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Title: 213 nm Scanning Solid-State Laser to Treat Myopic Astigmatism
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Purpose: To report on initial safety and effectiveness clinical outcomes using a solid-state scanning laser system for the treatment of myopic astigmatism by laser-assisted in situ keratomileusis (LASIK). Methods: The CustomVis Pulzar Z1 solid-state laser system was used in all cases in this prospective analysis. Laser parameters were: 213 nanometer (nm) wavelength, a 0.6mm flying beam spot and a rapid pulse rate of 300-400 Hertz (Hz). Pre-treatment refractive errors in this patient series involved myopia up to -5 diopters (D) and cylinder up to 4.5 (D); manifest refraction spherical equivalent up to -6 (D). All cases were performed at a single center by an individual surgeon. To date, 111 cases have undergone LASIK with the Pulzar Z1 laser; with 62 cases with = 1 week follow-up (50 cases at 1 week). Results: All LASIK procedures were performed successfully with no interruption. At the last visit, best spectacle corrected visual acuity (BSCVA) was well preserved with 90% of cases experiencing no change (82%) or a gain of 1 line (8%); with no loss of 2 or more lines. Post-treatment uncorrected visual acuity at last visit was 100% 20/40; 98% 20/30, 90% 20/25 and 65% 20/20 or better. A predictability analysis showed 70% + 0.5D and 92% + 1.0D of the target spherical equivalent (SE). Conclusions: Early postoperative follow-up shows that this solid-state 213 nm laser system for the treatment of myopic astigmatism is user friendly, well tolerated by patients with excellent safety and effectiveness results. Longer term follow-up will be available at the time of the meeting.