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BOOK OF ABSTRACTS

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INFLUENCE OF OPTIC ZONE SIZE ON THE OUTCOME OF LASER IN SITU KERATOMILEUSIS IN CHILDREN AND TEENAGERS WITH HYPEROPIA AND ANISOMETROPIA

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PURPOSE: To assess the clinical outcome of laser in situ keratomileusis (LASIK) with optical zone 6.0 and 6.5 mm in children and teenagers with hyperopia and anisometropia.
SETTING: Svyatoslav N. Fyodorov SI IRTC Eye Microsurgery Complex, Cheboksary Branch, Russia.
METHODS: 55 eyes of 55 children and teenagers were treated with LASIK for hyperopia and hyperopic astigmatism using Microscan eximer laser (24 eyes with 6.0 mm and 31 eyes with 6.5 mm optical zone). Mean patient age was 11.5 years ±1.9 (SD). Minimum follow-up was one year. Preoperatively mean manifest refraction spherical equivalent (MRSE) was +4.8 ±1.89 D (range +1.89 to +7.25 D), mean cylinder was -2.25 ±0.61 D (range -4.5 to 0.00 D).
RESULTS: In one year after LASIK in the group with optical zone 6.0 mm the MRSE was 1.75±0.57 D (range 0.00 to +3.15 D), the mean MRSE was within ±0.50 D in 25%, within ±1.00 D in 42% of cases, best spectacle-corrected visual acuity (BSCVA) 20/40 and better before the operation in 56%, uncorrected visual acuity after the operation 67% of eyes, the safety index of the technique was 1.25, and the efficacy index was 0.92. In the group with optical zone 6.5 mm the MRSE was 0.89±0.41 D (range -0.50 to +2.05 D), the mean MRSE was within ±0.50 D in 52%, within ±1.00 D in 67% of cases, best spectacle-corrected visual acuity 20/40 and better before the operation in 60%, uncorrected visual acuity after the operation 78% of eyes, the safety index of the technique was 1.34, and the efficacy index was 1.0. No eye lost more than 1 lines of BSCVA, 65% of eyes gained 1-5 Snellen lines in the groups.
CONCLUSIONS: LASIK in children and teenagers with hyperopia and anisometropia is an effective and safe operation, the size of central optic zone determines refraction effect of the operation and preciseness of its predictability. Improvement of hyperopic ablation profile by increasing central optic zone is one of the ways of achievement of higher and more stable results of correction of hyperopia and hyperopic astigmatism.