

ESIRIS excimer laser safe and effective for both myopes and hyperopes



Thomas Kohnen

Stefanie Petrou Binder MD in Rome

THE ESIRIS Scanning-Spot Excimer Laser offers effective and stable correction for myopia, myopic astigmatism, and high hyperopia, according to two independent studies presented at the 9th Winter Refractive Surgery Meeting of the ESCRS.

“LASIK operations performed with the ESIRIS laser reveal a high level of safety, effectiveness, stability, and predictability.”

Thomas Kohnen MD

“In the last few years, the LASIK procedure has established itself as the treatment of choice for dealing with myopia, hyperopia, and astigmatism by yielding excellent results. LASIK operations performed with the ESIRIS laser reveal a high level of safety, effectiveness, stability, and predictability without the occurrence of any major complications,” Thomas Kohnen MD said.

Prof. Kohnen employed the 200Hz ESIRIS scanning-spot excimer laser (Schwind, Eye-tech-solutions, Germany) on 100 eyes of 51 myopic and myopic-astigmatic patients, at the Johann Wolfgang Goethe-University Eye Clinic, Frankfurt, Germany. He performed 100 consecutive



Alberto Artola

LASIK operations between April and September 2004.

The mean preoperative subjective spherical equivalent of the patient series was -3.76 D ranging from -1.00 D to -8.88 D. The mean sphere was -3.28 D, ranging from -0.75 D to -8.00 D. The mean cylinder was -0.96 D, with a range from 0.00 D to -3.75 D.

One month postoperatively, 70% of the patients had uncorrected visual acuities of 1.0 and 93% had visual acuities of 0.8. The best-corrected visual acuity remained unchanged for 69% of the patients, while 22% gained one or two lines. Only 8% lost 1 line of BCVA, while no one lost 2 lines. No major complications occurred during or after the treatments, he reported.

Prof. Kohnen used the B&L Hansatome microkeratome with a superior hinge to create the LASIK flaps. The ESIRIS laser operates with 200 Hz, has a 0.8 mm scanning spot and a 330 Hz high speed eye tracking system. The surgeries involved no nomogram adjustment.

All 100 eyes that were included in the study were available for follow-up visits at one week and one month after surgery, and had one retreatment. The investigators excluded eyes of patients who were unable to report for all follow-up visits and retreatment.

Prof. Kohnen performed LASIK both bilaterally and unilaterally. The study target was emmetropia. The average patient age was 37 years, ranging from 21 to 61 years. The male: female ratio of the operated eyes was 35: 65 (35%: 65%). The ratio of right: left eyes operated by the surgeon was 50:50.

Best-corrected vision preserved in hyperopes

In a related study, investigators from the Vissum / Instituto Oftalmologico de Alicante, Alicante, Spain evaluated and compared the visual outcome results of primary LASIK and enhancement procedures using two different excimer lasers, the ESIRIS Scanning - Spot and the Technolas 217 C (Bausch & Lomb), in highly hyperopic patients.

“Different technologies perform differently in hyperopic LASIK and enhancements. The ESIRIS Schwind laser effectively corrected hyperopia up to +7D and enhancements proved to be efficient in correcting residual refractive errors, improving BCVA and corneal aberrations,” Alberto Artola MD noted.

Dr Artola conducted a comparative, consecutive case series investigation that included 200 eyes of 100 patients. The surgeon performed 100 LASIK procedures using the ESIRIS laser and 100 more using the Technolas laser. All surgeries were bilateral.

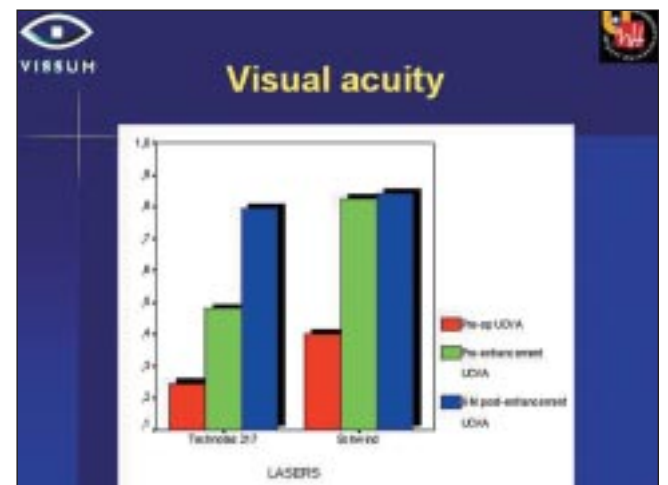
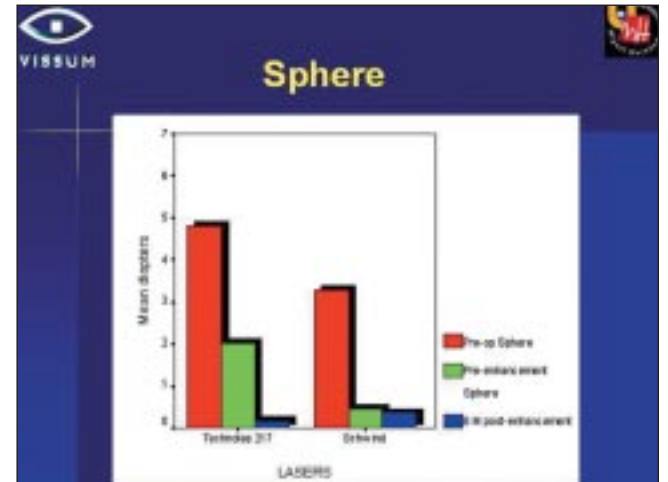
He analysed the visual outcome, refraction, and rate of complication, and compared the results of the two groups (Group - I: eyes operated with Technolas 217 and Group - II: eyes operated with Esiris Schwind). The preoperative mean spherical equivalent in group I was +3.9 D, and +3.75 D in group II.

In the Technolas group, eyes with more than +3.0 D preoperative refraction had a statistically significant loss of best-corrected visual acuity; 47% lost one or more lines of best-corrected acuity, a statistically significant result, Dr Artola said. In the same group, eyes with preoperative refraction of up to +3.0 D had a mean best-corrected visual acuity loss of one line, which was not considered statistically significant.

By sharp contrast, Dr Artola noted no significant visual loss in the ESIRIS patient series (group II). Furthermore, he observed that the enhancement surgery caused a loss in best-corrected acuity in the Technolas 217C group, but improved best-corrected acuity in the Esiris scanning - spot group.

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Courtesy of Alberto Artola MD

Courtesy of Thomas Kohnen MD