

the changes in the conventionally used parameters. SOD and CAT activities in rats in the OE and control groups were not statistically significant. The SOD activity in erythrocytes in rats of the E group decreased (by 45% ( $P < 0,001$ ) and 41% ( $P < 0,001$ ) compared to the similar parameter in groups C and OE, respectively), while CAT activity decreased by 57% ( $P < 0,001$ ) and 50% ( $P = 0,001$ ).

During the optimal exercising regime, the experimental animals increased TES, which indicates that the ratio between time spent in training and recovery periods were adequate. In the EE group a decrease in TES was observed, which suggests the development of fatigue in animals. We considered that the best parameters to use for the indication of the development of fatigue would be the parameters which are not affected during the optimal training regime but rapidly change during the excessive exercise regime. According to our results, such indicators could be the enzyme of the antioxidant system of erythrocytes, i.e. the activity of the enzymes SOD and CAT. Unlike the parameters which are conventionally used in sports medicine, these parameters are not affected during the optimal training regime. Therefore, the activity of the enzymes SOD and CAT could be used as effective markers of fatigue.

The concentrations of creatinine, lactic acid and  $\beta$ -hydroxybutyric, which depend on the rate of the accumulation of these metabolites, on the rate of their degradation and re-utilisation, are more variable. The statistically significant increase in the concentrations of these metabolites in the OE group allows the use of these parameters as markers of tiredness during the optimal exercises, rather than as markers of fatigue. Further investigations, which required the participation of athletes from various kinds of sports, could confirm or dispute the results.

**Conclusion.** Optimal exercise led to a moderate increase in the concentration of lactate and creatinine in the blood of rats, while excessive exercise was accompanied by a substantial increase of creatinine, lactic and  $\beta$ -hydroxybutyric acids. During the optimal exercise regime, the activity of superoxide dismutase and catalase in erythrocytes was not affected, while the excessive exercise regime led to steep decay in the activity of these enzymes. The data obtained revealed changes in the parameters, which are conventionally used in sports medicine, which proves them to be inefficient indicators of fatigue. We consider that the enzymes of the antioxidant system in erythrocytes could be effective markers of the fatigue.

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### THE CLINICAL AND MORPHOLOGICAL CHARACTERISTICS OF THE STOMACH AND DUODENAL ULCER BY THE OPIUM NARCOMANIA

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According to WHO data in the world more than 200 million people use narcotics [1]. Usage of narcotic drugs affects to the somatic pathology character and demands pathogenic treatment development. The Altai cleared mummy is applied at the disturbance of acidic production damage (hypo, hyper antacid conditions) at the stomach and duodenum ulcer. It is used as a preparation rendering protective and antitoxic effect that allows recommending it for treatment of patients with the specified stomach pathology and drug addiction.

**The purpose of our research** was clinical-morphological justification of the possibility of Altai mummy preparation in complex treatment of the patients with drug addiction who has stomach and a duodenum ulcer.

**Material and research methods.** In clinical conditions it were surveyed 70 patients, who has distributed in two groups: the I group (main) were 40 patients with drug addiction had stomach and duodenum pathology aged from 18 till 40 years. Usage duration of opium group psychoactive agents composed from 1 to 10 years. The average daily dose of psychoactive agent was 2,0–3,0 grams. The II group (comparisons) composed 30 patients with stomach and duodenum pathology without drug addiction.

At the detailed poll in the anamnesis of both group patients (I and the II groups) are found the following risk factors as systematic food intake disturbances and diet regimen damage (at 70% patients), long psychoemotional loads (64%) and adverse heredity by the ulcerative disease (32%). For the purpose HP eradication in the I group of patients is prescribed antibacterial therapy with amoxicillin 500 mg $\times$ 2 times a day, clarithromycin 500 mg $\times$ 2 once a day, a vegetative cytoprotector as mummy 0,2 g by 1 tablet $\times$ 2 times in a day, proton pump inhibitor Omeprazol 20 mg 1 $\times$ 2 times a day within the 14 days.

The biopsy materials of the stomach and duodenum were taken on endoscopy, fixed at 10% of formalin solution, filled with paraffin. Paraffinic sections painted with hematoxylin and Eosin, methylene blue and looked through a light microscope. Contamination of a stomach mucosa with *Helicobacter pylori* (Hp) determined by stomach biopsy materials and urease express-test and morphologically by the coloring methylene blue [2].

**Investigation results and discussion.** The microscopic picture of the stomach and duodenum ulcers in both investigated groups had a morphological variety of processes, the inherent is long developing wavier pathological process with exac-

erbation and remission phase changes. Zones of exudation and destruction, fibrinoid necrosis, young and mature granulated and scar tissue, alternate with sites of necrotic mass sloughing and with epithelium growing up under it. At the bottom of ulcerative defects is visible necrosis zone sequestration and the replacement of them with leukocytes and mononuclear cells. On the background of an angiogenesis sites and the scar formation are observed different degree expression of lymphoplasmatic cellular infiltration and fibrosclerosis. On the border with destructed stomach and duodenum wall muscular elements are visible sites with the prolonged chronic inflammation, growth of granulated tissue and scar formation.

The detail comparative morphological investigation showed the inflammation processes intensity in the background of sequencing ulceration and regeneration processes, consists some mosaic picture and more meeting at the long duration opium addicts. Those processes are presented as intestinal methaplasia of duodenum to the stomach epithelium.

At the border with the stomach mucous ulcerative defect is visible a small on depth forces and a regenerating glandular epithelium. In that patients' intramural nervous plexuses and ganglions is noted the cytoplasm vacuolation, a nodules pyknosis of the ganglionic cells and the expressed lymphoid cell infiltration.

Another feature of a peptic ulcer on the drug addiction background is the increased infiltration of a scar formatting ulcerative stroma with lymphocytes, plasmocytes with an admixture of neutrophil granulocytes and mast cells. In a granulation tissue of an ulcer wall in group of comparison cellular infiltration is more weak, neutrophils are single, lymphocytes and plasmocytes are prevailing. Here is finding the capillaries, set and unripe glands of the pseudopyloric type.

The hypersecretion reason, which found in part of the main group patients, is the parietal cell hyperplasia. It, allegedly, can be bound tone uroregulatory secretion mechanisms disturbance, probably taking place, as additional Exo–endogenic factor of opium narcotic influence.

Thus, it is possible to assume, that in pathogenetic mechanisms of opium narcomania influence on the duodenal ulcer morphogenesis there is elements influence as an «aggression» and «protection» factors. However, they have expressed opposite character.

#### References

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#### PERSON'S FETUS PAROTID SALIVARY GLANDS AGE FEATURES

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**Purpose.** To study fetal parotid salivary glands age features.

**Materials and methods.** Research is done on the material received from 40 fetuses (10–24 weeks of development) during 2012–2013, died in delivery rooms (maternity homes) of Arkhangelsk, delivery room and city hospital № 1 of Severodvinsk. Material distribution according to age: 10 weeks of  $n = 2$ , 13 weeks of  $n = 6$ , 14 weeks of  $n = 2$ , 16 weeks of  $n = 4$ , 17 weeks of  $n = 4$ , 18 weeks of  $n = 8$ , 19 weeks of  $n = 2$ , 20 weeks of  $n = 4$ , 21 weeks of  $n = 4$ , 24th week of  $n = 4$ . The fetal death causes were particular conditions in the perinatal period ( $n = 70\%$ ) and congenital anomalies ( $n = 30\%$ ) were causes of fetuses death. The autopsy material was gathered within 24 hours after death and was fixed within 24 hours in 10% solution of neutral formalin. Macro- and microscopic preparation of separation of parotid salivary glands was carried out. The gland mass (mg), volume ( $\text{cm}^3$ ), length, width, thickness (mm), the area ( $\text{mm}^2$ ) were measured. Various forms of glands in its contour were studied. All stages were photographed by the Nikon D7000 Kit camera.

**Results.** In the pre-natal period the parotid gland is in a deep hollow behind a branch of the mandible, in retro mandibular fossa. The gland has a gray-yellow color similar in color of hypodermic-fatty cellulose. In this age period gland form nearly corresponds to the walls of a bed and has an irregular form. There are variants of gland form: oval (32%), triangular (13%), quadrangular (9,6%), prismatic (22,8%), ellipsoid (9,6%) and pyramidal (9,6%). The volume of gland is variable. Average organ mass was  $184,2 \pm 128,31$ , volume  $0,2 \pm 0,1$ , length  $11,9 \pm 4,22$ , width  $7,6 \pm 2,95$ , thickness  $3,3 \pm 1,34$ , area  $91,2 \pm 45,02$ .

**Conclusions.** While studying age dynamics of body measuring values of fetal parotid glands, the dependence of weight, length of glands and head circumference of a fetus (Kruskala-Wallice's criterion 19,541 (9) 0,021; 20,219 (9) 0,017) from gestational age was revealed. When comparing the body measuring values of the right and left glands statistically significant differences were not revealed ( $p > 0,05$ ).

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