Dropless cataract surgery effective choice without compliance issues

Study finds therapy seems to be more practical, efficacious as standard of care

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Reviewed by Helga P. Sandoval, MD, MSCR

Dropless prophylaxis in patients scheduled for cataract surgery seems to be more practical than and as efficacious as the standard of care for use in this patient population.

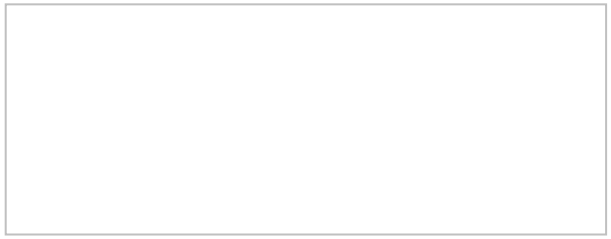
Evaluation of an intravitreal injection containing antibiotic and anti-inflammatory drugs during cataract surgery showed no differences between the patients randomly assigned to the intravitreal injection group and the standard care group.

Patients expressed high satisfaction with the dropless procedure.

One of the key factors in cataract surgery is the use of prophylactic topical antibiotics and anti-inflammatories administered to prevent postoperative infections, such as endophthalmitis and inflammation.

While the need for instillation of these drugs is paramount, poor patient compliance with the postoperative regimen is a big concern.

According to Helga P. Sandoval, MD, MSCR, a number of factors can come into play here: the patient's inability to self-administer the drops, a lack of understanding of the importance of using the prophylactic treatment, a lack of understanding of the instructions regarding the



method of drop administration and storage, forgetfulness, and dislike of the need to instill the drops multiple times a day for from 2 to 4 weeks postoperatively.

Dr. Sandoval, director of research, Carolina Eyecare Physicians LLC and adjunct professor, Storm Eye Institute, Medical University of South Carolina, Charleston, and colleagues theorized that eliminating the postoperative drop regimen altogether and substituting an intravitreal injection of the required drugs intraoperatively would solve the compliance problems.

The investigators designed a study in which they compared use of an injectable compound containing an antibiotic and anti-inflammatory drugs (triamcinolone acetonide, moxifloxacin, and vancomycin [TriMoxiVanc]) with or without a topical, nonsteroidal, anti-inflammatory drug during cataract surgery to the standard of care that involves instilling three topical medications into the eye over an extended period postoperatively.

Study breakdown

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In this prospective, randomized, contralateral study, all patients undergoing routine bilateral cataract surgery were randomly assigned to receive TriMoxiVanc (TMV) or TMV plus nepafenac 0.3%, or the standard treatment of moxifloxacin 0.5%, nepafenac 0.3%, and prednisolone acetate 1% in the fellow eye.

Pachymetry and retinal thickness were measured 15 and 30 days postoperatively. The IOP was measured and the eyes were evaluated for floaters 1, 15, and 30 days postoperatively.

The patient preference for the dropless procedure or drops was noted on 30 days postoperatively. The primary outcome measure was the change from baseline in the macular thickness.

Study results

Fifty-five patients (110 eyes) were included in the study. Both central macular thickness and pachymetry significantly increased over time in both study regimens, as well as in the control group ($p < 0.01$), but there were

not statistically significant differences in the change by treatment group.

Dr. Sandoval reported that on day 1 postoperatively, patients who received the study regimens had significantly ($p < 0.01$ for both comparisons) more floaters compared with the control group.

There was minimal postoperative inflammation in all groups at all time points. The most reported sign was "cells" on the first day postoperative. There was no significant difference in the presence of cells between treatment and control, or between TMV and TMV plus nepafenac day 1 postoperatively.

On day 1, IOP was significantly higher for TMV, TMV plus nepafenac, and control eyes, but there was no difference in the mean change between the study regimens and control, or between the two study regimen groups.

Ninety-seven percent of patients (107 of 110 eyes) were satisfied or very satisfied with the treatment, with no significant difference between treatment and control or between treatment types. Ninety percent of subjects (49/55) preferred the dropless regimen (TMV or TMV plus nepafenac) to the drops regimen when considering both the experience and the vision outcomes of the surgery, according to Dr. Sandoval.

The adverse events include rebound inflammation and posterior vitreous detachment in 2 control eyes of the same patient, retinal detachment (not related to the treatment) and allergic conjunctivitis in 1 eye each.

"The results show a very similar outcome between the TMV group compared with the standard of care," she commented.

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