Comparing characteristics of the optic nerve head assessed with HRT II between children and adults

V. Babic, P. Hentova-Sencanic, V. Markovic, V. Krstic, M. Bozic, I. Marjanovic, J. Djurovic

Institute of eye diseases Clinical Centre of Serbia, Belgrade, Serbia

**Purpose:** To determine quantitative stereometric parameters of the optic nerve head by using the Heidelberg Retina Tomography II and to investigate any damage of neuroretinal rim in children and compare these data with the data of the control group of adults.

**Methods:** One hundred and twenty-seven eyes of 127 children aged between 5-16 years were included in this comparative cross-sectional study, all with suspect juvenile glaucoma. The inclusion criteria were a large disc cupping detected by clinical examination and anamnestic history of headache. The control group comprised 127 adult patients (127 eyes), aged between 55-66 years also with suspect glaucoma. Optic nerve head topography and retinal nerve fiber layer thickness measurements were assessed using a HRT II. The right eye of each patient examined for the first time by means of HRT II was selected for the study. By Using Moorfields regresional analysis, the percentage of the participants who had maintained, suspect and/or damaged neuroretinal rim (T, TS, TI, N, NS and NI) was determined, so these data were compared between study and control groups.

**Results:** Data analysis in this study showed that the average mean values for children/adults were: disc area (mm²) 3.01 ± 0.62/2.68 ± 0.46 (p > 0.05); rim area (mm²) 1.88 ± 0.39 /1.67 ± 0.28 (p > 0.05); r/d 0.630 ± 0.124/0.630 ± 0.101 (p>0.05); c/d 0.369 ± 0.124/0.369 ± 0.101 (p>0.05); mean RNFL thickness (mm) 0.225 ± 0.078/0.219 ± 0.055 (p>0.05). Statistically significant difference in damaging of neuroretinal rim, between children and adults, was found in T and Ts segments. There was no statistically significant difference in others segments.

**Conclusion:** There were no differences in the investigated quantitative parameters of the optic nerve head in children and adults. Difference in damaging of the neuroretinal rim comparing children and adults optic discs appeared only in T and TS segments, which means that optic disc cupping spread was wider in children than in adults.