

POST-LASIK HYPEROPIC REGRESSION - A NOVEL APPROACH

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Purpose: To differentiate and measure the post-LASIK hyperopic regression, to analyze the contributing factors and to identify presurgical biomarkers. **Methods:** A retrospective cohort study of 402 hyperopic LASIK procedures, 90 with signs of regression in ocular aberrometry and corneal topography. We measured the value of absolute regression by subtraction the difference between preoperative total refraction and intended correction from postoperative total refraction. Our primary endpoint was to correlate absolute regression and selected factors age, sex, interval of regression, postsurgical keratometry and postsurgical pachymetry. These were subjected to multivariate correlation analysis by the level of significance $\alpha=0,10$. **Results:** There is 16,4% of linear relationship between absolute regression and its interval of occurrence in low hyperopia. More, there is 11% correlation between absolute regression and postoperative keratometry in any level of hyperopia. We detected 17.3% correlation between absolute regression and postoperative pachymetry in eyes with astigmatism. No evident correlation between regression and universal factors like age and sex were present. **Conclusions:** There is higher incidence of hyperopic regression in cases of excessive postoperative corneal steepening. Astigmatic cornea shows greater tendency of absolute and keratometric regression due to biomechanical weakness as long as postoperative pachymetry indicates such. The lack of any strong correlation in this study may be a sign that regression is determined multifactorially. The duration of hyperopic LASIK should be subjected to further studies. No absolute preoperative biomarkers of regression risk were identified but some strong evidence appeared that corneal biomechanics may be the intrinsic factor of regression. **Financial Disclosure:** No