Topography-Guided Photorefractive Keratectomy for Irregular Astigmatism After Radial Keratotomy Using a High-Speed Laser

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Introduction:

To evaluate Topography-guided Photorefractive Keratectomy (TG-PRK) for irregular astigmatism after Radial Keratotomy (RK) with Schwind Amaris 1050 (SA).

Methods:

81 eyes treated with Schwind Amaris 1050 excimer laser l. Preoperative and post-operative uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), manifest refraction, and topographic cylinder were analyzed after 12 months of follow-up.

Results:

46 eyes (57%) showed UDVA ≥20/40 postoperatively. 36 eyes (45%) had improved CDVA and 9 (11%) gained ≥2 lines while 3 (4%) lost 2 or more lines. Mean astigmatism was reduced from - 2.44±1.89D to -0.98±0.85D. Mean spherical equivalent improved from 2.03±2.32D to -0.51±1.84D.

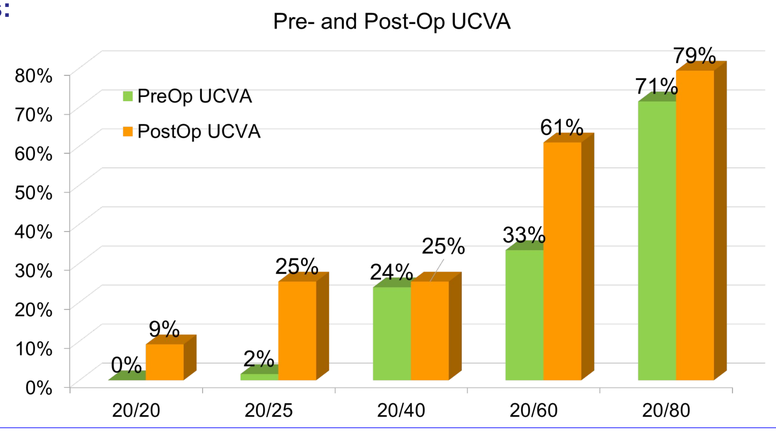
Conclusion:

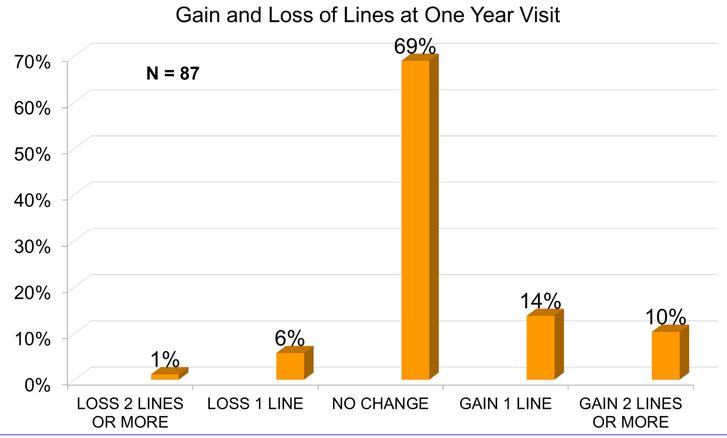
Early results of TG-PRK with SA show efficacy and safety in treating post-RK irregular astigmatism. The technique may be an alternative treatment for post-RK patients who have been unsuccessful with other methods of vision correction such as specialty contact lenses.

Spherical Equivalent	Pre-Op	Post-Op
Average	2.03	-0.51
Standard Deviation	2.32	1.84

Astigmatism	Pre-Op	Post-Op
Average	-2.44	-0.98
Standard Deviation	1.89	0.85

Refractive Outcomes:





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References:

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2. Lin, D. T., Holland, S., Tan, J. C., & Moloney, G. (2012). Clinical results of topography-based customized ablations in highly aberrated eyes and keratoconus/ectasia with cross-linking. *Journal of Refractive Surgery*, *28*(11), S841-S848. https://doi.org/10.3928/1081597X-20121005-06