for the dexamethasone implant, intravitreal triamcinolone, and periocular triamcinolone treatment groups, respectively. While all the treatments led to improvement in vision, those receiving intravitreal triamcinolone or dexamethasone implant showed an average of nine standard letters improvement (about two lines on an eye chart), versus four standard letters for those receiving the periocular injection treatment.

"Although all three treatments reduced macular

edema and increased visual acuity, the data show superior efficacy for intravitreal triamcinolone and the intravitreal dexamethasone implant, which suggests that the approach to [treatment](#) for uveitic macular edema should be through the intravitreal route," said Douglas A. Jabs, M.D., M.B.A., professor of ophthalmology and medicine at the Icahn School of Medicine at Mount Sinai, chair of the Multicenter Uveitis Steroid Treatment Trial Research Group, which conducted the research.

Direct delivery of corticosteroids to the eye can lead to high IOP and glaucoma—a disease that causes optic nerve damage. While more participants who received intravitreal delivery of corticosteroids showed a rise in IOP, compared to patients receiving periocular injections, this higher pressure was largely controlled with drugs.

"This trial included people already receiving IOP-lowering medications and those with previous history of glaucoma or glaucoma surgery," said Thorne. "It was reassuring to see that IOP elevations were moderate and controllable with medication through the six-month period of the study even in patients with a previous history of IOP elevations and glaucoma."

While each of these three treatments have been studied previously and have been shown to be effective in treating macular edema complications of uveitis, this is the first head-to-head comparison.

"The POINT Trial, funded by the NEI, provides evidence to guide the clinicians in the utilization of the most commonly used regional corticosteroid injections for uveitic [macular edema](#)," said Sangeeta Bhargava, Ph.D., program director for clinical research at NEI.

"These data will improve the management of patients with uveitis, and demonstrate the importance of NIH-funded comparative effectiveness trials," said Jabs.

More information: Thorne JE, Sugar EA, et al. "Periocular triamcinolone versus intravitreal triamcinolone versus intravitreal dexamethasone implant for the treatment of uveitic macular edema: the PeriOcular versus INTravitreal corticosteroids

for uveitic macular edema (POINT) Trial." September 27, 2018; *Ophthalmology*.

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