

COMBINING IOLS TO CREATE BLENDED VISION



Mixing and matching two multifocal lens styles may improve results.

BY JOHN A. HOVANESIAN, MD

As we strive to refine the refractive results of cataract surgery, one area that has received increased attention in recent years is the correction of presbyopia. Patients today who ask for a cataract surgery consultation have varying needs for spectacle freedom. Many desire to be spectacle-free at arm's length for tasks like using the computer, seeing the dashboard, or playing music. Many of the same patients prefer no glasses for reading as well. Freedom from glasses for distance vision is also popular in nearly every patient.

Ophthalmologists continue to seek the best means of providing our patients with good vision at all distances after cataract surgery. In that vein, my colleagues and I recently conducted an investigator-initiated study, funded by a grant from Alcon, aimed at determining which of two lens combinations provided better patient satisfaction and spectacle independence after bilateral cataract surgery. The lenses in question were the Acrysof IQ Restor +2.5 D IOL with Activefocus optical design and the Acrysof IQ Restor +3.0 D IOL (both by Alcon).

The purpose of the study was to assess the satisfaction of patients who underwent implantation of one Restor +2.5 D and one Restor +3.0 D in comparison with patients who had the Restor +3.0 D implanted bilaterally. The main outcome measures were overall satisfaction with surgery,

spectacle independence for different activities, incidence of glare and halos, and refractive accuracy (defined as sphere and cylinder both within 0.50 D of target refraction) with each lens combination.

The Restor +2.5, with its add of 2.50 D, has been successful in providing patients with high-quality distance vision along with acceptable intermediate vision. Bilateral implantation, however, can yield insufficient near vision for about 30% of patients in my experience. For this reason, some of my colleagues implant the Restor +2.5 D IOL with Activefocus in the dominant eye and place the Restor +3.0 D, which provides an add of 3.00 D, in the fellow eye. Results with this combination of lenses have not previously been documented.

STUDY DESIGN

We administered a questionnaire to patients who had undergone uncomplicated cataract surgery with bilateral Restor implants at least 2 months previously. We then compared the answers of patients who had received the combination of Restor +2.5 D in the dominant eye and +3.0 D in the nondominant eye (2.5/3.0; $n = 89$) to those of patients who had received bilateral Restor +3.0 D lenses (3.0/3.0; $n = 78$). Patients with significant ocular pathology, surgical complications, or significant posterior capsular opacity ($> 1+$) at the 2-month follow-up visit were excluded from the study.

Of note, we had previously collected the data on the 3.0/3.0 patients as part of a similar study conducted in the same patient population using the same outcome measures.

RESULTS

Demographics were well balanced between the groups, with no statistically significant differences in patient age or age range. No patients in the 3.0/3.0 group received toric IOLs, whereas five patients (6%) in the 2.5/3.0 group had toric IOLs.

We found that overall patient satisfaction was similar in both groups, with 74% of 3.0/3.0 patients and 73% of 2.5/3.0 patients highly satisfied. Overall spectacle independence was also similar, with about one-third of patients in each group saying they never needed glasses and another third in each group saying they sometimes or rarely needed glasses.

When asked about specific vision activities, most results were similar between groups, but patients in the 2.5/3.0 group reported better computer vision, with 80% needing no glasses for that task, compared with 66% in the 3.0/3.0 group ($P < .3$, Mann-Whitney U test). Among those who reported needing glasses, reading was the activity that most often required them. For computer vision, having the 2.5/3.0 combination reduced the need for glasses by almost 50% compared with the 3.0/3.0 combination ($P < .001$, Mann-Whitney U test).

Glare and halos were noticed more often by patients in the 3.0/3.0 group (56%) than by those in the 2.5/3.0 group (30%; $P < .2$, Mann-Whitney U test). BCVA 1 month after surgery was similar between groups, with all patients achieving 20/40 or better. Refractive accuracy was also similar, with more than 90% of patients within 1.00 D of target in both groups.

DISCUSSION

Satisfaction and overall spectacle independence were high with both combinations of lenses, and both groups had similar results. Also similar between groups were the refractive and visual acuity results. The 2.5/3.0 combination reduced the need for glasses for computer use and resulted in less noticeable

glare and halos compared with the 3.0/3.0 group.

What is to be made of these results? To me, the lesson is that patients do not lose anything in terms of reading vision by receiving the lower-add lens in their dominant eye, and they seem to gain in computer vision and have reduced glare and halos. The approach of mixing the Restor +2.5 D in the dominant eye and the Restor +3.0 D in the nondominant eye has therefore become my go-to approach for most patients who are candidates for multifocal IOLs.

I have found that, with this approach, I do not have to assess patients beforehand for their tolerance of monovision. The only time I might avoid the mismatch is if patients reported earlier trouble with monovision correction using contact lenses.

My colleagues and I have begun a trial assessing a mini-monovision strategy, using bilateral Restor +2.5 D Activefocus IOLs, with the dominant eye targeted for plano and the non-dominant eye for about -0.50 D. Although we are still in the early phase of data collection, this strategy seems to be equally satisfactory for patients. We look forward to sharing our results with this approach in a future article. ■

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