VERY HIGH ASTIGMATISM OUTCOMES WITH PRK AND LASIK

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PURPOSE
To determine the accuracy, efficacy, safety, and stability of laser vision correction (LVC) for high astigmatism greater than -5 D.

METHODS
Retrospective chart review of eyes with greater than -5 D cylinder. All eyes underwent aspheric PRK or LASIK targeting emmetropia. 6 month or greater postop manifest refraction, UDVA and CDVA were compared to preop measurements. RM-ANOVA with Holms-Sidak post hoc tests and vector analysis (VA) were performed.

RESULTS
208 eyes, preop sphere -0.82±2.32 D (-6.75-+5.50D) and cyl -5.89±0.77D (-5.00- -7.75D). 88 postop of 6+ months, mean FU 12.9±5.8 months. Postop sphere +0.08±0.48D (-1.50-+1.25D), cyl -0.67±0.53 D (0- -2.25D). 46, 73, 98% within ±0.25, ±0.50, ±1.00D. Cumulative UDVA 20/20, 20/25, 20/40 in 34, 65, 94%, preop CDVA in 48, 82, 98%; efficacy index 0.9±0.2. 2 lines CDVA loss-1%, 1 line-5%, no change-55%, gain of ≥1 lines-39%. No loss >2 lines; safety index 1.1±0.2. MRSE stable. 30 (14%) had retreat. VA: correction ratio 0.95±0.10, error ratio 0.11±0.08, axis shift -3.2±36.7°. Error of magnitude and axis 0.32±0.62D and -0.44±2.65°.

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CONCLUSIONS

LVC for very high astigmatism (greater than -5 D) has excellent accuracy, efficacy, and safety profiles. Vector analysis demonstrated a high degree of precision in treating these highly astigmatic eyes.