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Correlation between corneal elevation topography and perimetric changes in patients with primary open angle glaucoma

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Aim: The aim of this study is to assess Scheimpflug topographic elevation maps in patients with POAG and correlate the results with their perimetric changes.

Methods: This was an analytical observational cross-sectional study. The study included 130 eyes of 70 subjects which were divided into 78 eyes of 44 patients diagnosed with POAG and 52 eyes of 26 control subjects. Measurement of IOP, visual field examination in patients with POAG using <u>Humphrey Field Analyzer</u> (2003 Carl Zeiss Meditec), Germany were done. Subjects were scanned using TMS-5 topographer (Topographic Modeling System, version 5. Tomey Corp. Nagoya, Japan) to measure central corneal thickness, mean anterior keratometry, maximum anterior and posterior topographic elevation maps in the central 3, 5, and 7 mm.

Results: 78 patients with POAG classified according to visual field deterioration using Hodapp-Anderson-Parrish grading scale into mild <u>glaucoma</u> 33 eyes, moderate glaucoma 19 eyes, severe glaucoma 26 eyes and 52 eyes control were included in the study. The mean age of the patients with POAG was 57.82 ± 7.78 years; 22 eyes (50%) were male and 22 eyes (50%) were female. The average age of control subjects was 56.62 ± 8.48 years; 12 eyes (46.2%) were male and 14 eyes (53.8%) were female, average CCT was $530.3 \pm 23.58 \,\mu\text{m}$, average mean anterior keratometry (MAK) was 42.97 ± 1.42 D, average maximum anterior elevation (MAE) in 3,5 and 7mm zone was 5.31 ± 2.28 , 12.10 ± 6.94 and $44.04 \pm 21.99 \,\mu\text{m}$ respectively and average maximum posterior elevation (MPE) in 3,5 and 7mm zone was 8.46 ± 2.10 , 19.90 ± 9.39 and $62.72 \pm 28.82 \,\mu\text{m}$ respectively in patients with POAG, whereas average CCT was $543.0 \pm 31.02 \,\mu\text{m}$, average MAK was 43.11 ± 1.73 D, average MAE in 3,5 and 7mm zone was 4.52 ± 1.97 , 5.90 ± 2.71 and $27.19 \pm 8.55 \,\mu\text{m}$ respectively.

Conclusions: Evaluation of corneal elevation topography by scheimpflug imaging showed forward shifting of the anterior and posterior corneal surfaces in POAG.

Biography

Asaad A Ghanem has completed his MD at the age of 35 years from Mansoura University, Egypt. He is the head of <u>Glaucoma</u> department of Mansoura University, Egypt. He has over 70 publications that have been cited over 453 times, and his publication h-index is 14. He has been serving as an editorial board member of several reputed journals.

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