



ICL for High Myopia: Long-term results and complications

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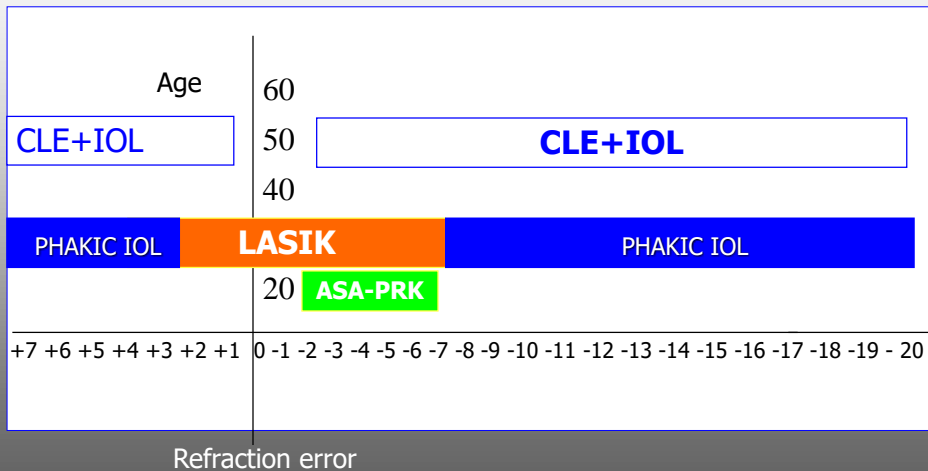
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Financial disclosure

Lecture/Medical Education : *Bausch & Lomb
Johnson & Johnson
Carl Zeiss-Me ditek
Oculus*

Consultant / Advisor: *Bausch & Lomb
Carl Zeiss-Meditec
Imex Clinic*

CURRENT REFRACTIVE SURGERY INDICATION



CLINICAL STUDY

- Restrospective observational study
- High myopic patients treated with ICL implant (Visian ICL STAAR®)
- Study group: 262 eyes (146 patients)
- Gender: 50 males y 96 females
- Follow-up: from 2003 till 2017
- Minimum follow-up period : 2 years

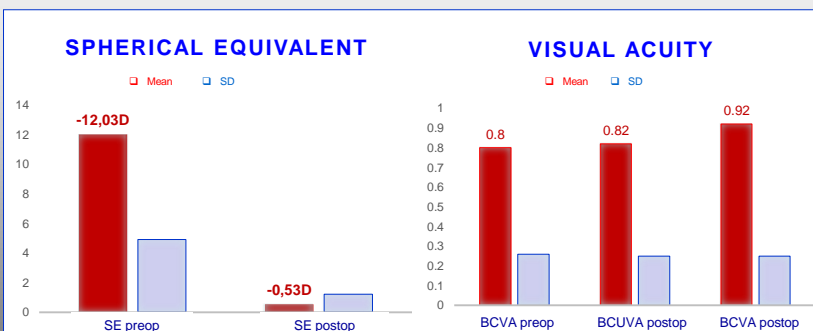


Results

- **Mean follow-up:** $4,94 \pm 3,78$ years ($r 2,01 - 14,33$)
- **Mean age:** $34,03 \pm 7,85$ years ($r 21,8 - 50,2$)
- **Mean spherical defect:**
 PREOP: $-11,22 \pm 4,89$ D ($r -4,75$ a $-23,0$) POSTOP: $-0,28 \pm 1,07$ D ($r -7$ +1)
- **Mean astigmatism defect:**
 PREOP: $-1,6 \pm 1,11$ D ($r 0$ a $-4,75$) POSTOP: $-0,48 \pm 0,76$ D ($r -3$ +1,5)

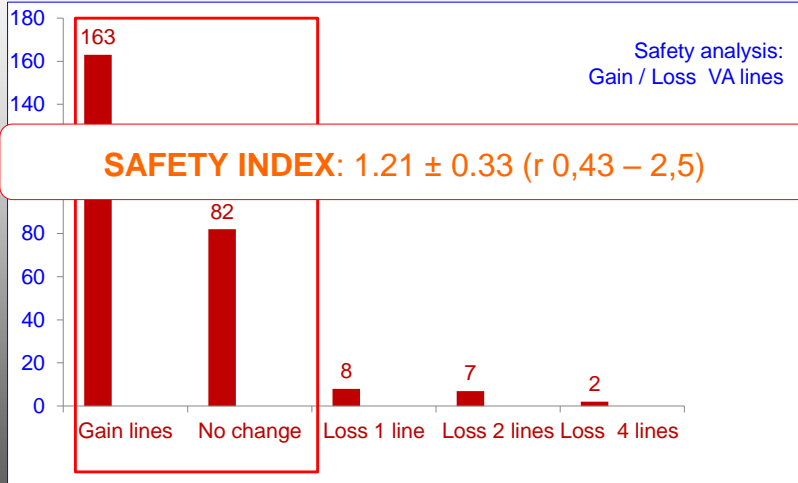


Results

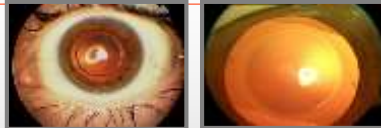


EFFICACY INDEX: 1.07 ± 0.33 ($r 0,33 - 2,5$)

Results



Results



	COMPLICATIONS	N (%)
Secondary to SURGERY (2,3 %)	OHT (<i>transient</i>)	15 (5,7)
	Cataract	5 (1,9)
	Acute OHT + IOL Explantation	1 (0,4)
Secondary to HIGH MYOPIA 4,2 %	Retinal Detachment	4 (1,5)
	Choroidal Neovasc	6 (2,3)
	Macular hemorrhage	1 (0,4)

Why are we talking about Retinal Detachment with phakic IOLs?

* Refractive surgery : concept of “healthy” eye

Intraocular surgery : Independent risk for RD

High myopia: Independent risk for RD
Higher incidence of vitreous detachment and lattice deg

Young patients : No PVD : Risk of PVD following surgery

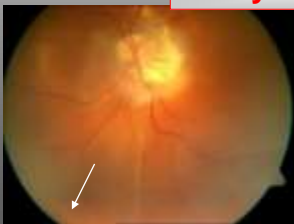
Complications : Inflammation
Secondary cataract

1.- RETINAL DETACHMENT INCIDENCE

RD in myopic eyes (0.7 % - 3.2 %)

	LASIK / PRK	(0.034% - 0.36 %)	
	Clear lens exchange	(2.10% - 8.10%)	
	Phakic IOL	(0.60 % - 4.08 %)	

Study: ICL 4 cases (1.50%)



2.- What happening when RD SURGERY is needed?

POSTOPERATIVE COMPLICATIONS

Corneal changes : Haze

- Endothelial cell loss
- Shallowing of AC : OHT
- IOL decentration
- Secondary cataract



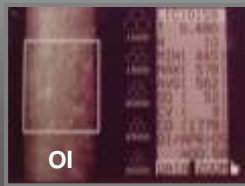
2.- What happening when RD SURGERY is needed?

POSTOPERATIVE COMPLICATIONS

Corneal changes : Haze

Endothelial cell loss: no clinical significance

- Shallowing of AC : OHT
- IOL decentration
- Secondary cataract



2.- What happening when RD SURGERY is needed?

POSTOPERATIVE COMPLICATIONS

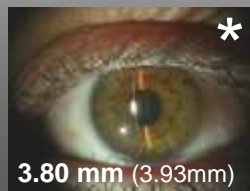
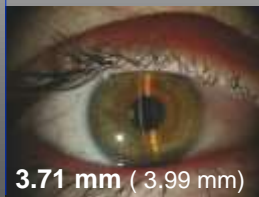
Corneal changes : Haze

Endothelial cell loss

Shallowing of AC : OHT (no clinical significance)

IOL decentration

Secondary cataract



2.- What happening when RD SURGERY is needed?

POSTOPERATIVE COMPLICATIONS

Corneal changes

Endothelial cell loss

Shallowing of AC : OHT

IOL decentration: 0 cases

Secondary cataract

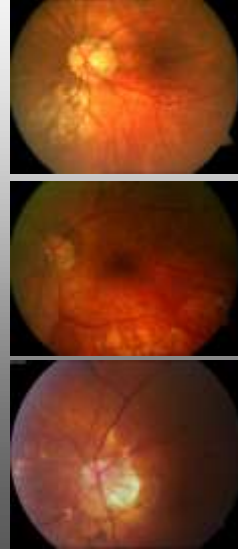


2.- What happening when RD SURGERY is needed?

POSTOPERATIVE COMPLICATIONS

Corneal changes
Endothelial cell loss
Shallowing of AC : OHT
IOL decentration
Secondary cataract: no clinical significance

Posterior vitrectomy: 1 case
Anatomic and functional recovery
Clear crystalline lens (> 4 years)

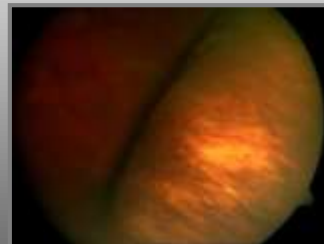


3.- TOPOGRAPHIC AND REFRACTIVE CHANGES

POSTOPERATIVE COMPLICATIONS

Scleral buckle : Increase of axial length of 0.99 mm : -2.75 D

Reduce the AC depth
Increase zonular laxity
Increase the IOP in shallow AC
Increase the corneal curvature

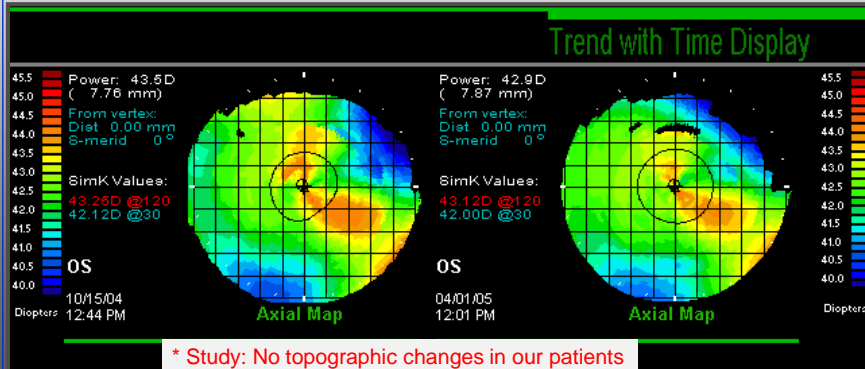


3.- TOPOGRAPHIC AND REFRACTIVE CHANGES

POSTOPERATIVE COMPLICATIONS

Bibliographic references

R. Sinha . BMC Ophthalmology 2004 : Orbscan II Corneal Topography
 Increase of the corneal curvature : Vitrectomy + scleral buckle



3.- TOPOGRAPHIC AND REFRACTIVE CHANGES

POSTOPERATIVE COMPLICATIONS

Increase of axial lens
 +
 Topographic changes
 +
 Refractive changes

MYOPIC ERROR

VISUAL ACUITY

PRE	-0.5	-0.5	-0.5	-1.7	0.9	0.9	0.9	0.7
POST	-0.75	-1	-1.25	-2	0.7	0.8	0.7	0.4

Clinical Study

Conclusion

- 1.- REFRACTIVE SURGERY WITH ICL IS A **SAFE AND EFFECTIVE** PROCEDURE FOR HIGH MYOPIA
- 2.- **COMPLICATIONS RATIO** FOLLOWING ICL IMPLANT **IS ACCEPTABLE** FOR REFRACTIVE SURGERY TECHNIQUE
- 3.- REFRACTIVE SURGERY USING ICL **DO NOT INCREASE THE RETINAL DETACHMENT INCIDENCE** IN MYOPIC PATIENTS
- 4.- RETINAL DETACHMENT SURGERY **DO NO AFFECT SIGNIFICANTLY** THE ANATOMIC AND FUNCTIONAL RESULTS OBTAINED WITH ICL IMPLANT.



شکرا جزيلاً

¡ Muchas Gracias !