

Results of Intracorneal Ring Implantation with IntraLase followed by Toric ICL Implantation in Keratoconus eyes

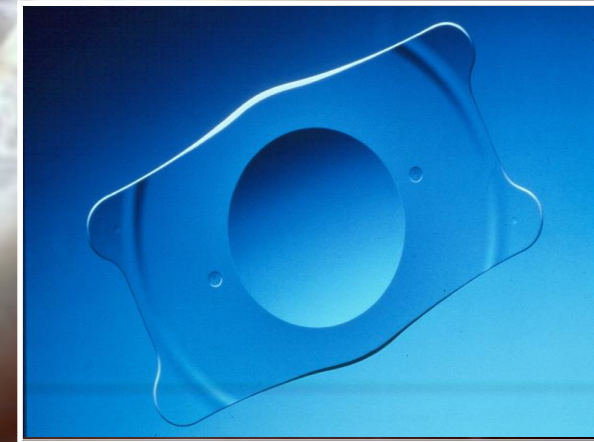
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Purpose

To evaluate the refractive, visual and keratometric results and complications of combined INTACS and Toric ICL implantation in keratoconus eyes

Patient Inclusion Criteria

- Grade I, II, III keratoconus patients
- Older than 21 years of age
- Contact lens intolerance
- No progression in previous 2 years
- Corneal thickness at least 350 μ at thinnest point and at least 450 μ at incision point.

Patient Exclusion Criteria

- Keratometer readings $\geq 65D$
- Endothelial cell count < 2000 cell/mm²
- ACD less than 2.8 mm (after ICR implantation)
- Unstable refraction ($\geq 0.5D$ change) and unstable topography in previous 24 months
- Mesopic pupil ≥ 6.0 mm
- high expectations for emmetropia
- severe atopic patients
- recurrent corneal erosion syndrome
- herpetic keratitis
- corneal dystrophies, hydropse, corneal opacities
- collagen vascular, autoimmune diseases ,other systemic diseases,
- pregnancy and breast feeding period

Patients

- 6 eyes of 4 Keratoconus patients
- Mean age: 33.83 ± 7.86 (Range: 26 to 36)
- UCVA, BCVA (Snellen chart),
- Orbscan IIz (Bausch&Lomb), topography (Wavelight Allegretto Topolyzer),
- Ultrasonic pachymetry (Sonogage 50 Hz)

Methods

Incision length:1.0mm,

Incision depth:75% of the corneal thickness measured at 7.0mm, $\leq 400\mu$

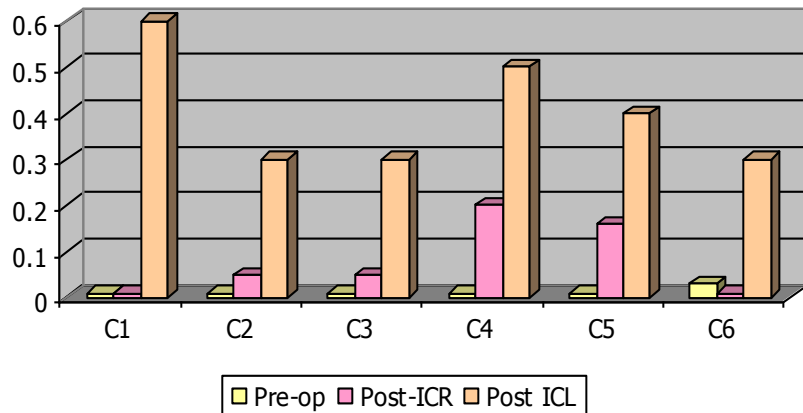
Incision site was chosen as the steep axis

IntraLase FS30: ~16 sn, FS 60: 12 sn

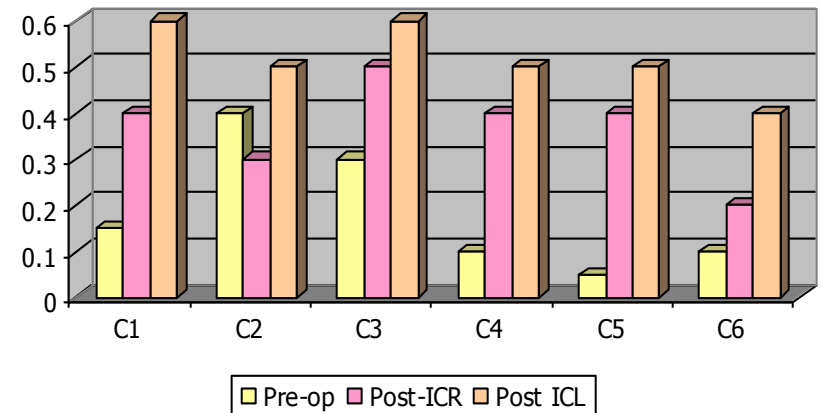
Intacs was implanted in 3 cases (C1, C2, C3) and in the other 3 cases (C4, C5, C6) Keraring was implanted

Toric ICL was implanted 6 months after Intacs implantation.

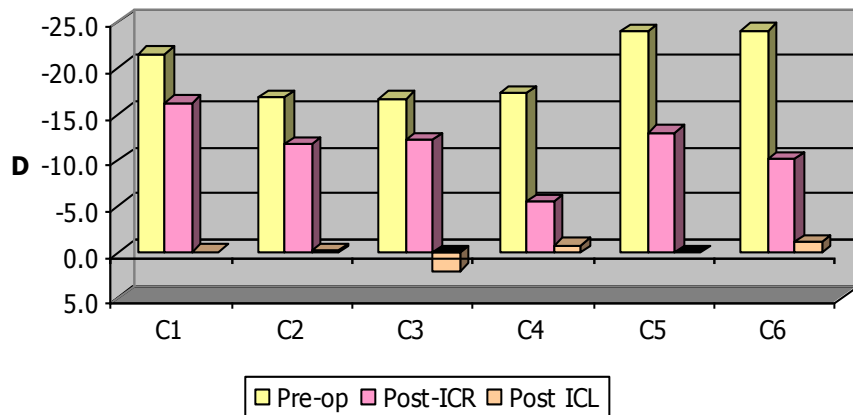
Uncorrected Visual Acuity



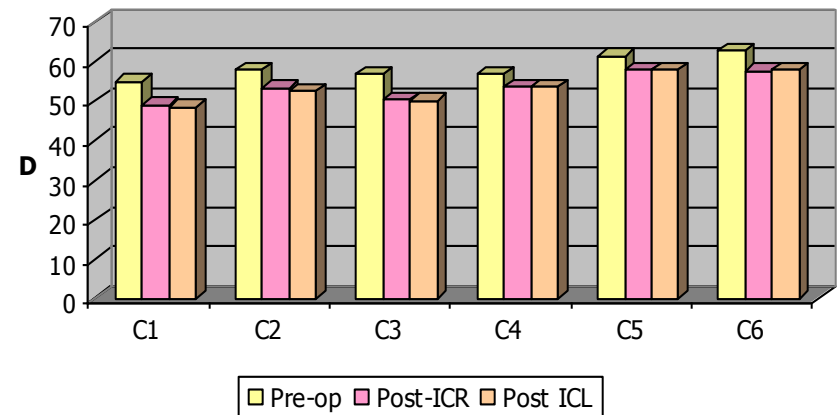
Best Corrected Visual Acuity



MRSE



Mean K



	UCVA			BCVA			Mean K			MRSE		
	Pre-op	Post-ICR	Post ICL	Pre-op	Post-ICR	Post ICL	Pre-op	Post-ICR	Post ICL	Pre-op	Post-ICR	Post ICL
C1	0.01	0.01	0.6	0.15	0.4	0.6	54.85	48.95	48.45	-21.5	-16.3	-0.1
C2	0.01	0.05	0.3	0.4	0.3	0.5	57.95	53.2	52.35	-16.8	-11.8	-0.3
C3	0.01	0.05	0.3	0.3	0.5	0.6	56.65	50.3	50.0	-16.6	-12.1	2.0
C4	0.01	0.2	0.5	0.1	0.4	0.5	56.65	53.6	53.6	-17.25	-5.5	-0.75
C5	0.01	0.16	0.4	0.05	0.4	0.5	61.35	57.95	57.95	-23.88	-13	0
C6	0.03	0.01	0.3	0.1	0.2	0.4	62.7	57.5	57.95	-24	-10.1	-1.1

Conclusion

**IntraLase ICR followed by Toric ICL
Implantation to correct irregular
astigmatism and high refractive errors
in keratoconus patients can be a safe and
effective alternative treatment.**