

**Shorter duration, higher ultraviolet A
irradiation (UVA) fluence collagen cross-
linking (CCL) for keratoconus (KCN)
Winter ESCRS Rome 09**

A. John Kanellopoulos, MD

Manhattan Eye, Ear and Throat Hospital, NY
NYU Medical School, NY
Laservision.gr Institute, Athens, Greece

Methods:

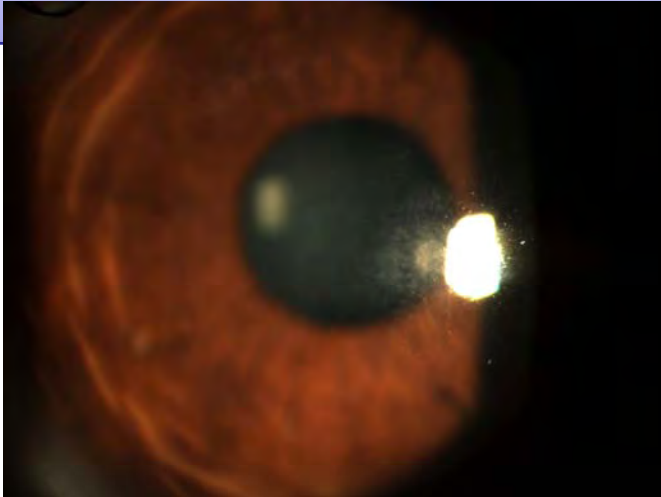
- 15 patients with bilateral keratoconus were studied. All cases were evaluated for UCVA, BSCVA, refraction, keratometry changes (K), topography changes, endothelium cell changes and cornea clarity. All eyes received CCL with topical 0.1% riboflavin solution drops and in regard to UVA they were randomized for each patient:
- 15 eyes were CCL with 7mW/cm² for 15 minutes and the 15 contra lateral eyes with 3mW/cm² for 30 minutes.
- Mean follow up was 1.5 years

Results:

- The mean improvement of UCVA was 0.2 to 0.4,
- BSCVA improved from 0.4 to 0.7,
- The average change of spherical equivalent was 1.5D reduction in myopia, the average change in cylinder was 2.1D reduction, The average highest keratometry was 51.2D pre-op and changed to 48.5D post-op
- **There was no statistical difference in the means in the 2 groups.**

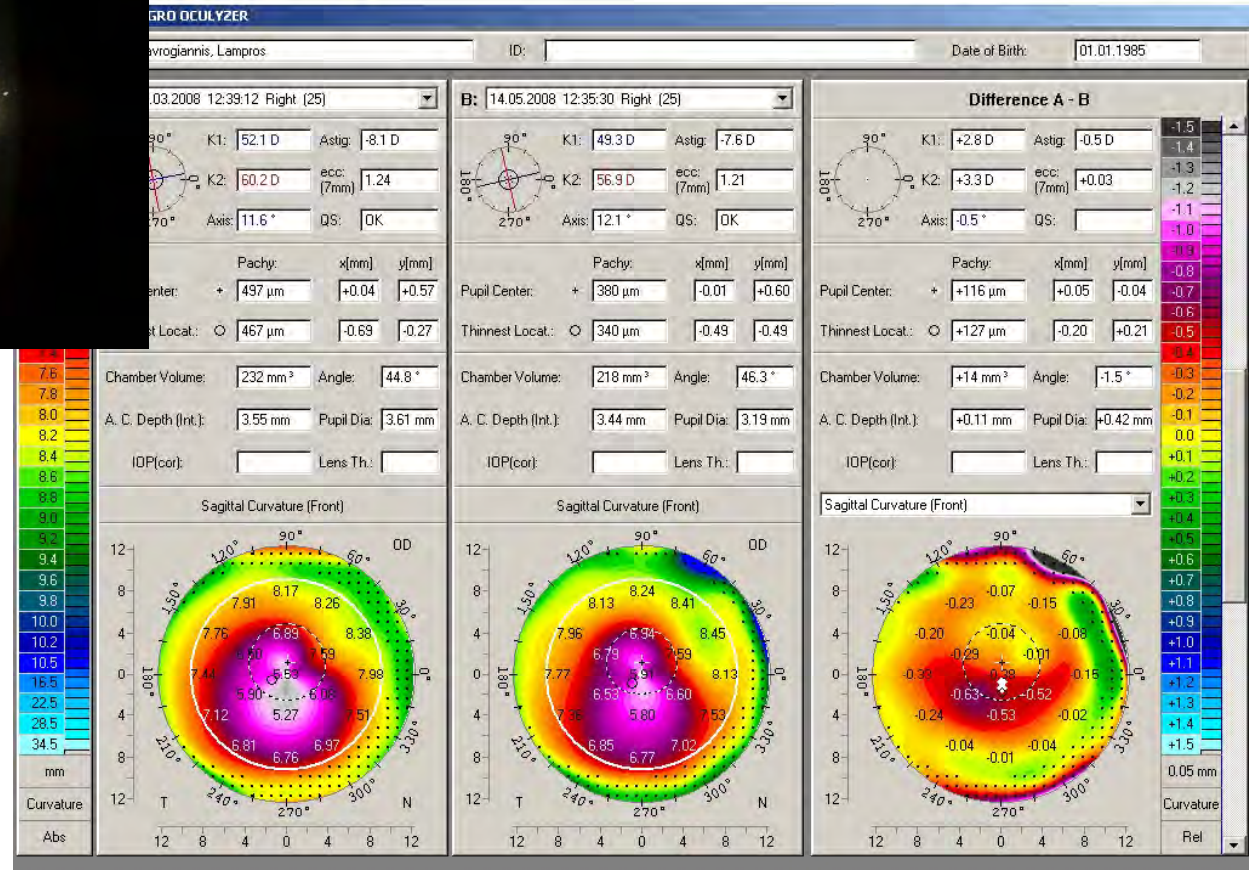
	UCVA	BSCVA	Sph. EQ change	Cylinde r change	ECC change	Topo change s	Compli cations
7 mW	0.2	0.3	1.5D	2.2D	100	2.3	0
3mW	0.2	0.3	1.4D	2D	200	2.1	0

Clinical improvement at 3 months



serVision.gr

Dr. A.J. Kanellopoulos, MD
Associate Professor, NYU Medical School



Kanellopoulos MD

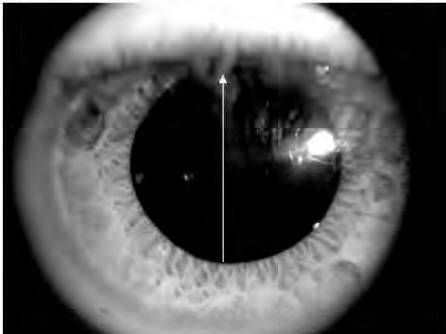
2 years out s/p Phakic IOL UCVA 20/25!

Patient: athanasios dedousis
 DOB (age): 11/23/1978 (30)
 ID:
 Disease:
 Algorithm Version: A3, 5, 2, 5
 Gender: M
 Photographer:
 Exam Date: 12/03/2008
 Physician:

OS

Pachymetry

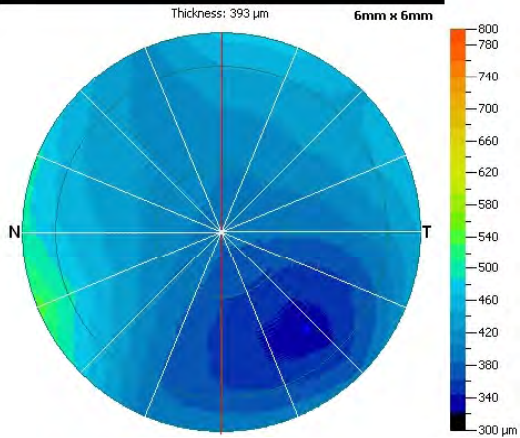
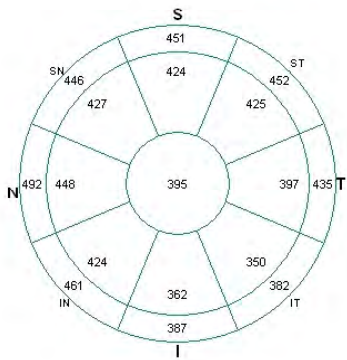
SSI= 39.8



Keratoconus Analysis	2 - 5 mm	5 - 6 mm
Zonal / Hemispheric Analysis		
SN - IT	78	64
S - I	62	64
ST - IN	2	-10
Superior - Inferior	-38	-30
Min = 339 µm, Min - Median = -60 µm, Min - Max = -111 µm within 5 mm diameter circle		
Minimum thickness: 339 µm Location at (1.273 mm, -1.468mm) indicated as *		



- Show Boundary Curves
- Show Lines



Diagnosis:



Conclusions:

- Shorter duration, higher UVA fluence CCL appears to be as safe and as effective in stabilization of ectasia in KCN.
- It may cause less cell toxicity due to lesser cornea dehydration (less time) and shorter exposure of keratocytes and endothelial cells to UV light along with riboflavin.
- Further studies are needed to validate this data.



A photograph of a sunset over a rocky coastline. The sun is a bright, glowing orb in the upper center, casting a warm orange and yellow light across the sky. In the foreground, a small, light-colored boat is moored on a sandy beach. Behind the boat is a large, dark, craggy rock formation. To the left, the dark silhouette of a tree is visible against the bright sky. The water in the background is dark and calm.

Thank you