COMPARISON OF TORIC INTRAOCULAR LENSES AND FEMTOSECOND LASER-ASSISTED ARCUATE KERATOTOMY TO CORRECT MODERATE TO HIGH ASTIGMATISM IN CATARACT SURGERY

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Purpose: To compare toric intraocular lens (IOL) implantation with arcuate corneal relaxing incisions in correction of mild and moderate corneal astigmatism during cataract surgery.

Design: A retrospective comparison study.

Methods: This 6-month single-surgeon study compared eyes with cataract and astigmatism of 1.5-2.0 diopters (D) or greater than 2.0 diopter (range, 2.25-5.25 D) receiving corneal arcuate relaxing incisions or toric IOL implantation. Main outcome measures were visual acuity, refractive results, and IOL axis determination.

Results: There were 32, 36 and 25 eyes in the low and moderate toric IOL groups and arcuate incision group, respectively. Preoperative age and were not significantly different between the 3 groups; the mean preoperative astigmatism was -1.89 +/- 0.63 D in the mild toric IOL group and -3.01 +/- 0.76 D in the moderate toric IOL group and -1.61 +/- 0.54 D in the arcuate incision group. At 6 months postoperatively, the mean residual astigmatism was 0.76 D, 0.88 D and 0.61 D (P = 0.1), respectively; 82%, 73% and 76% of eyes were 1.00 D or less; and 35.7%, 42% and 48% of eyes were 0.50 D or less (P = 0.000), in the mild and toric IOL groups and arcuate incision group respectively. Uncorrected distance visual acuity improved in all groups. Following surgery, all eyes had best corrected visual acuity of 20/40 or greater, and no eye lost a line of vision.

Conclusions: Both toric IOLs and arcuate corneal incisions reduce moderate to high preexisting corneal astigmatism during cataract surgery; however, in our results, toric IOL and arcuate incision groups had comparable results.