

## Comparison of Corneal Curvature Measurements Conducted with Tomey AO-2000® and the Current Standard Biometer IOL Master®

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**Abstract :** Purpose: Corneal curvature (CC) is an important anterior segment parameter. This study compared CC measurements conducted with two optical devices in phakic eyes. Methods: Sixty phakic eyes of 30 patients were enrolled in this study. CC was measured three times with the optical biometer and topography-keratometer Tomey AO-2000 (Tomey Corporation, Nagoya, Japan), then with the standard partial optical coherence interferometry (PCI) IOL Master (Carl Zeiss Meditec, Dublin, CA) and data were statistically analysed. Results: The measurements resulted in a mean CC of  $43.86 \pm 1.57$  D with Tomey AO-2000 and  $43.84 \pm 1.55$  D with IOL Master. Distribution of data is normal, and no significance difference in CC values was detected ( $P = 0.952$ ) between the two devices. Correlation between CC measurements was highly significant ( $r = 0.99$ ;  $P < 0.0001$ ). The mean difference of CC values between devices was  $0.017$  D and 95% limit of agreement was  $-0.088$  to  $0.12$ . Duration taken for measurements with the standard biometer IOL Master was longer ( $55.17 \pm 2.24$  seconds) than with Tomey AO-2000 ( $39.88 \pm 2.38$  seconds) in automatic mode. Duration of manual measurement with Tomey AO-2000 in manual mode was the shortest ( $28.57 \pm 2.71$  seconds). Conclusion: In phakic eyes, CC measured with Tomey AO-2000 and IOL Master showed similar values, and high correlation was observed between these two devices. This shows that both devices can be used interchangeably. Tomey AO-2000 is better in terms of faster to operate and has its own topography systems.

**Keywords :** corneal topography, corneal curvature, IOL Master, Tomey AO2000

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