Investigative Ophthalmology & Visual Science

Invest Ophthalmol Vis Sci 2002;43: E-Abstract 4116.

Quality of Vision With the Artisan Phakic Lens for the Correction of High Myopia

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Commercial Relationships: M. Harissi-Dagher, None; **M. Podtetenev**, None; **M. Parent**, None; **H. Hamam**, None; **J.M. Bueno**, None; **I. Brunette**, None.
Grant Identification: MRC, FRSQ Research in Vision Network

Abstract

Purpose: To evaluate the optical quality of the eye before and after the insertion of an Artisan lens. This lens is currently under investigation for its approval by Health Canada.
Methods: This prospective study will include consecutive eyes implanted with the Artisan lens by a single surgeon (MP) over a two-year period, starting August 2001. Monochromatic aberrations are measured pre- and 3 to 6 months postoperatively, using a modified Hartmann-Shack sensor. Aberrations are measured for a natural pupil in mesopic conditions and for a pharmacologically dilated pupil.
Results: The mean age of the 5 patients (8 eyes) operated thus far is 40.6±16.4 years. Their mean preoperative spherical equivalent was -14.95±4.12D (range -10 to -23D), with a best spectacle-corrected visual acuity (BSCVA) of 20/40 in 80% of patients and 20/25 in 60% of patients. The mean axial length was 29.27±2.22mm, the mean anterior chamber depth 3.57±0.26mm, and the mean central corneal curvature 44.52±1.35D. No major complications were encountered. LASIK surgery for the correction of residual myopia was done on 2 eyes. The mean post-operative spherical equivalent was -1.21±1.12D (range plano to -3.50D). An UCVA of 20/40 or better was observed in 62.5 % of eyes and a BSCVA of 20/40 or better in 100 % of eyes at post-operative day 1 which remained stable throughout follow-up; 75% of eyes had a BSCVA of 20/25 or better post-operatively. Glare was noted in only one patient and halos and rings in another. For 4 eyes, pre- and postoperative rms values were available: for pupil diameters of 4 and 5mm, the mean pre-op rms were 0.81±0.21 λ and 0.83±0.29 λ respectively, and mean post-op rms of 0.44±0.11 λ and 0.60±0.18 λ respectively.
Conclusion: Preliminary data using a modified Hartmann Shack wave sensor does not reveal an increase in the amount of optical aberration post-insertion of Artisan lens for the treatment of high myopia. These

results will be compared to results obtained with the Zyoptix aberrometer (Bausch & Lomb).

Keywords: 551 refractive surgery: phakic IOL • 481 myopia • 317 anterior chamber