

Residual Astigmatism of Toric Intraocular Lenses Compared between Intraocular Aberrometry or Topography Iris Registration FLACS Toric Marks



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Purpose:

Refractive cataract surgery aims to deliver minimal residual astigmatism for optimal post operative UCVA. Different methods have been used to try and minimize residual astigmatism. This study was designed to evaluate two different methods of placement of toric IOLs to determine which left less residual astigmatism.

Methods:

This is a retrospective study of 136 eyes one month following cataract surgery with toric IOL placement by one surgeon. All toric lenses were analyzed including standard toric, accommodating toric, EDOF toric and trifocal toric lenses. 76 consecutive eyes had toric IOL placement using intraocular aberrometry guidance (Ab) to achieve NRR (no rotation) readings. 60 consecutive eyes had placement using the Cassini Ambient

topographer with iris registration linked to the Catalys femto second laser with toric corneal marks (CC) placed to align the toric lenses. All eyes had post operative refractions recorded from optometrists and were analyzed for residual astigmatism

Results:

Eyes with toric IOL placement (all types) using femto second laser corneal marks had a higher percentage (86.7%) of eyes with +/- 0.50 diopters of residual astigmatism compared to eyes using intraocular aberrometry (75%) for toric IOL placement. The multifocal toric IOLs showed +/- 0.5 diopters of residual astigmatism at 90% (CC) versus 80% (Ab). The EDOF toric IOLs showed +/- 0.50 diopters of residual astigmatism at 90.9% (CC) versus 73.7% (Ab). Standard toric IOLs showed +/- 0.50 of residual astigmatism at 76% (CC) versus 50% (AB). Small sample size of 16 eyes with accommodating IOLs showed +/- 0.50 residual astigmatism of 100% (CC) and 80% (Ab).

Conclusion:

This study indicated that there was less postoperative refractive astigmatism using femto second laser corneal marks with iris registration from the Cassini Ambient topographer than intraoperative aberrometry.