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Density of the photoreceptor in the macula according to adaptive optics in primary and secondary school children after a retinopathy of prematurity

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Objectives: To determine the density of photoreceptors in the macula according to adaptive optics in secondary school children after a retinopathy of prematurity

Methods: Ophthalmoscopy with adaptive optics was performed in children using the RTX1 device (Imagine Eye, France). The inclusion criteria for the study were the age of children from 9 to 15 years, and retinopathy of prematurity in anamnesis, in which the pathological process regressed spontaneously. Depending on the gestational age (GA) and body weight (BW) at birth, children were divided into two groups. The first group included children, who were born very prematurely, 26–28 weeks GA and BW up to 1500 grams, the second group—those were born at 29–32 weeks GA and with BW up to 2500 grams. As a control, the studies were carried out in healthy children of the appropriate age. Photoreceptor density was assessed in the area of 4° from the center of the fovea in an area of 100 μm² in each quadrant: superior temporal, superior nasal, inferior nasal and inferior temporal. During statistical analysis, the median of photoreceptor density by group and the level of significance of its difference were calculated.

Results: 30 children (60 eyes) were examined. The study groups, matched for GA and BW, at the time of the study had a corrected visual acuity of 1.0 and the length of the anterior-posterior segment of the eye in the range from 22.2 to 23.7 mm. The first group included 10 deeply premature children (20 eyes), during the examination the photoreceptor density was 25063; the second group—10 premature children (20 eyes), the photoreceptor density was 22308; in the control group were 10 full-term children (20 eyes), the photoreceptor density was 21222. However, in statistical analysis the difference was not significant.

Conclusions: The density of retinal photoreceptors in our study did not differ statistically between premature children of primary and secondary school age with a self-regression of retinopathy of prematurity in anamnesis and healthy children.

Angaben zu potentiellen Interessenkonflikten: Illia Nasinnyk

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Employee: No

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Our experience in compensating for myopia in children with prolonged visual stress

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Aims: To compare and evaluate methods of correcting myopia of varying degrees in school-age children (patients-PT) during intensive distance learning in wartime conditions.

Methods: 46 PT (92 eyes) participated in the study with low myopia –0.5–3 D, moderate myopia –3–6 D aged from 9 to 15 years were included in the examination. The control group (I group) included 19 PT who used op-

tical correction—glasses or microcontact lenses; in the studied group (II group)—27 PT who used corrective (hard) night lenses. In addition to the standard ophthalmological examination, the axial length (AL) of the eye was measured and static retinoscopy (RS) was performed. Control indicators were AL, RS and visual acuity (VA). The exclusion criteria: PT with systemic diseases, myopia greater than 6.0D, strabismus and amblyopia. PT of both groups were on forced distance learning for 3 years and spent an average of 8 hours a day on monitors. Patients of 2 groups used correct optical correction during the studied period. Control indicators were assessed at the first visit, after 12 months, 24 and 36 months. All PT had a family history of myopia.

Results: negative dynamics in both groups were observed for 2 control parameters, but with different values. In II group AL increased by 0.25 ± 0.03 mm, the RS increased by 0.08 ± 0.02 D ($p < 0.05$). The I group: AL increased by 1.1 ± 0.04 mm, the RS increased by 1.21 ± 0.05 D ($p < 0.05$). The mean VA remained stable with complete correction in both groups. A significant increase AL in I group was observed in 89.4%: patients with low 36.8% (7 PT) and moderate 52.6% (10 PT) myopia. In 10.5% (2 PT) of the control group, the indicators remained without significant changes. The increase in indicators in group II was significantly lower—the increase in AL was 74.1% (20 PT) and was stable at 33.3% (9 PT). In the control group, RS increased in all patients; in the study group, RS increased in only 14.8% (4 PT).

Conclusions: hard night lenses (corneal refractive therapy lenses) as a method of choice for myopia correction in school-age children reliably slow down the progression of myopia and contribute to its stabilization even with an aggravated hereditary history and intensive distance learning in wartime conditions.

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Pediatric Graves' Orbitopathy: TRAb and FT-3 are also prognostic factors in children—A Tertiary Center study

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Purpose: Graves' orbitopathy (GO) is an autoimmune disease of the orbit which occurs most often in relation to an autoimmune thyroidopathy. The clinical picture varies and is dependent on many risk factors especially age, antibody levels and the quality of the control of thyroid function. In this study we compare the clinical manifestations of GO in children to adults and the relation of the antibody levels, thyroid treatment and disease manifestation.

Methods: We conducted a review of the medical records of all pediatric GO patients (< 18 years) and compared the results with 482 (18–50 years old) adult patients from the Graves' Orbitopathy Database. Sub cohort analysis of pediatric GO Patients depending on definitive (surgical) thyroid vs. medical thyroid treatment was conducted. Risk stratification for remission in pediatric GO-Patients through univariate as well as multiple logistic regression for variables including serological laboratory results FT-3, FT-4, TSH-receptor autoantibodies (TRAb) and Anti-TGO antibodies was conducted.

Results: Clinical presentation varied significantly between paediatric and adult patients, with children showing mostly mild manifestations (80.4 vs. 48.7%, $p < 0.0001$), resulting in much less need of anti-inflammatory treatments and rehabilitative surgery. Univariate analyses revealed signif-