

Long-Term Outcomes and Safety of the Phakic Visian Toric Implantable Collamer Lens in Eyes with Non-Progressive Keratoconus

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ABSTRACT

Study Design: Retrospective

Background: Keratoconus is a bilateral condition that affects 0.09–0.22% of the population and involves a progressive thinning of the cornea. This thinning results in a corneal bulge, which leads to irregular astigmatism and visual function impairment. Vision is generally correctable in the early stages of keratoconus with glasses. To evaluate the long-term outcomes and safety of phakic Visian toric implantable collamer lens (ICL) implantation in eyes with stable keratoconus.

Methods: This retrospective records review included patients with stable keratoconus who underwent phakic Visian ICL implantation and had been followed for at least 5 years following surgery. Keratometry, visual acuity, and refractive error were examined to evaluate outcomes. The Amsler-Krumeich classification system was used to determine disease stage. Adverse events were also examined to evaluate treatment safety.

Results: A total of 52 eyes (35 patients) with Stage I-III keratoconus were included in this study. Average subject age was 28.1 ± 4.3 years. Prior to ICL implant, logMAR uncorrected visual acuity (UCVA) and best-corrected visual acuity (BCVA) were 1.093 ± 0.343 (Snellen equivalent: 20/248) and 0.026 ± 0.041 (20/21), respectively. Additionally, the spherical and cylindrical refractive errors averaged -6.688 ± 3.810 and -2.168 ± 0.747 D, respectively. The maximum keratometry reading (k_{max}) averaged 47.5 ± 1.951 D. Five years after surgery, uncorrected logMAR visual acuity had significantly improved to 0.073 ± 0.057 (20/24, $p = <0.001$).

Conclusion: The Visian toric ICL is an effective and safe treatment option for improving visual acuity in eyes with stable keratoconus.

Keywords: Keratoconus, Vision, Eyes, Lens

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