Zeyad A Alzaben et al., J Clin Exp Ophthalmol 2016, 7:11(Suppl)
http://dx.doi.org/10.4172/2155-9570.C1.055

7th European Ophthalmology Congress

December 05-06, 2016 Madrid, Spain

Functional asymmetry in macular area in patients with pathological myopia using microperimetry

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Introduction: Microperimetry is a clinical innovation to evaluate the retinal sensitivity. In this study, we explored the inter-ocular retinal variations of retinal sensitivity in the macular area in patients with pathological myopia.

Methods: A transversal study was designed in which the macular sensitivity (Expert exam protocol) of MAIATM microperimeter was employed to evaluate the functional variations of 10° in macular areas in patients affected by pathological myopia using 37 points strategy, in a sample of 36 persons aged between 13 and 60 years (spherical equivalent from -6.00 to -16.00 diopters). Inter-ocular asymmetry values were determined and compared with previous published tolerance values by means of a paired t test, and the interocular differences were calculated as the 2.5th and the 97.5th percentiles.

Results: The interocular difference tolerance limits for central sensitivity of the macula was 7.28 dB in patients affected by pathological myopia. Statically significant differences were found between males and females in the asymmetry of the central ring and the second ring of retinal sensitivity (SC and S2). There was a significant positive correlation between the retinal sensitivity and the spherical equivalent, and a weak correlation between the retinal sensitivity and the fixation level. Also we encountered significant positive correlation in retinal sensitivity between the central ring and the third ring (SC and S3).

Conclusions: A general reduction in the central retinal sensitivity in eyes with pathological myopia is expected to be more marked with increasing ametropia. Considering inter-ocular asymmetry in central retinal sensitivity should help understand better the retinal features of patients with pathological myopia, for which establishing normative percentile values should prove a useful tool.

Biography

Zeyad A Alzaben received his Bachelor's degree in Optometry (2013) at the Jordan University of Science & Technology (JUST), and the first MSc degree in Science of Vision and Optometry (2014) at the Universitat Politècnica de Catalunya (UPC), and the second MSc degree in Visual Rehabilitation (2014) at Universida de Valladolid (UVa) / Medicine Faculty, and he is a PhD candidate in Optical Engineering doctoral program (2014-2016) at Universitat Politècnica de Catalunya (UPC). He is currently employed as full-time optometrist at the Department of Low Vision of Optipunt Eye Clinic. He has conducted two new researches about normal patients and patients affected by pathological myopia using OCT and MAIA microperimeter, waiting for the acceptance letters to be published. He is a student of Corporate Program for Management Development/Advanced Program for Optics Management in ESADE Business School in Barcelona (2014-2017).

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