Routine use of topical cyclosporine improves visual function in multifocal IOL recipients

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USE of topical cyclosporine ophthalmic emulsion 0.05 per cent (Restasis,Allergan) before and after cataract surgery significantly improves visual outcomes in patients receiving multifocal IOls, according to the results of a prospective, randomised, contralateral eye-controlled study reported by Eric D. Donnenfeld, MD, at the annual meeting of the Association for Research in Vision and Ophthalmology.

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The study enrolled 14 patients scheduled to undergo sequential, bilateral phacoemulsification with implantation of a refractive multifocal IOL (ReZoom,AMO). Patients had to be at least 50 years old, have visual potential of 20/25 or better, and be able to complete all study visits. Patients who had previously used topical cyclosporine were excluded.

Beginning one month prior to their first eye surgery, patient eyes were randomised to start twice daily treatment with topical cyclosporine in one eye and an artificial tear (Systane,Alcon) contralaterally. Treatment was withheld on the day of surgery and then continued on the first day postoperatively. Second eye surgery was performed two weeks after the first procedure, and the study treatments were continued for two months after the second eye surgery.

At study completion, eyes treated with topical cyclosporine had significantly better quality of vision measured by UCVA, BCVA, and contrast sensitivity. Significant benefits favoring cyclosporine treatment were also noted in patient preference ratings and evaluations of dry eye.

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Patient satisfaction was investigated by asking each participant which eye they preferred. The results showed 10 (71.4 per cent) patients had a preference for one eye versus the other. Eight patients (57.1 per cent) preferred their cyclosporine-treated eye and only two patients (14.3 per cent) preferred the eye treated with the artificial tears statistically significant under mesopic conditions without glare at 12 cpd. In addition, the p value showed a trend toward achieving statistical significance under mesopic conditions without glare at 3 cpd, photopic conditions with glare at 6 cpd, and photopic conditions without glare at 18 cpd.

“While multifocal IOls can offer patients excellent uncorrected vision at all distances, intrinsic to the optics of that technology, there can be loss of contrast sensitivity and an increase in visual symptoms. Any preexisting ocular surface disease induces optical distortion that is magnified by a multifocal IOL and may compound those problems,” said Dr Donnenfeld, a private practitioner in Rockville Centre, New York.

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At enrollment, there were no significant differences between the eyes randomised to cyclosporine or artificial tears in mean fluorescein or lissamine corneal staining scores. At the end of the study, the mean scores for both measures were lower in the cyclosporine-treated eyes and the difference favoring cyclosporine was statistically significant for fluorescein corneal staining.

In addition, there was a trend toward a significantly longer mean tear breakup time score in eyes treated with cyclosporine compared with the artificial tear-treated controls (17.8 vs. 6.2 seconds; p = 0.065). The mean Schirmer test score was also better in the cyclosporine-treated eyes, although the difference was not statistically significant.

“Improving the condition of the ocular surface is especially important in cataract surgery patients receiving a multifocal IOL because they tend to be older and more likely to have problems with dry eye disease. However, as recent advances in IOl technology have led cataract surgery to evolve toward the performance of elective refractive procedures, the outcomes bar has been raised. In all patients, incising the cornea decreases innervation that can precipitate dry eye through multiple pathways, and the routine use of topical NSAIDs, antibiotics, and corticosteroids pre- and postoperatively can further degrade the ocular surface. Therefore, treatment that improves the quality of the tear film can improve the optics of the eye and result in improved visual outcomes after multifocal IOl implantation in all patients,” Dr Donnenfeld said.