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Twelve Months Results of Photorefractive Keratectomy for Myopia and Compound Myopic Astigmatism with 210 nm Wavelength All Solid-State Laser for Refractive Surgery

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Disclosure for Anna M Roszkowska

In compliance with COI policy, ESCRS requires the following disclosures to the session audience:

Shareholder	No relevant conflicts of interest to declare.
Grant / Research Support	No relevant conflicts of interest to declare.
Consultant	Katana Technologies
Employee	No relevant conflicts of interest to declare.
Paid Instructor	No relevant conflicts of interest to declare.
Speaker Bureau	No relevant conflicts of interest to declare.
Other	No relevant conflicts of interest to declare.

Presentation includes discussion of the following off-label use of a drug or medical device:

None



- **Purpose:** To assess one year efficacy and safety of the PRK performed with all-solid state laser for refractive surgery
- **Setting:** Ophthalmology Unit, University Hospital of Messina, Italy



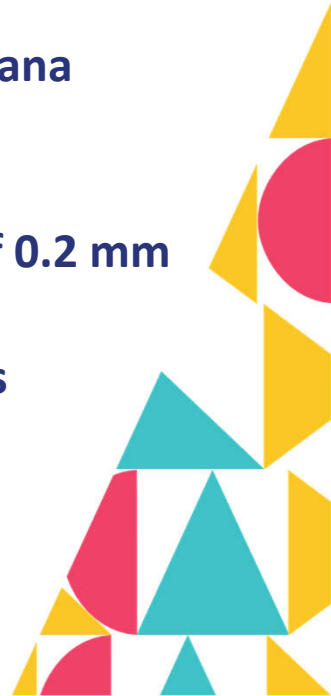
Patients

- 19 patients (12M, 7F) 34 eyes
- Age: 21 to 52 years (mean 34.32 ± 8.27)
- SE: from -8.63 to -1.25 D (mean -4.9 ± 2.11)



Methods

- PRK
- OZ: 6-7 mm; 1 mm transition zone
- All solid-state laser - LaserSoft (Katana Technologies, Germany)
 - Wavelength 210 nm
 - Gaussian beam, flying spot of 0.2 mm
 - Repetition rate of 2 kHz
 - Video Eye tracker: continuous tracking, latency < 0.2ms



Main outcome measures

- UDVA
- CDVA
- Spherical Equivalent Refraction
- Corneal transparency

Follow up period 12 months



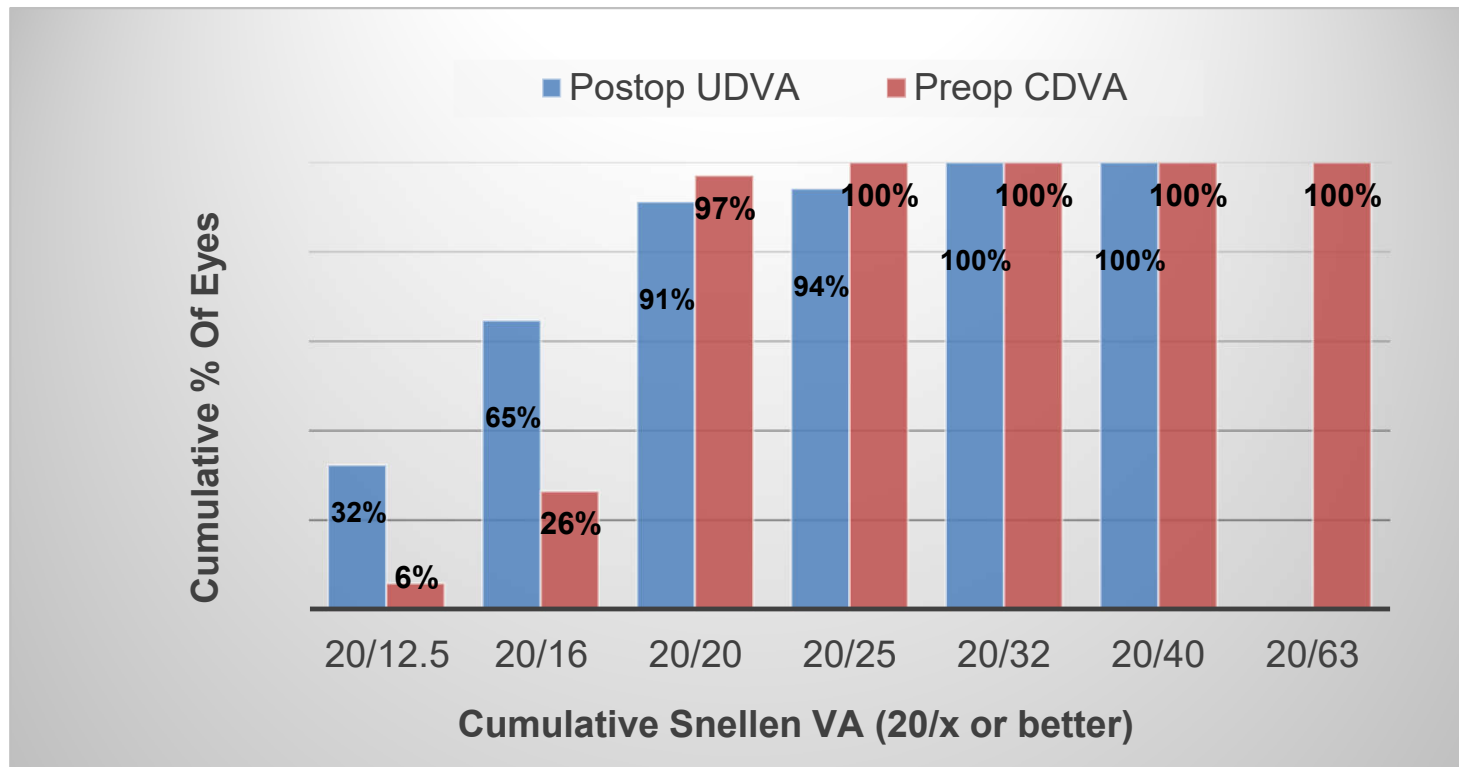
Results

	Pre op	Post op (12 months)
*UDVA	1.20 ± 0.43	-0.08 ± 0.11
*CDVA	-0.03 ± 0.06	-0.12 ± 0.10
Spherical equivalent (D)	-4.90 ± 2.11	$-0.38 \pm 0,68$

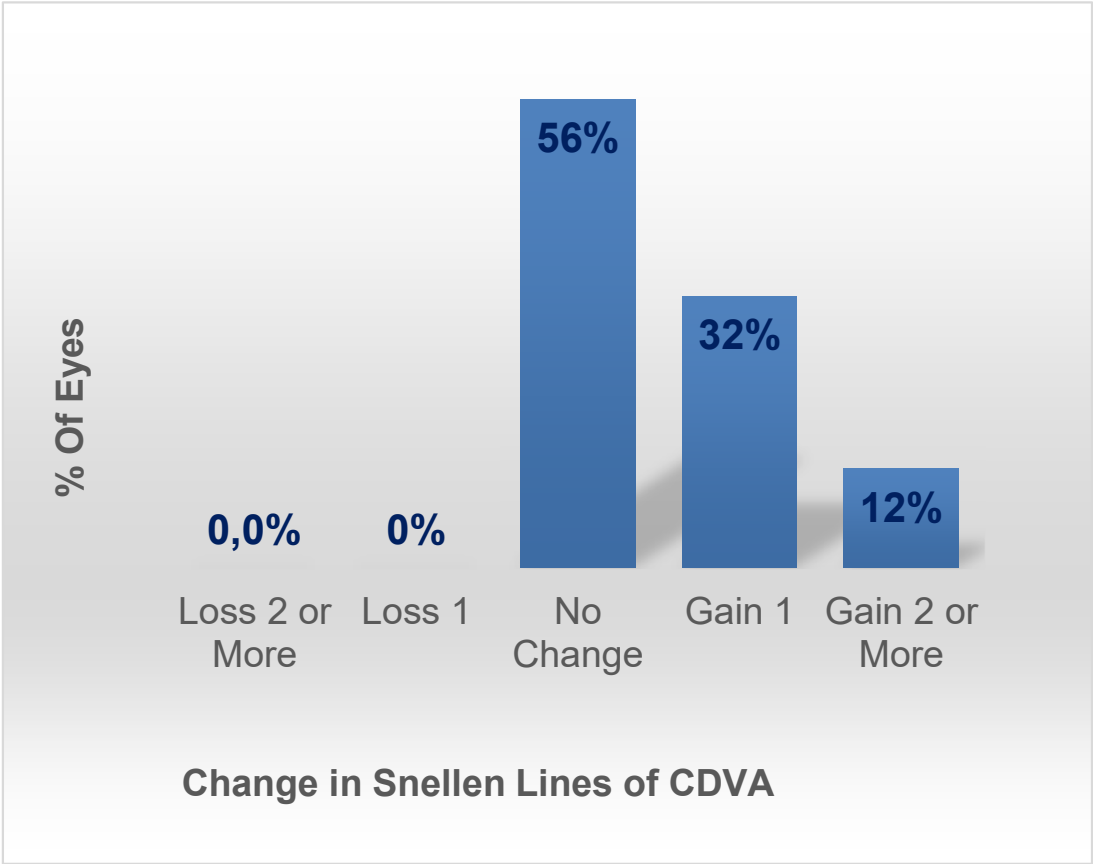
*UDVA, CDVA (LogMAR)



Results: Visual Acuity



Safety

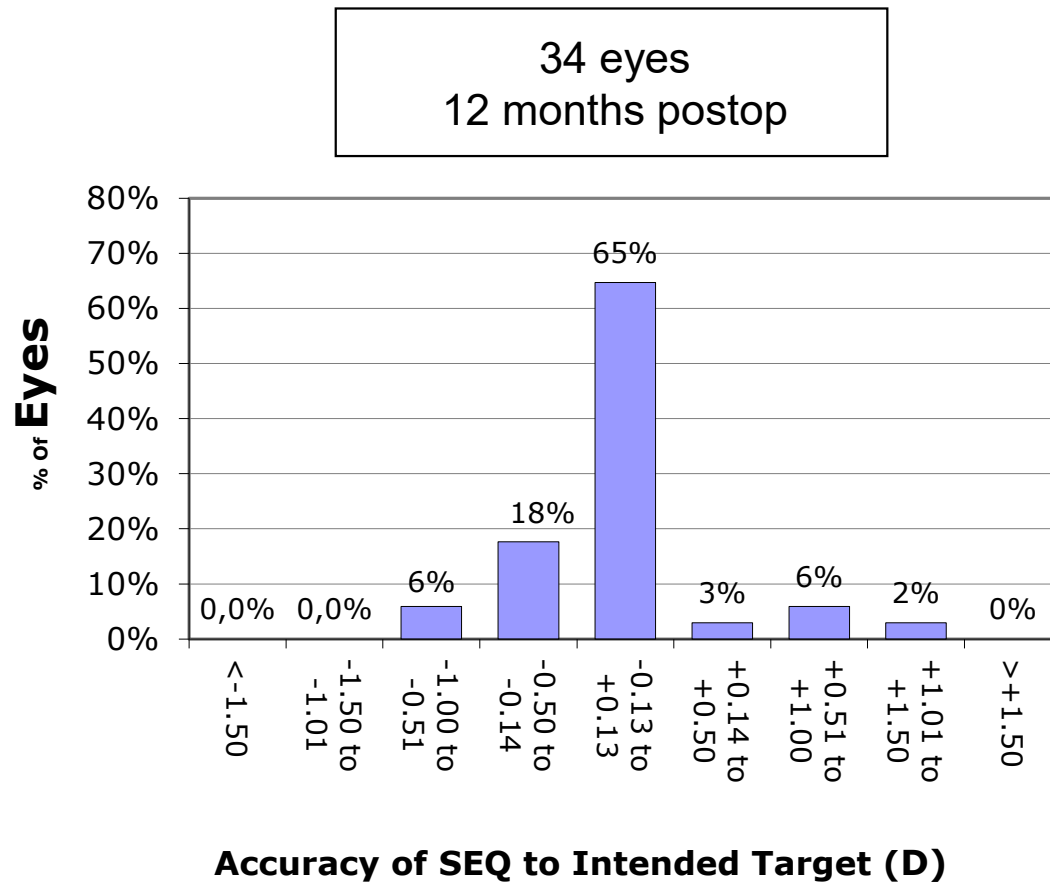


34 eyes
12 months postop

1 or more lines lost 0.0%
15 eyes (44%) gained 1 or 2 lines



Refractive outcome



86% within ± 0.5 D
98% within ± 1 D

- **Efficacy index = 1.13**
(postoperative UDVA / preoperative CDVA)
- **Safety index = 1.14**
(postoperative CDVA / preoperative CDVA)
- **Predictability index = 1.02**
(postoperative CDVA/ postoperative UDVA)



Conclusions

The PRK with LaserSoft resulted as a safe and effective procedure with a good predictability during the evaluation period.

- Due to the high repetition rate, the **energy per pulse is lower** than in standard excimer treatments. This leads to a true “minimally invasive” PRK ablation, with strongly **reduced thermal stress**; and much less or no reliance to corneal and environmental humidity in comparison to excimers.
- The solid state approach **reduces the requirements for maintenance** and the related costs, and the diode pumping system features long lifetime and efficiency.
- **These characteristics make LaserSoft a safe, stable, more compact and less costly alternative to gas-operating excimer lasers for refractive surgery.**

Thank you

