

# Correction of high astigmatism with toric intraocular lens in eyes with corneal transplant

## Abstract

**Objectives:** To evaluate the results of toric intraocular lens (IOL) implantation during cataract surgery in eyes with high regular astigmatism associated with prior penetrating keratoplasty (PK).

**Methods:** A retrospective data analysis of patients with prior PK, who underwent uncomplicated cataract surgery with hydrophobic toric single piece IOL (EyeCryl Toric®, Biotech Vision Care, Luzern, Switzerland).

**Results:** A total of 18 eyes of 18 patients were included in the study. The mean age was  $53.4 \pm 12.4$  (25-70) years. The mean follow-up period was 15.5 (4-24) months. The mean best corrected visual acuity (BCVA) significantly increased from  $1.36 \pm 1.0$  logMAR to  $0.31 \pm 0.17$  logMAR ( $p < .001$ ) pre- and post-operative 4 weeks, respectively. There was no significant change in mean BCVA during follow-up; mean BCVA was  $0.32 \pm 0.17$  logMAR at the last visit. The mean pre-operative topographic astigmatism was  $6.52 \pm 1.80$  diopters (D). The mean manifest refraction astigmatism was decreased from  $6.55 \pm 1.62$  D to  $2.80 \pm 1.43$  D ( $p < 0.001$ ). The mean Surgically induced astigmatism (SIA) was  $3.74 \pm 0.77$  D according to vector analysis. There was no patient with graft rejection or failure, the mean endothelial cell loss rate was  $12.75 \pm 3.76\%$  (7-17%). There was no patient requiring IOL reposition.

**Conclusions:** Toric IOL implantation during cataract surgery provides an option to correct astigmatism in post-PK eyes with high regular astigmatism. When appropriate patients are selected it is a safe method to achieve significant improvements in visual acuity and astigmatism.

**Keywords:** Penetrating keratoplasty; astigmatism; phacoemulsification; toric intraocular lens.