

## Materials of Conferences

**POSSIBLE WAYS OF BLOOD PRESSURE  
CORRECTION AT PATIENTS WITH  
DIABETES MELLITUS ASSOCIATED WITH  
COPD**

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The aim of our research was to evaluate the effectiveness of the imidazoline receptor agonist – moxonidine («Physiotens») in the treatment for high blood pressure at patients with diabetes mellitus type 2 associated with the chronic obstructive pulmonary disease (COPD).

**Materials and methods:** our study group included 28 patients with diabetes mellitus type 2 (average age -  $53,7 \pm 3,1$  years old, duration of diabetes mellitus -  $9,8 \pm 1,1$  years) associated with COPD of I-II stages (*GOLD*, 2003). Mild COPD was diagnosed at 21 patients, moderate - at 7 patients. All patients received Physiotens as a monotherapy in dose 0,2 mg/day with titration till 0,6 mg/day. The therapy duration was 24 weeks. All patients received the earlier prescribed broncholytic therapy. The examination of the test persons included the following aspects: daily monitoring of blood pressure; evaluation of microcirculation by bulbar biomicroscopy method including estimation of perivascular space, vessels and intravascular blood flow and determination of conjunctival indices; examination of endothelium-dependent vasodilation; measuring insulin resistance according to *HOMA IR*. The function of external respiration was studied using lung-tester «Spiro S-100».

**Results:** after the treatment, the average daily systolic blood pressure reduced by 13,3% ( $p < 0,01$ ), and diastolic by 10,1% ( $p < 0,05$ ). Daily blood pressure profiles showed a positive dynamics; variability, value and velocity of the morning rise in blood pressure reduced ( $p < 0,01$ ). All studied parameters of the microcircular blood flow improved: we observed a diminution of perivascular edema, higher velocity of microcircular blood flow and disappearing of «sludge syndrome». Perivascular conjunctival index reduced from  $2,12 \pm 0,08$  till  $1,85 \pm 0,09$  ( $p < 0,05$ ); vascular - from  $14,13 \pm 1,11$  till  $10,12 \pm 0,91$  ( $p < 0,01$ ); intravascular - from  $6,94 \pm 0,44$  till  $5,39 \pm 0,31$  ( $p < 0,05$ ). Evaluating the endothelium-dependent vasodilation, we could see a reliable growth of brachial artery diameter ( $p < 0,05$ ). The *HOMA IR* index reduced reliably ( $p < 0,05$ ) after taking Physiotens. We have not observed any statistically significant changes in external respiration during the conducted study.

**Conclusion:** Physiotens (moxonidine) can be recommended as a basic therapeutic medication to correct blood pressure at patients with diabetes mellitus type 2 associated with COPD.

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**EPIDEMIOLOGIC PECULIARITIES OF THE  
CEREBROVASCULAR DISTURBANCES IN  
THE VERTEBROBASILAR SYSTEM AMONG  
THE POPULATION OF THE KARELSKY  
REGION, PETROZAVODSK.**

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Bioclimatic severity of the Karelsky region is determined by its high latitude, as well as by the main environmental factors of the North – temperature and light conditions, humidity, pressure, speed and direction of wind – and their negative influence on people's health (N.A. Agadzhanian, P.G. Petrova, 1996; N.V. Dorshakova, 1997). According to the data of the Republican center of medical analytics, prevalence of cerebrovascular diseases is high in the region, on average 11,4 cases per 1000 persons. High prevalence of acute ischemic cerebrovascular disturbances (ACD) was measured at the level of 8,4 cases per 1000 persons. In this respect, epidemiologic peculiarities of the cerebral blood flow disturbances among region's population become a worthy issue for research. The aim of this study was to research on the epidemiologic peculiarities of the cerebral blood flow disturbances of the vertebrobasilar system (VBS) among the citizens of Kareliya's capital Petrozavodsk. The study group included 140 patients with cerebral blood flow disturbances (CBFD) of VBS, who underwent a treatment at the angioneurology department of the Petrozavodsk City Emergency Hospital. The group consisted of 61 men (43,6%) and 79 women (56,4%). The patients were aged between 38 and 77, average age is  $55,4 \pm 7,7$ . Age structure of the study group was the following: till 45 years old – 10,7%, 46-59 – 61,4%, 60-74 – 27,1%, over 74 years old – 0,7%. Working-age patients prevailed in the group – 72,1%. Medical history of the patients with ACD often included ischemic stroke of VBS – 42,1%, ischemic stroke in the carotid system (CS) – 17,1% and mini-stroke of VBS – 17,1%, less frequently were found ischemic stroke of both carotid and vertebrobasilar systems, – 7,9%, transient ischemic attacks (TIA) in CS – 7,9%, TIA in VBS – 6,6%, mini-stroke in CS – 1,3%. Men had ACD more often – 59,2%. It was revealed, that 84,2% of the patients suffered one ischemic ACD incident, 14,5% – two ACD incidents and 1,3% of the patients had three ACD incidents. To sum up, prevalence of

the acute ischemic cerebrovascular disturbances in the vertebrobasilar system is high among the population of Petrozavodsk; working-age people prevail among the patients, and more and more younger people suffer from the disease.

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**THE IMMUNITY STATE & PURINE NUCLEOTIDES ENZYMES ACTIVITY AT THE RATS, HAVING EXPOSED TO THE DUST AND RADIATION FACTOR & THEIR CORRECTION**

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**Actuality**

The structural and functional disorders of the tissue homeostasis, having accompanied by this or that pathology beginning and development, are always connected with the tissue integrity disorder, the various cell populations' death and reproduction just in the lesion focus. In its turn, this means, that some universal characteristics of the destructively and reparative processes, having proceeded in the organism's organs and tissues, have to be existed, besides the specific metabolic shifts, having caused by the ethiopathogenetic diseases factors. The enzyme systems of the free predecessors exchange of the nucleic acids and their derivatives are belonged to a number of such pathological processes characteristics. So, the immunodeficient states are connected with the enzymes activity disorder, having controlled the adenosine level in the lymphocytes: the adenosine deaminase (ADA) insufficiency results in the serious immunodeficiency, at which the number is being lowered and the T – and B – lymphocytes function is being disturbed; the 5 – nucleotidase insufficiency results in the easier immunodeficiency form, at which the B – lymphocytes functions are being left normal, but the T – lymphocytes functions are being violated [4, 5]. The catabolic processes of the purine nucleotides exchange in the organism have the large significance for the immunological organism reactivity regulation.

And the adenylate cyclase system is also involved in the adenosine immunosuppressive system and cytotoxic action. But the cyclical adenosine monophosphate (cAMPH) can be served not only the negative, but and the positive lymphocytes function's regulator. The cAMPH effects different orientation

can be conditioned by the its content change in the various immune system cells compartments, by these compartments functions, having provided the lymphocytes biological qualities or the other cells [2].

**The Aim**

The aim in the experiment on the animals at the combined influence of the asbestos dust and the ionizing radiation the has been defined by us, to study the immune status change, and the enzymes activity of the purine nucleotides metabolism: the adenosine deaminase (ADA), the adenosine monophosphate deaminase (AMPH – DA) and 5' – nucleotidase (5' – HT) in the more sensitive tissues of the liver, the thymus gland organs, and in the blood lymphocytes. Our aim is, moreover, to find it out the immunity changes interconnection presence with these enzymes activity, and also to study the Be phytopreparation action (e.g. triterpenoid from the *Betula Pendula* Roth).

**The Research Methods**

Three tests series on 40 albino rats have already been carried out for the assigned task realization. The I – st group – the intact ones (n=10), the II – nd group – the irradiated ones in 6 gr. dose, having primed by the asbestos dust, at the same time (n=15), and the III – rd group – the irradiated and primed ones by the dust and having received the Be phytopreparation (n=15). The II – nd and the III – rd groups' animals have been one time irradiated during 30 days and nights before the examination on the "Teragam <sup>60</sup>Co" radio therapeutic installation (Czech Republic) in the 6 gr. dose. We have carried out the animals' topometric and dosimetric preparation on the «Terasix» X – ray photography simulator, which is provided the correct bringing to the planned dose, before to conduct the irradiations. The asbestos dust was brought into the rats' lungs (e.g. intratracheally) for the pneumoconiosis reproduction by the method, which had been developed by us [1]. The animals have been killed by means of the incomplete decapitation, having, preliminarily, put to sleep by the chloroform. This kind of work with the experimental animals has been conducted, in accordance with the principles of the Helsinki Declaration of the World Medical Association on the humane treatment with the animals. The immune status has been estimated on the basis of the content study in the lymphocytes' peripheral blood and their subpopulation with the phenotypes: CD3<sup>+</sup>, CD4<sup>+</sup>, CD8<sup>+</sup>, CD19<sup>+</sup> by the method of the immunofluorescent staining of the cells with the antibodies use, having conjugated with the ФИТИ phenylzothiocyanate (PHETC) (the "CALTAG Laboratories" Company, the USA), having adapted, exactly, for the rats' analyses. The neutrophils' phagocytal activity (PHA) definition, the serum immunoglobulins level of the A, M, G classes, the CIC (the circulating immune complexes), ITML (the inhibition test of the migration of leukocytes) number have been conducted.