Contrast Sensitivity Outcomes for Zyoptix Aspheric Myopic LASIK

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PURPOSE
To report low and high contrast vision for myopic astigmatism LASIK using Technolas Zyoptix Aspheric (ZA) algorithm.

SETTING/VENUE
LASIK MD—A Canadian laser vision correction clinic

METHODS
This prospective case series recruited 132 eyes of 67 myopic astigmatism patients treated with bilateral ZA LASIK using the Technolas Z100 laser. Target correction was plano. The established Zyoptix Tissue Saving (TS) nomogram was used. Low (LC) and high contrast (HC) UCVA and BSCVA, manifest refraction, Q-values, higher order aberrations (HOA) were obtained pre-op and at 1 day, 1 week, 1, 3, and 6 months post-op. Accuracy, efficacy, safety, stability, change in Q-values and change in HOA/spherical aberrations post-surgery were analyzed, using paired t-tests where necessary.

RESULTS
Mean attempted spherical equivalent was -4.14D (range -0.63D to -9.08D) and cylinder was -0.76D (range 0 to -5.00D) for 6 month post-op data for 126 eyes. 98%, 93%, 81% of eyes were within +/-1.00D, +/-0.50D, and +/-0.25D of intended. 90%, 96%, and 100% of eyes achieved HC UCVA of 20/20, 20/25, 20/40 or better. 0%, 4%, 48%, and 81% of eyes achieved LC UCVA of 20/20, 20/25, 20/32, 20/40 or better. 43% gained one or more lines of HC BSCVA, 47% unchanged, 10% lost one or more lines, none below 20/25. 58% gained one or more lines of LC BSCVA, 30% unchanged, 12% lost one or more lines, 1 eye losing two lines. No significant difference between post-op HC UCVA (-0.11+/-0.12 logMAR) and pre-op HC BSCVA (-0.10+/-0.09 logMAR, p=0.57). Post-op LC UCVA (0.28+/-0.12 logMAR) was significantly better than pre-op LC BSCVA (0.32+/-0.11 logMAR, p<0.001).
CONCLUSION
The Technolas ZA algorithm is comparable in accuracy, efficacy, and safety to published results for Zyoptix TS. Post-op HC- and LC-UCVA compared to pre-op BSCVA were unchanged or better in most patients. Outcomes here are superior to the one published paper for ZA.