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MORPHOMETRIC CHARACTERISTICS OF THE EYEBALL IN PATIENTS WITH DIFFERENT DEGREES OF MYOPIA AND THEIR INFLUENCE ON VISUAL FUNCTIONS

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Abstract. View The incidence of myopia in different regions of Uzbekistan in the structure of organ diseases ranges from 20 to 45.7 %. It is known that 22% of the visually impaired are young people, and the main cause of disability is high-grade myopia [10] . Both in our country and abroad , high - grade myopia in adolescents and "young adults " is often combined with pathology of the retina and optic nerve , which complicates the prognosis and course of the pathological process [10]. The medical and social significance of the problem is complex myopia It is further exacerbated by the impact on people of working age.

Key words: myopia , emmetropia , macula pigment optician density of the eye front-back axis , morphometric parameters , carotenoids , heterochromatic flashing photometry , retina optician coherent tomography .

The development of myopia can lead to serious irreversible changes in the eye and significant loss of vision [7]. Among adults with visual impairment due to myopia, 56% have congenital myopia, including school-age children [7]. The results of extensive epidemiological studies have shown that myopia is a multifactorial disease. Understanding the pathogenetic mechanisms of visual impairment in myopia remains one of the urgent issues in ophthalmology. Morphological features of the sclera play an important role in the process of myopia . They are especially important in the pathogenesis of eyeball elongation. Dystrophic changes occur in the sclera of people with high myopia [6]. It has been found that the expansion and deformation of the sclera of the eyes of adults with high myopia are significantly greater than in emmetropia , especially in the posterior pole [20]. The increase in the length of the eyeball in myopia is currently considered a consequence of metabolic diseases of the sclera, changes in hemodynamics [6]. The elastic properties of the sclera and changes in the length of the anterior-posterior axis have long interested scientists. The evolution of the study of the anatomical parameters of the eyeball is reflected in the works of many authors. According to EJ Tron, the length of the emmetropic eyeball varies from 22.42 27,30 ммto 22.42. E. J. Tron gives the following information about the variability of the length of the eyeball in myopia from 0.5 to 22.0 D: the length of the eyeball in myopia is 0.5–6.0 D – from 22.19 to 22.19 28.11 мм; myopia 6.0–22.0 D -28.11 38.18 ммto. According to T. I. Eroshevsky and A. A. Bochkareva, the biometric parameters of the 24.00 ммsagittal axis of a normal eyeball are average [4]. As mentioned above, with myopia , dystrophic changes occur in the retina , which, presumably , are caused by impaired blood flow in the choroidal and peripapillary arteries, as well as its mechanical stretching [2]. Thus, the longer the length of the eyeball , the greater the "growth" of the membranes of the eyeball and the lower the density of the tissues: sclera, choroid, retina . As a result of these changes, the number of cellular substances in the tissue cells also decreases: for example,

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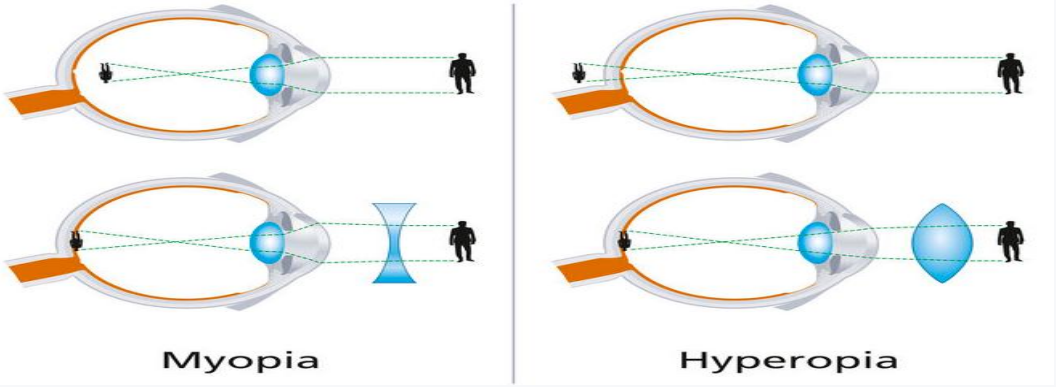
retinal pigment The epithelial layer becomes thinner, the concentration of active compounds, possibly carotenoids, decreases in the macular region .

Purpose: Evaluation of the morphofunctional parameters of the visual analyzer in patients with myopia as the length of the anterior-posterior axis of the eye (O OO') increases .



Materials and methods : 45 patients (90 eyes) participated in the study . All patients in the study were divided into 4 groups according to the length of the anterior-posterior axis of the eyeball (O OO'). The first group is light mi o pi ya and OOO' patients with length from 25,08 мм23, 96 were selected ; the second one is the average level mi o pi ya and OOO' patients with a length of 25.0 to 26,07 мм9 - patients with a high degree of third myopia , OOO' length 26,65 ммabove; the fourth - patients with refraction close to emmetropia and (O OO) length up to 22.2 23,8 мм. In addition to all clinical examinations according to ophthalmological standards , diagnostic measures were performed: echo obiometry, digital fundus photography, optical coherence tomography of the anterior and posterior segments of the eyeball , and examination of the fundus through a goniolense .

Results: Mean age of B emors They were 25.3 and 13.9 years old . Tested patients' indicators and results in statistical processing OOO' prolongation and in some cases reduction of OOO' was observed in some patients. Higher visual acuity (p=0.01), macular sensitivity (p=0.008), mean macular retinal thickness (p=0.01), mean macular x oroid thickness in nasal and temporal in parts (p=0.005; p=0.03) . In addition, a significant statistically significant inverse correlation was found between OOO' and Maximum Corrected Visual Acuity (MK KO') -0.4 in all subject groups; also, the thickness of the retina in the macula is -0.6; the thickness of the choroid in the macula is -0.5 and the sensitivity in the macula is -0.6; ($p<0.05$).

Conclusion: A detailed analysis of the average values obtained as a result of the conducted examinations revealed a general tendency to a decrease in the morphofunctional parameters of the eyeball with an increase in the OOP in the groups. The obtained correlation data of the conducted clinical trial indicate a close relationship between the morphometric and functional parameters of the visual analyzer. It is assumed that these changes are also associated with the "mechanical overstretching" of the membranes in patients with myopia due to the increase in the OOP. In separate groups, a decrease in the optical thickness of the macular pigment (OPT) is confirmed, as well as the presence of negative feedback between (OPT) and OOP.

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Literature

1. Avetisov E.S. Blizorukost. M.: Medicine, 1999. S. 59. [Avetisov ES Myopia. M.: Medicine, 1999. P. 59 (In Russian)].
2. Akopian A . I . i Dr. Osobennosti disca zritelnogo nerva pri glaucoma i myopia // Glaucoma. 2005. No. 4. S. 57–62. [Akopyan AI Features of the optic disc in glaucoma and myopia // Glaucoma. 2005. No. 4. P. 57–62 (In Russian)].
3. Dal N.Yu. Macular carotenoids. What is age-related macular degeneration? // Oftalmologicheskie vedomosti. 2008. No. 3. S. 51–53. [Dal N.Y.Macular carotenoids. Can they protect us from age-related macular degeneration? // Ophthalmological journal. 2008. No. 3. P. 51–53 (In Russian)].
4. Eroshevsky T.I., Bochkareva A.A. Diseases of the eye. M.: Medicine, 1989. S. 414. [Eroshevsky TI, Bochkareva AA Eye diseases. M.: Medicine, 1980. P. 414 (In Russian)].5. Zykova A.V., Rzaev V.M., Eskina E.N. Issledovanie opticheskoy plotnosti macularnogo pigmenta u raznovozrastnykh patsientov v norme: Mat-ly VI Ross. obshchenats. ophthalmol. to the forum. Sbornik nauchnykh trudov. M., 2013. T. 2. S. 685–688. [Zykova AV, Rzaev VM, Eskina EN Study of normal macular pigment optical density in different aged patients // VI Russian national ophthalmological forum. Collection of scientific works. Moscow, 2013. Vol. 2. P. 685–688 (In Russian)].