EDITOR-IN-CHIEF'S PREFACE TO ISSUE 3, 2024

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When scanning through the content of current issue of our journal I would like to highlight the works that are directly related to the priorities and critical technologies which were identified by the President of the Russian Federation in his Decree No. 529 dated June 18, 2024. These are "Preventive and personalized medicine, ensuring healthy longevity" and "Biomedical and cognitive technologies for healthy and active longevity".

The first study is a joint work of Russian and Belarusian scientists from Moscow and Grodno (Krivolapchuk I.A. et al.), who analyzed **the factors and level of physical performance of schoolchildren aged 13–14 years**. It was revealed that the transition to higher stages of puberty is accompanied with progressive dynamics of most indicators of anaerobic performance, while indicators of aerobic power and capacity change in different directions. This is important to take into account when regulating physical activity in adolescents during the critical period of ontogenesis.

The second work is a review by I.E. Pleshchev et al. (Yaroslavl, Moscow) with an analysis of the prevalence of **sarcopenic obesity**, the causes of its occurrence, modern methods of its prevention and physical rehabilitation, age-related changes in adipose and muscle tissue, effect of calorie restriction and physical exercise complexes that have a positive effect. The authors also analyzed gaps in clinical practice recommendations.

This "age series" is completed with an article of L.V. Poskotinova et al. (Arkhangelsk) on the possibility of using the parameters of auditory evoked potentials as a criterion for reduced cognitive reserve and increased **risk of developing cognitive** impairments.

Studies on **cardiovascular pathology**, which makes the main contribution to the mortality and the reduction in life expectancy, is represented an extensive study by A.Yu. Lazutkina (Khabarovsk), on the assessment of the quality **of the screening test for coronary heart disease predictors**. It is proposed to expand the number of detected markers for assessing the risk of coronary heart disease and other pathologies. The work of A.N. Sumin et al. (Kemerovo) included analysis of diagnostic tactics in patients with suspected obstructive coronary heart disease which, and a conclusion was made about the necessity in wider using non-invasive imaging tests. R.E. Kalinin et al. (Ryazan) revealed that indicators of spectral analysis of electroencephalogram and P300 cognitive evoked potential are the predictors of cognitive status 6 months after carotid endarterectomy.

Other works published in this issue also correspond to the mentioned Decree and the Strategy for Scientific and Technological Development of the Russian Federation. This applies to the studies on **socially significant diseases**: hepatitis, tuberculosis, HIV infection, etc. This is the subject of articles by S.S. Sleptsov and S.S. Sleptsova on chronic viral hepatitis in the Arctic zone of the Republic of Sakha (Yakutia), R.Yu. Abdullaev et al. (Moscow), who revealed the development of hypercoagulation in TB patients with diabetes mellitus after moderate and severe COVID-19, A.Yu. Sambyalova et al. (Irkutsk), who analyzed the antiretroviral drugs concentrations in children with perinatal HIV infection.

Several works are devoted to **reproductive health and children's health** – the problems that are also under magnifying glass of modern

health care and state leaders. One of them is a review by S.V. Zotov et al. (Novosibirsk, Novokuznetsk) with an analysis of the impact of environmental pollution, lifestyle, surgical history, bad habits and obesity, psychological and social factors that reduce ovarian reserve. K.D. Ievleva et al. (Irkutsk) studied the diagnostic value of interleukins in women with chronic endometritis and overweight, which will give an opportunity to develop a minimally invasive method for determining the risk of this disease. E.D. Kazantseva et al. (Irkutsk) revealed a higher level of lipid peroxidation products, a lack of fat-soluble vitamins and increased values of oxidized glutathione in children with influenza compared to the healthy children. The series is concluded by the work by V.V. Kocherova et al. (Chita), who determined the risk factors for the development of intraventricular hemorrhages in extremely premature newborns, which is very important for the providing medical care to such children.

Two original articles and a review are devoted to the **surgical problems**. V.A. Zaika, T.N. Iureva and D.B. Danzandorzhieva (Irkutsk) proved that episcleral methods of **treating rhegmatogenous retinal detachment** are characterized by the best anatomical, reconstructive and functional effect. L.V. Lyubimova et al. (Cheboksary) revealed a change in the spectrum of leading pathogens **of implant-associated infection** in the pre- and post-COVID period and a change in their antibiotic resistance, and recommend vancomycin for empirical therapy, but limited use of fluoroquinolones. The review by L.M. Tibekina et al. (St. Petersburg) proved that **the surgical method of treatment of drug-resistant epilepsy** is a priority.

This issue contains a larger number than ever of interesting experimental studies. This concerns the **modeling of various pathologies, such as: cataract** – by A.D. Chuprov et al. (Orenburg), who showed a decrease in stearyl-coenzyme-A-desaturase and melatonin concentration in the lens tissue; **non-alcoholic fatty liver disease** – by T.V. Brus and A.G. Vasilyev (St. Petersburg), offering additional tests to assess the severity of the process; scopolamine **cholinergic insufficiency** – by Ya.G. Razuvaeva et al. (Ulan-Ude), who studied the neuroprotective effect of *Orostachys spinosa* Sweet extract.

Three works are dedicated to the studying **new and potential substances and compositions** for the creation of vaccines, drugs and probiotics. For example, A.B. Pyatidesynikova et al. (Irkutsk) showed stimulation of *TLR2* and *TLR4* gene expression by organoselenium compound 2,6-dipyridinium-9-selenabicyclo[3.3.1]nonan dibromide, i. e. increase in the immunogenic properties of the vaccinal strain Y. *pestis* EV. S.M. Miroshnichenko et al. (Novosibirsk) found that using enterosorbent based on aluminum oxide and polydimethylsiloxane has protective effect for thymus functional activity in modeling continuous lighting in rats. A.S. Pendyukhova et al. (Irkutsk, Ulan-Ude) proved that both the biocompatibility of probiotic strains and the antagonistic activity of the consortium against pathogenic strains are important for the creation of a probiotic consortium with effective potential, which makes it possible to determine effective strategies for the use of probiotics.

The article by E.V. Saidakova et al. (Perm) proposes to modify the cultivation protocol by introducing interleukin 2 into the culture medium in order to increase the viability and mitotic activity of T lymphocytes thawed after cryopreservation.

As always, the issue contains a description of unique clinical observations. T.V. Sorokovikova et al. (Tver, Moscow) describe a rare prion disease – fatal familial insomnia caused by an autosomal dominant mutation D178N of the *PRNP* gene.

In conclusion, I would recommend paying attention to a very interesting review not only for theorists and clinicians, but also for teachers. This is

the review by E.T. Ablyakimov and M.A. Kriventsov (Simferopol) discussing ligand-associated activation of vitamin D receptors in the morphogenesis of immune inflammation. A better understanding of the intercellular relationships between vitamin D receptors, D3-VDR complex, and immune checkpoint receptors (PD-1, PD-L, CTLA) in inflammation could form the basis for the development of new strategies for the diagnosis, prognosis, and treatment of various diseases.

We wish you a good summer and new interesting ideas!

For citation: Kolesnikov S.I. Editor-in-Chief's preface to Issue 3, 2024. *Acta biomedica scientifica.* 2024; 9(3): 5-10. doi: 10.29413/ABS.2024-9.3.1