

# Correction of High Astigmatism post DALK with Femtosecond Laser – Assisted ICR implantation

**JUAN GRANDIN, MD**  
**ADRIANA LOTFI, MD**  
**CARLOS GORDILLO, MD**


**Z**  
**ZALDIVAR**

ADVANCED OPHTHALMOLOGY FOR THE WORLD

# + Financial Disclosure



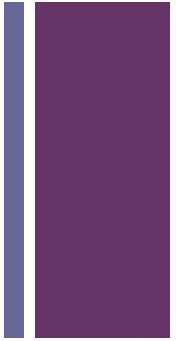
NO FINANCIAL INTEREST IN ANY OF THE PRODUCT MENTIONED



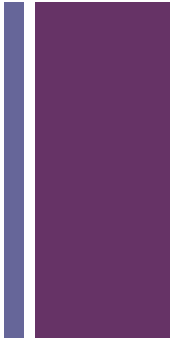
“Ametropia due to high  
+ spherical or astigmatic error is  
the leading cause of low  
vision in patients with corneal  
transplants”

# + PURPOSE

- To evaluate the results of Femtosecond assisted Intracorneal Ring Segments (ICRs) implantation in reducing high astigmatism in patients who have previously undergone Deep Anterior Lamellar Keratoplasty (DALK)



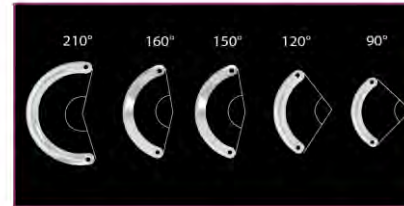
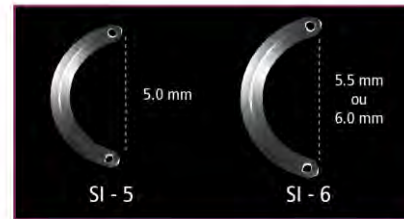
# + METHODS



- Retrospective Single Center Observational Study
- **Population: 21 eyes of 19 patients** (14 males/ 5 females) with High Residual Astigmatism after at least 1 year post DALK and without sutures
- All of them treated with ICRs with Intralase®
- Mean time between corneal graft and ICR implantation **34 months (range 12 to 46 months)**
- UDVA, CDVA, Refraction, Corneal Keratometry and Corneal Pachymetry were measured preop and at 1,3,6 and 12 months



# SURGICAL TECHNIQUE



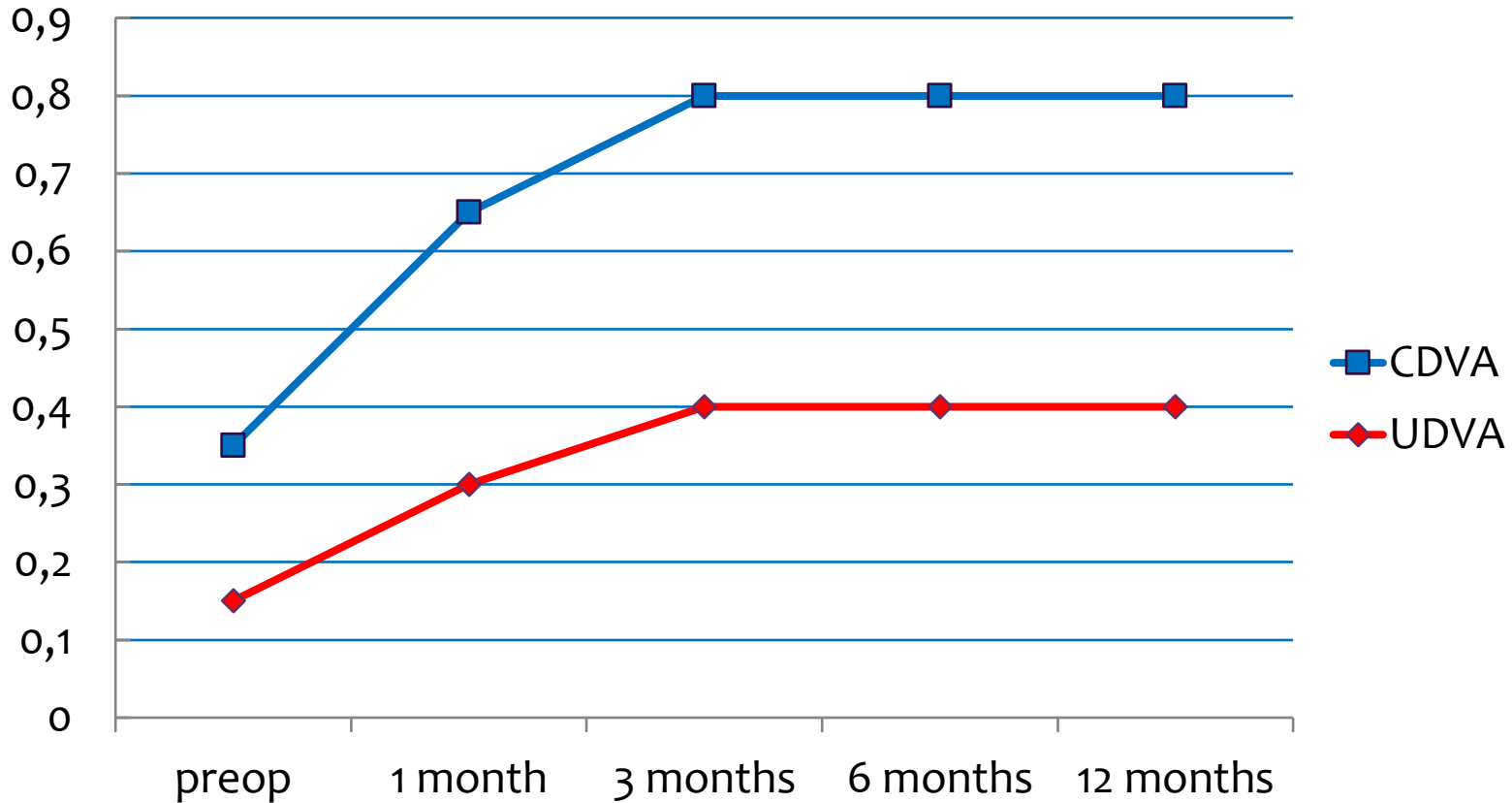
INTRASEG<sup>®</sup> (Gammavision, Argentina) segments of 5 & 6 mm

Femtosecond laser INTRALASE<sup>®</sup> (Abbot, USA) 150Hz

80% depth in cornea measured with US pachimetry and Visante OCT<sup>®</sup> (Zeiss, Germany)



# + RESULTS



Mean **UDVA** preop 20/200

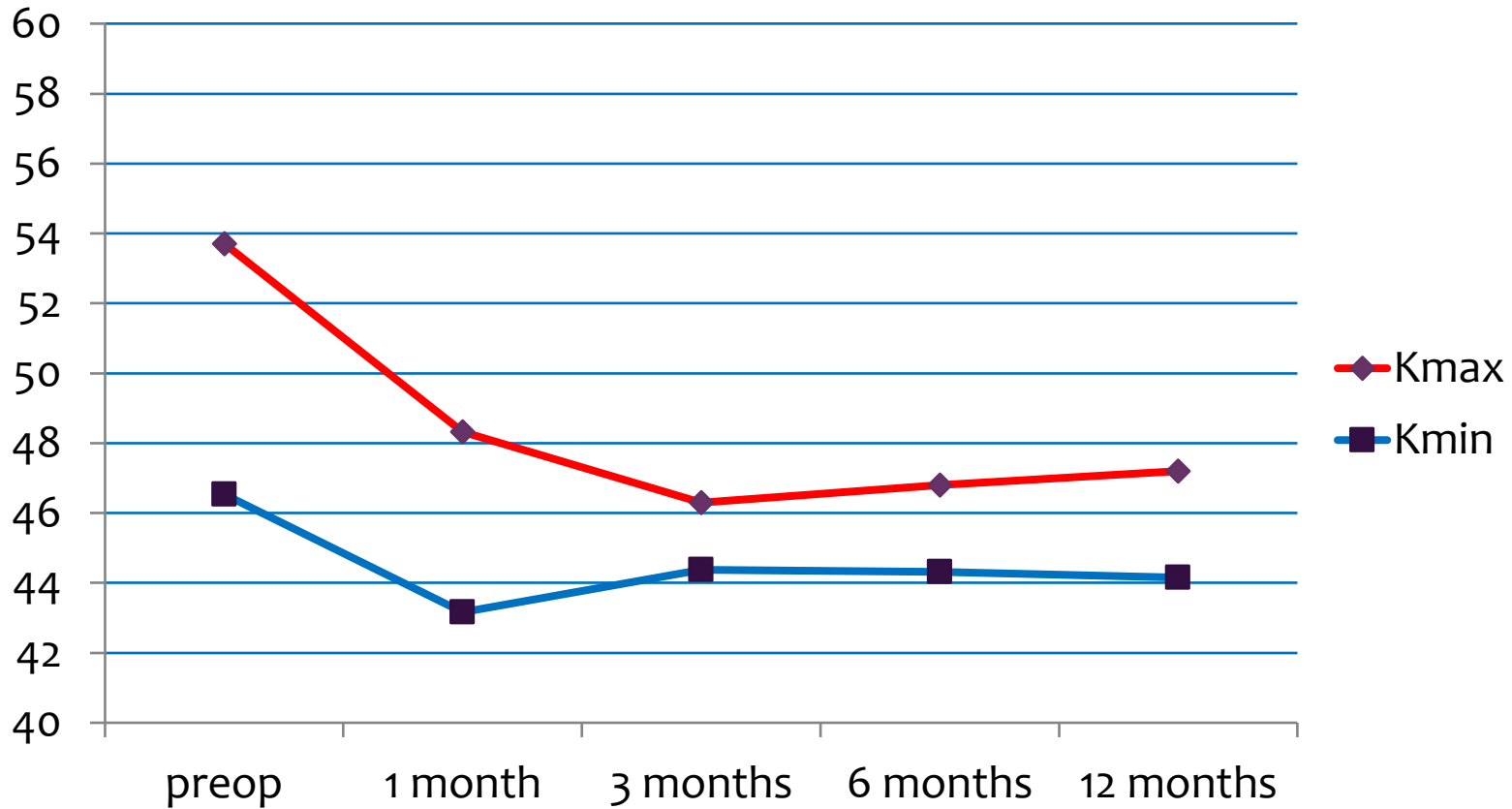
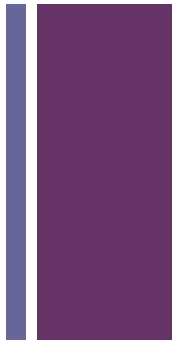
Mean **CDVA** preop 20/60

Mean **UDVA** 1 year 20/50

Mean **CDVA** 1 year 20/30



# RESULTS



Mean **Kmax** preop 53,7

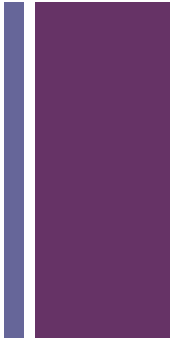
Mean **Kmax** 1 year 47,2

Mean **Kmin** preop 46,54

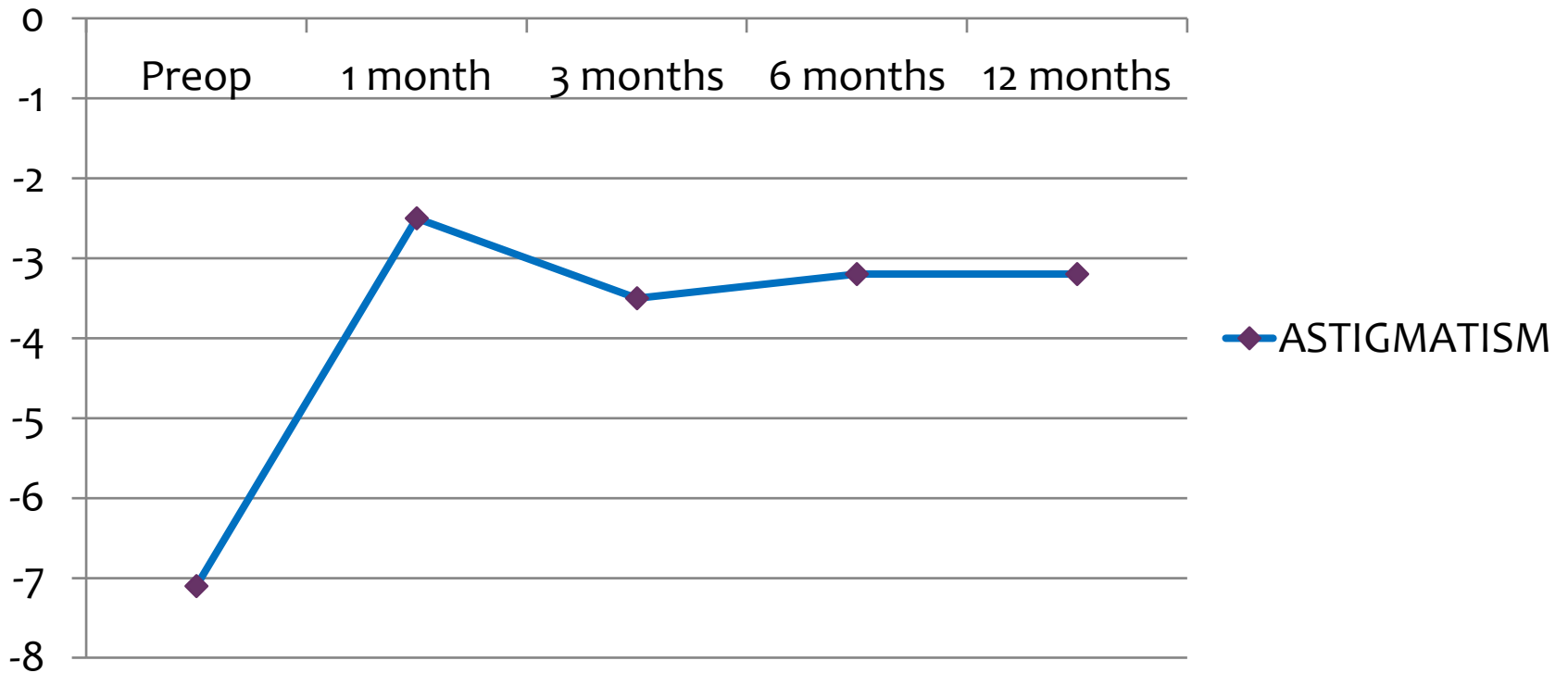
Mean **Kmin** 1 year 44,12



# + RESULTS

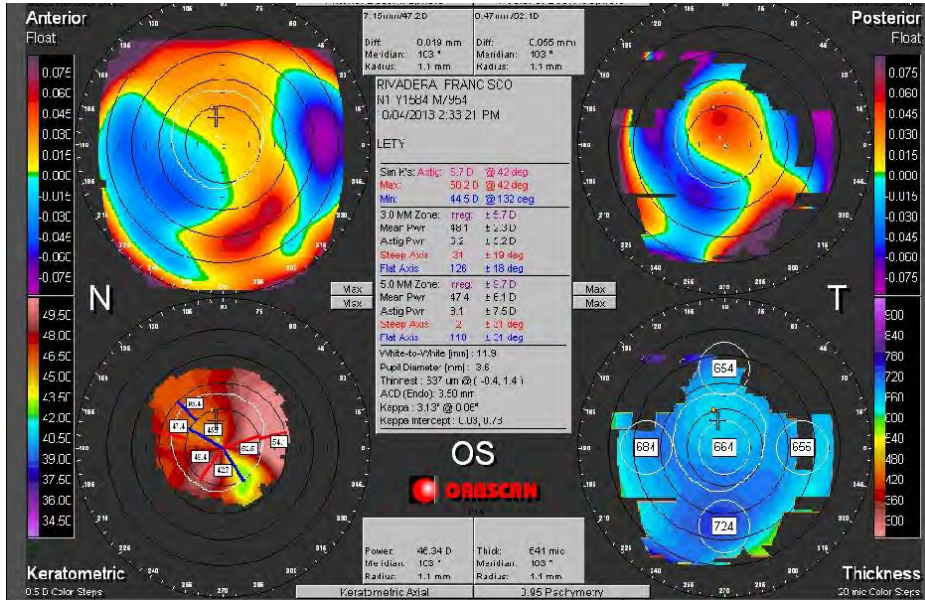
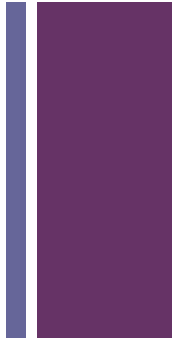


## ASTIGMATISM



Mean cylinder reduction from **-7,1 D** (rango -3,5 to -10) to **-3,3 D** (range -1 to -7)

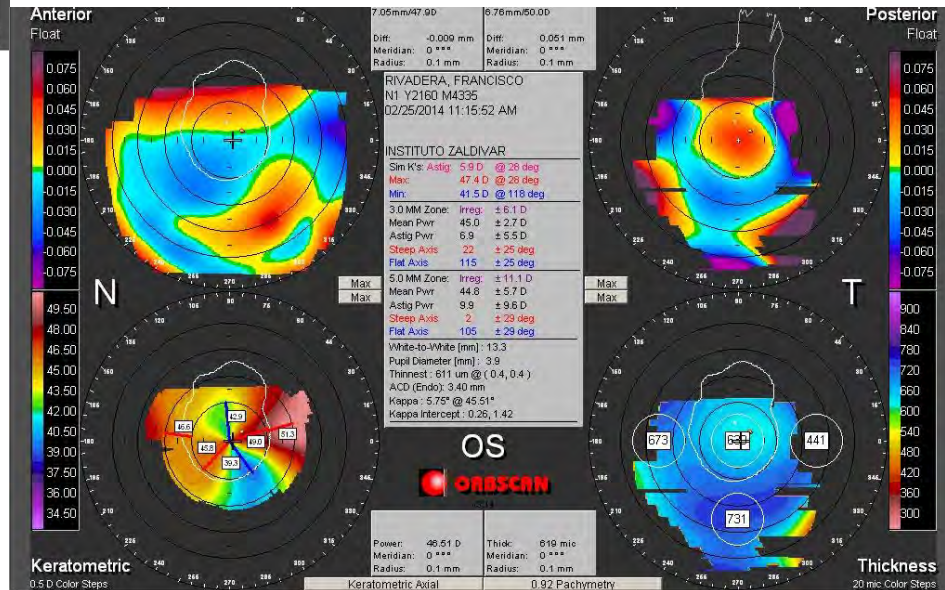
# + Example case



Preop  
 CF UDVA  
 20/60 -10,5 - 6 x 100°

**SI-6**  
 120°/250 μ 2 segmentos

Postop 6m ICR  
 CF UDVA  
 20/40 -10 -2,5 x 120°

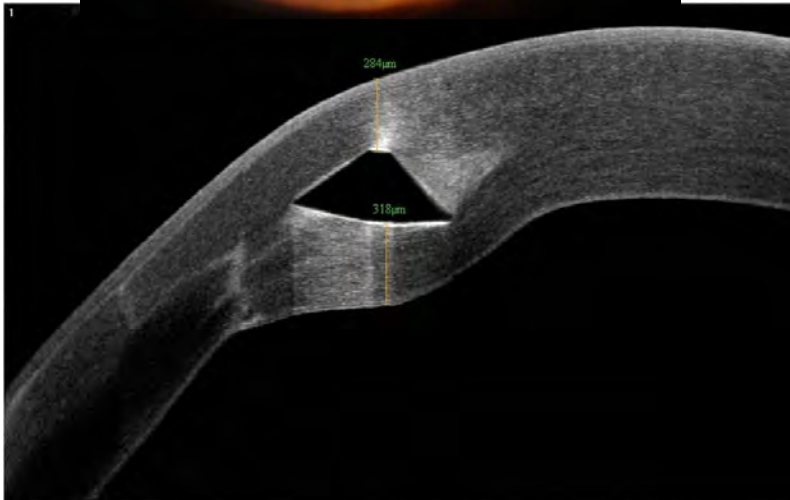
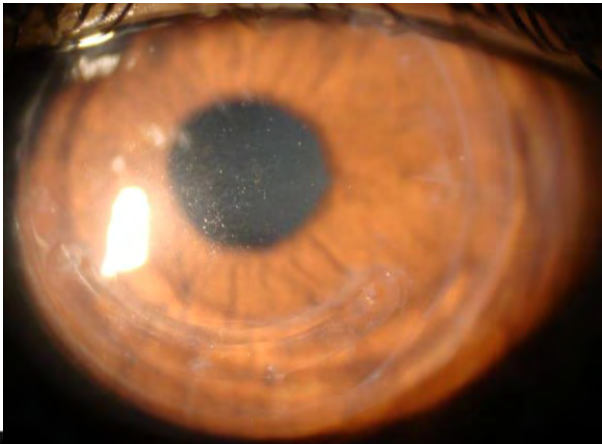


# + Example case

## Preop t-ICL V4C

CF UDVA

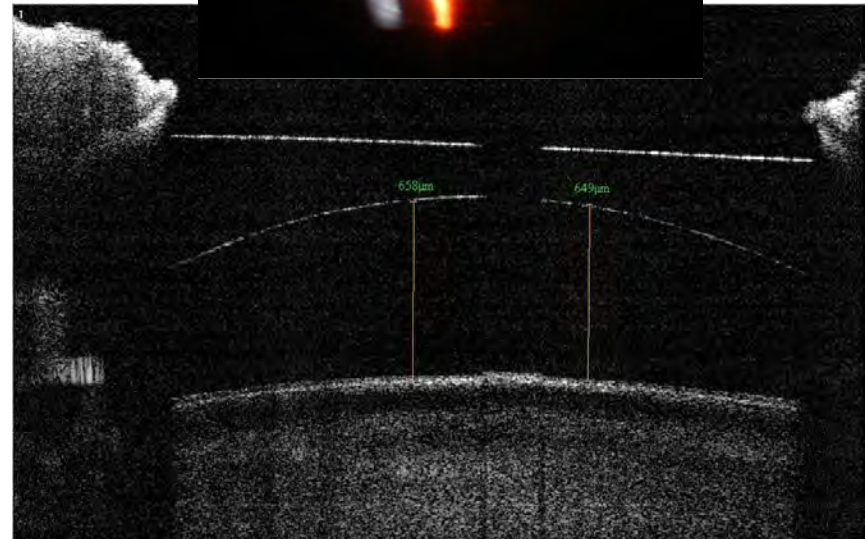
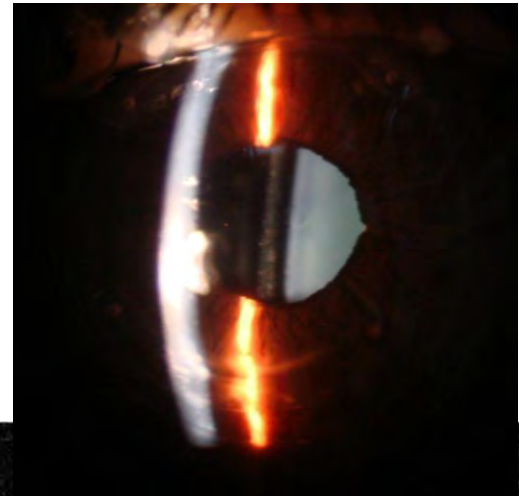
20/40 -10 -2,50 x 120°



## Post op 1 m t-ICL V4C

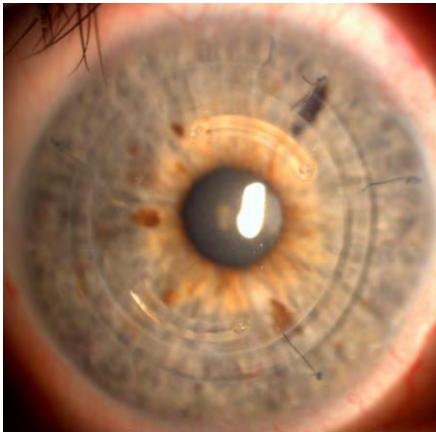
20/40 UDVA

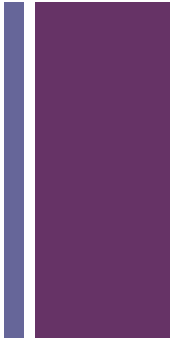
20/30 +1 -1,25 x 120°



# + CONCLUSIONS

- “Femtosecond-assisted ICRs implantation is a promising option for the management of high astigmatism in patients who have previously undergone DALK, reducing the topographic and refractive astigmatism, with the consequent improvement of visual acuity”





Thank you  
*cornea @institutozaldivar.com*

