ISSN NO: 2770-0003
Date of Publication: 28-05-2022

Hormonal status in progressive myopic Chorioretinitis

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Annotation. The article explains the scientific significance of retinal dystrophy. An actual problem in ophthalmology at the present time is retinal dystrophy of varying degrees. This is due to the progressive increase in the incidence of this pathology. Until now, a unified theory about the pathogenesis of retinal dystrophy has not been formed. Visually, this is usually not noticeable if we are talking about small degrees of retinal pathology. But what leads to the growth of the eye is a very stormy topic for discussion today, which generates a lot of myths.

Key words: dystrophy, oct, fundus chamber.

Relevance. Myopic chorioretinitis (MX) is a complication of progressive myopia of a high degree, accompanied by damage to the peripheral and central parts of the retina. Myopic chorioretinitis, occurs in young people, proceeds very slowly, but with a progressive degree of chorioretinitis proceeds quickly, without obvious signs, often leads to disability or irreversible loss of vision.

Goal. To determine the role of altered hormonal status in patients with advanced myopia of a high degree in the formation and progression of MX. To study the relationship of hormonal status indicators in adolescents with high myopia.

Materials and methods. Adolescents of two age ranges were examined: group 1 - initial pubertal changes, age 10-14 years; group 2 - 14-20 years of the period of the middle and end of puberty.The exclusion criteria were severe concomitant chronic diseases. The case histories of patients from the Andijan Regional Ophthalmological Hospital and the eye department of the And GosMI Clinic in 2020 – 2021 were analyzed. The obtained distribution of patients by gender type suggested that one of the reasons for the formation of MX may be a change in hormonal status. Then 80 patients (160 eyes) were prospectively examined. The first clinical group included 40 patients with myopic chorioretinitis, who in ten cases had a bilateral process (20 eyes). The second clinical group consisted of conditionally healthy paired eyes (15 eyes). The third group is represented by patients with myopia without signs of MX. The high degree of myopia in the first and third groups was comparable and averaged -10.5±2.1 dpt, PZO – 30.5±2.8 mm. The control group, the fourth, included patients with emmetropic refraction, PZO – 23.27 ± 0.44 mm. The age in all groups ranged from 14 to 20 years (33.6±6.1, $p>0.05$). The main criterion for inclusion in the control group was the presence of a regular menstrual cycle, the absence of gynecological and hormonal diseases. All patients underwent a comprehensive ophthalmological examination, including a fundus camera, refractometry, A-scan and optical coherence tomography, according to which the localization, size, shape of dystrophic foci, the severity of pathological changes of the retina above the focus were evaluated. The Fundus chamber and OCT data were used as the main criterion for the diagnosis of MX, determining the degree of its activity and indications for treatment with angiogenesis inhibitors. The hormonal status was studied with the determination of sex hormones (testosterone, progesterone, estradiol). The study was conducted by solid-phase ELISA. Blood sampling for the study was carried out from the ulnar vein, in women with a preserved menstrual cycle from the 5th to the 7th day of the cycle.

Results. The patients of the first group in the central part of the fundus were diagnosed with classical MX, located above the retinal pigment epithelium. The concentration of total testosterone in the blood in the group of adolescents with NWP increased significantly after reaching a BMI of >75% of the centile values. When compared with BMI <25, 25-50 and 50-75%: the testosterone level of 0.63±0.7 ng/ml at <25% centiles and 0.66±0.5 ng/ml at 25-50% centiles is significantly lower than at >75% centiles (2.0±0.5 ng/ml;

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p=0.035). Moreover, as in group 1, testosterone levels were moderately positively correlated with the level of LH in the blood (R=0.517; p=0.031) Neovascularization in complicated myopia was characterized by moderate activity, small membrane sizes (horizontal – 568±111.5, vertical - 205±28.6, sagittal - 316±31.3 microns), the absence of intraretinal cysts. Neuroepithelial detachment was weakly expressed or absent. Druses, elevation of the pigment epithelium, as a rule, were not visualized.

A comparative analysis of the indicators characterizing the state of retinal and choroidal blood flow in patients in four compared groups found that at the level of the superficial vascular plexus, significant differences in capillary density were detected between patients with myopic refraction and emmetropia. There were no differences in the groups with the presence and absence of HCV. At the level of the deep vascular plexus, other relationships were revealed. The relative density of the capillaries of the deep vascular plexus in the control group patients with myopia and emmetropia was comparable. Whereas in the group with myopic chorioretinal neovascularization, a decrease in this indicator was noted compared to the control. In the presence of HCV, the relative density was reduced by about 30%, on a pair of conditionally healthy eyes – 14%. This trend continued at the level of choriocapillaries, the degree of their relative density in patients of the first and second clinical groups would be. A comparative analysis of hormonal status indicators revealed a significant imbalance in patients with myopic CHF: the levels of FSH and prolactin were increased 2 and 1.8 times, respectively, compared with the control groups, and the concentration of progesterone was reduced 2.1 times The data of the examination of the ophthalmological status using OCT, including in the angio and PHAG mode, showed that myopic CNV has structural differences from other forms of CNV: small size, fusiform shape, moderate activity, type II neovascularization. The OCT data in the angio mode convincingly demonstrate that patients with myopic CNV have significant violations of retinal and choroidal blood flow, which is confirmed by a decrease in the relative density of capillaries in the deep retinal vascular plexus and at the level of choriocapillaries, as well as a pronounced thinning of the thickness of the choroid. It is important to emphasize that these changes were detected not only in the eyes with chorioretinal neovascularization. Assessment of hormonal status indicates an imbalance of sex hormones and the presence of estrogen deficiency. According to numerous data presented in domestic and foreign sources, it is known that a decrease in estrogen levels leads to an increased risk of vascular complications. Estrogen normally stimulates vascular relaxation by stimulating the release of nitric oxide or by acting directly on the vascular wall smooth muscle (VSN). Recent studies indicate that calcium and potassium channels in VSN cells play an important role in the estrogen-induced relaxation of many vascular structures. That is, hypoestrogenemia is the cause, on the one hand, of the formation of endothelial dysfunction, and, on the other, of prolonged vasospasm.

Conclusions. Thus, myopic CNV can be considered as a comorbid condition, which includes a combination of menstrual-ovarian cycle disorders, in which choriocapillaries as locus minoris resistentia act as a kind of target in the implementation of a systemic pathological process. The revealed results open up new ways of prevention and early diagnosis of chorioretinal neovascularization in patients with myopia.

Literature

1. Adesina A.F., Peterside O., Anochie I., Akani N.A. Weight status of adolescents in secondary schools in port Harcourt using Body Mass Index (BMI)// Ital. J. Pediatr. 2012. Vol. 38. P. 31.
2. Bessensen D.G., Kushner R. Overweight and obesity. Prevention, diagnosis, treatment. Moscow: Binom, 2006. 240 p.
3. Dedov I.I., Melnichenko G.A., Chebotnikova T.V., Kuchma V.R., Butrova S.A., Skoblina N.A., etc. Sexual development of children and adolescents of the Moscow region: the impact of obesity // Russian Medical Journal. 2006. No. 26. p. 1872.
4. Adair L.S., Gordon-Larsen P. Maturational timing and overweight prevalence in US adolescent girls // Am.J. Public Health. 2001. Vol. 91. P. 642-644.
5. Bratberg G.H., Nilsen T.I.L., Holmen T.L., Vatten L.J. Early sexual maturation, central adiposity and subsequent overweight in late adolescence. A four-year follow-up of 1605 adolescent Norwegian boys and girls: the Young HUNT study // BMC Public Health. 2007. Vol. 7. P. 1-7. Published online 2007 Apr 12.