

11. Summary

The aim of the study: The aim of this study is to document the quality of visual functions of children born prematurely with a weight below 1500 g in their school age (visual acuity, refraction errors, spherical equivalent, contrast sensitivity, axial length, binocularity and strabismus). We describe visual disorders and their relation to general disorders and perinatal complications.

Material: We evaluate 2 groups of patients, pilot group and main group. The pilot group includes 38 children with mean birth weight 1244 g and mean gestation age 31 weeks. The main group includes 37 children with mean birth weight 1093 g and mean gestation age 29 weeks. The control group includes 18 full term children with mean age 9.5 years.

Method: The visual acuity was examined on the Snellen optotype, Pflügel optotype, picture optotype. Refractive errors were evaluated with autorefractor AR – 800 Nidek and Powerref device of EriLens.

The contrast sensitivity was tested on the Ginsburg's table VCTS of the Vistech Consultants. (Dayton, USA). Strabismus and binocular balance were examined on the synoptophore 58 100 Oculus. Binocular vision was evaluated with Bagolini test, axial length was measured with IOL Master, device of Zeiss.

Results: The best corrected visual acuity was in both groups lower than in the control group. We also describe worse results of contrast sensitivity in premature children than in

the control group. The biggest difference in comparison with the control group was found on the level of 4.0 c/deg. Statistically significant difference was found out in measurement of axial length. Mean axial length was 22.30 mm and 22.32 mm in premature children and 23.18 mm in control group. Refractive errors were more common in both groups of premature children. Only 44.74% and 51.35% of premature children did not wear glasses, in a group of full term children almost 95% of patients did not wear glasses. Strabismus was found in 21.05% and 18.92% of premature children. General healthy problems were detected in 28.95% and 24.32% of premature children. More serious visual problems were higher in children with neurological disorders.

Conclusion: Visual functions of premature children are worse than those of full term children. We detected higher frequency of refractive errors: hypermetropia, myopia and astigmatismus. The most common is hypermetropia. Myopia is more frequent in children with neurological disorders and in children after cryotherapy of ROP. Also strabismus is more common in the group of premature children, exotropia was often detected. Contrast sensitivity is statistically significant lower even in premature children, who did not suffer from the retinopathy of prematurity. Very important is following of premature children with neurological disorders, hydrocephalus, interventricular leukomalacia. In these patients, there is a higher occurrence of refractive errors and strabismus.