Efficacy, safety and predictability of Femto LASIK with the all solid-state laser for refractive surgery.

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Purpose: To assess the efficacy, safety and predictability of Femto-LASIK procedure with the all solid-state laser for refractive surgery

Setting: Memira Group Centre for Refractive Surgery – Malmö, Sweden
Patients

- 21 patients (38 eyes)
- Age 21 to 52 years (mean 36 ± 8,63)
- SE -0,13 to -6,88 (mean -2,49 ± 1,68)

Methods

- Refractive ablation
  Solid state laser Katana LaserSoft
  (Katana Technologies, Germany)
- Flap creation
  Ziemer LDV Femtolaser
Katana LaserSoft

- Wavelength 210 nm
- Gaussian beam
- Flying spot of 0.25 mm in diameter
- Repetition rate of 1.75 kHz
- Eye-tracker latency of 1 ms
Main outcome measures

- UCVA
- BCVA
- Spherical Equivalent Refraction

Follow up period 3 months
Results: Visual Acuity (decimal chart)

UCVA $\geq 1,0$ in 83.8%, $\geq 0,8$ in 89.2% of eyes and $\geq 0,65$ in 100% of eyes
Safety

Lines of Visual Acuity: 67.6

-2 lines: 2.7
-1 line: 8.1
0 line: 67.6
+1 line: 18.9
+2 lines: 2.7
Refractive outcome

- within +/-0.25: 67.60%
- within +/-0.50: 81.10%
- within +/-1: 94.60%
- within +/-1.5: 97.30%
Efficacy index = 0.93
(UCVA postop/BCVA preop)

Safety index = 1.02
(BCVA postop/BCVA preop)

Predictability index = 1.12
(BCVA post/UCVA post)
Conclusions

• LaserSoft Femto LASIK resulted as a safe and effective procedure with a good predictability during the evaluation period.

• Due to the high repetition rate (1kHz) the energy per pulse is lower than in standard excimer treatments. This leads to an ablation with strongly reduced stress waves.

• 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.