

*Results of IntraLase INTACS  
followed by Toric ICL Implantation  
in Keratoconus eyes*

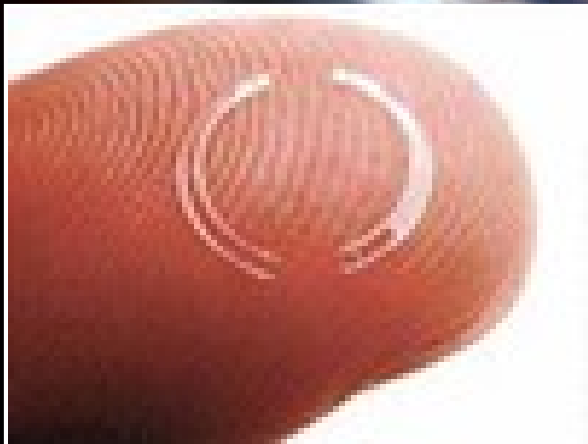
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*Dunya Eye Hospital*

*Istanbul Turkey*

*ESCRS Athens 2007*

*2-4 February*



# Purpose

*To evaluate the refractive, visual and keratometric results and complications of IntraLase INTACS followed by Toric ICL Implantation in keratoconus eyes*

# Patient Inclusion Criteria

- **Grade I, II, III keratoconus patients**
- **Older than 21 years of age**
- **Contact lens intolerance and showing cone evolution**
- **Corneal thickness at least 350 $\mu$  at thinnest point and at least 450 $\mu$  at incision point.**

# Patient Exclusion Criteria

- Keratometer readings  $\geq 65D$
- Endothelial cell count  $< 2000$  cell/mm<sup>2</sup>
- ACD less than 2.8 mm
- Unstable refraction ( $\geq 0.5D$  change in previous 12 months)
- Mesopic pupil  $\geq 6.0$ mm
- acute keratoconus
- high expectations for emmetropia
- severe atopic patients
- recurrent corneal erosion syndrome
- herpetic keratitis
- corneal dystrophies, hydropse, corneal opacities
- grade IV keratoconus; (Best corrected visual acuity 0.05 or less)
- collagen vascular, autoimmune diseases ,other systemic diseases,
- pregnancy and breast feeding period

# Patients

- 3 eyes of 2 Keratoconus patients
- UCVA, BCVA (Snellen chart),
- Orbscan IIz (Bausch&Lomb), topography (Wavelight Allegretto Topolyzer),
- Ultrasonic pachymetry (Sonogage 50 Hz)

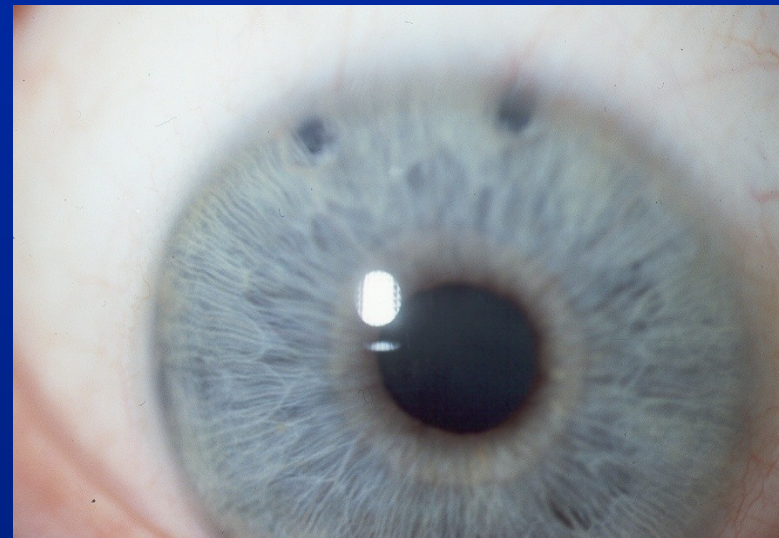
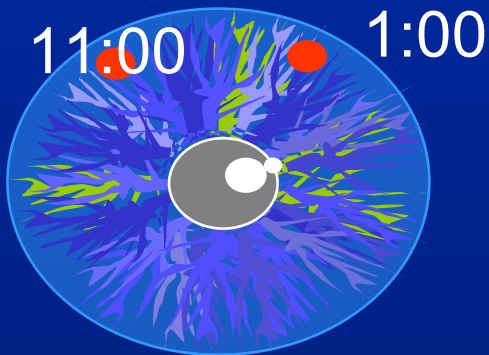
# Methods



- 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 FS15:  
~8 sn

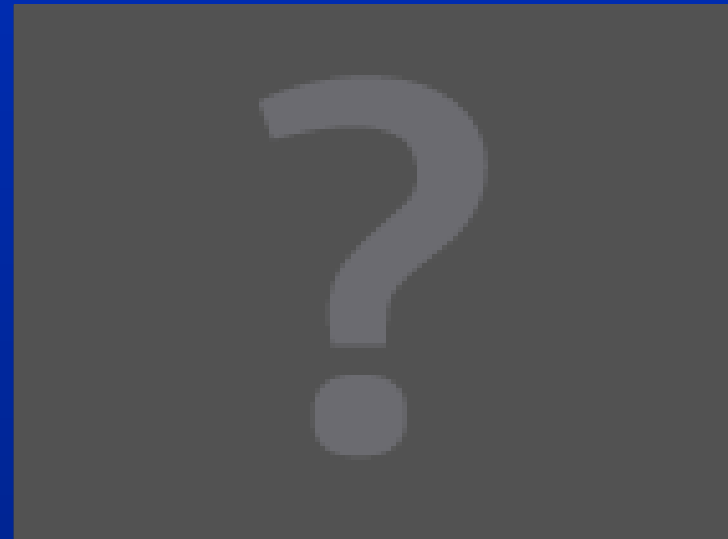
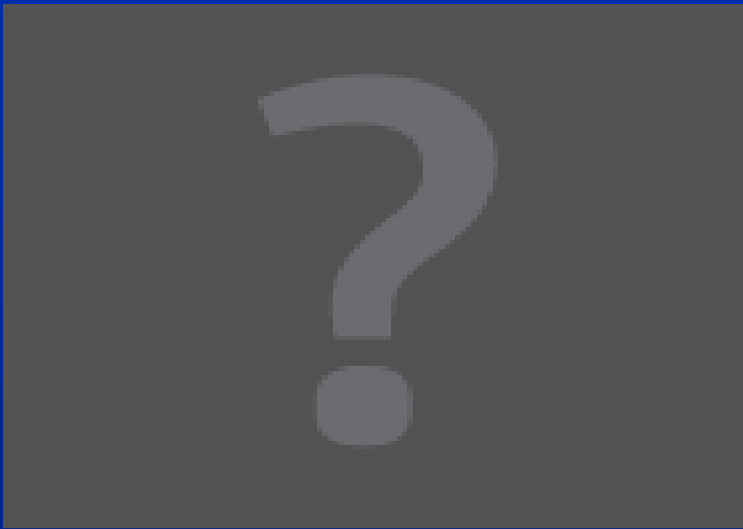
# Preoperative Evaluation

- Nd: YAG iridotomy; at least a week before ICL implantation,
  - On 1 and 11 o'clock , 5 mj
- For 3 days voltaren drop
- During surgery iridotomy controlled if it is patent



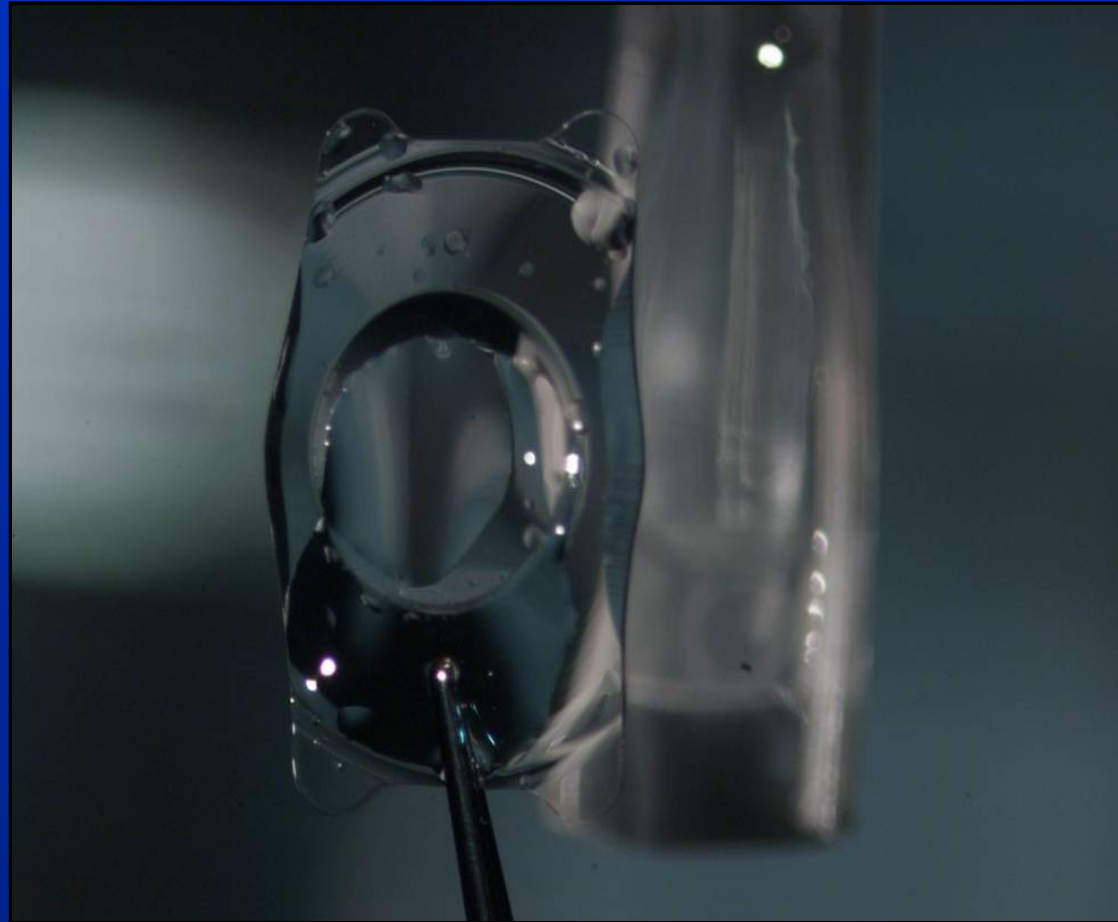
# Pre-Operative Planning

- White to White measurement  
According to Orbscan



# Implantable Contact Lens (ICL)

- \* ICL operations were performed 6 months after the ICR implantation
- \* ICL calculation was based on post op ICR refraction
- \* Under general anesthesia
- \* Follow up schedule was post operative days 1, 7, 30, 90 and every 6 months

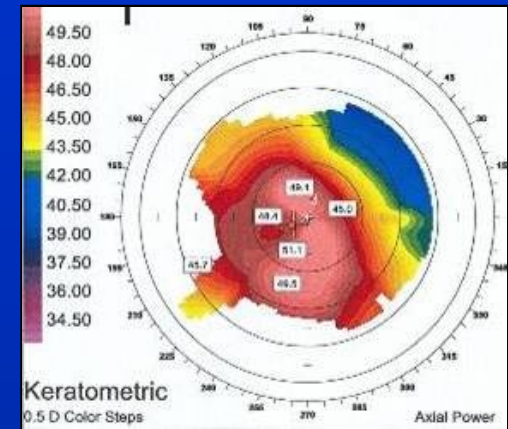
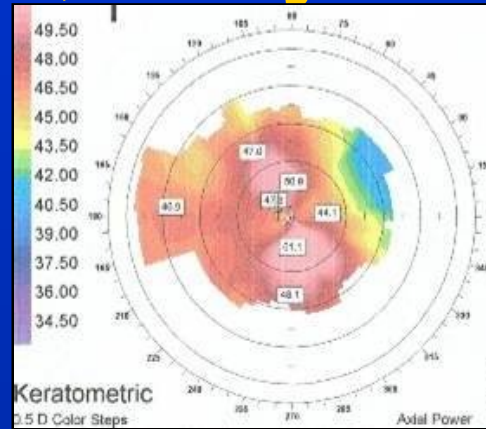
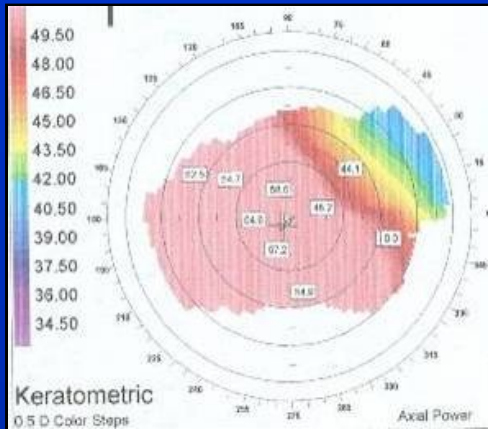


STAAR Surgical Company

An endoscopic view of a surgical site. A blue, multi-layered retractor system is in place, holding back muscle and soft tissue to provide a clear view of the underlying bony structures. The central area is illuminated, showing a smooth, light-colored surface. The surrounding tissue is dark and appears to be part of the surgical field.

**No Complication**

# Case 1: N.M., 32 years old



## Pre-Op 05/04/2005

- M.R: -18.0 -7.0x30
- UCVA: 0.01
- BCVA: 0.15
- K1: 51.8 D
- K2: 57.9 D
- Ult. Pach.: 389 $\mu$

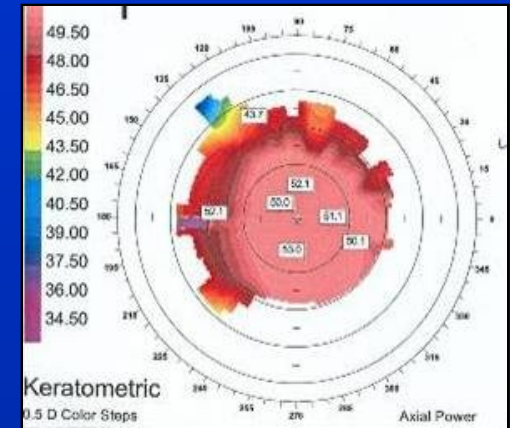
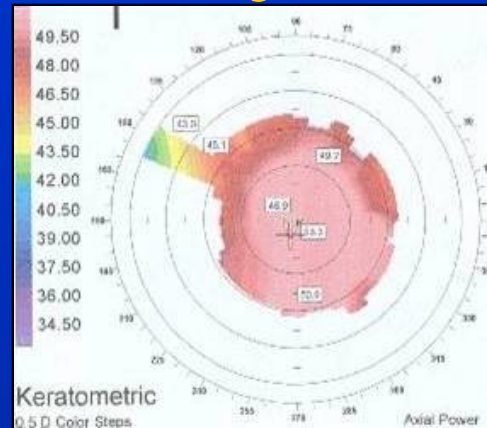
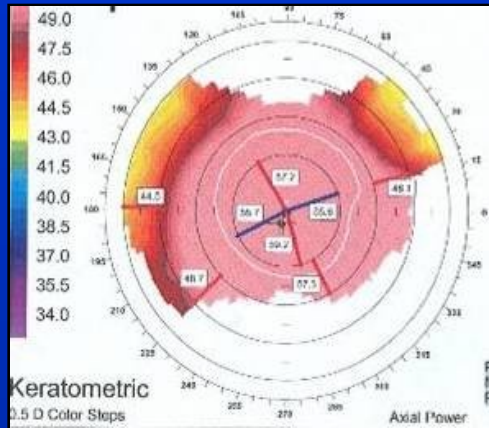
## Post-Op Intra-Intacs 19/05/2005

- M.R: -15.25 -2.0x55
- UCVA: 0.1
- BCVA: 0.4
- K1: 47.7 D
- K2: 50.2 D
- Ult. Pach.: 342 $\mu$

## Post-Op Intra-intacs + TICL 28/10/2006

- M.R: 0.25 -0.75x10
- UCVA: 0.6
- BCVA: 0.6
- K1: 46.4 D
- K2: 50.5 D
- Ult. Pach.: 347 $\mu$

# Case 2: H.A., 36 years old



## Pre-Op 04/10/2004

- M.R: -15.50 -3.50x30
- UCVA: 0.02
- BCVA: 0.4
- K1: 56.6 D
- K2: 59.3 D
- Ult. Pach.: 389 $\mu$

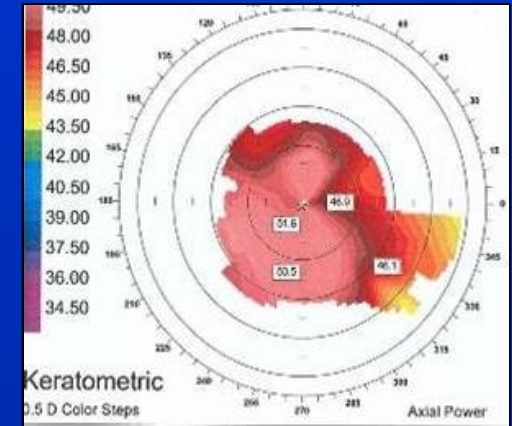
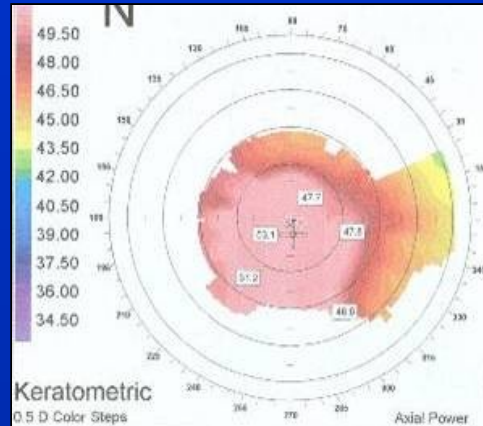
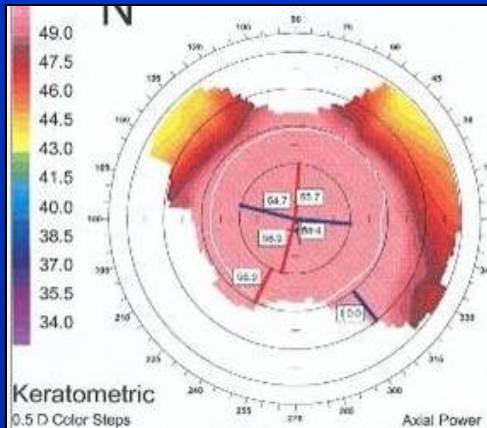
## Post-Op Intra-Intacs 29/3/2005

- M.R: -10.75 -2.0x180
- UCVA: 0.05
- BCVA: 0.4
- K1: 52.2 D
- K2: 54.2 D
- Ult.Pach.: 344 $\mu$

## Post-Op Intra-Intacs+ICL 5/5/2005

- M.R: 0.25 -1.0x35
- UCVA: 0.3
- BCVA: 0.5
- K1: 51.3 D
- K2: 53.4 D

# Case 3: H.A., 36 years old



## Pre-Op 04/10/2004

- M.R: -15.0 -3.25x135
- UCVA: 0.01
- BCVA: 0.3
- K1: 54.9 D
- K2: 58.4 D
- Ult. Pach.: 394 $\mu$

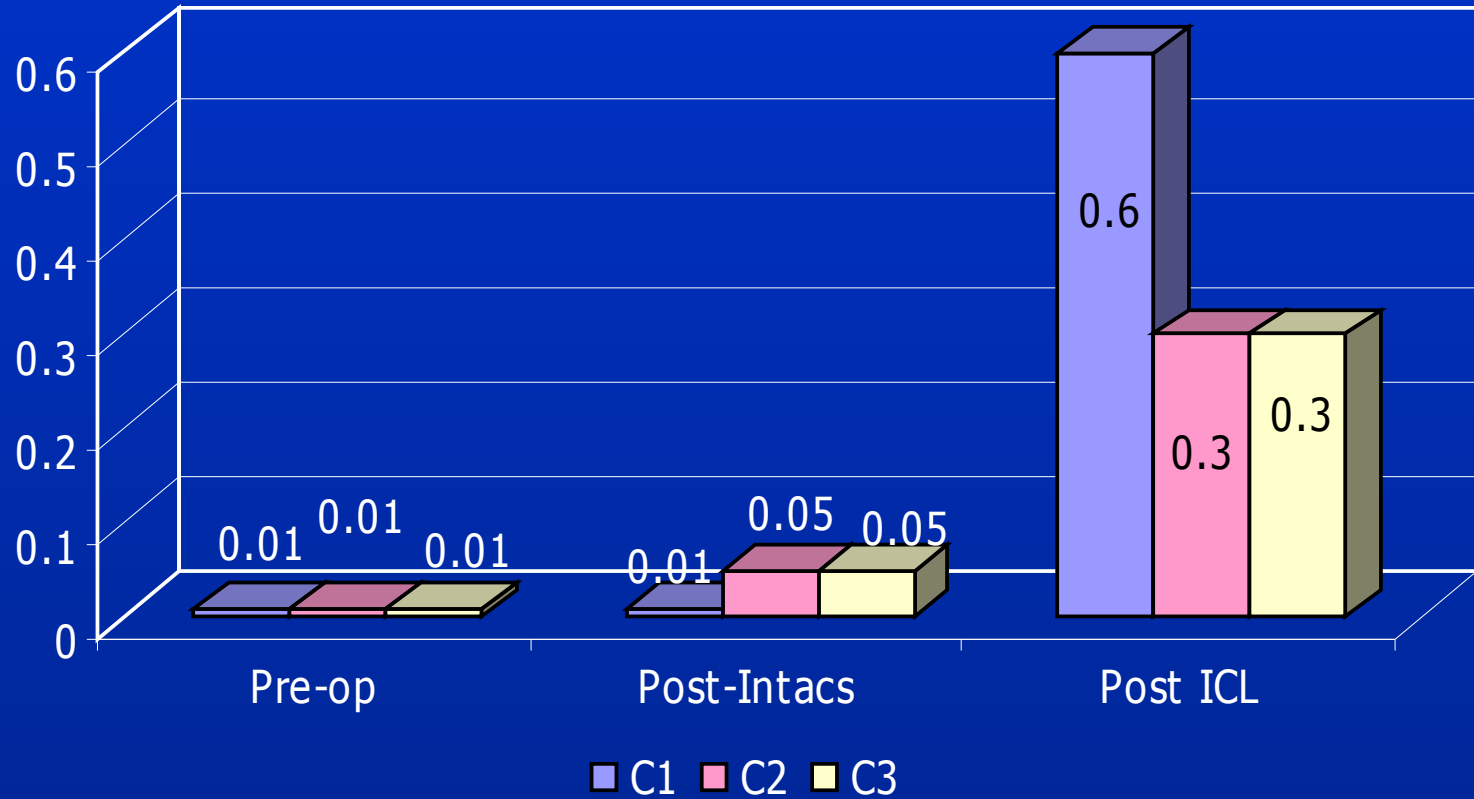
## Post-Op Intra-Intacs 29/3/2005

- M.R: -11.25 -1.75x115
- UCVA: 0.05
- BCVA: 0.5
- K1: 49.4 D
- K2: 51.2 D
- Ult.Pach.: 340 $\mu$

## Post-Op Intra-Intacs+ICL 5/5/2005

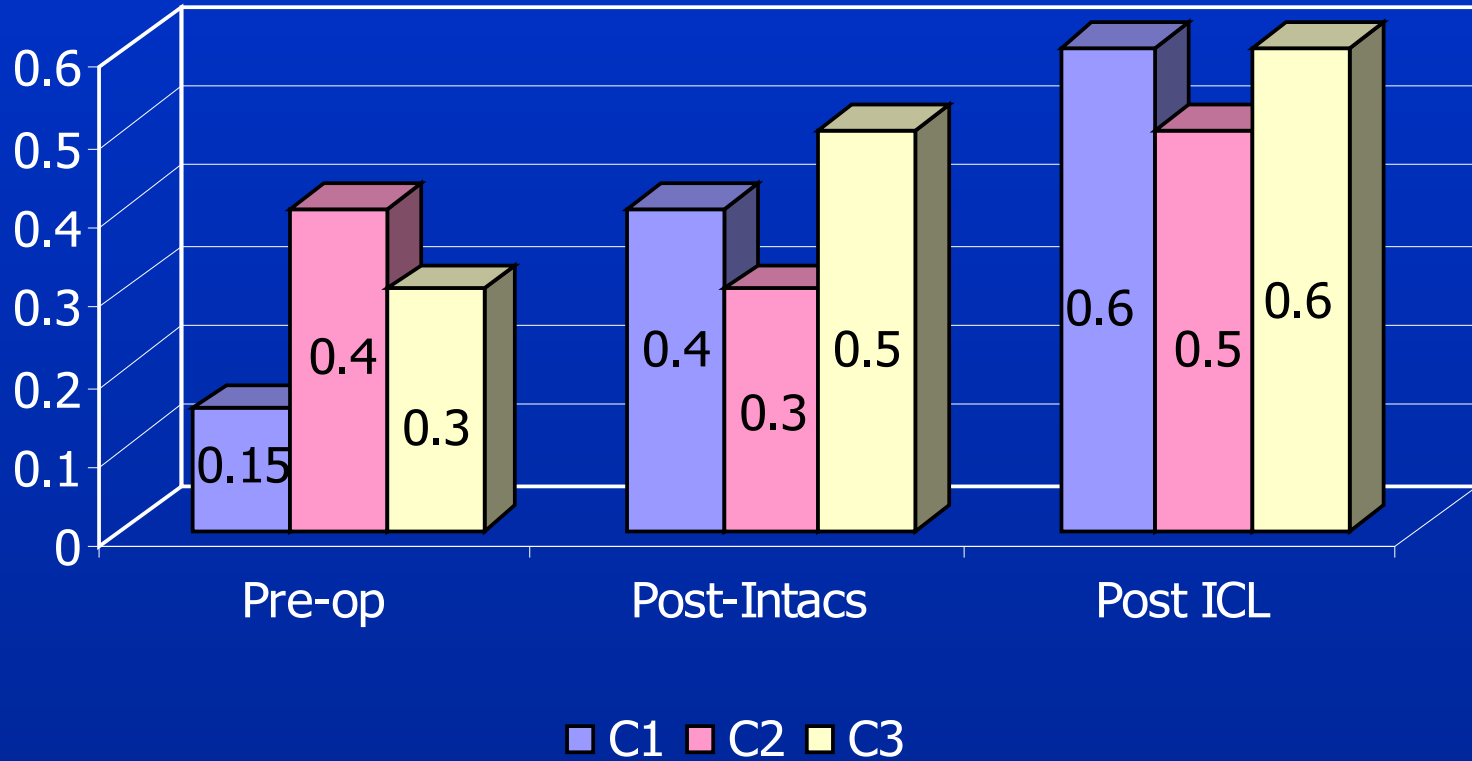
- M.R: 2.75 -1.5x10
- UCVA: 0.3
- BCVA: 0.6
- K1: 49.0 D
- K2: 51.0 D

# UCVA



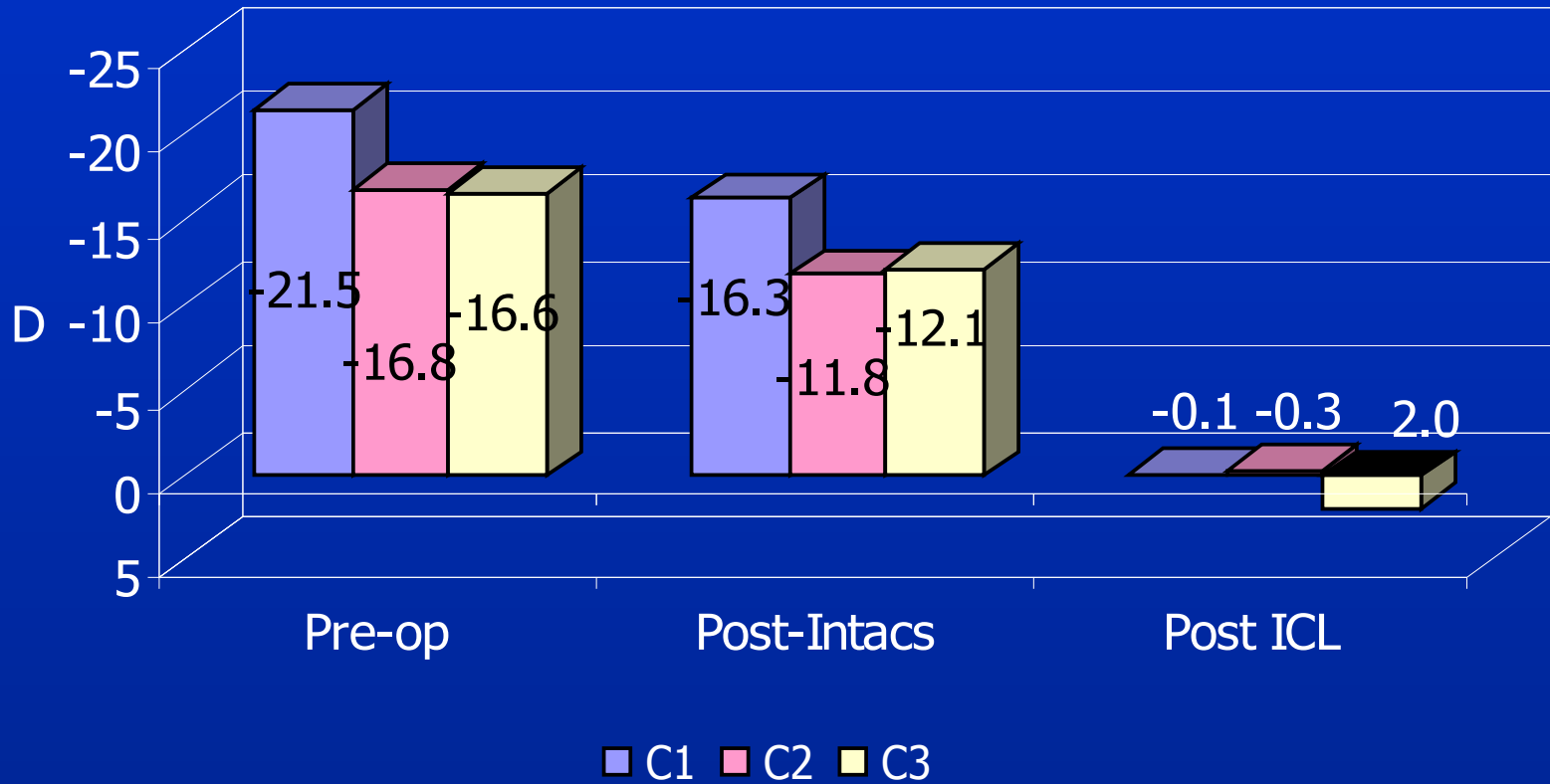
UCVA	Pre-op	Post-Intacs	Post ICL
C1	0.01	0.01	0.6
C2	0.01	0.05	0.3
C3	0.01	0.05	0.3

# BCVA



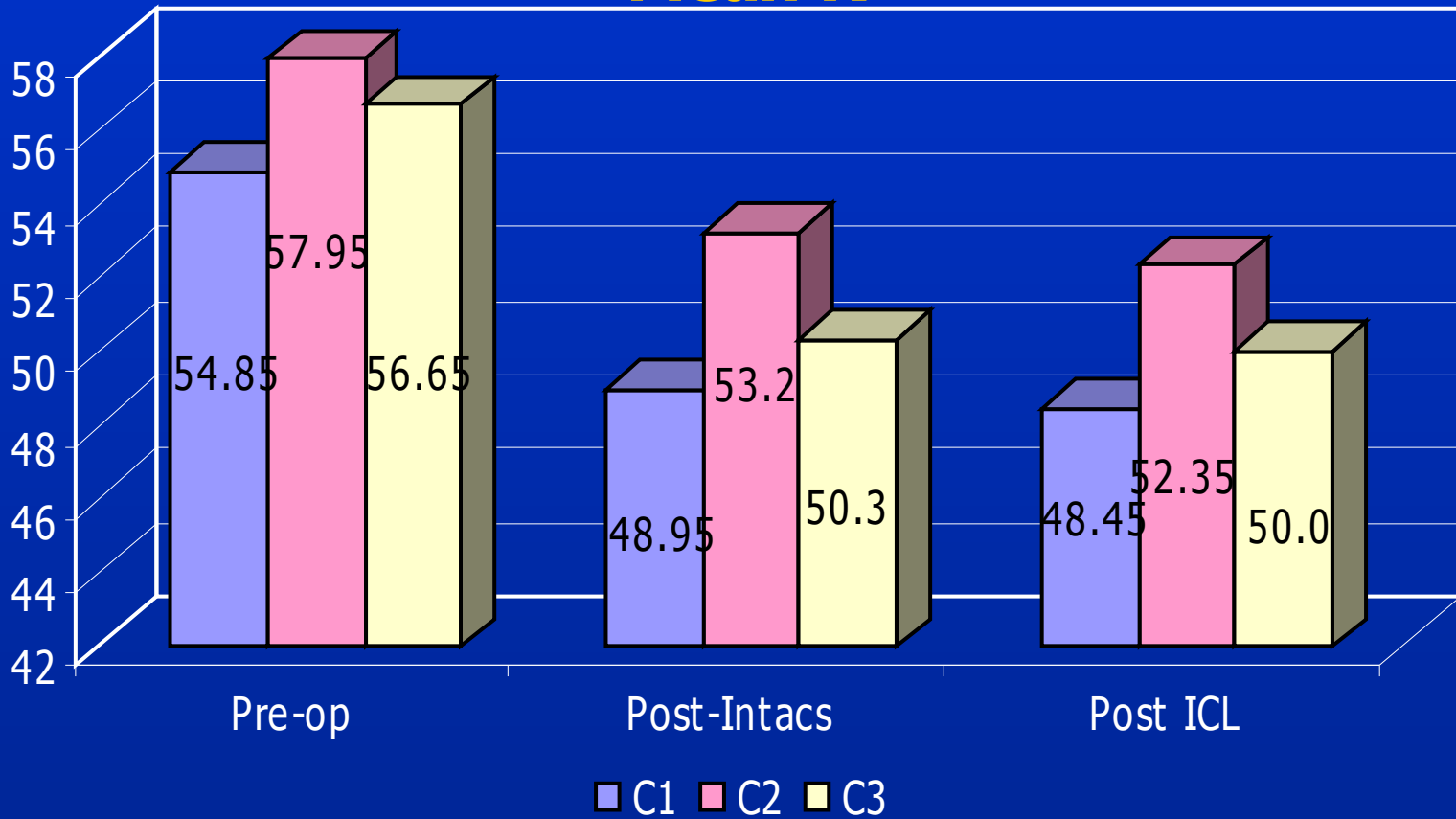
BCVA	Pre-op	Post-Intacs	Post ICL
C1	0.15	0.4	0.6
C2	0.4	0.3	0.5
C3	0.3	0.5	0.6

# SE



SE	Pre-op	Post-Intacs	Post ICL
C1	-21.5	-16.3	-0.1
C2	-16.8	-11.8	-0.3
C3	-16.6	-12.1	2.0

# Mean K



Mean K	Pre-op	Post-Intacs	Post ICL
C1	54.85	48.95	48.45
C2	57.95	53.2	52.35
C3	56.65	50.3	50.0

# Conclusion

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

# Thank You

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