INTEROCULAR PHYSIOLOGICAL ASYMMETRY IN PERIPAPILLARY RNFL THICKNESS IN NORMAL CHILDREN

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Purpose: To report interocular physiological asymmetry of peripapillary retinal nerve fiber layer (RNFL) thickness in healthy Bulgarian children aged 7 to 18 years using spectral domain optical coherence tomography (SD-OCT). Material and methods: This study analyzed 100 eyes of 50 healthy children. Each child had dilated eye examination in the Ophthalmology clinic of Medical University Alexandrovska Hospital with OCT measurements using Topcon 3D OCT 2000+ (Topcon Corporation, Japan) and protocols - 3D Disc and Circle. Normal ranges of interocular differences were established between 5^{th} and 95^{th} percentiles. In order to evaluate the physiological asymmetry intraclass correlation coefficients (ICC) were introduced. Results: The mean age of enrolled children was 11.96±3.35 years. The limits of interocular difference tolerance for average RNFL thickness were found to be 7 μm in 3D Disc protocol and 12 μm in Circle protocol, respectively. ICC were found to be almost perfect 0.81 (3D Disc - 0.92, Circle - 0.86). Conclusion: The interocular physiological assymetry in RNFL thickness beyond reported could be valuable in assessing certain early diseases like glaucoma. Key words: peripapillary nerve fiber layer, Topcon 3D OCT, physiological asymmetry, children, glaucoma.