( ) R1 ( ) R2 ( ) R3 ( ) PG0 ( ) PG1 ( ) Estagiário ( ) Tecnólogo ( ) PIBIC

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Wavefront-guided laser in situ keratomileusis with the Alcon CustomCornea and the Zyoptix: Six-month results.

Purpose: To evaluate and compare the visual and clinical outcomes of Wavefront-guided laser in situ keratomileusis (Lasik) with the Alcon CustomCornea and Zyoptix systems.
Methods: Prospective, randomized, masked and bilateral study is being conducted. Fifty patients with preoperative spherical equivalent (SE) ranging from –1.00 to –6.00 D were enrolled for customized ablation in both eyes. All of them were submitted to LASIK CustomCornea treatment in one eye and Zyoptix in the other eye. Uncorrected visual acuity (UCVA), best correct visual acuity (BCVA), manifest refraction, wavefront measurements, contrast sensitivity testing and subjective vision questionnaire were performed preoperatively and postoperatively at 1, 3 and 6 months.
Results: Preoperatively, the CustomCornea group had a mean manifest sphere of -3,07 ± 1,56 diopters (D) (range: -0.75 to -6.00), cylinder of -0.42 ± 0.42 D (range: 0.00 to -1.25 D), and manifest refractive spherical equivalent (MRSE) of -3,29 ±1.56 D (range: -1.00 to -6.50). The Zyoptix group had a mean manifest sphere of -3,00 ± 1,51 D (range: -0.75 to -6.00), cylinder of -0.44 ± 0.36 D (range: 0.00 to -1.25 D), and manifest refractive spherical equivalent (MRSE) of -3,22 ±1.50 D (range: -0.88 to -6.00). At 6 months, 86 % of CustomCornea eyes and 70 % of Zyoptix eyes had UCVA ≥ 20/20. Twenty-two percents of CustomCornea eyes and 20 % of Zyoptix eyes gained 1 line of BCVA. One hundred of the CustomCornea group and 88 % of the eyes in the Zyoptix, were within 0.50 D of emmetropia. In both groups, the contrast sensitivity improved. Spherical aberration and higher order aberration increased in both groups, the CustomCornea group showed lower values ($p < 0,001$).
Conclusion: Wavefront-guided Lasik with both systems is safe and effective. The CustomCornea platform showed lower higher order aberration and spherical aberration.