

ADAKHOVSKA ANASTASIIA, BOICHUK IRYNA, KATSAN SERGII AGE-RELATED CHANGES IN REFRACTION AND AXIAL LENGTH IN PRETERM INFANTS WITH RETINOPATHY OF PREMATURITY AFTER LASER COAGULATION OF THE RETINA

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Introduction. Retinopathy of prematurity (ROP) has been one of the leading causes of childhood blindness and low vision all over the world. Children who underwent laser coagulation of the retina (LCR) due to the development of severe forms of ROP are prone to the development of various kinds of refractive errors, mostly myopia and astigmatism.

The aim to estimate dynamics of the state of refraction and axial length of eye (ALE) in preterm infants with ROP after LCR in the age aspect.

Material and Methods. The material for our study was data of ophthalmological examinations of 84 premature babies at the age of 6 months to 3 years (average age is 1.1 years) and from 3 to 8 years (average age is 5.4 years) in group of children without ROP; with ROP self-regression; with ROP, who underwent LCR. The ophthalmological examination included a standard assessment of the anterior and posterior sections of the eye, strabismus and clinical refraction; eye ultrasound (A and B scans); assessment of visual acuity (from 3 years).

Results. At the age of 6 months - 3 years, the axial length of the right and left eyes in premature babies after laser coagulation of retina was 19,65□□□□□mm и 19,52□□□□□mm; at the age of 3 - 8 years - 22,52□1,28 mm and 22,61□1,19 mm. Spherical equivalent in premature babies after laser coagulation of the retina at the age of 6 months - 3 years was - 0.5±3.72 in the right eye and +0.07±3.54 in the left eye; at the age of 3 - 8 years -1.91±4.87 in the right eye and -2.3±4.9 in the left eye. In children after laser coagulation of retina at the age of 6 months - 3 years in the right eye, hyperopic refraction was recorded in 59.1%, myopic - in 31.8%, in the left eye - in 59.1% and 18.2%, respectively; at the age of 3-8 years in the right eye hyperopic refraction in 50.0%, myopic - in 36.4%, in the left eye - in 50.0% and 40.9%, respectively. Astigmatism < 2 D and ≥ 2 D after laser coagulation of retina at the age of 6 months - 3 years occurred in the right eye in 22.7% and 0.0%, in the left eye - in 22.7% and 4.6%; at the age of 3-8 years in the

right eye in 36.4% and 18.2%, in the left eye – in 36.4% and 22.7%, respectively. Anisometropia among children after laser coagulation of the retina was in 22.7% cases at the age of 6 months - 3 years and 18.2% at the age of 3-8 years.

Conclusions. The axial length of eye in premature babies after laser coagulation of the retina does not differ at the age of 6 months - 3 years and 3 - 8 years ($p>0.05$). A refractive shift in the magnitude of the spherical equivalent towards myopia was established in premature babies after laser coagulation of the retina. A significant difference in the magnitude of myopic refraction among premature children after laser coagulation of the retina and children without ROP/ ROP self-regression at the age of 6 months - 3 years and 3 - 8 years ($p<0.05$) was established. There was a difference in astigmatism between the right and left eyes in premature infants after laser coagulation of the retina and children without ROP/ ROP self-regression at the age of 6 months - 3 years and 3 - 8 years ($p<0.05$). For the first time, a more frequent occurrence of anisometropia among children after laser coagulation of the retina compared children without ROP/ ROP self-regression was established ($p=0.004$; $p=0.017$).

Key words: retinopathy of prematurity, age aspect, laser coagulation.