The LENTIS Comfort Toric IOL: A Means to Extend Depth of Focus

This lens provides excellent refractive predictability.

BY FLORIAN T.A. KRETZ, MD, FEBO

In recent years, we have seen increased interests in toric IOLs as well as in IOLs that can extend a patient’s depth of focus and range of vision. In response to these trends, Oculentis designed the LENTIS LS-313MF15 T1-T6 (Figure 1), a toric extended depth of focus IOL indicated for the treatment of presbyopia and astigmatism.

As is seen in Table 1, the LENTIS LS-313MF T1-T6 is a one-piece toric acrylic IOL intended for capsular bag implantation. With an optic size of 6 mm and an overall length of 11 mm, the IOL can be implanted through an incision of 2 mm. It has 0º haptic angulation, and the optic and haptics are designed with 360º square edges to prevent posterior capsular opacification. The biconvex optic design of the LENTIS LS-313MF15 T1-T6 consists of aspherical and toric surfaces with an anterior sector-shaped segment with a 1.50 D addition to provide vision at intermediate distances.

CLINICAL EVALUATION

Along with my colleagues at the International Vision Correction Research Centre Network (IVCRC.net) and at the David J. Apple International Laboratory of the Department of Ophthalmology, University of Heidelberg, I recently researched use of this IOL in cataract surgery and in refractive lens exchange.

A total of 38 eyes were included in the study. All patients had preoperative astigmatism of 0.75 D or more, were presbyopic, and had a desire for spectacle and contact lens independence. The presence of manifest glaucoma, uveitis, retinal detachment, iris atrophy, corneal dystrophia or degeneration, macular degeneration, or neuroophthalmological disease and prior intraocular surgery were reasons for exclusion.

Pre- and postoperative examinations (1 day, 1 week, 1 month, and 2 to 4 months) included manifest refraction, monocular and binocular UCVA and BCVA, and rotational stability of the IOL.

The Oculentis Easy Toric Calculator (Figure 2) was used to calculate IOL power.

RESULTS

Prior to surgery, the mean cylinder, sphere, and spherical equivalent in this population were -1.36 D, -0.05 D, and -0.73 D, respectively. By 1 month postoperatively, these figures had decreased to -0.25 D, -0.06 D, and -0.19 D, respectively, indicating that the LENTIS Comfort toric IOL effectively reduced sphere and cylinder,
caused only a small deviation from emmetropia, and provided excellent refractive stability (Figure 3).

With regard to monocular visual acuity at 1 month postoperatively, the average distance and intermediate UCVA were both greater than 1.0, and the average UNVA was approximately 0.5 for newspaper reading. The excellent intermediate visual results are due to the 1.50 D addition on the IOL plane.

With regard to binocular visual acuity, at 1 month postoperatively, the average UDVA and CDVA were all greater than 1.0 (Figure 4), and the average near CDVA was greater than 0.5 for newspaper reading.

At 1 day postoperatively, the average rotational stability of the LENTIS Comfort toric in 37 eyes was 2.75°, and, after 1 month postoperatively, it was 1.60°. As a result, we concluded that the rotational stability of this IOL is exceptional (Figure 5).

CONCLUSION
After studying the LENTIS Comfort toric, we have concluded that this extended depth of focus IOL should be considered as an effective treatment for presbyopia and astigmatism. It provides patients with excellent refractive predictability and distance and intermediate visual acuities of greater than 1.0, good near vision for newspaper reading, and a wide range of view. It also has exceptional rotational stability, thereby decreasing the need for postoperative adjustments.

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