

PO298

# Epithelial Mapping in Partial Topography-Guided Ablation Combined With Corneal Crosslinking (Athens Protocol) in Keratoconus

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# Financial Disclosure

- We have the following financial interests or relationships to disclose:
  - GA: Consultant for Alcon/WaveLight
  - AJK: Consultant for Alcon/WaveLight, Avedro



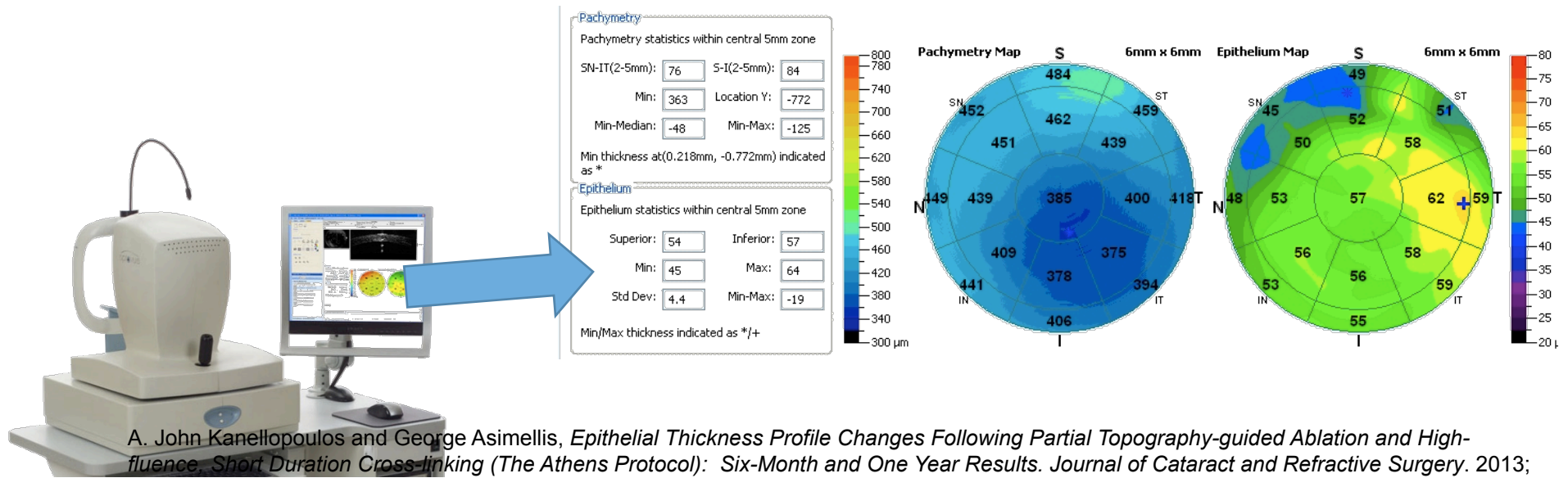
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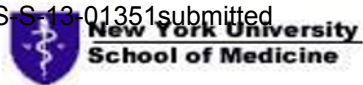


# Purpose

- To evaluate safety, efficacy and ease of measurement of epithelial thickness changes after:
  - partial topography-guided ablation and
  - high-fluence cross-linking with riboflavin



A. John Kanellopoulos and George Asimellis, *Epithelial Thickness Profile Changes Following Partial Topography-guided Ablation and High-fluence, Short Duration Cross-linking (The Athens Protocol): Six-Month and One Year Results.* *Journal of Cataract and Refractive Surgery.* 2013; JCRS S-13-01351submitted



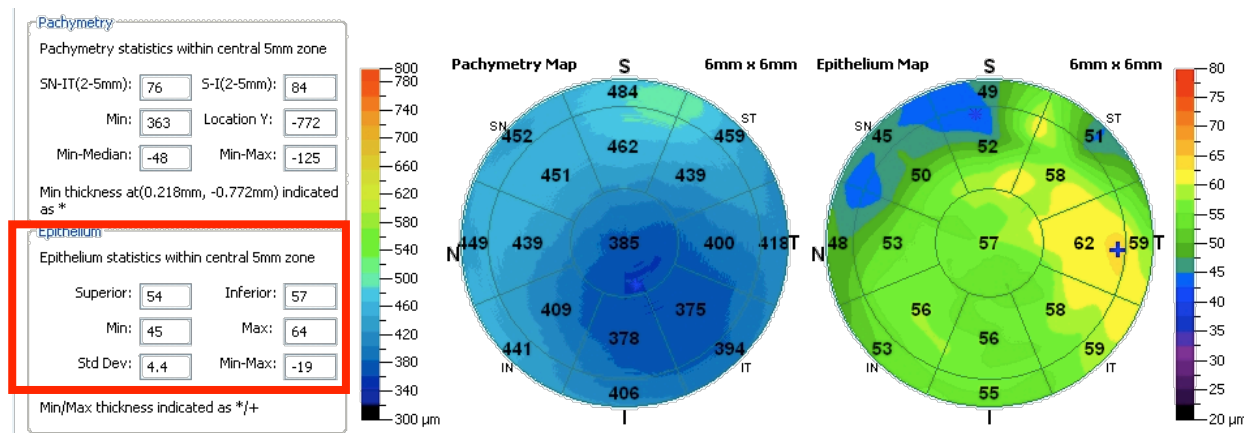
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# Methods

- Twenty keratoconic eyes were subjected to partial topography-guided ablation and high-fluence cross-linking with riboflavin.
- We investigated postoperative epithelial healing (thickness and topographic thickness distribution) with anterior-segment optical coherence tomography (AS-OCT), in comparison to a control non-treated, age-matched keratoconic population.



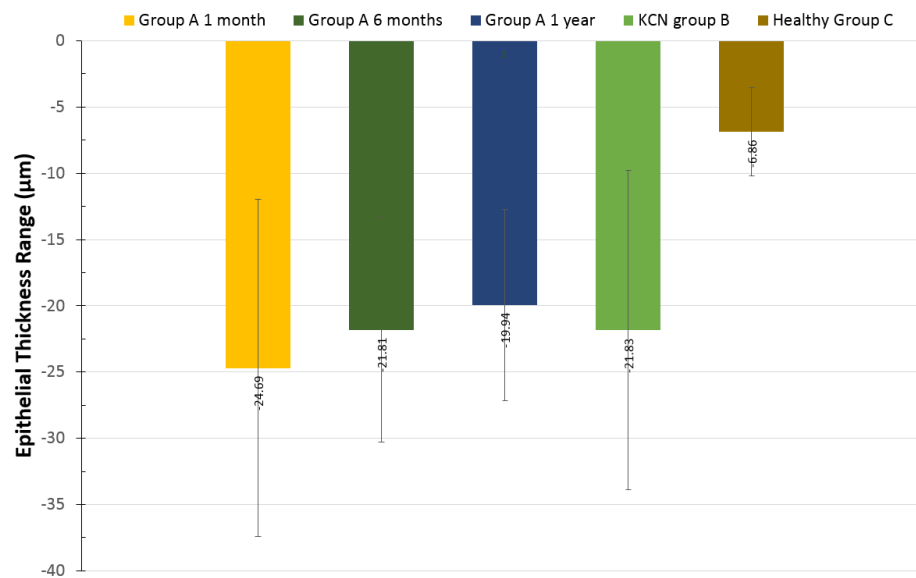
# Results

- The epithelium thickness showed an overall three month postoperative reduction. Specifically,
- Mean thickness was preoperatively  $55.65 \pm 1.22 \mu\text{m}$ , and postoperatively,  $40.60 \pm 1.22 \mu\text{m}$ .
- Topographic epithelial thickness variability was also reduced, from  $9.80 \pm 0.41 \mu\text{m}$ , preoperatively to  $5.37 \pm 0.40 \mu\text{m}$  postoperatively.
- Statistically significant differences were observed when compared to the control group

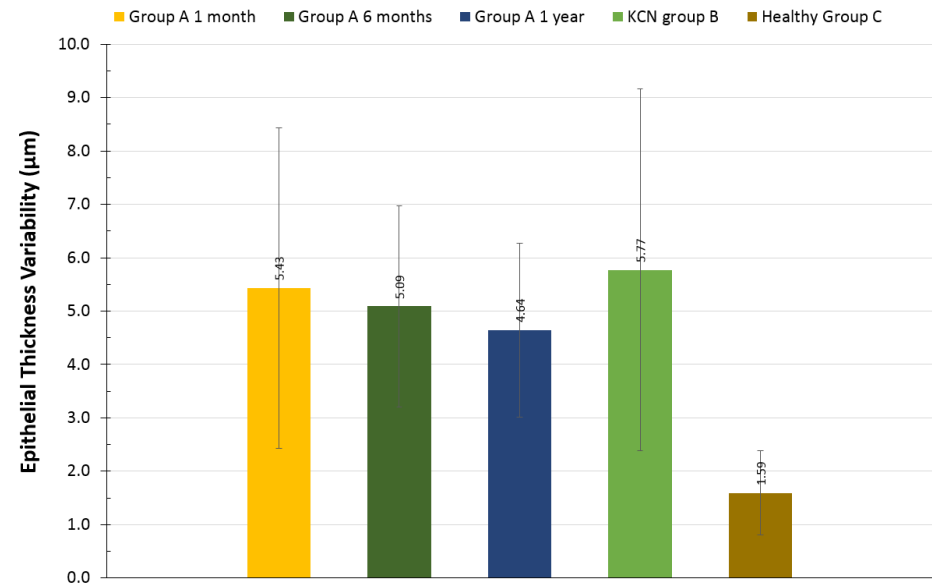


# Results

## Epithelial thickness change



## Thickness variability change



# Conclusions

- AS OCT imaging also supports a
  - thinner and
  - more homogeneous epithelium in cross-linked eyes,
  - as introduced by a previous study of ours based on a different imaging modality.
- The ease of use and the increased predictability offered by AS-OCT, may be a significant advantage.

