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Title:	Comparison of Excimer and Solid-State Lasers in Refractive Surgery
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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.
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 preformed 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% of the examined eyes were between + 1.00/-1.00 D for Excimer and 96% between for Solid at 12 months postop for PRK. 35%% of eyes gained more than 1 line in Solid and 31% of eyes gained more than one line in Excimer. Stability of refraction is the same for both systems with stability level being equal at 12 months PostOp. Histology study revealed smooth ablation surface created by both systems with no edema or distortion of the adjacent corneal stroma. Normal structure of the endothelial layer observed in both lasers ablated tissue. 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.
Conclusion:	Predictability presented similar results between the two systems. Both systems are safe for correction with PRK and LASIK.