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Excimer and solid state lasers in refractive surgery

Session: Refractive surgery new techniques - 6 minutes

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Paper Time: 09:18

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Abstract Details:

Purpose:

Evaluating the efficacy, safety and stability of refractive surgery results with the CustomVis Pulzar Z1 Solid State laser and the Allegretto 400 Excimer laser.

Setting:

University of Crete, Greece.

Methods:

200 eyes operated in each system (retrospectively 40 eyes LASIK and 160 PRK with adjuvant mitomycin (MMC)) and evaluated postoperatively for one year. PRK mean SEQ was 5.0D+/-2.0D while LASIK mean SEQ was 6.0D+/-2.2D. PostOp evaluation was performed with cycloplegic refraction in 3-month period and manifest refraction in 1, 6 and 12 months. Histology in rabbit eyes and endothelial cell density eyes studies conducted along with a study in the HO aberration.

Results:

89% and 96% of the eyes were between + 1.00/-1.00 D for Excimer and Solid respectively at 12 months for PRK. 35% and 31% of eyes gained more than 1 line in Solid and Excimer respectively. Histology study revealed smooth ablation surface created by both systems with no edema or distortion of the adjacent corneal stroma. There are no statistical significant changes in corneal endothelium monolayer in post PRK patients (up to one year) with solid state (213 nm) and excimer (193 nm) laser systems. Similar changes to high order aberration found between Solid and Excimer.

Conclusions:

Predictability presented similar results between the two systems. Both systems are safe for correction with PRK and LASIK.

Financial Disclosure:

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