عنوان مقاله:

Comparison of IOL Master Keratometry with Pentacam Keratometry for Intraocular Lens Power Calculation in Normal Corneas

محل انتشار:

مجله علمی پژوهشی دانشگاه علوم پزشکی زنجان, دوره 22, شماره 93 (سال: 1393)

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خلاصه مقاله:

Background and Objective: Proper method and machine for corneal evaluation is an important factor in many anterior segment interventions. This study was performed to compare the mean keratometry (K) readings obtained with an IOL Master and Pentacam for intraocular lens power calculation in normal subjects with no history of refractive surgery. Materials and Methods: Mean K values were obtained with the automated (IOL Master) and Scheimpflug keratometer. Scheimpflug readings obtained from simulated K (SIMK) and Holladay equivalent K (EKR) were analysed. Specific formula for a defined intraocular lens was considered according to the IOL Master, Pentacam SIMK and EKR data. Results: ۱۰۰ eyes undergoing PRK were evaluated. The mean age of patients was ۲۷ ± ۴.۳ year old. The mean corneal power by IOL Master, SIMK and the EKR was ۴۴.۵۲ D ± ۱.۵۴, ۴۴.۰۸ D ± ۱.۴۶ and ۴۴.۲۵ D ± ۱.۴۸, respectively. The mean intraocular lens power by these three machines was ۱۷.۱۵ D ± ۲.۱۴ and ۱۷.۶D ± ۲.۲ and ۱۷.۵۳ D ± ۲.۱۴, respectively. There was a statistically significant correlation between IOL Master and SIMK and EKR corneal power and intraocular lens power calculated by the three aforementioned techniques (P < ۰.۰۰۱). There was a statistically significant difference between mean corneal power by IOL Master, SIMK and EKR and intraocular lens power calculated by IOL Master, SIMK and EKR. (P < ۰.۰۰۱) Conclusion: Despite the high correlation between the mean corneal power of automated keratometry, SIMK and EKR, also indicated a high correlation between intraocular lens power calculated by automated keratometry, SIMK and EKR. There was a statistically significant difference between them and the values were not interchangeable. References ۱- Elie Saad, Maya C, Shammas H, John Shammas. Scheimpflug corneal power measurements for intraocular lens power calculation in cataract surgery. Am J Ophthalmol. ۲۰۱۳ ۱۵۶: ۴۶۰-۶۷. ۲- J Santodomingo-Rubido, EAH Mallen, B Gilmartin, JS Wolffsohn. A new non-contact optical device for ocular biometry. Br J Ophthalmol. ۲۰۰۲ ۸۶: ۴۵۸-۶۲. ۳- Olsen T. Improved accuracy of intraocular lens power calculation with Zeiss IOLMaster. Acta Ophthalmol Scand. ۲۰۰۷ ۸۵: ۸۴-۸۷. ۴- Richard J Symes, MRCOphth, Paul G. Ursell, FRC Ophth. Automated keratometry in routine cataract surgery: comparison of scheimpflugand conventional values. J Cataract Refract Surg. ۲۰۱۱ ۳۷: ۲۹۵-۳۰۱. ۵- Borasio E, Stevens J, Smith GT. Estimation of true corneal power after keratorefractive surgery in eyes requiring cataract surgery: BESSt formula. J Cataract Refract

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Keywords: Pentacam, IOL Master, Intraocular lens calculation, SIMK, EKR

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