

عنوان البحث:

Comparison of corneal measurements in normal and keratoconus eyes using Anterior Segment Optical Coherence Tomography (AS-OCT) and Pentacam HR topographer.

مكان وتاريخ النشر:

BMC Ophthalmology 2023;23:194:1-12

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Background: Keratoconus (KC) is easily recognized by its unique topographic pattern, but it can be difficult to distinguish subclinical form of the disease from the normal cornea. Optovue anterior segment optical coherence tomography (AS-OCT) helps diagnose KC.

Aim of the work:

To assess and the level of agreement of Keratometry-readings (K), Central Corneal Thickness (CCT) and Thinnest Corneal Thickness (TCT) measurements obtained by Optovue AS-OCT and Wavelight Oculyzer Pentacam HR in two groups: KC eyes and normal eyes.

Patients and methods:

This is a prospective clinical observational study. The study included 110 eyes divided into two groups. The study group included 62 eyes with topographic evidence of KC. The control group included 48 eyes of normal subjects with no topographic evidence of KC. All of the participants underwent full cycloplegic refraction, spectacle best-corrected distance visual acuity, comprehensive slit-lamp biomicroscopy and fundoscopy. All participants underwent corneal topography by Pentacam HR and AS-OCT.

Results: There were highly significant differences between the studied groups as regarding BCVA, intraocular pressure and CCT measurements which were found to be lower among KC group compared to the control one. There were highly significant differences between the studied groups regarding TCT measurement detected by Pentacam HR and AS-OCT which was found to be lower among the keratoconus group compared to the control one (470.9, 455.7 versus 541.9 and 518.7 respectively).

Conclusion:

Both Scheimpflug-based imaging and AS-OCT provide comparable readings with a good agreement regarding corneal pachymetry in keratoconus group with accurate identification of KC eyes and healthy ones. However, there was a significant difference in K readings between both devices in Keratoconus and control group.