THE DIFFERENCES BETWEEN INTRAOCULAR PRESSURE MEASUREMENTS BY ICARE REBOUND TONOMETER, TONOPEN, OCULAR RESPONSE ANALYZER, PASCAL DYNAMIC CONTOUR TONOMETER, AIRPUFF NON-CONTACT TONOMETER AND GOLDMANN APPLANATION TONOMETER ACCORDING TO THE CENTRAL CORNEAL THICKNESS

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AIM

To analyze the influence of central corneal thickness (CCT) on intraocular pressure (IOP) measurements with Icare, Ocular Response Analyzer (ORA), Pascal Dynamic Contour Tonometer (PDCT), Tonopen and Goldmann Applanation Tonometer (GAT).

METHODS

Prospective, non randomized outpatient clinic-based study included 74 eyes of 37 healthy subjects. Including criteria were no history for past ocular trauma or surgery and corneal diseases, being less than 3 diopters spherical value and 2 Diopters cylindrical value. IOP data with 6 different tonometers as follows; Air-puff, Goldmann Applanation, Icare rebound, Pascal Dynamic Contour Tonometers, Ocular Response Analyzer, respectively and CCT measurements with pachymeter were obtained. Collected data were seperated into two groups according to the CCT. Group A (CCT >550μm) and Group B (CCT ≤ 550μm).

RESULTS

Comparison between Icare and Tonopen, Airpuff no statistically significance were found in Group A (>550 μm) (p = 0.103). Diversely, a significant difference between ORA and GAT, PDCT was found (p<0.05). In Group B (<550 μm) there was a statistically significant difference between Icare and Tonopen, Airpuff, PDCT, GAT.

DISCUSSION

In our study, among 6 different tonometers; PDCT, Icare and Tonopen measurements are observed to be more reliable for IOP evaluation in thinner corneas.

REFERENCES