

CORRELATION BETWEEN KERATOCONUS PROGRESSION AND 2 CORNEA TOPOMETRIC PARAMETERS: THE REGULARITY OF THE PACHYMETRIC MAP (RPM) AND THE INDEX OF HEIGHT DECENTRATION (IHD).

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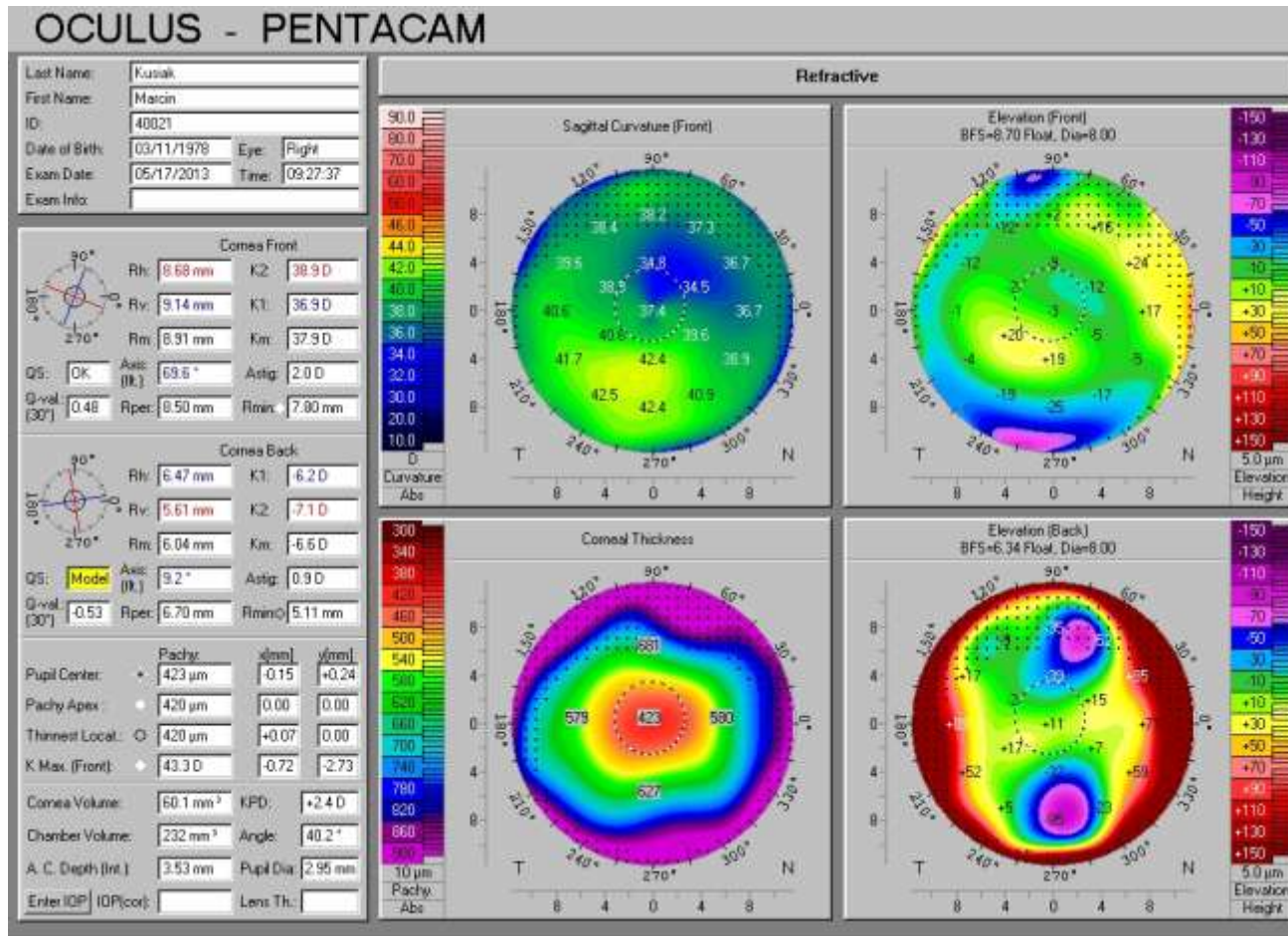


Purpose

- To determine the specificity and sensitivity of keratoconus progression measured with anterior surface irregularity parameters, as determined by Pentacam examination.



Post-LASIK ectasia



OCULUS - PENTACAM

Last Name: Kusiak
 First Name: Marcin
 ID: 40021
 Date of Birth: 03/11/1978 Eye: Right
 Exam Date: 05/17/2013 Time: 09:27:37
 Exam Info:

Cornea Front

Rh: 8.68 mm K2: 38.9 D
 Rv: 9.14 mm K1: 36.9 D
 Rm: 8.91 mm Km: 37.9 D
 Axis: 69.6° Astig: 2.0 D
 Rper: 8.50 mm Rmin: 7.80 mm
 Qs: OK
 Q-val. (30°): 0.48

Cornea Back

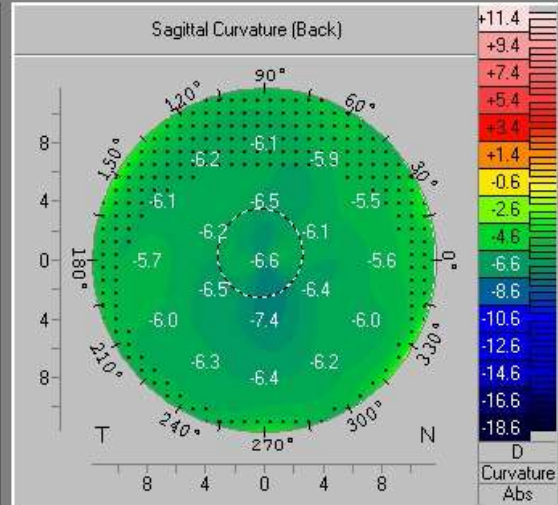
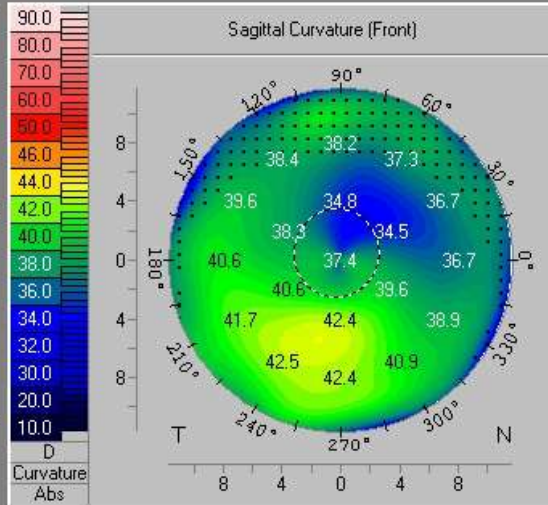
Rh: 6.47 mm K1: -6.2 D
 Rv: 5.61 mm K2: -7.1 D
 Rm: 6.04 mm Km: -6.6 D
 Axis: 9.2° Astig: 0.9 D
 Rper: 6.70 mm Rmin: 5.11 mm
 Qs: Model
 Q-val. (30°): -0.53

True Net Power

Astig: 2.6 D K2: 37.0 D
 Axis: 75.4° K1: 34.4 D
 P.Max: 41.6 D Km: 35.7 D

Pupil Center: + 423 μm x[mm] -0.15 y[mm] +0.24
 Pachy Apex: • 420 μm 0.00 0.00
 Thinnest Locat.: ○ 420 μm +0.07 0.00
 K Max. (Front): ◆ 43.3 D -0.72 -2.73

Cornea Volume: 60.1 mm³ KPD: +2.4 D
 Chamber Volume: 232 mm³ Angle: 40.2°
 A. C. Depth (Int.): 3.53 mm Pupil Dia: 2.95 mm
 IOP[cor]: Lens Th.:



Asphericity (Front) of Major Meridians

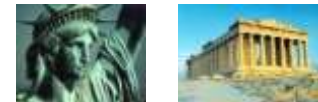
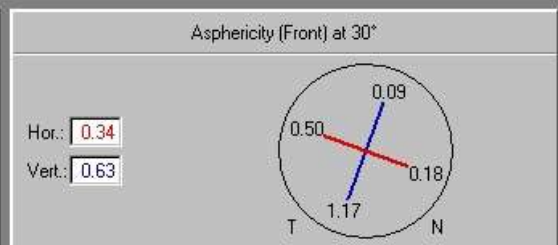
	Degrees peripheral				
	20°	25°	30°	35°	40°
Nas (Q-val.)	0.27	0.17	0.18	0.02	
Temp (Q-val.)	0.86	0.71	0.50	0.03	
Inf (Q-val.)	2.72	1.77	1.17	0.79	0.50
Sup (Q-val.)	-0.79	-0.18	0.09	0.16	0.06
Mean Value (Q-val.)	0.77	0.61	0.48	0.25	0.28

Front:
 Aspher.
 Sag. curvature

Back:
 Aspher.
 Sag. curvature

Indices (in 8mm zone)

ISV: 70 IHA: 1.0
 IVA: 1.02 IHD: 0.067
 KI: 1.13 RMin: 7.80
 CKI: 0.98 TKC: Post Cor



Methods

- Sequential topometric measurements spaced by six months, utilizing the Pentacam device (Scheimpflug imaging) were conducted in 100 keratoconic eyes. The anterior surface irregularity indices were correlated with keratometry, UDVA, CDVA and minimal corneal pachymetry.



Results

- Increase of ISV and IHD appeared to be the first markers of KCN progression in all cases, preceding by an average of 18 (± 4.5) months the UDVA, CDVA and keratometric changes of over 1 diopter.



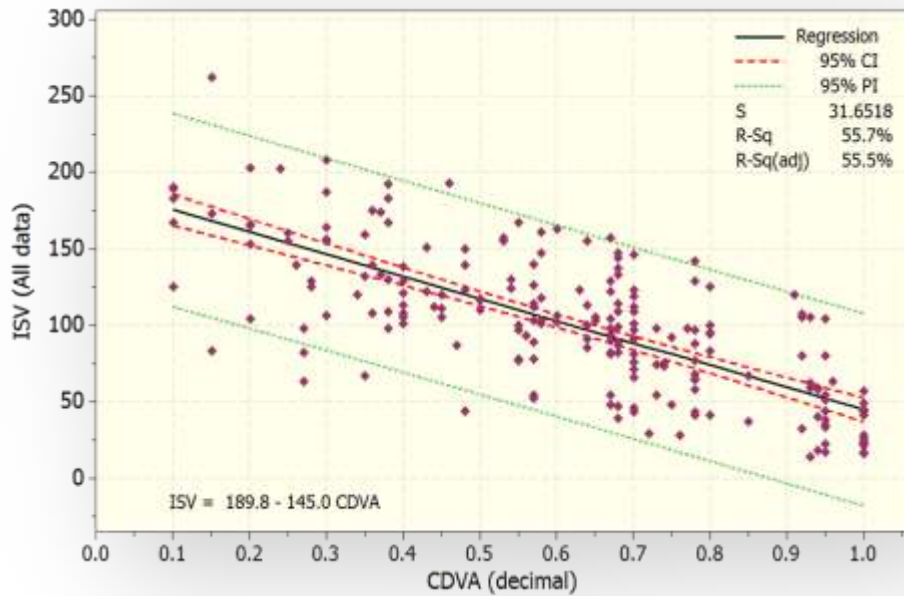
Conclusions:

Monitoring anterior –surface corneal irregularity indices may be a useful earlier diagnostic tool for ectasia progression and postoperative stability. It may serve as a new definition of ectasia progression.

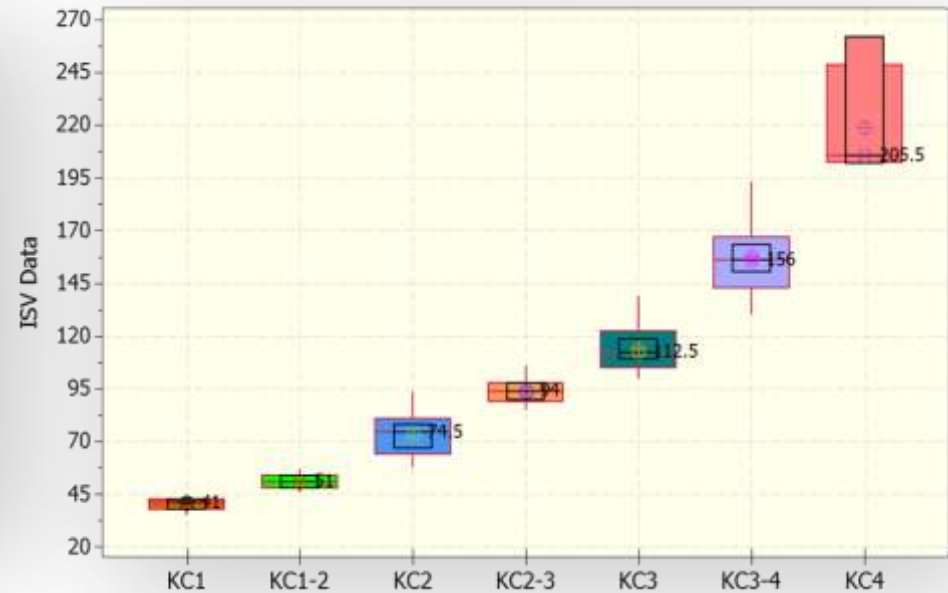


Background studies

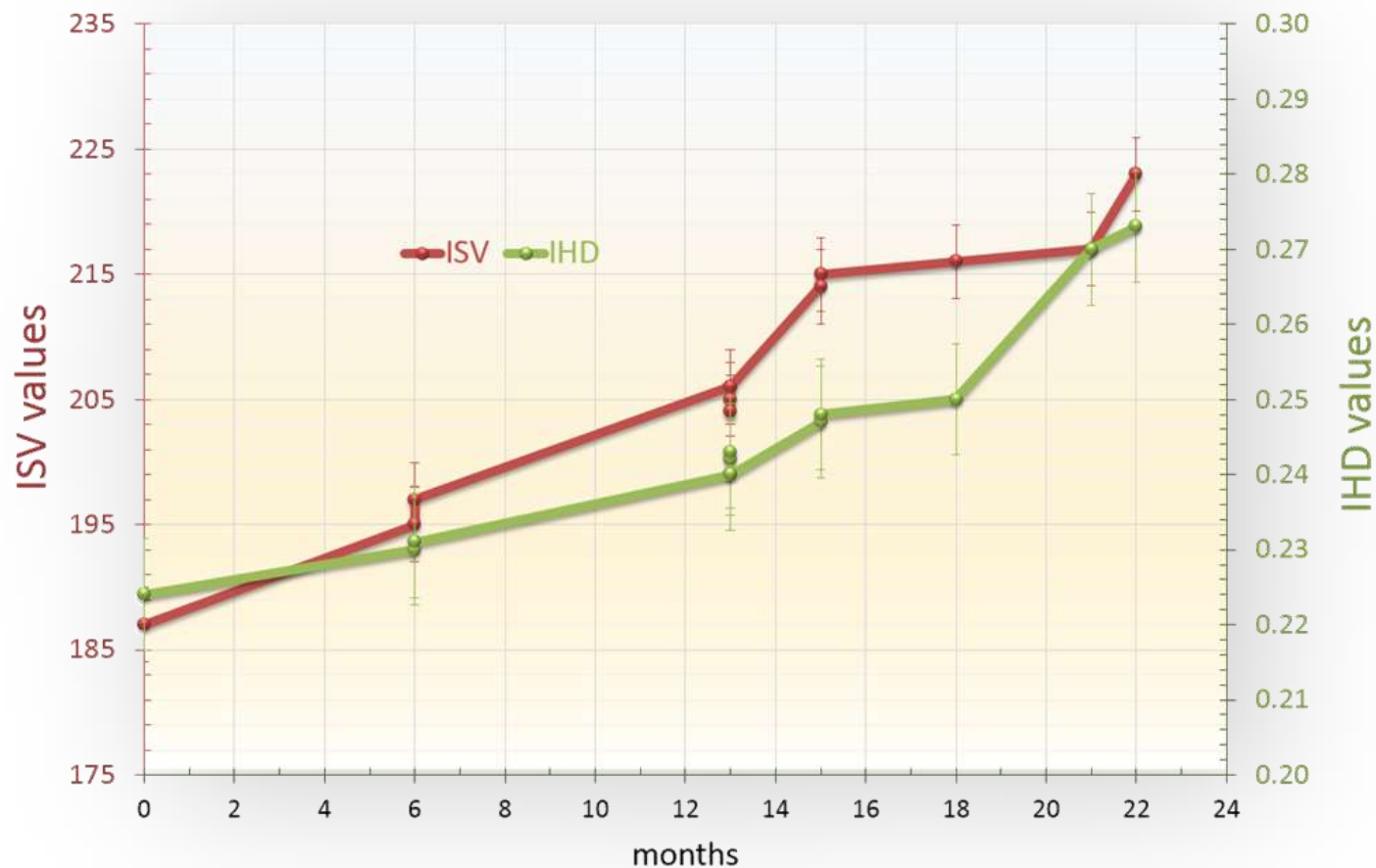
Index of Surface Variance vs CDVA



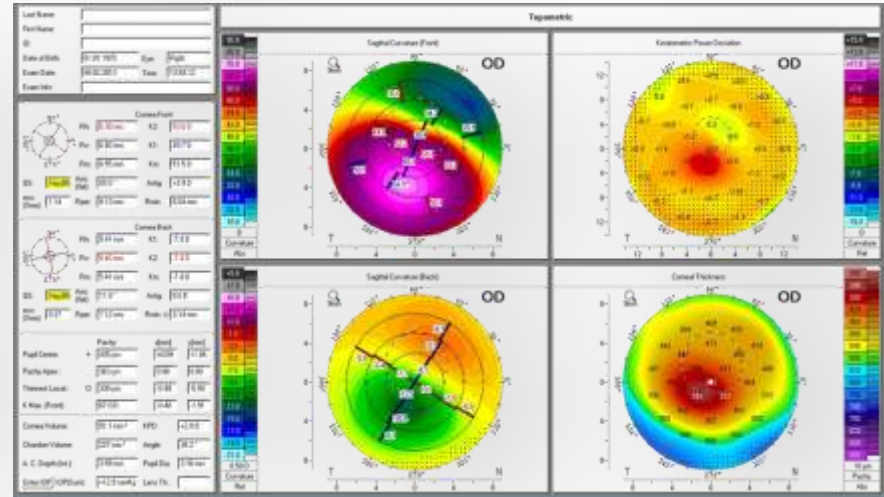
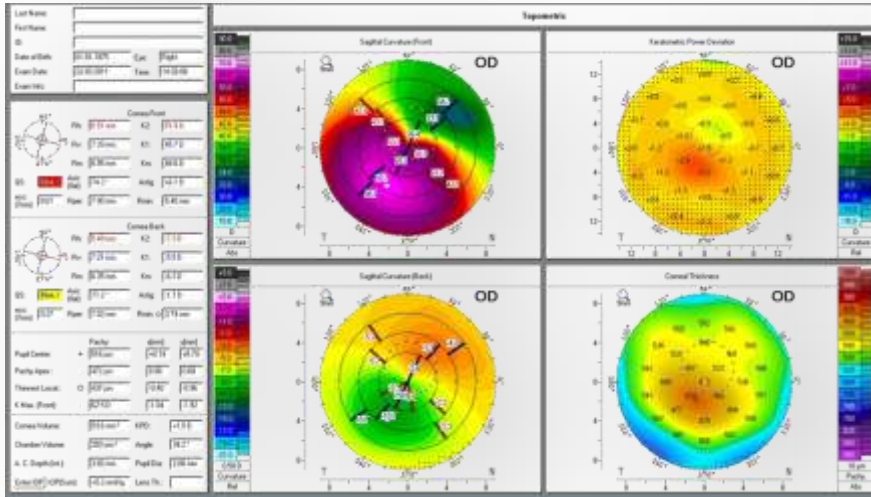
ISV vs Keratoconus Grading



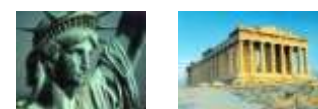
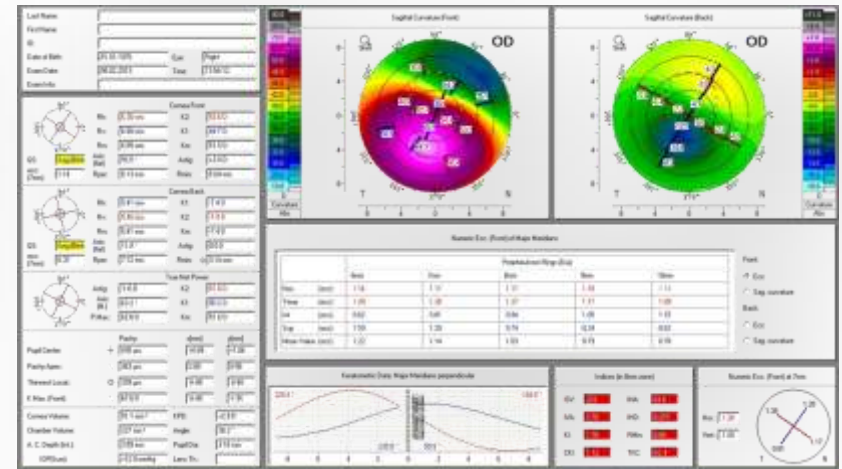
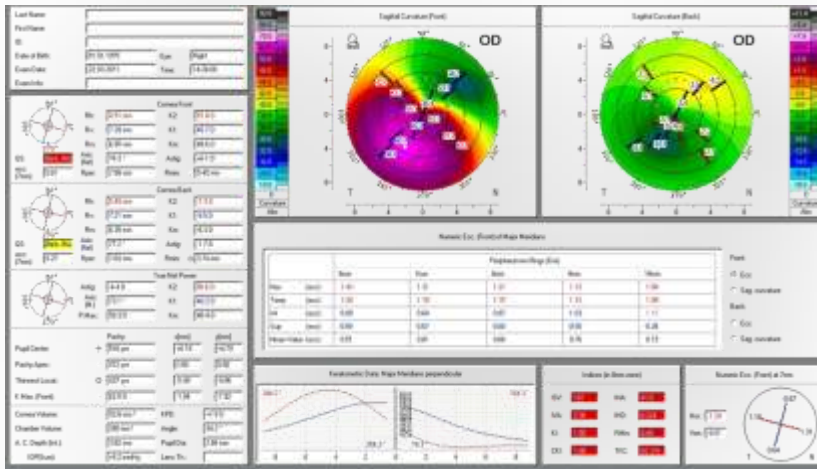
ISV, IHD and KCN progression: Increased values indicative of: Increasing cornea irregularity Cone becoming more decentered



Progression?



Yes if you study ISV and IHD



Cassini: LED projection topography: first ever clinical application now in Athens, Greece



3D Femtosecond & Nanosecond Laser Cataract surgery, Cross-linking and Cornea Imaging: Video Surgery Workshop and Wetlab

Saturday, September 14th 2013 at Laservision.gr Eye Institute Auditorium and Surgical facilities Tsocha 15-17, Athens GREECE



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Thank you

