

R1 R2 R3 PG0 PG1 Estagiário Tecnólogo
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Service (sector) Cataract N° CEP

Visual outcomes after accommodating intraocular lens implantation

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Purpose: To evaluate and compare the visual outcome and accommodating amplitude in cataract patients after implantation of the CrystaLens, versus standard monofocal intraocular lens. Setting: Multicenter Study : 10 clinics nationwide collaborated in this study. Methods: Multicenter, comparative, interventional case series. A masked randomized postoperative examination of 224 eyes from 112 patients was performed by a single observer. Patients were divided into two groups (56 patients; 112 eyes each) depending upon which IOL had been implanted (CrystaLens or monofocal). Accommodation was measured using one objective (dynamic retinoscopy) and two subjective methods (defocus and near point of accommodation). Visual acuity measurements were performed under the same conditions, with standard visual acuity charts. Results: Uncorrected monocular near vision was significantly better in the CrystaLens group than in standard monofocal patients, with 101 out of 112 eyes (90%), compared with 17 of 112 standard monofocal eyes (15%), reading J3 or better postoperatively. All (56 out of 56) CrystaLens patients had a binocular uncorrected near visual acuity of J3 or better compared with 16 out of 56 (29%) standard monofocal patients. Postoperative monocular (0.85 ± 0.30 vs 0.70 ± 0.19 ; $p < 0.01$) and binocular (1.16 ± 0.17 vs 1.01 ± 0.14 ; $p < 0.01$) distance uncorrected visual acuities were also better in CrystaLens group compared to control group. All patients in the study achieved a corrected distance visual acuity of 20/20 or better. Measures of accommodation were significantly higher in CrystaLens patients compared with monofocal IOL patients (dynamic retinoscopy 2.42 ± 0.39 D vs 0.91 ± 0.24 D ; $p < 0.01$; monocular defocus 1.74 ± 0.48 D vs 0.75 ± 0.25 D ; $p < 0.01$; monocular near point of accommodation 9.5 ± 3.1 inches vs 34.7 ± 9.8 inches , $p < 0.01$). Perceived accommodation (5.79 D) was significantly greater than the measured accommodation (1.96 – 2.42 D) in CrystaLens patients (paired t-test, $p < 0.01$). Conclusions: CrystaLens provided better uncorrected near and distance visual outcomes than standard monofocal IOLs in all analyses performed. Interestingly, patients perceived a greater accommodation than measured. Understanding why this occurred could lead to valuable advances in accommodating IOL technology.