phytoadaptogens under oxidative stress. Bulletin physiology and pathology of respiration 2015; 55:95–100 (in russian).
Dorovskikh V.A., Tseluyko S.S., Simonova N.V., Anokhina R.A. In the world of antioxidants. Blagoveshchensk, 2012 (in russian).
Krasavina N.P., Tseluyko S.S., Dorovskikh V.A. Mast cells of respiratory organs and prospects of their study (literature review). Bulletin physiology and pathology of respiration 2004; 19:74–79 (in russian).
Landyshev Ju.S., Dorovskikh V.A., Chaplenko T.N. Drug Allergy. St-Petersburg, 2010 (in russian).
Landyshev Ju.S., Dorovskikh V.A., Tseluyko S.S., Lazutkina E.L., Tkacheva S.I., Chaplenko T.N. Bronchial asthma. Blagoveshchensk, 2010 (in russian).
Lashin A. P., Simonova N.V., Simonova N.P. Infusion of medicinal plants in the prevention of dyspepsia in newborn calves. Bulletin of Krasnoyarsk state agrarian University 2013; 5:177– 181(in russian).
Pereverzev D. I., Dorovskikh V. A., Simonova I.V., Shtarberg M.A. Efficacy of cytoflavin in the correction of processes of lipid peroxidation in plasma of patients with acute myocardial infarction. Cardiology and cardiovascular surgery 2016; 9(5):42–45 (in russian).
Simonov V.A., Simonova N.V. Method of correcting lipid peroxidation in animal white muscle disease. Krasnoyarsk, 2006 (in russian).
Simonova I.V., Dorovskikh V.A., Simonova N.V., Shtarberg M.A. Non-specific preventive measures against respiratory diseases of nursery age children. Far Eastern Medical Journal 2009; 3:56–58 (in russian).
Simonova N.V., Dorovskikh V.A., Anokhina R.A. Medicinal plants of the Amur region. Blagoveshchensk; 2016 (in russian).
Simonova N.V. Infusion of medicinal plants and oxidative stress in the ultraviolet irradiation. Bulletin of Saratov state agrarian University. N. I. Vavilov 2011; 8:23-26 (in russian).
Simonova N.V. Phytopreparations in the correction of lipid peroxidation of membranes induced by ultraviolet irradiation: abstract of thesis…doctor of biological sciences. Blagoveshchensk; 2012 (in russian).
Pratt D.A., Tallman K.A., Porter N.A. Free radical oxidation of polyunsaturated lipids: New mechanistic insights and the development of peroxyl radical clocks. Acc. Chem. Res. 2011; 44(6):458–467.
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MODERN IDEAS OF AMBLYOPIA

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Abstract The leading role in formation of different types of amblyopia belongs to a touch deprivation owing to violation of refraction, decrease in transparency of optical environments or squint with violation of binocular sight during formation of visual system. The deprivation leads to violation of development of the visual analyzer at all levels – from a retina to the visual centers of a cerebral cortex. Today in literature discussion of questions of level and mechanisms of the violations developing in visual system under the influence of a deprivation continues.

Key words: amblyopia, vision acuity, deprivation.

Amblyopia (from Greek amblus - stupid, opsis - vision) is for the first time described by Le Cat in 1713. E.S. Avetisov (1962) has given the following definition: “It is necessary to understand forms of decrease in sight various by origin which reason functional frustration of the visual analyzer mainly are as an amblyopia”. Amblyopia – rather frequent pathology of the visual analyzer. According to E.S. Avetisov (1968), it is registered at 1-2% of all population. According to James F. Vender and Janis A. Gault (2005), the prevalence of amblyopia in the USA is 2-5%. Amblyopia arises and observed, mainly, at children’s age. A.N. Dobromyslov, V.G. Maymulov (1982) diagnosed it for 1,07-6% of children of preschool and school age. According to many ophthalmologists the amblyopia at preschool children wins first place in structure of children’s eye pathology, and at school students – the second, having conceded the first place of shortsightedness. In clinical practice ophthalmologists face problem of amblyopia at patients of all age [1]. By means of an optical coherent tomography at amblyopia violation of structure of pigmentary epithelium of retina, a thickening of a horiocapillar layer is revealed, involutional changes in type of thinning of layer of photoreceptors and a pigmentary epithelium are noted [2]. The reliable increase in thickness of the central area of retina at all types of amblyopia [3] which was more expressed at disbinocular amblyopia is defined. At refraction amblyopia, since average degree, reliable increase in thickness of the central area of retina is observed [2]. At the same time Markosyan G. et al. have revealed smoothing of retina relief in the field of fovea at congenital shortsightedness in comparison with acquired at identical values of retina volume [4]. Undoubtedly, the revealed features of the central area have certain, still insufficiently studied value in development and a current of amblyopia and are useful to diagnostics in clinical practice. Electrophysiological methods, are widely applied in objectification of a functional condition of the visual analyzer at amblyopia [5]. Researches of bioelectric activity of retina at amblyopia by means of ERG demonstrated decrease in function of photoreceptors and neurons of macular area (decrease in amplitude and - and in - waves of local ERG on a red incentive), at the same time the bioelectric activity of peripheral departments of retina is close to norm [6]. Electrophosphene, being method of express diagnostics of functional condition of the visual analyzer, I have allowed to define deterioration in indicators of electric sensitivity threshold of retina and electrolability of optic nerve at amblyopia in children [7]. Healthy children have a character of the visual caused potential which adequately reflects neurophysiological function of the visual analyzer, is formed up to 3 months, from a year to 3 years of his characteristic come nearer, and in 7 years coincide with indicators in adults. Complex use of techniques of assessment of the visual caused potentials allows to define degree and level of neurotouch defeat of vision acuity [8]. Data of literature on research ZVP demonstrate that functional violations of processing of touch information affect high-frequency channels at an anizometropic and disbinocular amblyopia and low-frequency channels at refraction and obskuration amblyopia. As a result of pilot studies neurophysiologists have found morphological and functional violations in the visual centers of a brain – external cranked bodies and striar bark where the atrophy and functional insolvency of the neurons receiving boost from deprivation eye

[9] develops. Results of complex clinical trials demonstrate that similar changes happen in primary and secondary visual centers of a brain at an amblyopia of different genesis and in person. The method of ultrasonic doppler sonography has revealed the violation of regional hemodynamics of brain which is shown increase in mezhpolusharny asymmetry and decrease in blood level of cerebral vessels, increase in a vascular tone, difficulty of venous outflow, reduction of speed of a brain blood-groove, increase in the index of resistance. In children with a refractive amblyopia at ametropia of high degree deterioration in blood supply of retina is revealed that is shown by low high-speed indicators of a blood-groove and high indexes of peripheral resistance. Results of ultrasonic Doppler research of children with refractive amblyopia demonstrate change of indicators of blood-groove in vessels, feeding retina. On this basis researchers have assumed a certain role of hemodynamic changes in pathogenesis of amblyopia. According to modern representations, the amblyopia is considered as display of the pathology of the visual analyzer caused disgenesis both touch, and motor links of P-and M-channels of retinocortical communications owing to inadequate visual stimulation during development of various departments of retina of both eyes (foveal, macular, paramacular, peripheral) and their representations within one or both hemispheres of brain. The complex of symptoms of visual functions violations is define by extent of touch and/or motor violations [8].

Despite numerous researches, the problem of amblyopia remains until the end of not studied. Where there is the main pathological link: in the field of bark, in retina or external cranked bodies and what structures are surprised initially at amblyopia? On all these questions concerning thin neurophysiological mechanisms of violation and restoration of visual functions, the modern science still should give the answer.

References

1. Barequet I.S. Laser in situ keratomileusis improves visual acuity in some adults with amblyopia / I.S. Barequet, T. Wygnanski-Jaffe, A. Hirsh // J. Refract. Surg. – 2004. – Vol.20. – P. 25-28.

2. Botabekova T. K. Optical coherent tomography in diagnostics of amblyopia / T.K. Botabekova, N.S. Kurgambekova//the Messenger of ophthalmology. - 2005. - Vol. 5. – P. 28-29.

3. Kee S.Y. Thickness of the fovea and retinal nerv fiber layer in amblyopic and normal eyes in children / S.Y., Kee S.Y. Lee, Y.S. Lee // Korean J. Ophthalmol. – 2006. – Vol. 20. - № 3. – P. 177-181.

4. Markosyan G.A. Retina thickness in macular area in children with the congenital and acquired shortsightedness of high degree according to optical coherent tomography / G.A. Markosyan, E.P. Tarutta, M.V. Ryabina//the Russian ophthalmologic magazine. - 2010. - Vol. 3. – P. 21-24.

5. Zislina N.N. A complex electrophysiological research of visual system at children and teenagers with congenital short-sightedness, diseases of retina and optic nerve / N.N. Zislina [etc.]//the Messenger of ophthalmology. – 1996. - Vol. 1. – P. 20-23.

6. Slyshalova N.N. Bioelectric activity of retina at amblyopia / N.N. Slyshalova, A.M. Shamshinova//the Messenger of ophthalmology. - 2008. - Vol. 4. – P. 32-39.

7. Ponomarchuk B.C., Terletskaya O.Yu., Slobodyanik S.B. et al. Electrostimulation in ophthalmology. Experience of functional methods of research laboratory of organ of vision//News of medicine and pharmacy, Ophthalmology (363). 2011. (thematic number) / Original researches.

8. Brutsky L.A. Etiopatogenetic mechanisms amblyopia. A. Brutskaya//Messenger of ophthalmology. - 2007. - Vol. 3. – P. 48-51.

9. Von Noorden G.K. Factors involved in the production of amblyopia / G.K. Von Noorden // Br. J. Ophthalmol. - 1974. - Vol.58. - №3. - P. 158-164.

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THE EFFECTIVENESS OF ACUPUNCTURE IN WOMEN WITH INSUFFICIENT LUTEAL PHASE OF THE MENSTRUAL CYCLE DURING PREGNANCY

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ABSTRACT 80 women of reproductive age who planned pregnancy were tested, of which 40 women with primary oligomenorrhea in the puberty and luteal phase insufficiency (LPI) of the menstrual cycle (main group) and 40 women with the correct rhythm of menstruation and full luteal phase (FLP) of the menstrual cycle (control group). The echographic parameters of ovaries before treatment and after acupuncture were research. It is established that after the application of acupuncture in women with ovulatory menstrual cycle and identified LPI of the menstrual cycle found a significant increase in the size of the corpus luteum (19.07±1.21 mm before treatment, 26.21±0.79 mm – after acupuncture). In women with the persistence of the preovulatory follicle in the ovary after the use of acupuncture, a two-phase menstrual cycle was established, the size of the corpus luteum corresponds to normal values (24.80±0.47 mm).

Key words: primary oligomenorrhea, anovulatory menstrual cycle, luteal phase insufficiency, acupuncture.

In women with primary oligomenorrhea in the pubertal period, lutein phase of the menstrual cycle was established as one of the factors of female infertility [1, 2, 3].

In connection with infertility caused by LPI of the menstrual cycle in women with primary oligomenorrhea in the puberty period, the use of acupuncture is pathogenetic method [4, 5].

Research objective Research the effectiveness of acupuncture in women with LPI of the menstrual cycle in planning pregnancy.

Materials and methods The research involved 80 women of reproductive age. 40 women with primary oligomenorrhea in puberty and LPI of the menstrual cycle (main group) and 40 women with the correct rhythm of menstruation and PLF menstrual cycle (control group). In the main group, there were 2 subgroups: 1 subgroup - 32 women with hypofunction of the corpus luteum and 2 subgroup - 8 women