TORIC MIOLS
Informed consent should familiarise patients with the issues they might face with mIOLs
by Howard Larkin in Orlando

Toric multifocal intraocular lenses (mIOLs) now available in Europe are not only safe and stable, they improve both distance and near vision in patients with presbyopia and corneal astigmatism greater than 1.0 to 1.5 D, Gerd U. Auffarth MD, University of Heidelberg, Germany, told an ESCRS-sponsored symposium at the American Academy of Ophthalmology annual meeting.

Some patients who want the benefits of multifocality are less-than-ideal candidates due to high corneal astigmatism that can interfere with lens function, he noted. Toric mIOLs are an option for these patients, but their stability also makes them attractive for those with moderate astigmatism. “There are patients with moderate astigmatism, 1.0 to 2.0 D, who can be difficult to deal with. You can try incisional techniques, but they may only be temporary. With multifocal toric lenses we can correct it completely regardless of the amount of torus.”

Dr. Auffarth noted that toric mIOLs are available in refractive models, such as the Rayner M-Flex-T and, diffractive designs, such as the Carl Zeiss Meditec Acry.Sof IQ Toric ReSTOR, which are among the most widely used in Europe. In addition, Oculentis makes the Mplus Toric, a segmented multifocal lens that confines the near add optic to less than half the lens, and the Rayner Sulcoflex Multifocal Toric, which can be added to a pseudophakic eye to provide multifocality and compensate for residual astigmatism.

Most are based on established proven monofocal designs that ophthalmic surgeons are familiar with and are easy to implant. For example, the Rayner M-Flex T is based on the C-Flex hydrophilic acrylic platform. Research in which Dr. Auffarth participated has shown that the design’s 360-degree sharp edge resists PCO. Significantly, its haptic design also ensures accurate centration as the capsular bag contracts over time and resists rotation, which is essential to keep a toric IOL on axis. The Alcon ReSTOR platform is also known for its good fit in the eye and minimal rotation, he said.

Dr. Auffarth reported good results with the Rayner M-Flex T that he implanted in 10 eyes of six patients. Mean age was 47.4, ranging from 17 to 60 years old; six eyes were refractive lens exchange and four were cataract eye. Two patients with anisometropia and amblyopia received a toric multifocal in one eye and a standard multifocal in the other. Preoperative mean sphere was -0.03 +/- 7.25 D, ranging from -10.0 to +9.0; mean cylinder -2.65 +/- 0.97 D ranging from -1.5 to -4.75, and best corrected distance vision was 0.19 logMAR, or about 20/30. Mean sphere of the implanted lenses was 20.95 +/- 10.61; cylinder 2.95 +/- 0.93; and near add 3.20 +/- 0.42.

At follow-up four to 11 months after surgery, median sphere was 0.00 ranging from -0.25 to +2.00; cylinder -0.5 ranging from -2.50 to 0.00; and spherical equivalent median 0.00 ranging from -0.50 to +0.75. This translated to median uncorrected distance visual acuity of 0.15 logMAR, or about 20/28, ranging from 20/16 to 20/50, and median corrected distance vision of about 20/25 ranging from about 20/12 to 20/50. Uncorrected near vision median was 20/40 ranging from 20/50 to 20/25; and median near add was 0.00, ranging up to +1.50, producing corrected near vision results ranging from 20/20 to 20/40.

Anisometropia and amblyopia

One patient with anisometropia preoperatively had 0.75 sphere in one eye and +6.0 with -4.75 D astigmatism in the other, producing 20/20 and 20/30 best corrected vision. Dr. Auffarth implanted a standard multifocal in the stronger eye, resulting in 20/20 uncorrected near and distance, and a toric multifocal in the other, resulting in 20/25 distance and 20/40 near uncorrected. He cautioned, however, that multifocal lenses will not work for patients with severe amblyopia.

Dr. Auffarth also reported good results with the Oculentis toric multifocal. In a 52-year-old female with zonular cataracts, hyperopia of +3.25 D and -1.25 astigmatism in the right eye and +4.25 and -1.75 in the left, and best corrected visual acuity of about 20/32 in both eyes, he observed uncorrected distance acuity of 20/32 and near acuity of about 20/32 and 20/25 one day after surgery. In five patients he saw median uncorrected distance vision of about 20/25, ranging from 20/20 to 20/32, and uncorrected near vision of about 20/25 ranging from 20/20 to 20/32.

He noted that because the Oculentis add zone covers only about half the lens optic, the lens is always implanted straight up and down, and must be ordered with the cylinder on the proper axis. “Most multifocal lenses are available in custom mode. They are individualised lenses and can be ordered, in extreme cases, up to 10 or 12 D cylinder.”

He said, however, that while standard power toric multifocals generally are reasonably priced, a custom lens may cost up to €2,000. One popular multifocal toric lens that is not available in custom powers is the Alcon ReSTOR, Dr. Auffarth said. “You can get very nice results with the Alcon toric multifocal. But it comes in fixed cylinder powers so you have to look at the incision size.”

The Alcon lens power calculator helps choose an appropriate power and axis. In six patients examined three months after surgery, he saw median uncorrected distance vision of 20/40 ranging from 20/20 to 20/50, and median corrected near vision of 20/32 ranging from 20/25 to 20/63. “Toric multifocal lenses are not for everyday cases,” Dr. Auffarth said.

He emphasised the need for careful biometry and corneal topography to rule out corneal pathology, and rigorous informed consent to familiarise patients with the issues they might face with multifocal lenses.