

The Visual and Refractive Outcomes and Complications of ICL and Toric ICL for the Correction of High Myopia and High Myopic Astigmatism. (1 year prospective study)

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Purpose: To evaluate the efficacy, safety, predictability and stability of Implantable Collmer Lens (ICL) and Toric ICL for the treatment of high myopia and high myopic astigmatism. 1 year prospective study.

Setting: Department of Ophthalmology of Fajr Hospital and Negah Eye Hospital, Tehran, Iran.

Methods: This prospective nonrandomised clinical trial comprised 62 eyes that had ICL (22 eyes) and Toric ICL (40 eyes). Primary outcome variables including UCVA, BSCVA, manifest refraction, adverse events and complications were evaluated at 5 days and 2, 6 and 12 months postoperation. Vector analysis was performed on eyes that received astigmatic correction.

Results: The mean spherical equivalent was $-11.55D \pm 4.1$ (-5.0 to -20.0) in ICL group and $-10.44D \pm 4.0$ (-7.0 to -20.0) with $-3.48D \pm 1.3$ (-2.0 to -6.0) cylinder postoperatively, $0.16 D \pm 0.48$ at 5 days, $-0.01D \pm 0.30$ at 2 months, $-0.05 D \pm 0.39$ at 6 months, $-0.09 D \pm 0.16$ at 1 year in ICL group and $-0.10 D \pm 0.63$, $-0.06 D \pm 0.40$, $-0.13 D \pm 0.51$ and $-0.21 D \pm 0.24$ in TICL group respectively. The mean postoperation cylinder in TICL group was $-0.85 D \pm 0.62$, $-0.81 D \pm 0.66$, $-0.91 D \pm 0.79$, $-0.75 D \pm 0.75$ respectively. At 2 months, the UCVA was 20/40 or better in 77.8% in ICL G and 75.0% in TICL G (efficacy = 1.033 and 1.126 respectively). 94.0% and 85.0%, were within $\pm 0.5 D$ and 100% and 97.5% were within $\pm 1.0 D$ of emmetropia respectively. 44% and 56% gained one to two lines (safety = 1.131 and 1.214). At 2 months, 80%, of eyes in TICL G had $< 1.0 D$ and 100% $< 1.5 D$ cylinder. No operative and postoperative complications or adverse events were observed. Asymptomatic anterior subcapsular opacities (trace) were seen in 1 eyes (1.6%).

Conclusions: ICL and TICL were effective, predictable, and safe procedures for the treatment of high myopia and high myopic astigmatism.