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FORMAT:
Abstract should contain:
Title
Author, Co-authors (maximum 6),
Purpose, Methods, Results,
Conclusion.

Poster guidelines:
ARVO Abstract Book (1.10 x 1.70m)

74.   FIRST (PRESENTING) AUTHOR (REQUIRED):
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( ) R1   ( ) R2   ( ) R3   ( ) PIBIC
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5. ABSTRACT (REQUIRED):

Pachymetric Mapping with Fourier-Domain Optical Coherence Tomography

Camila H. R. Salaroli, MD, Jose L. Ramos, MD, Yan Li, PhD, Maolong Tang, PhD, Xinbo Zhang, PhD, David Huang, MD, PhD

Purpose: To evaluate the repeatability of Fourier-domain optical coherence tomography (FD-OCT) pachymetric mapping and compare OCT central corneal thickness (CCT) measurements with those of ultrasound pachymetry and Orbscan II.
Methods: An RTVue-CAM FD-OCT system was used to map the corneal thickness of 50 participants without corneal abnormalities. The scans were centered on either the corneal vertex or pupil. The repeatability of central and pericentral map sectors was assessed by pooled standard deviation (SD). The CCT measured by OCT was compared with those measured by ultrasound and Orbscan II by paired t-test, Pearson correlation, and Bland-Altman analysis.
Results: Pupil centration (SD: 1.3 μm central, 1.8-3.8 μm pericentral) provided better repeatability than vertex centration (1.7 μm central, 2.4-5.7 μm pericentral) in all sectors ($P<0.035$). The CCT measured by OCT, ultrasound, and Orbscan II (acoustic factor 0.92) was 536.9±27.0, 556.6±30.5, and 537.2±32.6 μm, respectively. The CCT measured by OCT was significantly thinner than ultrasound pachymetric readings ($P=0.007$, mean difference –19.7 μm, 95% limits of agreement -40.4 to 0.9 μm) but not those of Orbscan II ($P=0.2637$, mean difference -0.3 μm, 95% limits of agreement -24.0 to 23.5 μm). The OCT CCT correlated well with those of ultrasound and Orbscan II (Pearson $r = 0.940$ and 0.934, respectively).
Conclusion: Pachymetric mapping with FD-OCT was highly repeatable in normal corneas. The repeatability was better with pupil-centered scans than with corneal vertex-centered scans.

Keywords: Pachymetric mapping, central corneal thickness, optical coherence tomography.

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