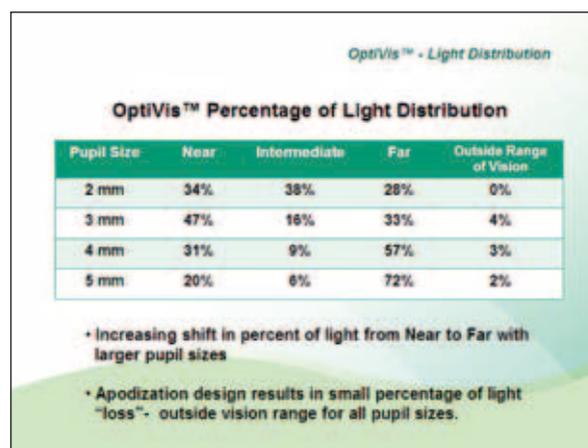
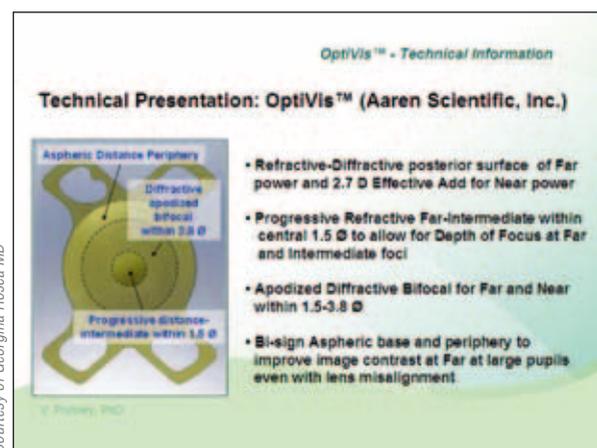


CATARACT & REFRACTIVE

MULTIFOCAL IOLS

Data from short follow-up in small patient series show favourable functional outcomes

by Cheryl Guttman Krader in Vienna



Three new multifocal IOLs with novel optic designs may come closer to delivering spectacle independence, with fewer problems typically associated with current lenses in this category, reported researchers at the XXIX Congress of the ESCRS.

Georgina Rosca MD, Nantes, France, reported outcomes with the OptiVis MFIOL (Aaren Scientific). The multifocal surface of this lens lies on the posterior aspect and comprises three zones, a 1.5mm central zone of progressive refractive powers, an apodised diffractive zone between 1.5 and 3.8mm with a 2.5 D effective add for near, and a peripheral refractive zone shaped for bi-sign aspherization. The optic's design aims to provide far, intermediate and near foci, minimise light loss at all pupil sizes to improve contrast sensitivity and reduce night vision disturbances, and allow optimal image quality even if the lens is tilted or decentered.

Dr Rosca reported results from 20 patients bilaterally implanted with the OptiVis MFIOL. Six-month follow-up was available for 16 eyes. Uncorrected distance visual acuity (UCDVA) was 20/20 or better in nearly half of eyes at one week and in 95 per cent of eyes at six months. Best-corrected distance visual acuity (BCDVA) was 20/25 in 91 per cent of eyes at one month and 20/20 or better in 81 per cent of eyes at six months. By one month, near UCVA was

20/25 or better in 90 per cent of eyes while 56 per cent of eyes had uncorrected near visual acuity of 20/20 or better at six months. Intermediate UCVA was 20/25 or better in 80 per cent of eyes at one month and 20/25 or better in all eyes seen at six months.

At three months, no patients suffered severe haloes or night glare. Haloes and glare were absent in about two-thirds of patients, while only four per cent reported moderate haloes and 5.6 per cent reported moderate night glare.

Mesopic and photopic contrast sensitivity testing was done in six patients, and the results were good, except photopic contrast sensitivity at high spatial frequencies was reduced in patients aged 70 and older.

Promising results Questionnaire results showed 98 per cent of patients reported never wearing glasses, 96 per cent were mostly or completely satisfied with their vision without glasses during the day, and 87 per cent were mostly or completely satisfied without glasses at night.

"These are promising results, and the intermediate vision outcome is particularly impressive. Now we are waiting for the hydrophobic acrylic version of this lens," said Dr Rosca.

Matteo Piovella MD, Monza, Italy, reported "promising" results from a series of 12 eyes of 12 patients implanted with the FIL 611 PV MFIOL (Review, Soleko). It is an aspheric plate lens with a near add of +3.75 D concentrated in the central 1.48mm of the optic, the optic periphery (from 2.48 to 6.0mm) is dedicated to distance vision, and the two areas are linked by an aspherically curved midzone dedicated to intermediate vision.

For the 12 eyes, mean SE was -0.45 D preoperatively and 0.06 D at three months. At three months, mean UCDVA was 0.92, mean UCNVA was J2.08, and mean CDNVA was J1.17 with +1 D sphere.

Dr Piovella mentioned there is also a multifocal toric version of the Review IOL (FIL 611 PVT) with a cylinder range from +1.00 to +6.00 D in 0.5 D steps. The lens is



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Alfredo Vega-Estrada MD

"customised" at the time of manufacture as the cylinder axis is set during production and shown in a technical drawing packaged with the IOL. Due to this technology the lens is implanted always at 0/180 degree (temporal corneal incision) and does not require any rotation to get the proper astigmatic axis. "With all diffractive multifocal IOLs we are facing penalisation related to contrast sensitivity up to 30 per cent, and so it is important to achieve a plano result. Experience shows that a small amount of residual sphere and or astigmatism is responsible for patient complaints," noted Dr Piovella. "A residual refractive error equal or over 0,75 spherical equivalent result, causes one line of visual acuity loss".

Alfredo Vega-Estrada MD, Alicante, Spain, reported positive results from a series of 24 patients implanted bilaterally with the SeeLens MFIOL (Hanita), a hydrophilic aspheric apodised diffractive IOL with a +3 D add that can be implanted through a 1.8mm incision. Preoperatively all eyes had less than one dioptre of corneal astigmatism. Mean post-op sphere was -0.07 D and mean cylinder was -0.38 D. At three months, mean logMAR UCDVA was 0.21, mean logMAR BCDVA was 0.05, mean binocular logMAR UCNVA was 0.10, and mean binocular logMAR DCNVA was 0.06. All of the values represented significant improvements from baseline. Nearly 80 per cent of patients achieved logMAR UCNVA of 0.2 (J2) and about 70 per cent achieved this level for UCIVA.

Defocus curve testing similarly showed patients had excellent vision across the full distance range with just a slight decrease in intermediate vision. Photopic contrast sensitivity was close to normal and scotopic contrast sensitivity was only slightly decreased.

Compared with results published by Dr Vega-Estrada's colleagues for two other diffractive multifocal IOLs (AcriLisa 366 D, Carl Zeiss Meditec and AcrySof ReSTOR SN6AD3, Alcon) [J Refract Surg 2011;27:570-81], the SeeLens had similar mesopic contrast sensitivity performance but superior results under photopic conditions at spatial frequencies of six, 12 and 18 cpd. There were no statistically significant differences between the three diffractive multifocal IOLs in their defocus curves, although the SeeLens had slightly better results in the intermediate range and was slightly worse for near vision.

Dr Vega-Estrada also highlighted the unique 360-degree double square edge optic of the SeeLens. Based on a method described by Werner et al. to evaluate IOL microedge structure [J Cataract Refract Surg 2009;35:556-66], the SeeLens was closer to a perfect square configuration than the IOL with the best edge profile in the published study.

"These data suggest posterior capsule opacification (PCO) development may be minimised with the SeeLens. However, longer follow-up is needed to assess PCO," Dr Vega-Estrada said.



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