HIGH MYOPIA OUTCOMES WITH LATEST GENERATION EXCIMER LASER

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PURPOSE

To determine the accuracy, efficacy, safety, and stability of laser vision correction (LVC) in high myopia greater than -10 D with a newer generation excimer laser.

STUDY DESIGN

Prospectively cohort study

METHODS

Contact lens-intolerant myopes with greater than -10 D manifest refractive spherical equivalent (MRSE) were included in the cohort. All eyes underwent aspheric PRK or LASIK targeting emmetropia, with a 400-Hz excimer laser. All performed by a single surgeon. Outcomes measures were accuracy, efficacy, safety, and stability. A subjective quality of vision (QoV) questionnaire was administered to assess subjective patient satisfaction. RM-ANOVA and Holms Sidak post hoc tests were used for all statistical analyses.

RESULTS

7 eyes (21 patients) were included, with pre-op average MRSE of -11.36 ± 1.09 D (range: -10.13 to -14.63 D); 31 eyes had postop data of 6 months or greater. Mean follow-up time was 14.2 ± 6.9 months. 39%, 56%, and 87% of eyes were within ±0.25, ±0.50, and ±1.00 D of emmetropia (R2 = 0.777). Cumulative UDVA of 20/20, 20/25, and 20/40 or better in 45%, 71%, and 84% of eyes, respectively, compared to preop cumulative CDVA of 65%, 89%, and 100%, respectively. Efficacy index was 0.89. 1 eye lost 1 line of Snellen CDVA. No eyes lost more than 1 line while 23% gained 1 and 3% gained 2 lines. Safety index was 1.07. Postop MRSE was stable at 1, 3, 6 months, or later timepoints (p=0.38). Patients rated their post-op uncorrected QoV significantly higher than pre-op corrected QoV on a scale of 1-10, average rating of 9.0±0.8 vs. 7.4±1.2, respectively, p<0.001.

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100% of patients rated their overall QoV as improved compared to pre-op, 83% significantly improved 17% moderately improved.

CONCLUSION

This cohort of eyes with greater than -10 D MRSE of myopia had better accuracy, efficacy, safety, stability, and satisfaction profiles than those published in high myopia with previous excimer laser technology. The safety profile was equivalent to that in low to moderate myopia, with excellent subjective satisfaction. Candidacy criteria for LVC should include contact lens intolerant high myopes between -10 to -14D.