جامعة الفيوم - كليه الطب
قسم طب وجراحة العيون

Changes of Higher Order Aberrations after using Wave Front Guided Lasik and Topography Guided Lasik for Correction of Refractive Errors: A Comparative Study

Objective: To evaluate and compare the changes of Higher Order Aberration (HOAs), visual acuity and refractive outcome after using wavefront guided Lasik and topography guided Lasik for correction of refractive errors.

Materials and methods: This is a prospective comparative study recruited 60 eyes of 30 patients, where 15 patients underwent topo-guided Lasik and 15 patients underwent wavefront guided Lasik. All participants underwent Uncorrected Visual Acuity (UCVA), Best Corrected Visual Acuity (BCVA), refractive outcome and wavefront to assess Root Mean Square (RMS) and Higher Order Aberration (HOAs) in each group and compare between Wavefront Guided Lasik (WFG) and Topography Guided Lasik (TG) pre-operative and at 3 months and 6 months post-operative.

Results: Mean patient age was 29.33 ± 5.62, 28.73 ± 6.72 in topoguided and wavefront group respectively. In TG group, statistically significant improvement were evident postoperatively in Spherical Equivalent (SE) (P=0.000), spherical aberration (P=0.00) and UCVA (P=0.000). Similarly in WFG group, statistically significant improvement were evident postoperatively in spherical equivalent (P=0.000), spherical aberration (P=0.04) and UCVA (P=0.000). On comparing HOAs, topoguided was significantly better at 3 months (P=0.02), but at the end of the study there was no statistically significance difference (P=0.052), spherical aberration (P=0.047) was significantly lower in WFG and coma (P=0.032) were significantly lower in TG group.

Conclusion: The study showed good efficacy, predictability, and stability of eyes undergoing TG Lasik and WFG Lasik with a follow-up of six months.