

Effect of ACD on Long-term Endothelial Safety after Iris-fixated pIOL

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Long term Endothelial safety after Iris-fixated pIOL

Background:

- FDA approval in 2004.¹
- Recommended ACD depth: 3.0 - 3.2 mm.²
- Established refractive outcomes.¹
- Endothelial cell safety is controversial.³
- We observed corneal decompensation 10-15 yrs after surgery.

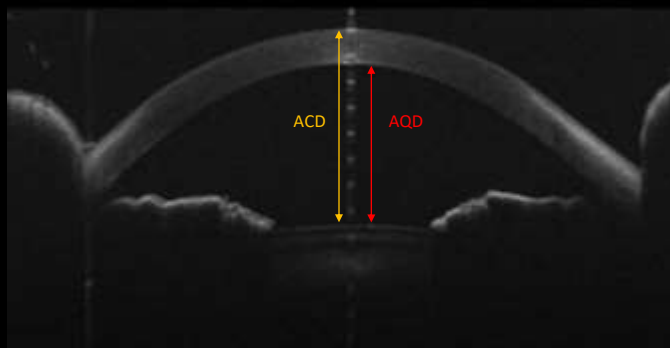


1. Guell JL, et al. J Cataract Refract Surg 2010; 36:1976–1993.
2. Bouheraoua N, et al. J Cataract Refract Surg 2015; 41:2450–2457.
3. Jonker SMR, et al. Ophthalmology 2018; 125:486-494.

Long term Endothelial safety after Iris-fixated pIOL

Purpose:

To assess long term effect of ACD on corneal endothelium in myopic eyes with Iris-fixated pIOLs.



Long term Endothelial safety after Iris-fixated pIOL

Study Design:

- Retrospective case series.
- Inclusion criteria:
 - Last exam between Jan 2016 and June 2017.
 - Iris-fixated pIOL for the correction of myopia.
 - Completed at least 9 years after surgery.
 - Preop ACD ≥ 3.0 mm, ECD ≥ 2200 cells/mm².
 - No secondary surgeries or trauma.

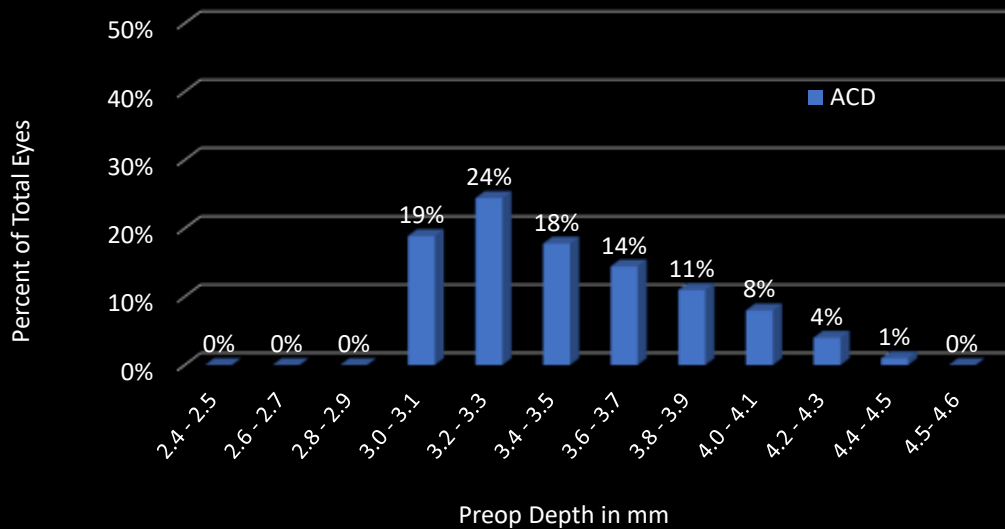
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Demographics:

- 90 eyes of 52 patients, 54% females.
- Surgery performed between 2001 - 2007
- Mean age at surgery: 30.1 ± 8.3 yrs (range, 18 to 53 yrs).
- Mean preop MRSE: -11.0 ± 5.7 D (-24.5 to -2.0 D).
- Mean preop ECD: 2629 ± 201 cells/mm² (2212 to 3533 cells/mm²).
- Mean follow up period: 11.6 ± 2.8 yrs (9.1 to 19.9 yrs).

Preoperative ACD Distribution

N= 90 eyes



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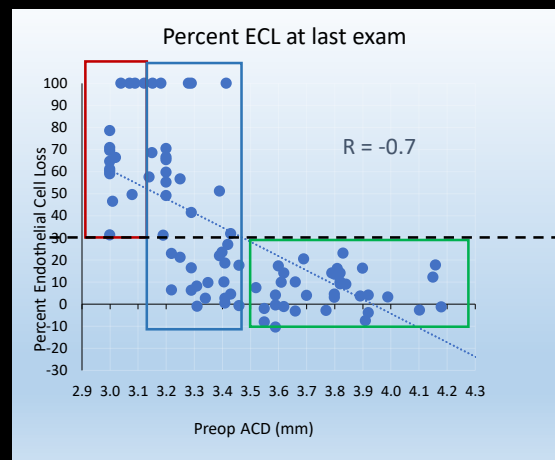
Correlation between ACD & ECL:

➤ Mean ECL:

- $24.2 \pm 24.5\%$ (-79% to 10%) in 81 (90%) eyes.
- Cannot be measured in 9 (10%) eyes.
- $R = -0.70$

➤ SECL $\geq 30\%$ in 34 (37.7%) eyes:

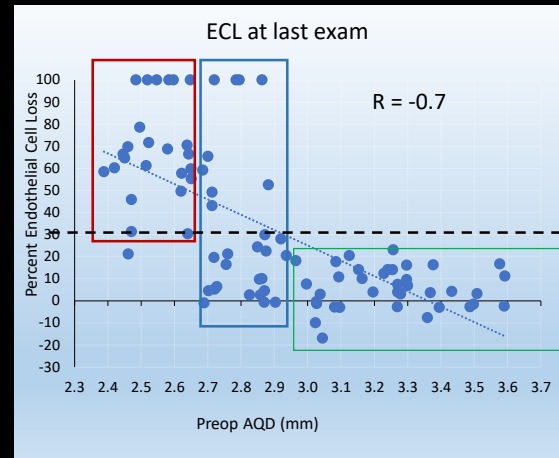
- 100% eyes with ACD < 3.2 mm.
- 41.1% eyes with ACD 3.2-3.5 mm.
- No eyes with ACD > 3.5 mm.



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Correlation between AQD and ECL

- SECL ($\geq 30\%$) in 34 eyes.
- All the 34 eyes had AQD < 3.0 mm.
- AQD < 2.7 mm:
 - 23/24 (96%) eyes has sig. ECL
- AQD 2.7 -2.9 mm:
 - 10/29 (34.5%) had SECL
- AQD ≥ 3.0 mm:
 - No SECL.



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Conclusions:

- Long term significant ECL may occur with ACD ≤ 3.5 mm & / or AQD < 3.0 mm.
- In our series; no eyes with ACD deeper than 3.5 mm & / or AQD of 3.0 or more had long term ECL more than 30%.
- The current selection criterion of an ACD 3.2 mm should be revised.

Thank YOU!

