

PRK with a Solid-State Laser: 2-year Experience

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85 °Congresso Nazionale SOI
Milano , 23-26 Novembre 2005



Katana LaserSoft vs. Excimer Laser

	Katana LaserSoft	Excimer Laser
Wavelength	210 nm	193 nm
Laser Fluence	140 mJ/cm ²	100-200 mJ/cm ²
Beam Diameter	0.2 – 0.3 mm	0.8 – 2.0 mm
Beam homogenization method	Not required	Use of UV-optic
Beam collimation	Collimate	Focused

Clinical Results

- Early experience with Katana LaserSoft solid-state Laser
 - Safety
 - Efficacy
 - Stability



Materials & Methods

Total Treatments

670 eyes

Mean age. 38 ± 13 years old

Preoperative Refraction (mean SE \pm SD): -2.55 ± 3.05 D

Myopia and Myopic Astigmatism

528 eyes

Preoperative Refraction (mean SE \pm SD): -3.61 ± 2.43 D

Max. SE : -12.50 D

Hyperopia and Hyperopic Astigmatism

107 eyes

Preoperative Refraction (mean SE \pm SD): $+1.94 \pm 1.12$ D

Max. SE : $+5.50$ D

Combined Astigmatism

35 eyes

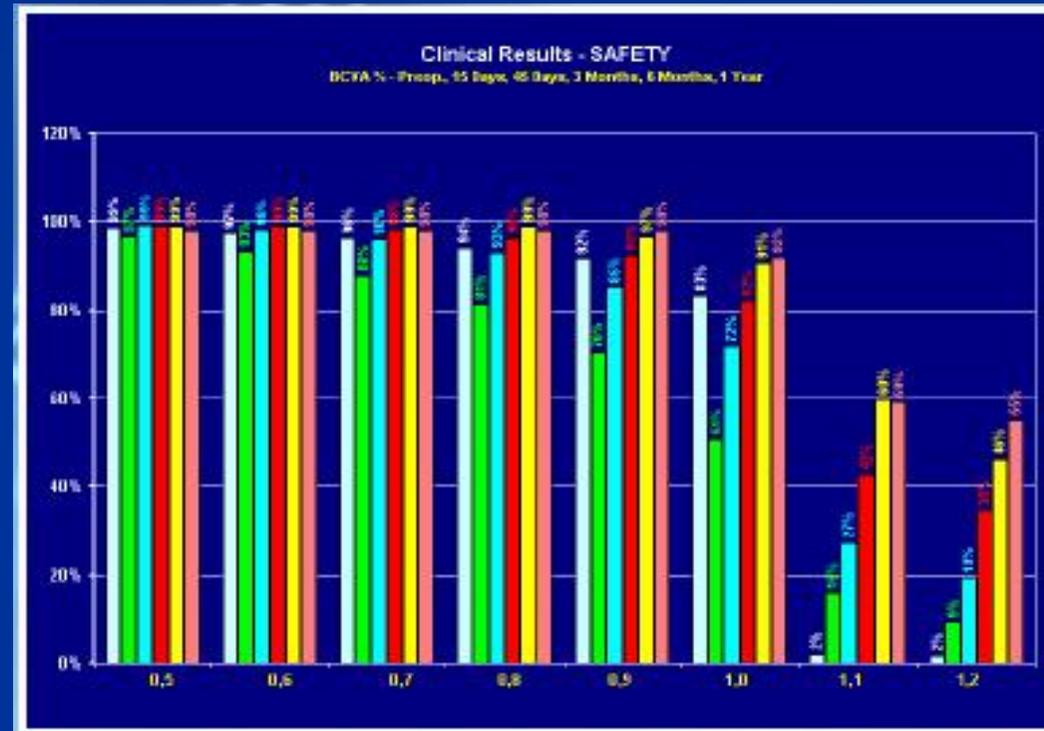
Preoperative Refraction (mean SE \pm SD): -0.21 ± 0.70 D

Max. SE : $+3.25$ D, Min SE. -5.50 D

Clinical Results: **Safety**

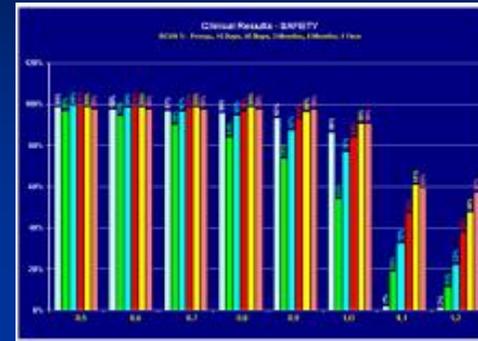
BCVA \geq 1.0:

Pre-op:	83%
After 15 D:	51%
After 45 D:	72%
After 90 D:	82%
After 180 D:	91%
After 360 D:	92%

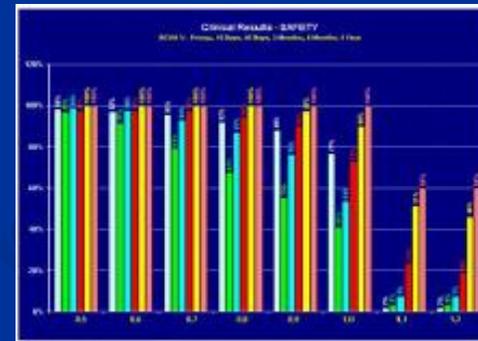


Clinical Results: **Safety**

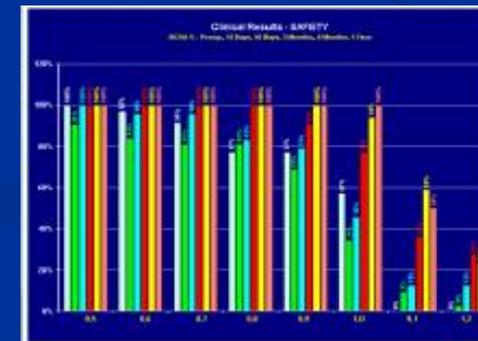
Myopia



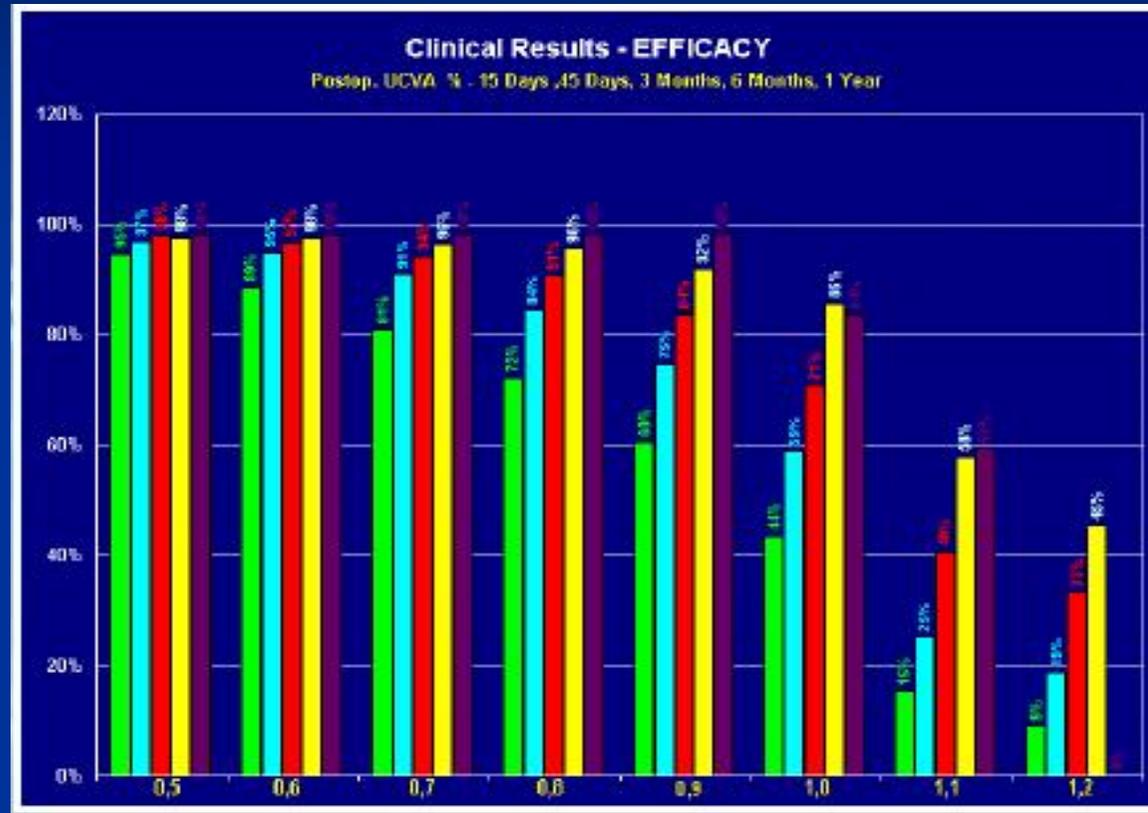
Hyperopia



Astigmatism



Clinical Results: **Efficacy**

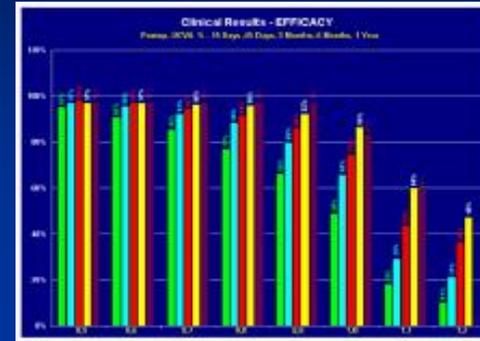


UCVA constantly improving in time

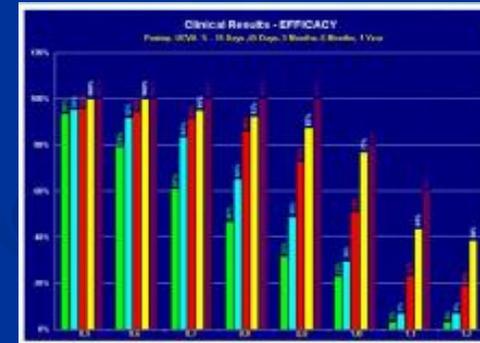


Clinical Results: Efficacy

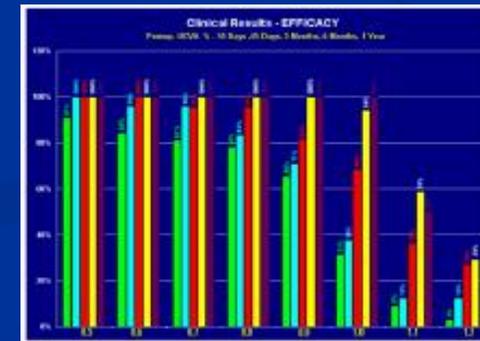
Myopia



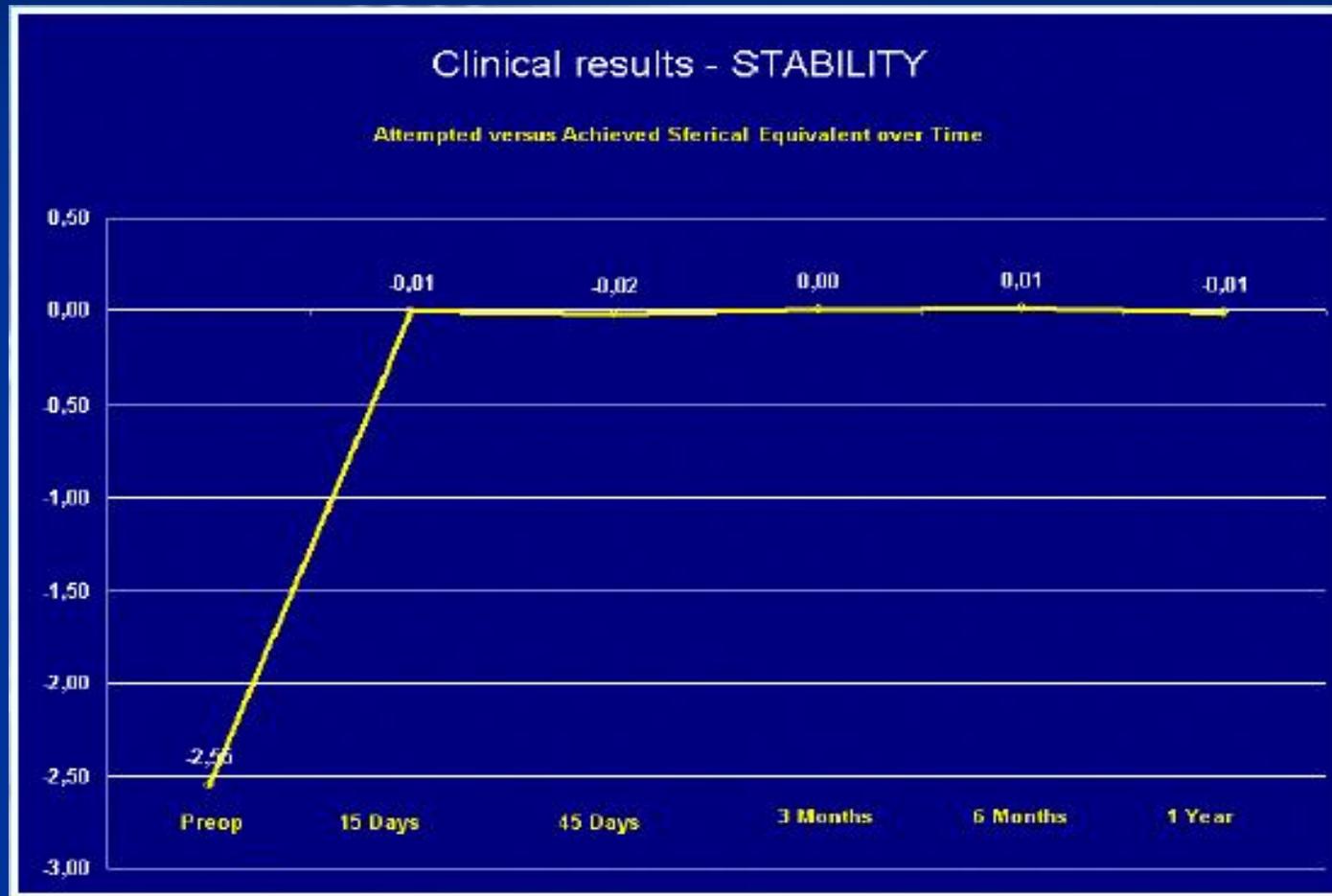
Hyperopia



Astigmatism

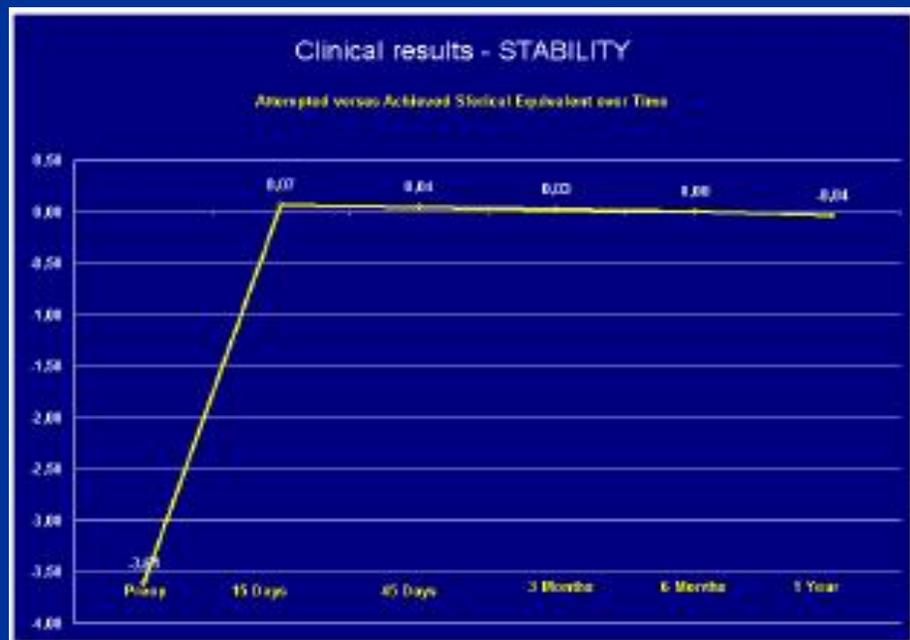


Clinical Results: **Stability**

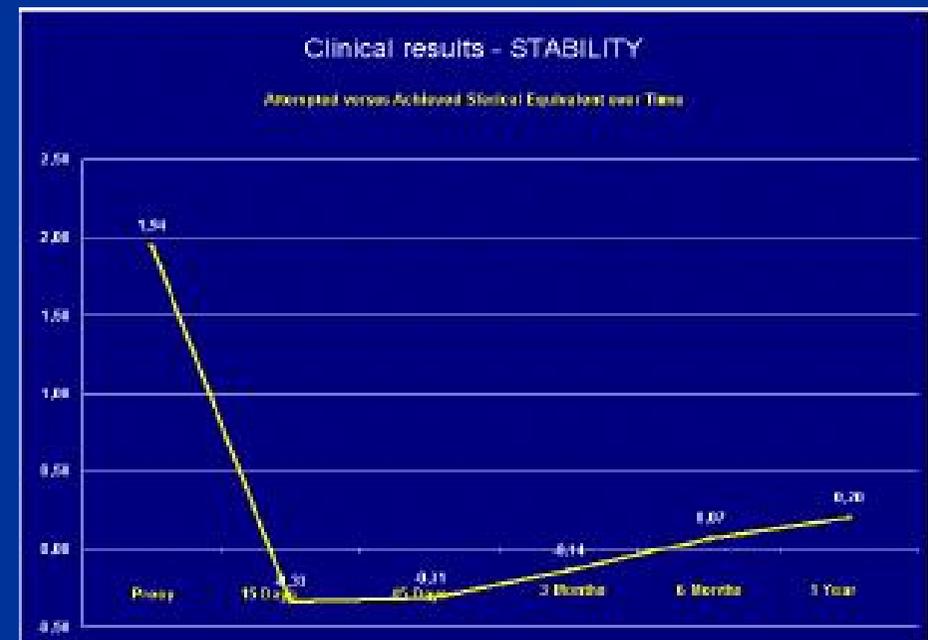


Clinical Results: **Stability**

Myopia

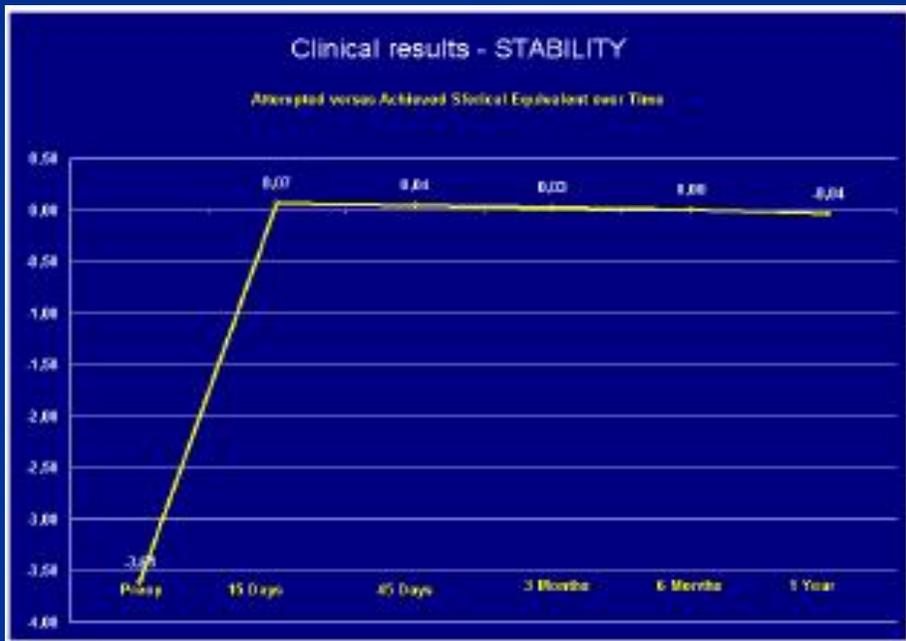


Hyperopia

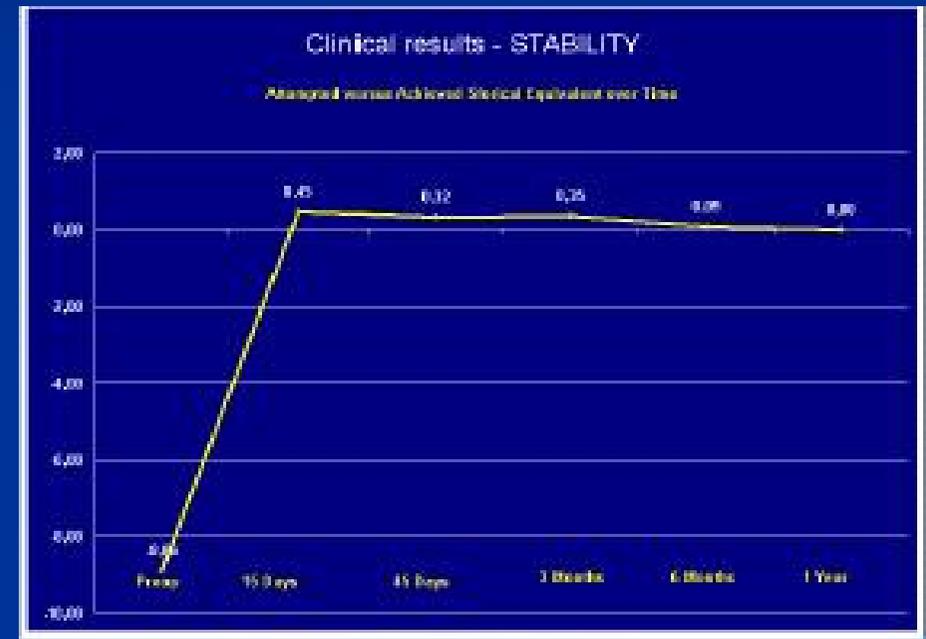


Clinical Results: **Stability**

Myopia



Myopia over 7 D



Ipercorrection

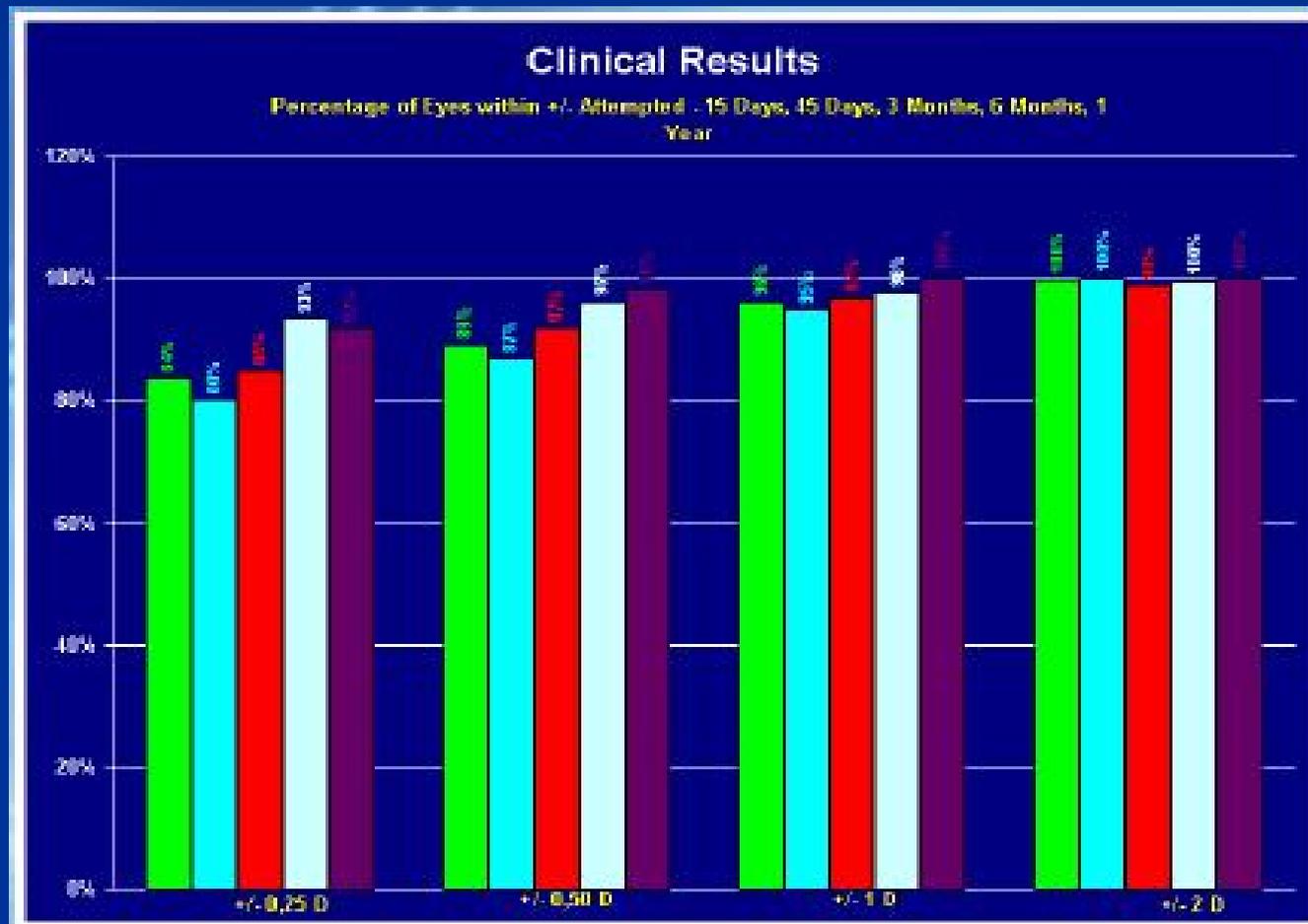
$P = 0.0002$ after 45 days

$P = 0.0001$ after 3 months
(duration of treatment ?)



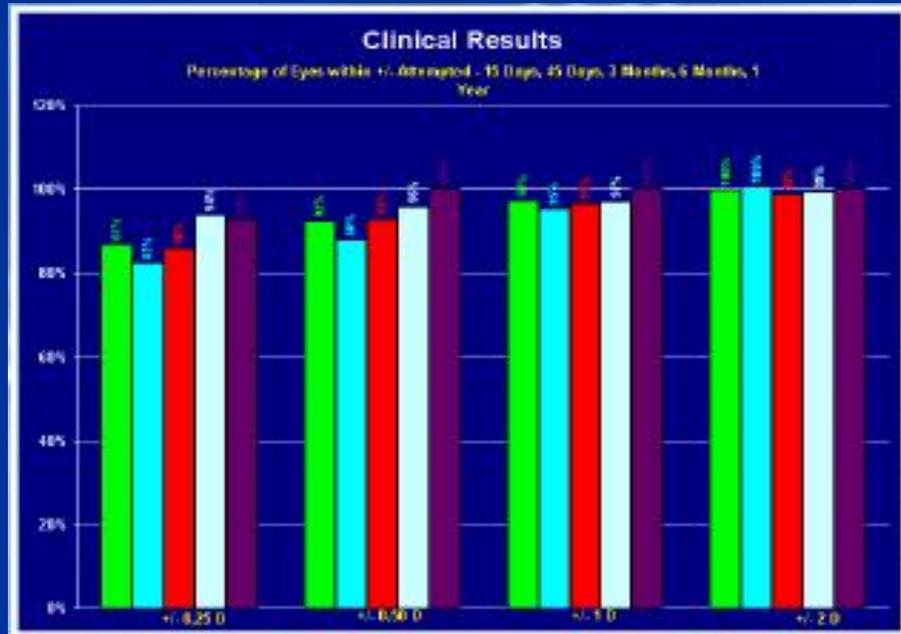
Clinical Results: Refraction

Final Refraction

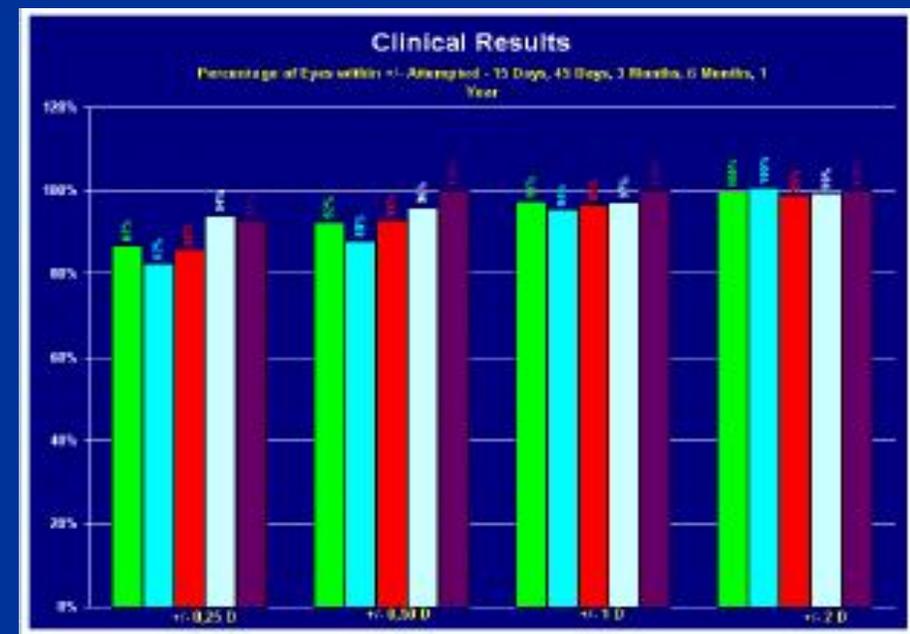


Clinical Results: Refraction

Myopia



Hyperopia



Clinical Results vs. FDA Targets

6 Months Results

	FDA	KATANA
<i>Variability of Efficacy</i>		
UCVA 1.0 or better	50%	86%
UCVA 0.5 or better	85%	97%
MRSE \pm 0.5 D	50%	93%
MRSE \pm 1 D	50%	93%
<i>Variability of Safety</i>		
BCVA loss > 2 lines	< 5%	2%
BCVA worse than 0.5	< 1%	0%

Conclusions

■ Advantages:

- Safe and efficacy laser for refractive surgery
- Reduced corneal inflammation: less pain, faster reepithelization, faster visual recovery

■ Limits:

- Moderate ipercorrection in high myopia, regressing with postoperative medical treatment



Thank You for your attention

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