

3 de Dezembro

08h30 | 10h00 – Sala 2

Catarata | Cataract

Moderadores | Chairs: João Feijão (CHULC), Conceição Lobo (CHUC), João Paulo Macedo (CHUSJ)

### CO 113

#### AGREEMENT IN OPTICAL BIOMETRY OF A NEW SWEEP-SOURCE OPTICAL COHERENCE TOMOGRAPHY-BASED BIOMETER VERSUS OPTICAL LOW-COHERENCE REFLECTOMETRY

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**Introduction:** To compare the agreement between a new swept-source optical coherence tomography (SSOCT) biometer (ANTERION, Heidelberg Engineering Ltd, Germany) with that of optical low-coherence reflectometry (OLCR) (Lenstar LS 900, HAAG-STREIT AG, Switzerland) and to evaluate the refractive prediction error (RPE) in intraocular lens power calculation with 6 formulas.

**Methods:** Biometry measurements were obtained with 2 different devices: the Anterior SSOCT biometer and the OLCR-based Lenstar LS 900. Axial length (AL), anterior chamber depth (ACD), central corneal thickness (CCT), anterior surface keratometry (K), lens thickness (LT) and white-to-white (WTW) were compared between both biometers. The agreement was evaluated with the intraclass correlation (ICC). The 95% limits of agreement (95% LoA) were calculated to compare the two devices. Readings obtained with both devices were used to predict the refraction of the implanted IOL with six IOL power calculation formulas: Kane, Barret, SRK/T, Holladay 1, Hoffer Q and Haigis. Mean prediction errors, median absolute errors, and mean absolute errors were investigated.

**Results:** One hundred seventy-two eyes of hundred seventy-two patients were included. The mean difference between SSOCT and OLCR biometry for AL, CCT, ACD, K1, K2, and LT measurements was  $0.02\text{mm} \pm 0.03(\text{SD})$ ,  $4.38\mu\text{m} \pm 2.63(\text{SD})$ ,  $-0.025\text{mm} \pm 0.24(\text{SD})$ ,  $0.05\text{ diopter(D)} \pm 0.28(\text{SD})$ ,  $0.08\text{D} \pm 0.27(\text{SD})$  and  $-32\mu\text{m} \pm 32(\text{SD})$ , respectively. A excellent agreement (0.75-1.00) was obtained for AL, CCT, ACD, K1 and K2; LT had a good agreement (0.747). The 95% LoA were -0.03 to +0.07 for AL, -1 to +9 for CCT, -0.49 to +0.44 for ACD, -0.51 to +0.61 for K1, -0.46 to 0.61 for K2, and -0.94 to 0.30 for LT. When comparing the results of each formula between Lenstar and Anterior, no statistically significant difference was detected between mean absolute error, without and after adjusting the mean RPE to zero.

**Conclusion:** The Anterior measurements showed good agreement with those of the Lenstar-LS900. The application of the measurements obtained with both devices for the 6 formulas studied did not lead to a statistical significant difference in refractive outcomes.