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ORIGINAL ARTICLES

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THE LEVEL OF HYDROGEN SULPHIDE AND ANTIOXIDANT SYSTEM IN RAT BRAIN IN HOMOCYSTEINE THIOLACTONE-INDUCED HYPERHOMOCYSTEINEMIA AND ITS CORRECTION

Introduction. Hyperhomocysteinemia (HHC) is associated with neurovascular and neurodegenerative diseases. Disposal of homocysteine in the brain associated with the synthesis of H_2S - neuromodulator, vasodilator, cytoprotector. It was established that under experimental hyperhomocysteinemia deficit H_2S formed in the brain tissues is associated with decreased activity of H_2S-synthesizing enzymes and with imbalance in ways of H_2S utilization. *The aim* was to determine the effect of an isolated HHC on level H_2S and indicators pro - / antioxidant systems in the rats brain under correction with vitamins B_6, B_9, B_{12} and esmin.
Materials and methods. Research conducted on 50 white laboratory male rats weighing 250-270 g. in accordance with the requirements of the Commission on bioethics, "the General ethical principles of animal experimentation" (Kyiv, 2001), "the European Convention for the protection of vertebrate animals used for research and other scientific purposes (Strasbourg, 1986). HHC aroused in 4 groups of rats by the administration of the thiolactone D,L-homocysteine (Sigma, USA) introgastrically in a dose 100 mg/kg during 28 days. H_2S level, prooxidant and antioxidant enzymes activity were estimated in brain's homogenates. The activity of cystathionine-β-synthase (EC 4.2.1.22) were measured in the incubation medium (0.67 mM pyridoxal phosphate, 3.3 mM L-cysteine, D, L-homocysteine 3.3 mM, 0.083 M Tris buffer, pH 8.5 at final concentrations) by H_2S in growth. Homocysteine serum level was estimated by «Homocysteine EIA» (Axis-Shield, UK). Statistical analysis was conducted using the Student t-test, correlation analysis was performed by Pearson. Reliable considered the data at $p<0.05$.
Results. Introduction homocysteine thiolactone (100 mg / kg for 28 days) causes an increase in the basal level of homocysteine in the serum of 154%, which is accompanied by a decrease in the H_2S level and activity of cystathionine-β-synthase in rat brain (53.0 and 34.1%). In the HHC conditions violations in the H_2S / cystathionine synthase-β-associated with increased activity of NADPH oxidase (on

76%), decreased activity of SOD, thioredoxin reductase, glutamate cysteine ligase and decreased glutathione content (on 38.6; 53.3; 50.3; 48.2%).
Administration of vitamins B_6, B_9, B_{12} or esmin reduces the level of homocysteine in the blood, reduced the deficit of H_2S, and increased the activity of antioxidant enzymes in rat brain with HHC. But the composition of vitamins B6, B9, B12 with trace elemen*ts most effectively reduces homocysteine levels and corrects irregularities in H2S system and antioxidant system in the brain in conditions thiolactone-induced HHC.
Results. The composition of vitamins B_6, B_9, B_{12} with trace elements most effectively reduces homocysteine levels and corrects irregularities in H_2S system and antioxidant system in the brain in conditions thiolactone-induced HHC. Thus, increase of H_2S content in the brain by vitamins and trace elements can be an important strategy for the neuroprotection at the conditions of HHC.
Key words: homocysteine, hydrogen sulfide, vitamins, trace element, esmin, brain.

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THE STUDY OF ENZYME ACTIVITY IN THE TEAR FLUID AND BLOOD SERUM OF RABBITS IN COMBINED INSTILLATIONS OF BIOPELOIDS AND GENTAMICIN IN A BACTERIAL KERATITIS

Introduction. Bacterial keratitis (BK) is characterized by an acute inflammatory reaction external structures of the anterior eye. The use of traditional antibiotic therapy does not always provide a positive therapeutic effect that is most frequently associated with the development of resistance to antibiotics, low immunity, dysbiosis, allergic reactions. The important points of pathogenetic therapy of BK are increased metabolic processes in the tissues of the anterior eye, improve microcirculation, activation mechanisms nonspecific defense. In this regard, very promising use of preparations containing natural BAS as effective pathogenic drugs of inflammatory diseases of the cornea. The study of enzyme activity in the tear fluid (TF) and serum of blood (SB) under the BK in the combined use of instillation biopeloidov and gentamicin allow to evaluate the effectiveness of the therapy, and predict the dynamics of the relief of the inflammatory process in the cornea.
Materials and methods. The research was conducted on 14 rabbits chinchilla weighing 2.5-3.0 kg, distributed into 2 groups: 1 - control (BK + 0.3% instillation solution and gentamicin); 2 - Experimental (BK + Combined biopeloidov instillation and 0.3% gentamicin solution). The TF and SB activity was determined enzymes lactate dehydrogenase (LDH), catalase, acid and alkaline phosphatase (AcP, AlP), lysozyme.
Results. It was found that in playing BK in TF rabbits changes the activity of enzymes: their performance in relation to the initial background accounted for LDH

(+ 292%), alkaline phosphatase (60%), catalase (+ 522%), AcP (181 %), lysozyme (+162%), which is accompanied by a violation of the oxidation-reduction, antioxidant, membrane and antimicrobial processes in the cornea. The use of combined instillation biopeloidov and gentamicin in a BK has a normalizing effect, as evidenced by a lower level of activity of the enzymes LDH,AcP, AlP, catalase in the SB, and TF, increases the activity of lysozyme in TF.

Conclusions. Thus, the associated instillations of biopeloids and gentamicin in the treatment of bacterial keratitis have a normalizing effect on the enzyme activity, increase the activity of lysozyme in TF, reflecting the positive trend of faster relief of inflammation in the cornea.

Key words: bacterial keratitis, the activity of enzymes, biopeloids.

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EFFECT OF 1-[4-(1-ADAMANTYL)-PHENOXY]-3-(N-BENZENE, N-DIMETHYLAMINO) 2-PROPANOL CHLORIDE ON THE *CANDIDA ALBICANS* ULTRASTRUCTURE

Introduction. The spread of multidrug resistant strainscreated acritical need of the new effective antimicrobial agents. One of the promising chemical classes for its research and development are adamantane derivatives. After the screening studies compound KVM-97 was selected as the potent antifungal and antibacterial agent. In the present study, *our purpose* was to examine ultrastructural changes in the fungal cells under the influence of the compound KVM-97.

Materials and methods. *Candidaalbicans*NCTC 885/653 was used in all experiments.The minimum inhibitory concentration was determined by a macrodilution test in Saburo broth. Fungal cells were exposed to the 2.0 MIC of the KVM-97 for 1 h, 3 h, 6 h and 24 h. Ultrastructure of intact and treated *C. albicans* cells was examined by transmission electron microscopy after contrasting by osmium tetraoxide and lead citrate.

Results. The compound KVM-97 possesses a distinct antifungal activity against *C. albicans*, the minimum inhibitory concentration was 0.6 μg/ml. We found that the fungicidal concentration of compound caused ultrastructural changes of cytoplasm and mitochondria starting from 1 h of treatment. Progressive cytoplasmic deterioration, change in size and number of mitochondria, and loss of mitochondrial cristae were observed depending on duration of the treatment.

Conclusions. The detected alterations of *C. albicans* ultrastructure were considered to be specific response to the disorder in fungal cells energy process and apoptosis caused by KVM-97 treatment.

Key words: adamantine derivative, *Candida albicans,* antifungal action, ultrastructure.

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IMAL EPIPHYSEAL CARTILAGE AND DIAPHYSIS OF RATS FEMORAL BONE DURING SHORT-TERM PREDNISONE APPLICATION

Introduction. Short-term appointment of glucocorticoids for treatmant various diseases is widely used in medicine, but the changes in bone and cartilage tissue, which are connected with such treatment, is studied insufficiently.

The aim of the study. Explore at the experiment morphological changes in bone and cartilage in the short-term administration of prednisolone.

Materials and methods. The study conducted on 34 linear Wistar species rats. Animals were divided into two series of experiments. The first series (17 rats), which was the control animals, are not treated with prednisolone. The second series of experiments animals (17 rats), were administered 0,5 mg prednisolone. On 30 day of the experiment, the animals were weighed and taken out of the experiment by an overdose of ether. Than for examination the materials were carried. In histological preparates was determined morphometrical indicators of proliferative processes activity in articular cartilage and epiphyseal cartilage, counted the number of common channels in the central vascular diaphysis for the determination of diaphysis remodeling bone during prednisolone administration. The data was conducted due to statistical analysis with subsequent comparison and determine their authenticity differences using T-Student test.

Research results. Studies have shown that the 30 days prednisolone introduction into rats, caused degenerative and necrotic changes in the articular and epiphyseal cartilage, compact and spongy bone epiphysis and metaphysis, accompanied by violation of their structure, resulting disorders formation of bone tissue and its plate structures, slowdown restructuring bone and bone growth in length and thickness. Results of osteometry were conducted by animal control series of experiments: rats femur length was 31,01 ± 0,05 mm and thickness - 3,49 ± 0,26 mm. While in a series of experiments where animals treated with prednisolone these figures were at the next level: the femur length was 28,81 ± 0,25 mm and the thickness was 3,07 ±04,0 mm,

which was significantly (p <0, 05) lower than in the control group of animals and it was evidence of the negative effect of prednisone on these indicators. Research the number of central vascular channels at the site of the anterior histological sections of the middle third of the femoral diaphysis showed that in the control series of experiments the number was 20,43 ± 0,841 mm, while a series of experiments where animals administered prednisone their number was 37,43 ± 1,100 mm, which was significantly (p <0,05) higher than in the control series of experiments.

Conclusion. Results of morphological studies show that taking short-term courses of prednisolone caused degenerative and necrotic changes in articular epiphyseal cartilage and in a compact and spongy bone epiphysis and metaphysis. These changes were accompanied by a violation of their structure, results in the formation of bone disorders and its lamellar structures, slowdown restructuring of compact bone and lead to bone growth disorders in length and its thickness.

The obtained data indicate the need to develop methods for correcting these disorders, especially medication that would perform prophylaxis violation structural - functional organization, articular epiphyseal cartilage formation and reconstruction of bone tissue.

Key words: osteoporosis, prednisolone, morphological changes in bone and cartilage during prednisone therapy.

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PATHOLOGICAL CHANGES IN RATS' LIVER WITH CHRONIC ALCOHOL INTOXICATION AND AFTER CORRECTION BY QUERCETIN AND L-ARGININE-L-GLUTAMATE DEPENDING ON ANIMALS' AGE

Introduction. During last years the amount of complications after chronic alcoholic liver disease has been increased various etiologies, first of all – alcohol. Diagnostic techniques of liver pathologies include both clinical and morphological methods, which allow assessing of spare liver capacity.

Current research is aimed at improving the pathogenetic therapy. The most accurate measure of efficiency is the morphological study. The main aim is to learn age features of pathomorphological changes of rats liver tissue with chronic alcoholic liver intoxication and their possible correction by quercetin and L-arginine-L-glutamate.

Materials and methods. The study was conducted on 120 white female rats of three age groups: immature animals (1.5 month; starting weight – 60-80 g.), mature young (6 months, starting weight – 180-220 g.); old animals (20 months, starting weight – 300-320 g.). Each group of animals was devided into four groups such as 10 animals in each: intact animals; animals with chronic alcoholic liver disease (daily administered 14-18 g / kg of ethanol for 12 weeks); animals with chronic alcoholic

liver disease with the correction using quercetin (100 mg/kg); animals with chronic alcoholic liver disease with the correction using L-arginine-L-glutamate (35mg/kg). The duration of administration of 12 weeks.

Rats were taken out of the experiment simultaneously using decapitation method under ether narcosis. The liver was removed, which was fixed using 10% neutral formalin solution, conducted through the spirits battery of rising concentrations and steeped in paraffin. During histological study were used microtome sections (5 microns), which were stained by hematoxylin and eosin and Van Gieson's stain. Histological microspecimens were studied by light optical microscope "Olimpus BN-2" with enlarging from 100 up to 400 times and digital images were gained.

Results: Established that under conditions of experimental chronic alcoholic intoxication in rats of different age develop liver damage, which is based on necrotic and dystrophic changes with prevalence of fat and protein intracellular degeneration. Histological changes in rats of all age groups accompanied by violation of lobular structure of liver parenchyma. The central veins and sinusoids, beamed cell organization can't be visualized. Hepatocytes have a severe level of pulverulent fat and hydropic protein degenerations, some of them were deformed with fuzzy contours. The vessels of portal tracts have been totally expanded, and their gap were filled by erythrocytes, there was marked perivascular edema, which was combined with lymphoma and histiocytic infiltration. It should be noted that hepatocytes destruction caused by pulverulent fat and intracellular protein degenerations have more locally character in the old animals in comparence with the immature and mature young animals. After pathogenetic correction by quercetin and L-arginine-L-glutamate was observed next morphological changes, which in some cases were characterized by lower intensity of necrotic and dystrophic change and a decrease in collagen fibers, which confirm the positive impact of the selected remedy. The obtained results show that L-arginine-L-glutamate has more hepatoprotective effect in rats with chronic alcoholic liver disease, compared with quercetin.

Conclusions:

1. Established that in rats of different age groups on the background of chronic alcoholic liver disease develop liver damage which is expressed by necrotic and dystrophic changes with prevalence of fat and protein intracellular degeneration, morphologically. According to the same experimental conditions, more vulnerable to the toxic ethanol effect were immature and old animals, because morphofunctional changes of liver structure characterized by more local dystrophic hepatocytes' changes in comparence to the young immature animals.

Against the backdrop of the introduction of ethanol in the liver of rats of all ages observed the proliferation of collagen fibers with the development of fibrosis. Proved that quercetin and L-arginine-L-glutamate under conditions HAUP show antyfibrotychnyy effect.

3. Histological study shows that hepatoprotector L-arginine-L-glutamate contributes to more effective and intensive recovery of structural liver components during chronic alcoholic liver disease, compared to quercetin, as evidenced by significant reduction of necrotic symptoms, reduction of manifestation of fat and protein

intracellular liver degeneration, reduction of fibrosis and acceleration of recovery process of hepatocytes.
Key words: liver, chronic alcoholic liver disease, fibrosis, morphological studies.

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THE EFFECT OF EXCESS NITRIC OXIDE IN THE MORPHO-FUNCTIONAL STATE OF THE PANCREAS IN RATS

Background. Nitric oxide (NO) is a fat-soluble gas, a high-reactive and unstable compound, which is formed from L-arginine under the action of NO-synthase. NO easily inpours cell membranes, exists only for a few seconds and being subjected to oxidation transforms to nitrites and nitrates. NO acts in all directions as a universal regulator of physiological functions and transmission of nerve impulses, a potent peripheral vasodilator and regulator of motor control and secretion. NO is a potent mediator of inflammation release in response to bacteria, viruses, proinflammatory cytokines.
Sodium nitroprusside, which is well known as simple NO-donor, can not be synthesized in cells and is an exogenous source of NO, which is traditionally used for experimental studies.
Purpose: Determine the morphofunctional characteristics of the rat pancreas under conditions of NO excess caused by the administration of sodium nitroprusside as a simple NO-donor.
Material and methods. The study was conducted in 40 male Wistar rats with weight 180-230 g. Nitric oxide (NO) was administrated in the form of sodium nitroprusside "Reahim" (Ukraine), at 1.5 mg / kg for 1 day (n = 6), 2 days (n = 6), 6 days (n = 6), 12 days (n = 6), and 30 days (n = 6). Rats were sacrificed by ketamine introduction in lethal dose of 200 mg/kg. The control group (n = 10) was formed of intact rats and recieved 0,9% NaCl for 1, 2, 6, 12 and 30 days.
Sections were deparaffinized and stained with hematoxylin-eosin or Mallory Trichrom.
Biochemical process of fibrosis was evaluated on the content in the serum of free and protein-bonded hydroxyproline and hexosamines. NO production was determined by the total content of nitrite / nitrate in serum using Gris test. To estimate the exocrine function activity of pancreatic enzymes were measured in serum - α-amylase using set of ”Filisit-diagnosis” and trypsin - using Erlanger test with modifications of Shaternikov. State of the endocrine pancreatic function was evaluated by determining the serum levels of glucose set by "Phyllis-diagnosis" (glucose oxidase method).
Results. After 1 and 2 days of sodium nitroprusside administration there was a significant increase of NO metabolites in rat blood ($p < 0,001$), upward tendency in the activity of pancreatic enzymes - α-amylase and trypsin. Morphologically dilation

of blood vessels and ducts were observed, alongside with accumulation of secretion in the pancreas.
After 6 days the maximum increase in serum enzyme activity - α-amylase ($p < 0,05$) and trypsin ($p<0,05$), and of the NO metabolites concentration ($p < 0,05$) was noted, in addition to gradual increase of the HA concentration ($p < 0,001$). Morphological signs of acute pancreatitis were shown, the structural basis of which was inflammation - stromal infiltration by lymphocytes and leukocytes, dilation of blood vessels and intralobular ducts, stasis of blood cells, presence of hypersecretory acinar cells and isolated small foci of necrosis.
After 12 days there was a downward tendency in the serum activity of α-amylase and trypsin and significant reduction of the NO metabolites concentration compared to day 6 ($p < 0,01$). There was the significant increase of the protein-bonded hydroxyproline and free hydroxyproline concentration ($p < 0,01$) along with HA ($p<0,001$). Morphological signs included stromal infiltration and vasodilatation. Some acinar cells was in state of focal adipose degeneration or segmental apoptosis.
After 30 days the maximum levels of collagen synthesis was observed - highest concentration of protein-bonded hydroxyproline in the serum ($p < 0,01$), in parallel with catabolism - highest concentration of free hydroxyproline ($p < 0,05$) and HA ($p < 0,001$). Against this background functional failure of the pancreas was developing, which made itself evident in the sharp decrease of the pancreatic enzymes activity - namely α-amylase ($p < 0,05$) and trypsin ($p<0,05$). Reduced concentration of NO metabolites (nitrite / nitrate) was observed after 1 ($p < 0,001$) and 2 ($p < 0,001$) days, with gradual increase occurred afterwards - maximum concentration after 6 days ($p < 0,05$), followed by a gradual decrease - minimum concentration after 30 days ($p < 0,001$). Following morphological changes after 30 days of sodium nitroprusside administration were observed: compensation of previously affected microcirculation (diameter of blood vessels did not differ from the comparison group); mild dilatation of the interlobular ducts and development of intralobular connective tissue. The tiny bands of fibrous tissue enveloped main ducts, major blood vessels and penetrates into the interlobular space zone, which is typical for chronic pancreatitis.
Conclusions. 1. NO excess caused by the intraperitoneal administration of sodium nitroprusside leads to following morphological changes in the pancreas: vasodilation with stasis of blood cells after 1 and 2 days; focal necrosis, destruction of acinar tissue, ductal dilatation and excessive accumulation of secretion after 6 days; adipose degeneration and segmental apoptosis after 12 days and morphologically compensated microcirculatory changes which accompanied the development of fibrous tissue around main ducts, major blood vessels and in the interlobular space after 30 days – changes typical for chronic pancreatitis.
2. Exocrine pancreatic function of rats responded to the excess of NO in ways of increasing pancreatic enzymes levels in blood serum – α-amylase and trypsin, which than significantly decrease after 30 days of experiment. The biochemical markers of fibrosis (free and protein-bonded hydroxyproline, hexosamine) also showed increase levels, accompanied with endocrine insufficiency. All this changes is peculiar to development of chronic experimental pancreatitis.

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IMMUNOHISTOCHEMICAL ANALYSIS OF 1A TYPE MELATONIN RECEPTORS DENSITY IN THE SUPRAOPTIC NUCLEUS NEURONS OF THE HYPOTHALAMUS OF WHITE RATS IN ALTERED PHOTOPERIOD

Introduction. Circadian rhythms organization in biological systems depends on the interaction between central units of control after oscillatory processes in the body and brain structures intermediaries in the form of so-called functional chronobiological blocks [Hyldebrandt and et al., 2006]. One of these blocks is formed by the relationship between SON and pineal gland [Reiter et al., 2014]. Through the melatonin receptors the hormone controls the state of the hypothalamic-pituitary system and the activity of the endocrine glands [Ishii et al., 2015].

Objective. To provide the quantitative circadian characteristic of melatonin receptor density in the neurons of the supraoptic nucleus of the rats' hypothalamus by means of immunohistochemical techniques combined with computer microdensitometry.

Materials and methods. Experiments were conducted on 40 outbred white mature male rats weighing 0,15-0,18 kg. The animals were kept in cages at constant temperature, humidity and free access to water and food. Experimental animals were divided into 2 series each with 2 groups (10 animals each) which were under conditions of standard light regime - 12.00L: 12.00D (light from 08.00AMto 08.00 PM, fluorescent lamps LB-40, the room was lit at the animals level at 200 lux) and hyperilluminated one (day and night light (24.00L: 00T) fluorescent lamps LB-40, room light at animals level was 500 lux) for 7 days. In order to detect differences in circadian melatonin receptors and taking into consideration the cyclical production of melatonin euthanasia of rats was performed with 12-hour interval (02.00AM and 02.00 PM) by decapitation on the 8th day. Chosen dates for the experiment were due to different functional activity of the pineal gland and production of leading chronobiotic - MT in these time periods. Commission on bioethical expertise of Bukovinian State Medical University found that all stages of the experiment were conducted in compliance with the essential requirements of the Helsinki Declaration and the requirements of the Council of Europe on Human Rights and Biomedicine (1977), the provisions of the WHO International Code of Medical Ethics (1983) and the laws of Ukraine (protocol number 22 of November 28, 2007).

For immunohistochemical study fragments of brain cortex with supraoptic nucleus area of the hypothalamus were fixed in 10% solution of neutral buffered formalin for 22 hours. After that a rapid dehydration in ascending concentrations of alcohol was performed, then it was embedded in paraffin at 580C, followed by obtaining histological sections 5 microns thick.

In order to perform immunohistochemical methods we used polyclonal antibodies to melatonin receptor 1A manufactured by Abcam (UK) and streptavidin-biotin visualization system LSAB2 (peroxidase label + diaminobenzidine) manufactured by Chemicon International Inc. (USA). We followed the protocol of standardization methods for all sections at most. Additional nuclei staining was performed with Mayer hematoxylin.

Quantitative research of the staining intensity was conducted as follows. First, using a microscope lens x 40 we received digital copies of optical image which were further analyzed by a licensed copy of the computer program "VideoTesT - Size 5.0" (OOO VideoTest, Russia) that is we conducted the computer microdensitometry. The analysis was performed on the basis of measurements by means of microprobe technique in the field of positive staining in terms of "optical density" (in relative units with a range of 0-1, where "0" corresponds to the absolute optical transparency microprobe, and "1" - absolute optical opacity). The intensity of the specific staining (Score "optical density") was identified with the degree of density of melatonin receptors.

Taking into consideration the need to perform multiple statistical comparisons of averages in statistical samplings and to determine the differences between sets of criteria we used Newman-Keuls test.

Results. The indices of optical density of specific M1A neurocytes of SON staining obtained in the intact group (at 02.00 AM- 0,488 ± 0,0024, at 02.00 P.M. - 0,464 ± 0,0023, p = 0.002) and in animals subjected to light stress (at 02.00 AM-0,295 ± 0, 0019, at 02.00 P.M.- 0,286 ± 0,0018, p = 0,012) had a probable value and were characterized by a clear diurnal periodicity. In the group of animals with pineal gland hypofunction modulation (at 02.00 A.M.- 0,216 ± 0,0017, at 02.00 P.M. - 0,214 ± 0,0021, p> 0,05).

Conclusions. The density of 1A melatonin receptors in rat's hypothalamic neurons of SON are normally characterized by a accurate circadian rhythm. The highest density of receptors is observed at 02.00 AM, and at 02.00 PM it is significantly lower (p = 0.002).

Immunohistochemical studies revealed that under inhibition of pineal gland activity the circadian rhythm of melatonin receptors density in neurons of supraoptic nuclei of the hypothalamus gets disturbed, which is characterized by an incredible difference of indices in the tested periods of the day.

We are planning further immunohistochemical analysis with a light deprivation of rats for possible disturbances in circadian rhythm of density of 1A melatonin receptors in rat's hypothalamic neurons of SON.

Key words: hypothalamus, supraoptic nucleus, neurons, melatonin receptors, immunohistochemical analysis.

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PECULIARITIES OF STRUCTURAL CHANGES OF PANCREAS IN CONDITIONS OF EXPERIMENTAL ATHEROSCLEROSIS CORRECTION

Introduction. Atherosclerosis and its consequences and, above all, cardiovascular diseases and diabetes hold the first positions among the most widespread reasons for disability and mortality of adult population. In this light, pancreas state is a matter of interest, particularly, taking into account the effect of some medicines used in atherosclerosis and its consequences. *Objectives* of this research is to study the peculiarities of structural changes of pancreas in conditions of experimental atherosclerosis correction with the help of medicines of different mechanisms of effect and of different origin. The goal of this research included performing of histologic and morphometric assessment of structural changes of cellular elements of pancreas endocrine part in conditions of experiment and comparing of obtained results of effects from medicines.

Materials and methods. Experimental atherosclerosis of rabbits was caused by the classical Anichkov's method within three months. During the fourth month the rabbits of three groups were given the medicines: Vinboron (spasmolysant) – a national synthetical preparation of benzofuran line, Polysorbate (atoxyl) – enterosorbent of siliceous nature and Polysponinum – a plant preparation of hypocholesteremic action. For morphometric study pancreas of all experimental groups and intact rabbits (taken for comparison) was taken. After fixation in Bouin liquid the paraffin sections were coloured by Dyban's method.

Results. In experimental atherosclerosis without correction in the most pancreatic islets of rabbits the vascular disorders can be defined and the changes of insular apparatus are developed that can be characterized by size reduction of islet cells and their nucleuses (33,72±0,91 micrometers[3] against 89,89±3,63 in intact animals) as well as the reduction level of aldehyde-fuchsinophil granulosis in cytoplasm. Animals that were given Vinboron, Polysorbate and Polysponinum had the increased level of aldehyde-fuchsinophil granulosis and nucleus volume up to 45,96±3,12, 50,57±0,45, 50,91±0,68 micrometers[3] correspondingly in comparison with those who were untreated. Functional index that is B-cells to A-cells ratio does not change and is 4:1.

Conclusions. 1. In experimental atherosclerosis the signs of hypofunction of insular apparatus of pancreas can be defined.

2. In conditions of taking Vinboron, Polysorbate and Polysponinum the signs of hypofunction reduce.

Key words: pancreas, atherosclerosis, correction.

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ULTRASTRUCTUAL CHANGES IN BRAIN CELLS OF RATS UNDER INTOXICATION 1,2-DICHLOROETHANE

Introduction. 1,2-dichloroethane, arriving in humans or warm-blooded animals, causing damage to membrane structures of many organs and tissues, including liver, myocardium, brain, kidneys, resulting in severe nekrodystrofical of these lesions [Hubskyy, 2001; Luzhnykov, 2012].

Studies have been conducted morphological cellular structures of the brain in acute poisoning 1,2-dichloroethane and after correction nicotinamide.

Materials and Methods. Ultrastructural changes of brain studied by electron microscopy. For electron microscopic studies of liver tissue were fixed in 2% solution OSO4, for to fill objects used araldyt. Ultrathin sections were analyzed in electron microscopes UEMV - 100 B and EMR - 100 L.

Results. Electron microscope examination of the cerebral hemispheres in terms of 1,2-dyhloretanovoyi intoxication showed that distinct ultrastructural changes observed in all structural components of the cerebral cortex. In neurons observed mosaic structure. There are cells that contain a nucleus with a few enlightened kariopolazmoyu unchanged and organelles biloksyntetychnoho energy plan and be placed in the cytosol of moderate density.

Neurons are marked with tightened cytoplasm and karioplazmoyu. They usually altered in form - as the cells themselves, and their nucleus. For a typical nuclear chromatin is the formation of a large number brylok across karioplazmi. Compartments endoplasmic reticulum dramatically compacted, contain small amounts of ribosomes and shifted to the periphery of the cell.

Tubules diktiosom Golgi complex and advanced dekompleksovani. In the mitochondria appear to change destructive Christie and plots lysis matrix, which often reach large sizes, sometimes almost remains only the external mitochondrial membrane.

In neuropile damage primarily related synaptic connections, which number reduced, and their presynaptic terminal by changing "light" type, that is swelling of the past and the disappearance of synaptic vesicles. In aksoplazmi neyrofilamenty are separate and mostly degenerative altered mitochondria.

In space there is a distinct perivascular edema and accumulation of lipid droplets. The lumen of blood microvessels filled plazmykrovi protein precipitate and separate erythrocytes. Sladzhfenomenu not clearly marked. There is a lack of endothelial cells and pericytes elektronnouschilnenyh and better preservation of ultrastructure of endothelial cells. Also observed thinning endothelial hemomikrosudyn will send to the thickness of the plasma membrane, areas of local lysis plasma membrane and cytoplasm of endothelial significant thickening of the basement membrane.

When you enter nicotinamide conditions for 1,2-dichloroethane poisoning decrease majority of pathological changes in the structural components of the cerebral cortex.

Conclusions. 1. Ultrastructural changes in brain cells of rats under intoxication hloralkanamy characterized by morphological manifestations of hypoxia

histotoksychnoyi neurons and glial cells, in particular 1,2-dichloroethane active phenomena in the formation and synaptic mitochondria, microcirculation disturbance in the bloodstream.
2. Correction nicotinamide led to less pronounced ultrastructural changes in the brain tissue of rats poisoned 1,2-dichloroethane.
Key words: ultrastructural changes, brain, 1,2-dichloroethane, xenobiotics, rats.

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THE INFLUENCE ANTIMICROBIAL COATING OF CATETERS ON ANIMALS

Introduction. According to the National monitoring system of epidemiological control nosocomial infections of the US (NNIS) from 31 to 40% of all nosocomial infections constitute for catheter-associated urinary tract infection.
The aim. Determination of effect the antimicrobial coating catheters and duration antimicrobial properties of the coating.
Materials and methods. The study group were injected catheters with an antiseptic-coated. After 24 hours the infected animal depends of *E.coli*. We performed analysis of urine every day. The control group of animals received sterile catheters. To study the histological material used technique by Subbotin. Colouring preparations conducted with hematoxylin-eosin. Microscopic examination of histological preparations was performed using a microscope "Biolam" at 300 × magnification.
Results. In the control group of animals on the second day we noted the emergence signs of infection. Increasing edema and hyperemia of the genitals. On the 3 day , there was an unpleasant smell from the urine. Showed signs of necrosis and desquamation of epithelial plethora of vessels, small hemorrhages. The changes observed in the kidneys, ureters, urinary bladder. In the control group there was a slight hyperemia of the genitals. Changes in urine analeze not revealed.
Conclusion. Antiseptic composition have an antimicrobial effect on a wide range of microorganisms, that colonized catheters for 7 days. It create the antiseptic conditions in the catheter channel and it development of inflammation in the urinary system. It don’t cause mutagenic and degenerative changes in the organs of test animals.
Key words: antiseptic coating, catheters, histological structure, inflammatory changes.

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EFFECT OF VARIOUS DOSES OF COMPLEX OF VITAMINS B_2, B_6, B_9, B_{12} ON BIOCHEMICAL VALUES OF OXIDATIVE STRESS IN THE LIVER OF RATS WITH HYPOVITAMINOSIS - METHIONINE HYPERHOMOCYSTEINEMIA

Introduction. It is known that hyperhomocysteinemia (HHC) causes oxidative stress, which is a powerful factor that leads to liver damage. Therefore it is an actual problem to develop means of correction of HHC. Hypohomocystinemic properties have vitamins B_6, B_9, B_{12} and vitamin B_2.

Aim of work is to study influence of different doses of the complex of vitamins B_2, B_6, B_9, B_{12} on the levels of homocystein (HC) in plasma and indicators of oxidative stress in the liver of rats under simulated HHC.

Materials and methods. Testing was conducted in 59 nonlinear white male rats using a model with hypovitaminosis - methionine hyperhomocysteinemia (HM HHC) by keeping rats on a diet without vitamins B_6, B_9, B_{12}, but enriched with L-methionine.

Results. Animals have a signifficnt level of HHC and activation of oxidative stress in the liver. Rats were treated with a complete diet and vitamin complexes I and II, containing 5 (compared with physiological) or 15 multiple doses of vitamins B_2, B_6, B_9, B_{12}. It was found out that only vitamin complex II completely normalized HC level in blood plasma and all indicators of oxidative stress in the liver, provoked by HM HHC.

Conclusions. The results of experiment indicate advisibility of the above complex of vitamins B_2, B_6, B_9, B_{12} for HHC correction. Further study of effect of proposed vitamin complexes on other types of HHC and determining contribution of each of these vitamins to hypohomocystinemic and antioxidant action are very perspective.

Key words: hyperhomocysteinemia, oxidative stress, vitamin complex.

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THE CHARACTERISTICS OF MORPHOLOGICAL PARAMETERS OF THE HEART CHAMBERS IN RATS OF DIFFERENT SEX UNDER SODIUM NITRITE INTOXICATION

Introduction. One of the important medical and biological problems of nowadays is a study of pathogenesis of cardio-vascular diseases. It is widely known that

ecological factors, including small doses of xenobiotics, play a considerable role in genesis of pathology, breaking the homeostasis and leading to the morbid changes. Despite the various-sided inspections of myocardium, its anatomy in animals of different sex, following sodium nitrite intoxication, is not studied enough. The analysis of morphometric, planimetric and dimensional characteristics of the heart following the toxic impact, depending on animals' sex, provides a theoretic basement for the forward practical use of this acquirement for appreciation as well as diagnostics of diseases.

The goal of the research was a study of morphometric and dimensional parameters of heart chambers in animals of different sex under sodium nitrite intoxication.

Materials and methods. There were examined the hearts of 68 white mature sound rats of weight 185,0-200,0 g that were divided into 4 groups. The intoxication was caused by intragastric receiving of sodium nitrite in dose 5 mg/kg daily during 21 day.

Results. While the lasting acceptance of sodium nitrite, it was noticed, that the heart weight of female rats reliably ($p<0,001$) increased in 20,6 %, which was (1045,2±9,0) mg to (1259,8±9,3) mg. In male rats this indicator also reliably ($p<0,05$) increased in 25,0%, from (1095,4±9,3) mg to (1381,9±10,2) mg.

While the toxic impact on a complex organism, the weight indexes of different heart chambers changed not in the same way. During the experiment, there were found the alternations of an absolute weight of the left ventricle. This index among the group of male rats increased from (717,7±9,0) to (933,20±9,0), which made 26%. In female rats the absolute weight of the left ventricle increased from (685,2±8,7) to (848,6 ± 8,1) mg. The increment was 24 %. In the group of female rats during the experiment increased as well an absolute weight of the right ventricle from (279,8 ± 3,9) to (324,8 ± 4,0) mg, which was 16,0 %. Among male rats this parameter increased from (295,2 ± 4,2) up to (353,3 ± 4,1) mg, which made 20,0 %. The weight alternations of both left and right auricles were noted. These changes were somewhat less than the changes of weight of each ventricle.

Among female rats the size of an endocardial surface of the left ventricle during the experiment increased from (145,2 ± 2,1) to (197,2 ± 5,1) mm^2, which made 36,5 %. The size of the endocardial surface of the left ventricle in male rats following intoxication reached (215,5 ± 5,4) mm^2, which means that it exceed the previous morphometric parameter on 39,56 %.

In the cause of the experiment there were also found the differences between expanse parameters of the heart ventricles among rats of different sex.

Conclusion. Therefore, due to the analysis of morphometric, planimetric and dimensional indexes of myocardium of the animals that were subjected to the influence of sodium nitrite, it was indicated a prevalence of the weight of left ventricle comparatively to the right, increasing of the size of right ventricle comparing to the left, the changes of dimensional parameters of heart chambers could be observed as well. The appointed changes were more expressed between male rats than among animals of opposite sex.

Key words: morphometry, heart, different genders, sodium nitrite.

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COMPARATIVE ANALYSIS OF THE MORPHOLOGICAL CHANGES OF THE JOINTS WHEN USING THE SODIUM SALT OF 4- (3-METHYL-2-OXO-2H- [1,2,4] TRIAZINO [2,3-C] QUINAZOLIN-6-YL) BUTYRIC ACID (COMPOUND DSK-38) AND DICLOFENAC SODIUM ON THE ADJUVANT ARTHRITIS MODEL

Introduction. The presence of adverse events in modern NSAID encourages the search for new chemicals, suitable for the creation of more effective and safer antiphlogistics.

Objective: on the basis of pathological studies provide a comparative assessment of the therapeutic effect of the compound DSK-38 and diclofenac in the model of adjuvant arthritis (AA).

Materials and methods. The study was conducted on 35 nonlinear male rats weighing 140-150g, divided into 5 groups of 7 animals each: 1 - intact rats; 2 - AA rats without treatment (control pathology, euthanasia on the 14 day); 3 - AA rats without treatment (control pathology, euthanasia on the 28 day); 4 - rats with AA treated with compound DSK-38 (2 mg / kg i/p); 5 - AA rats treated with diclofenac (4 mg / kg / i/p). Doses of both substances were equal to their ED50. Arthritis is modeled by introducing under the planter aponeurosis of rats 0.1 ml of complete Freund's adjuvant. Treatment was carried out with 14 to 28 day experiment. The degree of treatment effect was assessed at 28 day.

For evaluation of the morphological changes of the synovium their ankle joints were fixed in 10% neutral formalin solution and subjected to decalcification. Histological sections (5-7mkm) were stained with hematoxylin and eosin, Van Gison pikrofuksine main brown for Shubich, a combination of basic brown and strong green dye, PAS - reaction with alcian blue.

Microscopy and photography of histological preparations was performed using a light microscope BX OLIMPUS 41 at a magnification of 40, 100, 200 and 400 times. Morphometry and statistical analysis was performed using the program "Quick PHOTO MICRO 2.3."

Results. On day 28 of the experiment in untreated animals in the intermediate and deep areas of the synovial membrane of affected joints revealed the broad field of granulation tissue of varying degrees of maturity. They consist mainly of capillaries, fibroblasts, lymphocytes and histiocytes. In the central regions of these infiltrations were degenerative changes of the basic substance, surrounded by connective tissue fibers.

The treatment DSK-38, as well as diclofenac, the most pronounced changes were observed in the superficial parts of the articular cartilage (surface and intermediate zones), which grows in the granulation tissue pannus and damage while articular

cartilage. Unlike the untreated animals full invasion into the cartilage synovium were observed.
Applications DSK-38 caused a decrease or absence of inflammation in the joint, and in periarticular tissues. This cartilage was Gorny, with clearly defined areas and constant presence of chondrocytes. Thus bone destruction caused by inflammation, accompanied by reduction in bone tissue and restoration of function focal synovial and cartilage tissue, as evidenced by the appearance of acidic glycosaminoglycans in dissociated chondrocytes.
Regeneration of bone tissue was realized by proliferation of connective tissue and its transformation into the cartilage. Only in some places synovium remained moderate signs of swelling and slight focal lymphocytic infiltration. On the background of DSK-38 there has been a significant decrease in the number of fibroblasts compared with untreated rats and treatment with Diclofenac.
Conclusion. 1. A compound DSK-38 reduces inflammation of the synovial membrane ankle and performance is not inferior to comparator diclofenac sodium, as evidenced by the presence of the compound antiproliferative properties.
2. Along with antiproliferative properties unlike diclofenac sodium in a new compound DSK-38 also observed antysklerohennyy effect, as evidenced by the low level of fibroblastic reaction ($1350 \pm 152{,}93$, $p < 0{,}05$).
Key words: pathological changes, sodium salt of 4- (3-methyl-2-oxo-2H- [1,2,4] triazino [2,3-c] quinazolin -6-yl) butyric acid, diclofenac sodium, adjuvant arthritis.

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EXPERIMENTAL AND MORPHOLOGICAL SUBSTANTIATION OF INTRAPERITONEAL ALLOPLASTY AT INCISIONAL ABDOMINAL HERNIAS

Introduction. The treatment of incisional abdominal hernias (PAH), especially the ones of large and giant sizes, continues to be a challenge despite the introduction of modern alloplasty and laparoscopic surgery. The application of classical methods of alloplasty, including «onlay», «sublay», «inlay», combined with component separation technique (CST), is still accompanied by a relatively high incidence of local wound complications such as seroma (30.8-60.4%), suppuration (1.5-4.8%), ligature fistulas (1.2-3%) meshoma (0.06-1.6%), leading to the recurrence of hernias (10-15%). This is due to the fact that during application of such techniques, extensive dissection of tissues is performed, and a large number of blood and lymph vessels are damaged. In addition, by the «onlay» method, the mesh implant is in contact with the subcutaneous tissue. The use of intraperitoneal alloplasty with special mesh with adhesive coating reduces postoperative complications of the surgical wound. The

study of morphological changes in the tissues of the abdominal wall at intraperitoneal placement of mesh implants and their comparison with classical alloplasty methods have not yet been performed.

Objective: To prove feasibility intraperitoneal placement of mesh implant during postoperative abdominal hernias.

Materials and methods. With the view to substantiate the intraperitoneal alloplasty at incisional abdominal hernias, experimental and morphological study of 80 Wistar rats has been conducted. The response of tissues in the anterior abdominal wall and internal organs at alloplasty of hernial defects has been studied in a number of ways. Depending on the alloplasty way, the animals were divided into 4 groups. In group I intraperitoneal alloplasty was performed using Parietex composite mesh with anti-adhesive coating; in group II − intraperitoneal alloplasty with polypropylene mesh; in group III − placement of polypropylene mesh in the subcutaneous space over the stitched muscular-aponeurotic defect; in group IV – contact stitching of the defect without mesh implant.

Results. In the early postoperative period, 11 rats died: 2 of group I and 1 of group IV (overdose of anaesthetic medications), 6 of group II (development of peritonitis due to early peritoneal commissures because of adhesions of the intestine to the mesh which caused intestinal obstruction, necrosis of the bowel loops), 2 of group III (suppuration of surgical wound, abscess formation).

Macroscopic evaluation of the abdominal cavity at the 30th, 60ht and 120th days displayed the following results: in group I thin commissures between the edges of the mesh and internal organs are observed, the mesh is well-adhered on the part of the abdominal wall; in group II – rough commissures between the entire surface of mesh and the internal organs is observed, abdominal wall along with the mesh forms a thick inflammatory infiltrate; in group III – sporadic commissures between internal organs are observed, the mesh has partly adhered on the part of aponeurosis. In all cases, the signs of chronic inflammation were observed, in 2 cases – abscesses in the abdominal wall with rejection of the implanted mesh; in group IV – sporadic commissures in the abdominal cavity.

The results of histological studies are the most indicant in animals who were euthanized on the 120th day, due to the best adherence of the mesh with the connective tissue and the formation of mature postoperative cicatrix.

The results of the study showed that in animals of group I with intraperitoneal placement of composite mesh implant with adhesive coating, the uniform adhesion of the mesh with connective tissue was observed with minimal signs of inflammation, formation of neoperitoneum (mesh was covered with a layer of mesothelium on the part of the abdominal cavity) which prevented the mesh implant from adherence to internal organs, while the intraperitoneal placement of polypropylene mesh was accompanied by chronic inflammation, the formation of abscesses, severe coalescence of the intestine with the mesh, leading to intestinal obstruction. This fact confirms the need to use only intraperitoneal alloplasty and only special mesh with adhesive coating.

The use of intraperitoneal alloplasty as compared with the «onlay» method has a significant advantage. This is confirmed by severe inflammation of muscle-

aponeurotic tissue, hypoderm and skin, wound suppuration, abscess formation, rejection of polypropylene mesh implant at its subcutaneous location.
From 2009 to 2014 in the Ukrainian center of surgical treatment of abdominal hernias 82 patients with incisional ventral hernias of gigantic sizes using intraperitoneal alloplasty underwent surgery. Patients were aged from 30 to 80. The results showed that intra-abdominal pressure in the postoperative period was at 5±2.1 mm Hg; abdominal compartment of the syndrome was not observed. Seroma was observed in 6 (7.3±2.9)% patients, suppuration of surgical wound – in 2 (2.4±1.7)%, chronic infiltrate – in 2 (2.4±1.7)%, ligature fistulas of the anterior abdominal wall – in 1 (1.2 ± 1.2)%, meshoma was not observed, inpatient periods were 7±1,2 days.
Chronic pain in the area of mesh implantation during 6-8 months after surgery was observed in 1 (1.6±1.6)% patient and it was eliminated by prescribing physical therapy and nonsteroidal anti-inflammatory drugs. Hernia recurrences were detected in 1 (1.6±1.6)% patient. These results indicate that intraperitoneal alloplasty at giant incisional hernias has significant advantages as compared to classical techniques of alloplasty.
Conclusions. The results showed that intraperitoneal placement of composite mesh coated with anti-adhesive coating reduces the incidence of local wound complications, it does not cause adhesions mesh with the internal organs and provides optimum germination connective tissue mesh implant due to its contact with the parietal peritoneum, which stimulates the active formation of neoperitoneum. It confirms the highest efficiency of intraperitoneal allohernioplasty compared to the method of placement of the implant in the grid.
Key words: incisional hernia, intraperitoneal alloplasty, onlay method, mesothelium, neoperitoneum.

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STRUCTURAL AND MORPHOMETRIC REORGANIZATION OF THE LUNG VESSELS AFTER EXPERIMENTAL THERMAL TRAUMA AND APPLICATION OF LYOPHILIZED XENOGRAFT SUBSTRATE

The aim of this work was to establish the histologic and morphometric vascular reorganization of the lungs in animals after thermal damage in the application of crushed of lyophilized xenograft substrate.
Materials and methods. The experiment was carried out on 30 mature white male rats. Third degree burn was applied under ether anesthesia with copper plates heated in boiling water to a temperature 97-100^{0}C. Size of the area lesions amounted 18-20% of the shaved body surface of rats. Early necrectomy of damaged skin was performed 1 day after causing burns. Closure of wound which formed, committed by crushed lyophilized xenographt substrate. Experimental animals were decapitated at 7, 14 and 21 days.

Results. The conducted histologic and morphometric study on day 7 showed that already in this period less pronounced destructive changes vascular permeability and expression of vascular walls, especially microvasculature. Morphometric found a significant increase in external diameter and narrowing of internal in the arteries of medium caliber, so Vohenvort index less than 1.33 times the rate of animals which correction of thermal injury did not commit. Similarly, changing morphometric data in small caliber arteries.

Submicroscopic in this term of experiment installed less distinct changes in hemocapillary walls of the alveoli of the lungs, they are not so far advanced and filled with blood. For basement membrane typical swelling in a greater extent, available land on which it has no clear contours. In endothelial cells are round-oval nuclei, with shallow intussusception of karyotheca. Edotelialnyh cell cytoplasm moderately swollen. In the peripheral areas of endothelial cytoplasm we can see growing number of pinocytosys vesicles and caveolae.

Histologically on 14 days of the experiment observed that the blood vessels of the lungs moderately blood-filled. Morphometric set reduction in external diameter arteries of medium caliber to 1.08 times and increase in internal in 1.07 times in comparison with the indexes in group of animals without correction burn. Therefore Vohenvort index of these arteries fewer in 1.43 times, relative index of animals without correction. Similar morphometric parameters found in arteries of small caliber.

Microscopically for the conditions of using lyophilized xenograft substrate on 21 day of experiment structural organization of the lungs vascular significantly improved compared to previous terms. Morphometric these changes are confirmed by significant decrease in the index of medium-caliber arteries Vohenvort at 1.74 times and small - to 1.73 times in comparison with values in the group of animals without correction care and their approach to performance intact.

At the ultrastructural level on 14 and 21 days in most hemocapillary walls of the alveoli of the lungs we can see less extent of damage of its components. In moderate their gaps blood corpuscles, mainly red blood cells. Ellipse shape core have clear contours and minor intussusception membranes of karyotheca. The cytoplasms of endothelial cells have moderate electron density. Thin peripheral areas of endothelial cells contain numerous pinocytosys vesicles and caveolae. At this time of experiment basement membrane integrity is preserved as part of the aero-hematic barrier.

Conclusions. Thus, the results of histologic and morphometric studies of the lungs indicate that closure of burn wounds by crushed lyophilized xenograft substrate after conducting early necrosectomy of affected skin prevents the action of pathogenic factors on the vascular system body, reduces the degree of their damage. Therefore, at the end of the experiment takes place relative normalization of structural organization and their morphometric parameters.

Key words: vessels of the lungs, aero-hematic barrier, histologic and morphometric changes, thermal trauma, lyophilized xenographt substrate.

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APPLICATION OF CULTIVATION FOR EXPERIMENTAL IMPACT ASSESMENT OF FETAL NEUROGENIC CELLS' SUPERNATANT ON C6 GLIOMA CELLS

Introduction. Despite intensive research of malignant gliomas in the world, today significant progress in their treatment are not attained by invasiveness and high retsydyvnist gliomas. The combination in treatment of cancer surgery, radiation and chemotherapy is the gold standard, but does not ensure its effectiveness. One alternative approaches to solve this problem is to use neurogenic stem cells and progenitor cells.

It is known that neural progenitor cells exhibit antitumor properties in mice and rats. Multipotent neural progenitor cells of human, rat and mouse expressing both proinflammatory and suppressor cytokines. However, the mechanism of antitumor properties of neurogenic progenitor cells remains unclear.

According to previous studies, fetal nerve cells of rats 18-20 days gestation exhibit antitumor effect in experimental glioma cells in vitro and 101.8 in vivo at heterotransplantatsiyi joint capsule in the kidneys of mice. Shown anti-tumor effect of the supernatant of fetal rat brain cells in rats with glioma 101.8 in vivo.

The purpose of the study was to evaluate the effect of rat fetal neurogenic cells supernatant (RFNS) on cultured cells of rat glioma C6.

Materials and methods. RFNS from suspensions of neurogenic cells of rat brain of 9-th (E9) and 14-th (T14) days of gestation (0,01, 0,10 mg/ml) were added to cell suspensions of rat glioma C6; after 24 h of incubation cell suspensions were analyzed for number of viable cells, cytotoxic index (CI) was calculated. RFNS (0,01, 0,10 mg/ml) were added to primary cultures of rat glioma C6, after 24 and 48 h of incubation cytological preparations were analized and mitotic index was determined.

The supernatant neural cells (NCC) received suspensions of neurogenic rat brain cells at 9 (E9) and 14 (E14) day of gestation.

Results. Supernatants fetal rat brain both studied gestation (E9, E14) revealed a cytotoxic effect on all samples C6 glioma cells in short-term cultures. The level of exposure cytotoxic intensified with increasing duration of incubation of cells with supernatants. With increasing concentration of NCC (E9) from 0.01 to 0.10 mg/ml in the suspensions THESE C6 glioma cells increased and reached (37,61±2,57)% and (50,12±4,55)%, respectively, at 24 hours. and 48 hours. incubation.

At 4-5 day culture experienced a gradual rozryhlennya mikroeksplantativ cell to form a monolayer of tumor cells rozroschen unipolar, triangular or rhomboid shape with fairly long spikes. In these areas crop growth zone were more common areas sitkopodibnoyi architectonics due to the formation of intercellular communications.

In subsequent observation period (8-9 days) in cultures of C6 glioma There was a further dilution of cell arrays zone growth due to spontaneously share desquamation of dead cells appeared significant number of apoptotic cells, reflecting the spontaneous death of cultured cells. Necrobiotic processes spontaneous death covered

the vast number of cells zone growth remained preserved some areas sitkopodibnyh structures and cellular sferoyidni microaggregates, surrounded by a monolayer of epithelial cell growths undifferentiated type.

Conclusions. 1. The supernatant neural cells fetal rat brain different terms of gestation and antymitotychnyy found cytotoxic effects on cultured C6 glioma cells, which intensified with increasing gestational age rat brain, lengthening the duration of incubation was dose-dependent.

2. Primary cultures of rat brain gliomas is adequate experimental model for evaluation of antitumor action neurogenic cells of fetal rat.

3. Using primary cultures of rat brain gliomas to evaluate individual sensitivity of tumor cells to the studied biological product.

Key words: rat progenitor neurogenic cells, supernatant, rat glioma C6, cytotoxic index, mitotic index.

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MORPHOLOGICAL CHANGES OF THE MYOCARDIUM AND LIVER AT THE BACKGROUND OF TETRACHLORMETANE HEPATITIS AND CARDIOTOXIC ADRENALINE ACTION AND THEIR CORRECTION WITH MEXIDOL

Introduction. Under conditions of aggravating anthropogenic toxic effect on the human constitution, combined cardio-vascular pathology and toxic liver damage are common in the medical practice. The liver damage influences both the pathogenesis of cardio-vascular diseases and the efficacy and specifics of the treatment. Therefore, extensive research of the comorbid pathology and the search of effective corrective agents are reasonable.

Objective: To determine the structural dynamics of myocardial damage induced by administration of high doses of adrenaline, against hepatitis tetrahlormetanovoho and effectiveness of the correction of these changes meksydolom.

Materials and methods. Experiments were performed on 36 non-linear white male rats weighing 170-200 g, which were kept on a standard diet vivarium Ternopil State Medical University Horbachevsky.

Toxic liver damage caused intraperitoneally introduced a 50% oil solution of carbon tetrachloride in doses of 1.0 ml / kg. Acute myocardial damage adrenalin fueled by a single intramuscular injection of 0.18% solution of adrenaline hydrotartrate ("Darnitsa", Ukraine) at a dose of 0.5 mg/kg.

To correct drug is used from the group of antioxidants and antihypoxants - Meksydol (Russian Federation). The drug was administered vnutrishnoocherevyno 50 mg/kg

three times - once with the introduction of adrenaline, after 24 and 48 hours after injection of adrenalin hydrotartrate.
Euthanasia was performed using thiopental sodium at 3, 24 and 48 hours from the start of injection of adrenalin on the background of 7 days of acute toxic hepatitis. The animals were divided into 3 groups: 1 - intact animals 2 - infected animals 3 - affected the animals used to correct Meksydol.
For histological studies were liver and heart test animals on day 7 of hepatitis after 3, 24 and 48 hours after administration of epinephrine and after correction Meksydolom in those terms. Samples of fixed in 10% formalin solution, dehidratuvaly in alcohols of increasing concentration and embedded in paraffin-tseloyidyn by conventional methods. Sections were stained with hematoxylin and eosin.
All experiments were performed in compliance with the general rules and regulations of the European Convention for the Protection of vertebrate animals used for experimental and other scientific purposes (Strasbourg, 1986), the General ethical animal experimentation (Kyiv, 2001).
Results. The data analysis found toxic hepatitis developing on the 7^{th} day after intraperitoneal tetrachlormetane introduction to experimental animals. It is morphologically characterized by dystrophy and necrosis of most particle hepatocytes and grows from the centre to the peripheral area thus causing discomplexation of the plates. Concurrently, fibroplastic processes are in progress, leading to sinusoid capillarization and certain ischemia.
Impaired microcirculation as well as growing dystrophic and necrotic changes in the hepatocytes within 3, 24 and 48 hours are the major liver changes at the background of tetrachlormetane hepatitis following the introduction of cardiotoxic adrenaline dose. 48 hours after the introduction of cardiotoxic adrenaline dose at the background of tetrachlormetane hepatitis, progressively disturbed circulation in the liver particles occurs.
Myocardium damage with high adrenaline doses at the background of tetrachlormetane hepatitis primarily involved the damage to the microcirculation stream as well as perivascular and interstitial swelling alongside with necrotic and necribiotic cardiomyocytes' changes, found 3 hours after adrenaline introduction. The changes were found to grow up to the 48^{th} experimental hour.
Light optic study of the liver at the background of tetrachlormetane hepatitis after the introduction of cardiotoxic adrenaline dose, within 3, 24 and 48 hours following mexidol treatment revealed microcirculation disturbance as well as the liver plates discomplexation and marked histiolymphocytic infiltration of portal tracts.
However, it was not before 48 hours within adrenaline introduction that the mosaic structure of hepatocyte damage due to mexidol effect revealed itself in the liver particle of experimental animals. Myocardium microscopy following adrenaline introduction at the background of tetrachlormetane hepatitis and mexidol treatment within 3, 24 and 48 hours revealed insignificant mexidol effect on the myocardium structure on the 3^{d} and 24^{th} experimental hour. It was not before the 48^{th} experimental hour that the decreasing of necrotizing cardiac hystiocytes and their microfocal form were found.

Conclusions. 1. Tetrahlormetanovyy hepatitis is characterized by structural and functional restructuring of the liver, which shows combined solid fat and hydropic degeneration, necrosis, accompanied by a decrease in functional activity of hepatocytes. Alterativnoe changes hepatocytes ischemia intensified the development and proliferation of lymph histiocytic infiltrate in periportal tracts. 2. Cardiotoxic dose of adrenaline increases metabolic disorders in the liver, increasing degenerative changes of hepatocytes and necrobiotic inhibited and reparation processes. 3. Morphological study of ventricular myocardium of experimental animals after administration of a toxic dose of adrenaline on the background tetrahlormetanovoho hepatitis showed violations of the microcirculation changes of cardiomyocytes and necrobiotic that 48 hours increased. Meksydolu positive influence on morphofunctional state of the liver and myocardium is manifested only after 48 hours from the start of the experiment.

Key words: morphology, myocardium, liver, tetrahlormetane hepatitis, adrenalin myocardial injury, Meksydol.

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PATHOLOGICAL CHANGES OF REPRODUCTIVE ABILITY OF PIGS WHICH WERE LONGTERM FEEDING BY RAUNDAPSTABLE GENETICALLY MODIFIED SOYBEAN

Introduction. Genetically modified soy is characterized by a high protein content (38-42%), which contains all the essential aminoacids, many polyunsaturated fatty acids, vitamins, macro and micronutrients, so it comprise of many foods: bread, biscuits, margarine, pizza, sausage, candy, milk, yogurt, baby food and others, but the final opinion on their safety there. This problem is disturbed both as scientists around the world as ordinary people.

The aim of this study was to examine changes in the reproductive capacity of three generations of pigs, which are constantly fed GM raundapstable soy.

Material and methods. Two groups of piglets - and generation (control and research, 2 females and 2 males). After two months after farrowing sows have been separated from . In the control group diet was added 15-20% for crude protein sunflower meal and pea middlings and in research -15-20% for crude protein thermally treated ground raudapstable GM soy. Reproductive ability of females assessed by live weight the natural pairing and the number of stillborn piglets alive and after farrowing; and hogs - on live weight, development of testis and sexual activity. The same experimental conditions were performed in the second and third - generation mature boars examined histologically and biochemically defined fatty acid composition.

Results. Long-term feeding by raundapstable soybean piglets from two-month age to puberty I, II and II generations adversely affect the reproductive ability, shown

inhibition of sexual desire, increase live weight gain during his appearance, the development of significant violations of blood supply, necrotic and degenerative, inflammatory and dysplastic tumor-like processes in the testicles, especially the third generation of males.
Conclusions: 1. The long-term feeding pigs by raundapstable GM soybean in male pigs inhibited sexual desire, especially in the third generation.
2. Histologically the testes in males subjects found significant third generation circulatory disorders, necrotic, degenerative, inflammatory and tumor - dysplastic processes.
3. Biochemically was found that the fatty acid composition of the testicles hogs that received a diet of GM raundapstable soy not significantly different from controls.
Key words: raundap-resistent genetically modified soy, pigs, reproductive ability, testis.

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MORPHOLOGICAL STUDY OF THE EFFECTIVENESS OF CELL TECHNOLOGIES IN CORRECTION OF EXPERIMENTAL GASTRIC ULCER

Introduction. Modern methods of treatment of gastric ulcers, both conservative and surgical, aimed at creating an optimal balance between the factors of "defense" and "aggression" mucosa, leading to the healing of the ulcer. However, these approaches are not in any way affect the actual on reparative processes in the wall of the stomach, which adversely affect the course of disease in general. Solving this problem requires going beyond traditional methods of treatment.
The most promising areas is the use of plasma-rich platelets as a source of growth factors or autologous purified lipoaspiratu as donor mesenchymal stromal stem cells polipotentnyh.
Objective: to evaluate the morphological features of healing of experimental gastric ulcer lesions in terms of the use of autologous purified lipoaspiratu and plasma enriched with platelets.
Materials and methods. Experimental research conducted at the vivarium Vinnitsa National Pirogov Medical University. All experiments were performed according to the "Regulations on the use of animals in biomedical experiments" with the permission of the Bioethics Committee. To study included 48 white laboratory rats of both sexes under the age of 1 year and weighing 120 to 220 g (186 ± 17 g). The control group consisted of 12 rats, which were modeled on symmetric ulcerative lesions of the stomach. The other two groups included 18 rats with simulated gastric

and symmetrical subsequent stimulation of reparative processes in the gastric anterior wall of the stomach. 1 experimental group consisted of rats WHO to accelerate the repair of locally injected autologous purified lipoaspirat 2 research group - rats, for whom locally injected plasma enriched with platelets.

Modeling symmetrical ulcerative lesions of the stomach by a modified method Susumu Okabe using the author's device was made all 48 rats. Assess the state of existing ulcers was performed 3 days after modeling when (according to published data) completely formed ulcerative defects. To do this selectively picked 4 rats from each of the 3 groups.

Macroscopically assessed the state of the walls of the stomach and abdomen. Then vivo measured area formed ulcers front and rear walls of the stomach on the author's technique. After fixing performance areas ulcers animals taken out of the experiment by dislocation of the cervical vertebrae. Removed the stomach, gastrotomy performed and evaluated macroscopically condition mucosa. Material taken for further morphological studies.

The experimental results evaluated at 7 and 14 days from the date of repair stimulation - measured performance areas ulcers, and took away material for morphological studies. To evaluate the pathological changes of gastric mucosa experimental fixed in 10% formalin solution neutral. Preparations were prepared by the standard method, histological sections 5-7 microns thick were stained with hematoxylin, eosin, Sudan III, pikrofuksynom by Van ghisoni main brown for Shubichem, a combination of brown and strong core of green dye with PAS reaction altsianovym blue. Microscopy and histological preparations photographing performed using a light microscope Olympus BX 41 at magnifications of 40, 100, 200 and 400 times.

Results. Histological analysis of acetic ulcer after 7 days of the experiment revealed preference destructive inflammatory changes in the gastric mucosa. Thus, the surface epithelium of the mucous membrane in the area of the ulcer was necrotic.

Microscopic analysis reveals the shallowness characteristic at a time of observation: the outer layer at the bottom and edges of the ulcers presented fibrinous-purulent or purulent exudate. Followed by fibrinoid necrosis zone, which is located deeper layer of granulation tissue, and even deeper - fibroblasts.

At the bottom of the ulcer manifested structureless mass of desquamated epithelial cells limfotsytodopodibnyh impurities. When necrotic areas were observed among granulation tissue, small intermittent zones of fibrinoid necrosis.

In experimental groups, where stimulation of reparative processes performed using lipoaspirat and plasma enriched with platelets, ulcers on their morphological structure on the seventh day were similar to the acetate ulcer: ulcers proximal end hung above its crater, distal end smoothly passed to the mucosa. Layers of purulent exudate and fibrinoid necrosis turned into the lumen of the stomach, beneath formed granulation tissue.

In rats injected plasma enriched with platelets, the depth and degree of inflammatory infiltration compared with the acetate ulcer without correction was significantly lower (0,189±0,010±11,45 and 407 respectively, $p<0,001$).

14 day experiment in rats with acetic ulcer without correction biological stimulants progressed and ulcerative defect healing was observed in any animal. Pathomorphological changes acetate stomach ulcers not significantly different from the 7 days and were characterized by the persistence of floors

According to the morphometric study average depth of ulcers in the group lipoaspiratu use in this study period was 0,155±0,007 mm. In the group of rats injected plasma, platelet-rich epithelium holes 14 day experiment, by contrast, was generally healthy appearance. The cytoplasm of its cells filled with moderately secret basophilic, indicating that a large number rybonukleyidiv. There were figures mitotic division. Proliferation of cells in the deeper parts of the pits led to their extension and acquisition of tortuous or shtoporopodibnoho look. In some animals the use of plasma in the area of epithelial defect observed focal intestinal metaplasia.

In the group of experimental animals injected lipoaspirat complete epithelization ulcer was observed in 2 (28.6%) cases, platelet-rich plasma - 5 (71.4%). In the group of acetate ulcers not healed ulcer none during the experiment.

Morphometric study found that 14 days of the experiment the number of macrophages virtually unchanged in all study groups, but the number of fibroblasts in the case of plasma (209 ± 18,10) numerically higher than obtained in the group of acetate ulcers without correction. The size of the plasma cells and lymphocytes had the opposite trend and characterized their advantage in the group of acetate ulcers without correction, which can prolong suggests chronic inflammation in these rats.

The results of morphological studies of acetic acid gastric ulcers healing in rats with correction of the reparation process with local use of autologous purified lipoaspirate and platelet rich plasma are shown in this article. Platelet rich plasma significantly better than lipoaspirate reduces inflammatory response and stimulates proliferation of gastric epithelial cells on 7^{th} day with the restoration of secretory activity and epithelialization of ulcers in 71.4% of experimental animals on 14^{th} day, and the activation of the fibroblastic reaction during the all experiment.

Conclusions. 1. For the purposes lipoaspiratu morphological changes after 7 and 14 days of the experiment did not provide decongestants and anti-inflammatory effects, but the depth of the ulcer and the degree of inflammatory changes was significantly lower compared with the acetate ulcer without correction ($p<0,001$), and epithelization 14 day experiment 28.6% was determined in experimental animals.

2. The plasma enriched with platelets, reduces the inflammatory response and gastric epithelial cells stimulates proliferation on day 7 of the restoration of secretory activity and epithelialization of ulcers in 71.4% of experimental animals at 14 days, and the activation of the fibroblastic reaction during the entire duration of the experiment.

Key words: ulcer of stomach, acetic acid ulcer, lipoaspirate, platelet rich plasma.

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MORPHO-FUNCTIONAL STATE OF THE TESTICLES AND PROINFLAMMATORY CYTOKINES IN EXPERIMENTAL TOXIC INJURY CONDITION

Introduction. It is known cytokines play an important role in the communication between different systems of the body, regulate embryogenesis and regeneration of cells. It is proved a number of cytokines involved in the process of regulation of the reproductive system.

The *aim* of our research was to study the dynamic changes of inflammatory cytokines in mice males under the influence of doxorubomicyne hydrochloride (DH).

Materials and methods. The study was conducted in adult male mice ICR. Toxic testicular affection was modeled by intraperitoneal introduction of DH, twice with an interval of 7 days. Pathomorphological study of testes and measurement of cytokines content (interleukin-2, interleukin-4, interleukin-6 and interleukin-13) by enzyme immunoassay (ELISA), were conducted. The withdrawal of animals from the experiment took place at the 1st, 7th, 28th and 35th days of the experiment.

Results. In the animals of the control group the distribution of the cells of spermatogenic epithelium due to the stages of maturation was observed: the layers of spermatogonia and spermatocytes, evently spaced Sertoli cells, the lumen of the convoluted seminiferous tubules filled with sperm. IL-2 content was 17, 44 pg/ml; IL-6 - 80.21 pg/ml.

On the first day of the experiment spermatogenic epithelium of the large number of convoluted tubules is somewhat disorganized, in the lumen formed spermatozoa are observed, the height of the epithelium is uneven, sometimes its detachment is found. The content of IL-2 decreased almost three times, at the same time the reduction of IL-6 is almost 20%.

On the 7th day of the experiment in the most convoluted tubules there is a violation of the organization of spermatogenic epithelium: the number of spermatogonia is prominantly reduced, intercellular spaces are widen, diameter of the tubules seems wider due to the lowering of the epithelium, tubular lumen filled by very single sperm, significantly reduced the number of Sertoli cells. The content of IL-2 remains the same, and IL-6 – is reduced as compared both to the control and previous period.

On the 28th day of the experiment number of spermatogonia is sharply reduced, significantly expanded intercellular spaces, most of the tubules is empty, in the lumen of tubules some rare sperm are found, Sertoli cell number is substantially reduced, interstitium is edematous. No significant increase in the content of IL-2 compared to the previous period, but compared to control its content remains below 44 %. This trend is also characteristic of IL-6 content – it's 12,4 % increased compared to the previous period, but remains 13, 6 % below the control group data.

On the 35^{th} day of the experiment convoluted tubules remain dilated and filled by protein detritus, dramatically reduced the number of spermatogonia, sperm is almost absent, basement membrane is thickened, hyperchromic, in many cases spermatogenic epithelium turns peeled off. IL-2 content reaches only 66, 5% of control. The content of IL-6 is 11 % lower than the control group.

Immediately after the cessation of DH toxic exposure there is a sharp decline of IL-2 and IL-6, but on the 7th day of the experiment their content grows up and this growth continues throughout the observation period to the 35th day. Such fluctuations in the content of proinflammatory cytokines lead to an additional deviation of the metabolic processes in the affected organs.

Conclusions. The research demonstrates the importance of cytokine influence on the course of the pathological process in the testes of male mice under the toxic damage conditions. Substantial fluctuations in the content of proinflammatory cytokines during chronic experiment were found: first, there is a sharp decline, and then – a gradual increase of the concentration of these cytokines.

Key words: proinflammatory cytokines; toxic damage; testicles; experiment.

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EXPLORE THE CORRECTNESS OF THREE-DIMENSIONAL ANATOMICAL METRIC STUDIES OF BONE OBJECTS OBTAINED BY CONE BEAM COMPUTED TOMOGRAPHY MORITA VERAVIEWEPOCS 3D

The aim of this study was to determine the correctness of the use of cone-beam CT Morita Veraviewepocs 3D for accurate metric measurement of cranial structures as well as defining the difference between traditional measurements directly anatomical object and its virtual digital counterpart.

Materials and methods. This study compared the vertical, horizontal, transversal characteristics obtained by the conventional measurements of standard marker points on the dry skull using a attorney caliper with the data obtained in the software shell i-Dixel One Volume Viewer (Ver.1.5.0) J Morita Mfg Corp in analysis of i-Dixel database obtained on cone-beam CT Morita Veraviewepocs 3D. 23 identical measurements were carried out directly on the anatomical object caliper and a three-dimensional reconstructed analog programmatically. Statistical analysis was performed using the statistical software package Statistica 6.1.

Results. For qualitative characteristics of the measurement and detection of possible system errors were analyzed the presence of significant differences between the measurements of various researchers. For this purpose has been used a non-parametric Wilcoxon test W, which is based on ranks and used for comparing the value measured in two different conditions on the same subjects sample. The results of the statistical analysis for measuring conducted by caliper in the shell program i-Dixel One Volume Viewer confirmed the null hypothesis, ie there are no significant differences between the measurements conducted by different researchers.

To understand the nature of the relationship between the two groups of measurements is convenient to use Spearman correlation coefficient as a measure of the linear

relationship between random variables. Spearman correlation is rank that is to assess the strength of communication are used not numerical value but the corresponding grades. The coefficient is invariant in relation to any monotonic transformation of the measurement scale. The high value of the Spearman correlation coefficient - 0.99 suggests a close linear relationship, however, to assess the consistency that is not enough. Table 3 shows the detailed description of consistency two types of measurements between each other the method of Bland-Altman. Its data allow to make a number of conclusions. Firstly, the mean difference between the measurements is only 0.28, which indicates the absence of systematic differences. Secondly, the standard deviation of the difference was 0.51, which is low compared to the values themselves. Third, there is no dependence of difference measurement from the value indicator. Thus, measurements obtained by both methods are in good agreement with each other.

Conclusions. The findings confirm a fairly accurate reproduction of metric virtual three-dimensional digital model of the cranial bone structure, obtained by the cone-beam computed tomography Morita Veraviewepocs 3D, and software shell i-Dixel One Volume Viewer (Ver.1.5.0) J Morita Mfg Corp.

Key words: morphometry, skull, computer tomography.

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A COMPREHENSIVE APPROACH TO CLINICAL SAFETY ASSESSMENT OF NEURORETINOPROTECTORS ADMINISTERED IN VARIOUS ROUTES

Introduction. In the present article we proved the possibility of toxicological safety assessment for neuroretinoprotective drugs, using the complex approach to evaluation of intracellular metabolic functional parameters in different ophthalmic structures (retina, optic nerve and anterior corneal epithelium), by the example of ademol administered in various routes. The physiological normal ranges have been determined for neuronal specific enolase activity, cell cycle metrics based on flow cytometry data, oxidative and nitrosative stress markers (malondialdehyde level, carbonyl groups of protein, glutathioneperoxidase activity, nitrite and nitrate balance and adenosine triphosphoric acid content as an indicator of energy processes).

The goal - to establish physiological standards neyronspetsyfichnoyi enolazy, nuclear DNA content of cells in the retina and anterior corneal epithelium, biochemical indices of oxidative stress, energy balance and metabolism of nitrogen monoxide. To prove the use of biochemical and toxicological cytometric diagnostic impact

assessment tsytoprotektoriv the retina, cornea and optic nerve for example modulator activity of NMDA-receptors - Ademolu.

Materials and methods. Experiments conducted on rabbits breed Chinchilla weight 3,0-3,9 kg. All animals are kept in vivarium Vinnitsa National Pirogov Medical University (VNMU) on a standard water-diet with natural light and free access to water and feed. Animals were in under 12 hours of darkness, 12 hours of illumination.

To determine the presence of functional changes of intracellular metabolism in the retina, optic nerve and cornea of rabbits without eye pathology on the background of a course of Ademolu one group of animals injected it intramuscularly (w / m) dose of 2 mg / kg, and in another instylyuvaly con ' yuktyvalnyy bag made Ex tempore 0,5% aqueous solution Ademolu with 1.0% solution every 12 hours for 30 days.

Served as a comparison group without oftalmopatolohiyi intact animals, which have not entered any pharmacological agents.

Euthanasia of animals performing in terms propofolovoho anesthesia (60 mg / kg intravenously (v/v) ("FreseniusKabi", Austria)) [Khodakivskiy, 2014].

The evaluation process neyroretynodestruktsiyi (neuron-specific activity enolazy (NSE)) in the blood serum of animals was measured by ELISA using a set NSE ELISA KIT (DAI, USA) appliance company "Hipson" (Czech Republic) [Khodakivskiy, 2014].

The energy and carbohydrate metabolism in the retina evaluated the content of adenosine triphosphate (ATP). ATP content was determined in bezbilkovomu trichloroacetic extract retina 1: 5 (10% solution of trichloroacetic acid) chromatographic method [Prokhorov, 1982]. The intensity of oxidative stress in the retina determined by malondialdehyde (MDA) and oxidative modification of protein index (OMB).

State antioxidant defense system in the retina evaluated the activity of glutathione peroxidase (GPO). MDA content was determined by reaction with acid tiobarbiturovoyu [Vladimirov, Archakov 1972] PSC - the reaction of 2,4-dynitrofenilhidrazynom [Zaichko, 2003]. The total content of nitrites and nitrates was determined by reaction with a reagent Hrissa [Korenman, 1975]. The activity of glutathione peroxidase was determined spectrophotometric method [Vlasov et al., 1990].

The content of DNA in the nuclei of rat retinal cells was determined by flow cytometry. In the process of making nuclear suspensions using disposable filters CellTrics 50 microns (Partec, Germany). Flow analysis was performed on a multipurpose research flow cytometer "Partec PAS" (Partec, Germany).

Results. The research activity marker Nero destructive processes - NSE showed that its background value in venous blood is 0,35±0,021 ng / ml, which is matched with indicators of activity that received by other researchers, and indicates no fracture membrane processes neyrotsytiv [Dunker et al., 2001; Quintyn et al., 2005; Yee et al., 2012].

Topical (eye drops) or parenteral administration Ademol not cause and is not accompanied by the development neydestruktyvnyh changes in the retina, and demonstrates the lack of action neyroretynotoksychnoyi with prolonged use.

Research on energy metabolism macro level (ATP) showed that the contents intact animals in the retina was 50,40±1,50 nmol/mg protein, indicating the presence of aerobic glycolysis and points of sufficient energy retina. In intact animals no data on the development nitrozatyvnoho stress and imbalance in available nitrogen monoxide metabolism: the level of nitrites and nitrates averaged 5,42±0,21 nmol/mg protein.

Ademol daily intramuscular injection for 30 days, and its use as eye drops, does not cause metabolic changes in the retina. The content of lipid peroxidation products, stress levels of stable metabolites of nitrogen monoxide, ATP is not significantly different from the performance of intact animals.

We also identified the changes of mentioned above parameters on the background of neuroretinoprotective drug ademol.

The other researches may use the physiological normal ranges determined by us for comparative assessment of metabolic processes in the retinal cells under different pathological conditions.

Conclusions. 1. Installed physiological levels and limits the activity of biochemical and DNA markers cytometric cell homeostasis retina, optic nerve and anterior corneal epithelium of rabbits. NSE activity was 0,35 ± 0,021 ng / ml; the level of malondialdehyde, protein carbonyl groups, adenosine triphosphate, nitrites and nitrates, and glutathione peroxidase activity in the retina respectively 3,40 ± 0,13; 1,10 ± 0,04; 50,40 ± 1,50; 5,42 ± 0,21 nmol / mg protein and 5,71 ± 0,19 mmol / min. 1 mg protein.

2. Investigation of course daily intramuscular administration rabbits without oftalmopatolohiyi Ademolu 1.0% solution (2 mg / kg) or instillation into the eyes of its 0.5% solution showed no negative effect of such therapy on DNA content (cell cycle, DNA frahmenatsiya , ploidy) and biochemical homeostasis of cells of the retina, optic nerve and anterior corneal epithelium by criteria neyromarkeriv activity, flow cytometric analysis and metabolism (energy metabolism and oxidant-antioxidant balance).

The methods for toxicological evaluation of the functional state of the metabolism of the retina, optic nerve and cornea epithelium given physiological levels and defined the boundaries of the proposed activity markers can be recommended both for preclinical evaluation of new neyroretynoprotektornoyi activity of biological substances and to determine their possible toxic effects on eyesight.

Key words: neuron specific enolase, flow cytometry, retina, optic nerve, cornea, ademol.

ANTHROPOLOGICAL RESEARCH

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RELATIVE EFFECTIVENESS OF HEPATIC PROTECTOR USAGE AND PHYSICAL EXERCISES BY PATIENTS WITH CHRONIC DIFFUSE LIVER DISEASE

Introduction. Chronic diffuse liver disease remains an extremely relevant and complex problem. Wide spreading of viral hepatitis, high frequency and severity of complications, such as liver cirrhosis and hepatocellular carcinoma make this problem of very high importance. Despite of some success in development of diagnostic and treatment of diffuse liver disease, occurrence of viral hepatitis remains high. A higher occurrence of liver cirrhosis has also been noted. A chronic process in the liver affects its metabolic function to varying degrees. The disturbance of protein synthesis leads to change of aminoacid composition of blood, maladjustment in ammonium neutralization and blood coagulation. Inflammatory-necrotic processes in liver are accompanied with malfunction of lipid peroxidation, exhaustion of antioxidant resources and, as a result, injuries of phospholipid membranes of hepatocytes. All this justifies the usage of such group of medication as hepatic protectors in combined therapy of patients with chronic hepatitis and liver cirrhosis. For patients with alcoholic and non-alcoholic fatty liver disease hepatoprotectors serve as the basis of treatment. In recent years the attitude towards hepatoprotectors in clinical medicine has been reconsidered as to medication which has not been fully meeting the expectations. The only confirmed method of treatment of the fatty liver disease is a decrease of body mass. But recently data about positive effect of isometric physical exercises on the degree of intensity of fat infiltration in the liver without significant weight reduction appeared in literature.

In this connection we have conducted a comparative research, our goal was to compare effectiveness of hepatoprotectors and isometric physical exercises in restoration of metabolic activity of the liver, dynamics of cytolitic syndrome and clinical manifestations by chronic diffuse liver diseases.

Materials and methods. 53 patients (34 males and 19 females) with chronic diffuse liver disease (chronic viral hepatitis C with moderate activity – 10 people, fatty liver - 43 persons) were included into research. All the patients were examined with use of laboratory and instrumental methods (ultrasound, biochemical blood test (ALT, AST, GGT, ALP, cholinesterase, thymol sample, albumin). For determination of metabolic function of the liver of patients with chronic hepatitis C was used a 13s methacetin breath test (13s – MDT). Isometric exercises have been made 3 times a week during 8 weeks. By a simple blind method the patients were randomized into 2 groups. 6 persons with chronic hepatitis C and 22 with fattz liver belonged to the first group (n=28). Group 2 (n=25) had 4 patients with chronic hepatitis C and 21 with fatty liver. The patients of group 1 received silimarine in the dose of 90mg in a capsule of 3 t/d during 2 months. The patients of group 2 along with measures which were mentioned above dose were doing isometric physical exercises regularly. The biochemical study of blood has been made weekly in groups of comparison;

ultrasound, and 13s-MDT were made for all patients before treatment and 2 months after the therapy.

Results. The received results indicate that, as the result of the treatment, levels of total bilirubin in both clinical groups improved reliably. ALT dynamic was positive in groups of patients who received silimarin and isometric exercises , there was no veracious positive dynamics of ALT and AST indicators in group of patients of patients' receiving simarine as hepatoprotector. It should be noted that normalisation of biochemical biochemical was occurring more rapidly in the 1st group.

As for the rates of cholestasis, in group 2 dynamics of alkaline phosphatase was veracious negative.

Conclusions. 1. The two-month course of silimarin treatment with isometric physical exercises in researched groups led to veracious improvement of biochemical indicators, positive clinical dynamics.

2. No veracious improvement of detoxification liver function on treatment with silimarine and occurred, which puts into question consistency of their application as hepatoprotectors.

3. Isometric physical exercises with silimarine and therefore it is more preferable to use in complex treatment of patients with chronic diffuse liver disease.

Key words: chronic diffuse liver disease, hepatic protector, isometric physical exercises.

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CLINICAL PHENOMENOLOGICAL FEATURES AND STRUCTURE OF PERSONALITY DISORDERS AND BEHAVIOR AMONG WORKERS INDUSTRIAL POPULATION

Introduction. Personality disorder is one of the most significant, multifaceted, but still insufficiently studied problems of modern psychiatry. The prevalence of this pathology in the population was 4,7%.

With regard to industrial workers, then the risk of disease is above average, due primarily production conditions, which are based on occupational specificity. In response to an identified deficiency of research in this area to draw definitive conclusions about the priority of influence of certain risk factors on the development of mental health problems up to the present time is not possible.

The need for multivariate analysis arises from modern concepts of mental health, which is not limited to the presence or absence of psychopathological symptoms and syndromes, but includes biological, social, psychological aspects, what was the *purpose* of our study.

Materials and methods. To achieve this goal, we have in terms of informed consent of respondents was conducted mental status examination 982 industrial workers according to the Decree of the Cabinet of Ministers of Ukraine No. 1465 dated 27.12.2000 of the year. Aged 20 to 60 years (mean age of 38,7 ± 7,68 years). The survey was carried out on the basis of outpatient-polyclinic Department of the Zaporozhe regional clinical psychiatric hospital during 2008 to 2011.

Results. In 95 surveyed (9,2±0,83%, and on 100 surveyed) when conducting psychoprofilactic inspection showed signs of disorders of personality and behavior (F60 – 69, according to the codes ICD-10). Gender distribution the overwhelming majority of the surveyed were men and 82 (75,79%) and 13 (24,21%) – women.

In the course of our clinical-phenomenological and psycho-diagnostic study identified the clinical and psychological manifestations of personality disorders and behavior in 28,1% of industrial workers, their structural characteristics.

Personals disorder manifested season – 24,3% and hysterical – 19,7%, paranoid – 18,7% and emotionally unstable disorder, 16,7% of the patients. Much less frequently met disale – 5,9 per cent, dependent, or 5,7%, anancast disorder is 4,8% and anxiety-evasive – 4,2%.

Analysis of the severity of the leading psychopathological syndromes in patients with disorders of personality and behavior shows that for the majority of the surveyed (51.1% of the cases) was characterized by the presence of symptoms specific And cluster – centeredness, suspicion, and anxious-fearful traits. On the second place in number (32,3%) are signs of the cluster, such as eccentricities, emotional lability and theatricality. The cluster was the least represented (16.6 percent), and differed from the previous groups of minimum severity of pathological traits.

In (45,3%) patients was present a moderately severe symptoms or severe difficulty in social functioning. A significant number of individuals with disorders of personality and behavior (25,3%) were for symptoms and expected reactions to traumatic exposure, no more than a slight disruption of the functioning in interpersonal and professional spheres. In (22,1%) surveyed were significantly expressed symptoms or some difficulties in work, interpersonal relationships. The group of patients (7,3%) had established a clearly defined symptoms or impaired functioning that, of course, required attention or treatment.

The relationship between, on the one hand, individual characteristics of a number of personality traits, their level of job satisfaction and social status, and indicators of social functioning, which determines the feasibility of using these characteristics for diagnosis and prognosis of these disorders.

Conclusions. 1. Discovered clinical and psychological manifestations of personality disorders and behavioral disorders in 28.1% of industrial workers and their structural features. 2. Patopersonolohichni schizoid disorder manifested - 24.3%, hysterical - 19.7%, paranoid - 18.7% and emotionally unstable disorder - 16.7% of patients. Much less met dysotsialnyy - 5.9%, depending - 5.7%, anankastnyy disorder - 4.8% and disturbingly evasive - 4.2%. 3. Analysis of expression prevailing psychopathological syndromes in patients with personality disorders and behavior suggests that, for most of the patients (51.1% of cases) is characterized by the presence of symptoms characteristic of cluster A - ehotsentrychnist, suspicion and

anxiety and shy traits. In second place in quantitative terms (32.3%) are in the cluster features such as eccentricity, emotional lability and theatricality. Cluster C was the least represented (16.6%), and different from previous groups of minimum severity of pathological features. 4. 45.3% of patients present moderate or severe symptoms expressed difficulties in social functioning. In 22.1% of patients expressed significantly observed symptoms or difficulties at work, interpersonal relations. Group patients (7.3%) had established a clear symptoms or dysfunction that will certainly require attention or treatment. 5. The relation between the individual characteristics of a number of personality traits, their level of job satisfaction and social provisions and the other - indicators of social functioning, determining the feasibility of using these features for the diagnosis and prediction of these disorders.
Key words: psychiatry, psycho-diagnostics, pathopersonology, personality disorders, industrial workers, mental health.

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THE ISSUE OF PROGRAMMED RELAPAROTOMY IN CHILDREN

Introduction. The high mortality in advanced forms of intestinal obstruction and peritonitis, the complexity of managing these children in the postoperative period, the need for rehabilitation and re-audit of the abdomen, caused by the emergence of such treatment as programmed relaparotomy.
Relaparotomy - a therapeutic manipulation, when the healing process is incomplete. Without adequate sanitation of the abdominal cavity, which can not always be held during the first surgery, the patients can not be cured by antibiotics therapy and infusion therapy. Usually a second operation is imminent, but it is carried out in the worst conditions: the severity of the patient's condition due to intoxication and complications of abdominal abscesses, necrosis of part of the colon, and so on.
Indications to imposition of laparostomy are sufficiently developed. However, specialists have different opinions to the technical side of the overlay treatment.
Purpose of the study. Identify the underlying causes and the results of programmed relaparotomies in children with diffuse purulent fibrinous peritonitis and intestinal obstruction in children.
Materials and methods. The article made an analysis of 43 programmed relaparotomy to 22 children, representing 1.95 relaparotomies an average of one child. All children, which is holding sanation by surgery, performed a median laparotomy, which allows for full and secure access to all the abdomen.
In the study group 8 children (36.36%) were held by one relaparotomy, 4 children (18.18%), two relaparotomy, 3 children (13.63%) three relaparotomy.
The largest number of relaparotomies one child was 5. Two children (9.09%) in this group died.

Results. All relaparotomy were conducted in the period from 24 to 48 hours. In 20 cases (except newborns) was performed tubazh of intestine.
After 2 relaparotomy with programmed the third relaparotomy, the joints performed in order to avoid the eruption through the PVC pipe. Analyzing the data, we concluded that it is sufficient sanations 2-3, depending on the clinical situation. However, the treatment of children running in the background peritonitis syndrome of multiple organ failure requires an individual approach, depending on the result of treatment, severity of the disease may have increased sanations to 5 or more.
During the tubazh of bowel, the transanal gave preference to total tubazh or tubazh of intestines through tseko or appendikostomy.
It was made: 40% (8) transanal tubazh of bowel 9 (45%) - through appendikostomy and 5 (25%) - through tsekostomy. The advantage of such " retrograde " tubazh there is the fact that the appearance of even the minimum contents of the intestinal lumen motility is on the move, but not against the establishment of the probe. Another advantage is that the probe does not interfere with the external breathing, no casting of intestinal contents into the airway. In two cases, one tsekostomy and one appendikostomy (14.28%) were conducted deferred operation to close the stoma in all other cases, the stoma closed independently in the period from 2 to 22 days.
Conclusions. 1. Using programmed relaparotomies in children leads to a reduction in mortality and allows to achieve satisfactory results in the treatment of acute surgical pathology in children. 2. Tubazh of intestinies is mandatory manipulation during programmed relaparotomy in children. 3. Duration of tubazh and technology of its implementation should be adapted to the intraoperative situation.
Key words: children, relaparotomy, tubazh of intestine.

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DETERMINATION OF DOMINANT HEMISPHERE AS A PERSPECTIVE DIRECTION IN THE DEVELOPMENT OF CRITICAL THINKING OF MEDICAL STUDENTS

The methods of determining of the dominant cerebral hemisphere and a perspective direction of development of critical thinking of medical students considering functional asymmetry are reported in the article.
Introduction. The functional asymmetry of the cerebral hemispheres (FAH) - is totality of different functional areas and connections, formed in the process of specialization, providing fixed certain actions mainly and analysis involving different measurement categories in each of the hemispheres, with further joint synthesis.
The left hemisphere is responsible for the abstract symbolic analysis, drafting of logical chains, distribution of information on certain structural links, logical thinking, while the right hemisphere operates with specific images, summarizes and

synthesizes the information ensures the integrity of perception, spatial imaginative thinking.

Therefore, depending on the domination of a hemisphere there are three main groups of people: right-brained, left-brained and ambidexters - both hemispheres are equivalent significant in perception and analyzing of information. Approximately 90% of the world population have dominant right hand, but it does not give reason to think that the left hemisphere is more important in forming of the individuality. Hemispheric specialization holds the important place in the work of the future doctor. The development of interhemispheric relations allow to assess the situation effectively, which requires quick and creative solutions; to build logic plan for correct diagnosis; to take into consideration the features of each patient and apply effective preventive measures based on the experience of observation.

Materials and methods. Research of functional asymmetry of the hemispheres (FAH) was done among 1st-3rd-year students of the medical and dental faculties of VNMU by questioning. Age 17-20 years of respondents corresponds to period of the completion of functional asymmetry of the brain that is associated with the choice of priority activity that meets the adequate assessment of their capabilities and the type of thinking. The number of respondents was 1532. The sex ratio was 67.8% (1039/1532) women and 32.2% (493/1532) of men.

A questionnaire was developed for the study, which included classical tests to determine the dominant hemisphere considering manual asymmetry.

It was revealed among women: left-brained (LB) -73.6% (764), ambidexter (A) - 17.4% (181), right-brained (RB) -9.0% (94).

It was revealed among men: LB - 79.93% (394), A-11.6% (57), RB-8,47% (42). These indices belie significant differences in the prevailing dominance of a hemisphere and suggest a minor role in the formation of sex functional asymmetry of the cerebral hemispheres.

Results. Numerous studies indicate that the hemispheric asymmetry in left-handers less pronounced than in right-handers, approaching of functionality right and left hand is met frequently. Therefore it is impossible to do a clear correlation between the dominance of the right hemisphere and the leading left hand, also it is an important external factor to learn left-handers use right hand that causes changes in labile system of connections of the brain in early age .

The research of FAH is an important test, which is required to choose a future profession.

So it is perspective to determine the dominant hemisphere and to implement practice into learning process that ensures the development of spatio-shaped and logical thinking in medical students; to use in practical classes of situational problems requiring holistic analysis and justification of the action in a certain period of time.

Since the gender structure on a single hemisphere dominance does not have significant differences, it can be assumed effective using of common methods of functions activation and enhance their cooperation in both sexes.

Conclusions. Research of functional asymmetry of hemispheres is an important test, which is required to select a future career with the specifications that are

characteristic of dominant hemisphere that will ensure the harmonious development and self-realization of individuals and effective use of its abilities.
Key words: brain, asymmetry of hemispheres.

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PATHOMORPHOLOGIC FEATURES OF THE CORONARY ANATOMY IN PATIENTS WITH STABLE ANGINA PECTORIS

Introduction. Coronary angiographic investigation defined as an international standard in patients with cardiovascular diseases. However, according to current standards, the coronary angiography performance at low (I-II) stable angina functional class defines as an optional (elective) study.
Recent clinical studies show the mandatory determination of the hemodynamic significance of each stenosis and myocardial ischemia objective evidences before PCI procedure in patients with stable coronary artery disease. However, this does not mean the uselessness of the angiographic results; on the contrary, the coronary angiography plays the role of verification and essential coronary lesion determination.
*Objectives: t*he features of coronary lesion determination by coronary angiographic method in patients with coronary artery disease and I-II functional class stable angina pectoris.
Material and methods. The coronary angiography of 3234 patients was performed, including 1475 (45,6%) of planned coronary angiographies to patients with stable coronary artery disease with clinic signs of myocardial ischemia. The myocardial ischemia signs were estimated by stress-test veloergometry data.
All cases of 782 patients with I-II functional class stable angina pectoris diagnosis were selected, that represented 24,2% of total amount of the coronary angiographies. It compares clinic characteristics of angina and coronary lesion level in all patients.
Results. In 215 (27,49±1,60)% clinical cases it has been found the lack of the significant coronary artery atherosclerotic lesion. So, it was different disease in over a quarter of patients with low functional class of stable angina, which named as a coronary X syndrome, it has another approaches and treatment strategy.
It is established that the significant atherosclerosis of coronary arteries and unfavorable prognosis was present in 109 (13,94±1,24)% of patients with coronary artery disease and I-II functional class angina pectoris, which requires revascularization, regardless minor clinical symptoms.
It should be noted, that significant hemodynamic lesions of left main coronary artery were present in 15 (1,92±0,49)% of patients, that will require urgent decision for the

coronary revascularization. It was found in one-two vessels disease (2 and 3 patients accordingly), that is not necessary of the multivessel coronary pathology for the presence of dangerous left main lesions.
The correlation analysis between the occurrence of left main lesions and degree of the coronary injuries was made, the moderate non-significant statistical links established, proving the possibility of left main disease at any atherosclerotic disease and the necessity of initial coronary angiography performing for the exclusion of dangerous coronary disease even at the low functional class of angina.
Conclusion. 1. The various degree of coronary pathology between clear arteries and significant multivessel disease in 12,7% - 15,2% of cases was found, analyzing 782 coronary angiographies of patients with coronary artery disease and low (I-II) functional class angina pectoris. 2. There is a left main coronary artery injury from 1,5% to 2,4% of cases, and on the contrary clear coronary arteries (coronary X syndrome) appears in 25,9% - 29,1% of patients with I-II functional class of angina pectoris, that in any case cardinal changes in strategy and treatment tactics is required. 3. Changes in the coronary angiography indications for patients with coronary artery disease and I-II functional class angina pectoris need to be given, presenting it as a primary necessary diagnostics method.
Key words: coronary artery disease, coronary angiography.

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THE PREGNANCY SURVEILLANCE TACTICS FOR WOMEN WITH HIV-RELATED TUBERCULOSIS

Introduction. Recently, there are more pregnant women who are HIV positive, and there are cases of tuberculosis (TB) among them. The paper analyzes the course of pregnancy of women with HIV-related TB, the basic ways to optimize the surveillance of pregnancy of women with HIV-related TB, depending on the presence of active TB.
Similar to HIV infection, the incidence of TB is the highest among women of reproductive age, so there naturally arises the problem of HIV-related TB among pregnant women and obstetric patients [Savula, 2011].
Today, TB remains the most common cause of mortality and morbidity among HIV-infected patients and is the leading cause of maternal mortality in high HIV prevalence areas [Martin, 2012].
Given the increased rates of obstetric and perinatal complications among pregnant women with HIV-related TB, today there is an open and urgent matter of possibility of saving and carrying a pregnancy of such women, as well as determining the pregnancy surveillance tactics in case it has been saved.

Materials and methods. There has been analyzed the course of pregnancy of 158 HIV-infected women, including patients with TB, who were divided into five groups. The developed design anticipated two investigation phases:

Phase I was the investigation of assessment of the obstetric and perinatal complications among pregnant women with HIV-related TB.

Phase II was the investigation of assessment of the effectiveness of the proposed algorithm for pregnancy surveillance and methods of treatment of HIV-infected pregnant women without active TB, but with residual changes after pulmonary TB.

Results. The investigation found that the presence of active TB during pregnancy of HIV-infected women is a high-risk factor for pregnancy, delivery and perinatal complications, and therefore a high-risk factor for maternal and perinatal mortality.

In turn, immune defenses are low during pregnancy and delivery. This worsens the course of both HIV infection and TB, promoting the development of more advanced stages of these diseases.

According to the results obtained during the investigation, one may state that if there is the presence of active TB infection in an HIV-infected pregnant woman, saving and carrying a pregnancy is not desirable due to the high risk of obstetric and perinatal complications.

In case of residual changes after pulmonary TB in an HIV-infected pregnant woman, carrying a pregnancy is possible under the joint supervision of an obstetrician-gynecologist, TB doctor and an infectious disease specialist. Clinical management tactics for this category of women should include a timely screening for active TB, as well as prophylactic and antiretroviral therapy during pregnancy to prevent mother-to-child transmission of HIV.

Introducing the algorithm for surveillance of a pregnancy of an HIV-infected woman depending on the presence of active TB will decrease the incidence of obstetric and perinatal complications, which in turn would improve the maternal and perinatal mortality rates in Ukraine.

Conclusions. 1. established that the active presence of tuberculosis during pregnancy in HIV-infected women have a high risk factor for complications of pregnancy, childbirth and perinatal complications. In turn, pregnancy and childbirth reduces the immune defenses than worsen the course of HIV infection and tuberculosis. 2. It can be argued that the active presence of tuberculosis in HIV-infected pregnant women, preservation and pregnancy is not desirable because of the high risk of obstetric and perinatal complications. 3. In the case of the remaining amendments suffering of tuberculosis in HIV-infected pregnant pregnancy possible under the joint supervision of an obstetrician-gynecologist, a TB doctor and an infectious diseases doctor. Clinical management of this category of women should include timely screening for active tuberculosis, pregnancy rates for destination preventive therapy, prevention of relapse of tuberculosis, as well as receiving antiretroviral treatment to prevent HIV transmission from mother to child.

Key words: HIV-infected pregnant women, HIV-related tuberculosis, algorithms for pregnancy surveillance.

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PREVALENCE AND CHARACTERISTICS OF PERSISENT CYTOMEGALOVIRUS INFECTION WITH COMMUNITY-ACQURED PNEUMONIA

Introduction. There are many literature data about cytomegaloviral (CMVI) as direct cause and background for much somatic pathology, a favorable factor for the realization of pathological immune and neuroendocrine reactions which often leads to resistance in therapy of pathological processes in immune-compromised people. At the same time, scientific progress in the diagnosis of community-acquired pneumonia (CAP) and development of highly effective antibacterial drugs for treatment can not provide positive effect that can be explained by the transformation of the conditions of emergency, changes in virulence of the pathogen and the immune reactivity of the patient′s organism. By this time CMVI was considered an indicator disease, immunodeficiency persons. Therefore, and pneumonia, which was observed in similar cohorts of patients was regarded purely as viral etiological factor. And consequently, the latent prevalence of CMVI in patients with CAP has not been studied. The article presents data about the prevalence of cytomegalovirus infection in the population and among patients in community-acquired pneumonia with the presence of specific antibodies - immunoglobulins M and G. Also shows the performance persistence of cytomegalovirus in severity persistence among patients in community-acquired pneumonia and healthy individuals, the prevalence of persistent CMV infection in patients with CAP and healthy subjects on the basis of IgG content depending on the severity of the CAP Pneumonia Patient Outcomes Research Team (PORT) - scale.

The purpose of our work: to establish the prevalence and characteristics of persistent CMV infection in patients with community acquired pneumonia young age.

Materials and methods. 43 patients withe CAP (21 (48,8%) men and 22 (51,2%) women), who were treated in the pulmonary department of the Vinnytsia clinical hospital № 1 during 2015 year were examined. For control the 32 (14 (43,8%) male and 18 (56,2%) women) of practically healthy persons were examined. The average age of patients in group CAP was (40,1+1,7) years in the control group the average age of patients was (36,0+1,7) years. The diagnosis of CAP was determined according to the requirements of the Order MHO of Ukraine № 128 (19.03.2007) and National Clinical Protocol "Community-Acquired and Hospital (Nosocomial) Pneumonia in Adults: etiology, pathogenesis, classification, diagnostics, antibacterial therapy [Feshchenko Y. and etc., 2014]. The presence of CMVI in the study and control groups was made by determining specific antibodies of immunoglobulin M (Ig M CMV) and immunoglobulin G (CMV IgG) in serum using enzyme-linked immunosorbent method [National Committee for Clinical Laboratory Standards].

Statistical processing of the obtained results is performed on a personal computer using the statistical program package SPSS 12.0 for Windows (Grand Pack, Serial Number 9593869).

Results. CAP patients differed significantly according to their virological status (based on analysis of the content of CMV IgM and CMV IgG). According to our data IgM was detected in 4 cases (9.3 %) in clinically meaningless and titer was not typical for the patients of the control group. The average value of the titer of IgG class antibodies to CMV in the group of patients with CAP was (6,13±0,87) % and ranged from 0 to 27,8%, while in the healthy group the average titer values of IgG class antibodies to CMV was (4,07±0,82) units and ranged from 0 to 13,50% (the difference was t=1,664, p=0.1). In all cases (75 observations) the average value of the titer of IgG class antibodies to CMV was (5,25±0,85) units. CAP patients with a high level of statistical significance (p=0.002) differed from healthy subjects on the prevalence of persistent CMVI depending on the level of severity – mild level of persistence of 53.5% versus 25.0%, a high level of persistence is 11.6% versus 0. We haven't revealed statistical significant of differences in the rate of clinically significant severity of CMVI persistence according to the titer of antibodies in IgG class according to gender in both groups of comparison (p>0.05).

However, according to our data, individuals in the control group were characterized by absence of severe CMVI persistence, while in the group of patients with CAP the account 14%. Research of the average values of antibody titer of IgG class CMV showed that in the group of patients for CAP women, the rate was lower and amounted to (levels lower than the 5,37±1,05) units, as above men respectively (6,93±1,41)units, while statistical difference was not found (t=0,888, p=0,379). In the group of healthy women the average values of antibody titres of CMV IgG was higher and amounted to (4,76±1,17) units, while in men it was lower and amounted to (3,18±1,13) units, in this case also the differences were incredible (t=0,950, p=0,350). When assessing the prevalence rate of persistence CMVI according to age, statistically significant differences in both the comparison groups was revealed (p>0,05), however, the patients in group CAP there was a significantly increase in the severity with increasing patient age (p=0,047). For CAP patients in PORT-risk class II (30 patients), the prevalence rate amounted to 76.6% and were observed in 23 patients. For CAP patients-risk class III (13 patients), the prevalence of persistent CMVI amounted to 84,6% and was observed in 11 patients, which was significantly higher compared with the group of patients who had class II risk of a negative outcome on the PORT scale (p<0,05) and is higher than the average group index, which amounted in the whole to 79,1%.

Conclusions. 1. CAP patients differed significantly according to their virological status (based on analysis of the content of CMV IgM and CMV IgG). 2. The study was refuted CMVI-nature as the primary etiological factor of CAP. 3. The presence in the body CMVI-persistency is an aggravating factor for adherence comorbidities of lower respiratory tract, which is probably caused by changes in the immune status that CMVI provokes. 4. No significant difference was found in the analysis of the prevalence of persistent CMVI depending on the age and gender of respondents. 5. For patients who had class III risk according to the scale PORT, which corresponds to

a more severe clinical understanding of the flow of CAP, it is on average (9,40±2,21) against the average (4,71±0,69) p=0,012, which was determined on NP in patients with II class of risk on the scale of PORT, and, which are respectively easier in understanding the clinical course of CAP.

Key words: cytomegalovirus infection, persistence, community-acquired pneumonia, immunoglobulins.

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THE DIAGNOSTIC MEASURING OF A-FETOPROTEIN IN THE BLOOD SERUM IN CHILDREN OF DIFFERENT AGES WITH CHRONIC VIRAL HEPATITIS B AND C

Background. The actual problem of modern medicine and essential of hepatology is the problem of non-invasive diagnosis of the liver fibrosis and cirrhosis in children with chronic liver disease. This is due to the rapid progression of fibrosis in children and the use of limited invasive method of diagnosis of this disease by liver biopsy. In addition, the need for regular monitoring of the effectiveness of the treatment requires the development of a rapid non-invasive method of monitoring of fibrotic changes in the liver, which also limits the biopsy diagnostic method because of the inability of its frequent use. There are several methods of non-invasive diagnostic of the liver fibrosis and cirrhosis, most of which involves complex determination of several biochemical parameters. For these reasons, the notion of the highly sensitive screening methods for fast diagnostics of fibrosis and cirrhosis in children with chronic liver disease and also for monitoring of the effectiveness of therapy is an actual issue today.

Objective: to establish the diagnostic value of the α-fetoprotein in the blood serum at chronic viral hepatitis B and C in children.

Material and methods. The content of the α-fetoprotein measured in the blood serum in 66 children with chronic viral hepatitis B and C, aged from 8 months till 18 years, ELISA on enzyme-linked immunosorbent analyzer Humareader 2106 (USA). Statistical analysis of the results conducted in the program "STATISTICA 5.5". Reliability of difference values between independent quantitative variables determined using the U-Mann-Whitney test.

Results. In was determined that in healthy children of the control group the α-fetoprotein not determined in the blood serum. In children with chronic viral hepatitis content of the α-fetoprotein in the blood serum ranged from 0 to 13 pg/l. It is proved that the content of the α-fetoprotein are significantly higher in the phase of viral replication and with patient at high inflammatory activity in the liver (the activity of transaminase increases in 5-10 times and more).

The appearance of the protein, which is the markers of tumour and liver fibrosis in children of all ages with chronic viral hepatitis B and C, in our opinion, is an unfavourable prognostic sign that may indicate progression of the disease course and liver fibrosis.

Concludions. It was found that the criterion of progressive course of chronic viral hepatitis B and C and the progression of liver cirrhosis in children of all ages is the increase the content of α-fetoprotein in blood serum. For the screening of non-invasive diagnosis of liver fibrosis and cirrhosis in children with chronic liver disease, as well as to monitor the effectiveness of the therapy proposed measuring of α-fetoprotein, as an important indicator of collagen.

Key words: α-fetoprotein, chronic viral hepatitis B and C, fibrosis, children.

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ORGANIZATION OF SPATIO-TEMPORAL PARAMETERS OF GAIT WHILE PERFORMING AN ADDITIONAL MOTOR TASK IN ADOLESCENT AND YOUTH AGE MEN.

Introduction. Although gait is considered automated act on the complex mechanism of its implementation and impact numerous environmental factors and brain functioning at any given time.

The increasing volume of literature on the subject shows that the maintenance or restoration of stability gait requires attention resources are used to support the provision, so - walking is not only an act of automated

The purpose of our study was to determine the spatial and temporal parameters of walking while additional motor task performing in healthy men adolescence and youth age men; analyze the direction of change in gait pattern compared with normal gait with any individual comfortable speed.

Materials and methods. The study was carried out using an automated system GAITRite. In a study on a voluntary basis was attended by students of the Vinnitsa Medical College. We investigated 88 healthy men 13-21 years (mean age was 17,03±1,25 years).

Surveyed were divided into two age groups:

1. The group of adolescence - 33 men 13-16 years (mean age was 15,82±0,39 years).
2. The group of young - 54 men 17-21 years (mean age was 17,76 ± 0,99 years).

Surveyed at the time of the investigation had no injuries and denied the existence of diseases that could affect the formation of the normal gait act.

Determined the value of spatial-temporal parameters according to selected age groups during gait in freely chosen rate and performing of motor tasks. To study the effect of

additional motor tasks for spatial-temporal parameters of walking person used to assess the ability of the device to stabilize the position of hands.

Comparison of the data was performed using nonparametric statistical methods: ANOVA and Newman-Keuls criterion for independent samples.

Results.

Tables 1a, 1b shows the values of spatio-temporal parameters of gait, obtained in 2 groups of men - adolescence (1a), young aged (1b).

Table 1a. Spatio-temporal parameters of normal gait and gait with an additional motor task in adolescents men (mean ± st.err.).

Parameters of gait	normal gait	gait with cogn. task	P
Step Length, left, sm.	69,20±1,24	58,46±1,64	**0,0000**
Step Length, right, sm.	68,71±1,27	58,29±1,70	**0,0000**
Stride Length left, sm.	137,95±2,48	116,68±3,29	**0,0000**
Stride Length right, sm.	137,88±2,47	116,95±3,30	**0,0000**
Step/Extremity Ratio left	0,77±0,01	0,64±0,02	**0,0000**
Step/Extremity Ratio right	0,76±0,01	0,64±0,02	**0,0000**
Toe In/Toe Out left	7,84±1,15	-6,75 ±1,10	0,9796
Toe In/Toe Out right	9,47±1,06	8,65±1,01	0,9903
H-H Base of Support left, sm.	10,08±0,44	8,49±0,53	0,5477
H-H Base of Support right, sm.	10,27±0,42	8,47±0,51	0,2981
Distance, sm.	672,50±10,51	702,05±9,55	0,2710
Step Time left, sec.	0,54±0,01	0,54±0,01	0,9025
Step Time right, sec.	0,54±0,01	0,55±0,01	0,5628
Gait Cycle left, sec	1,08±0,02	1,09±0,02	0,8716
Gait Cycle right, sec	1,07±0,02	1,09±0,02	0,8307
Ambulation Time, sec	5,34±0,19	6,89±0,36	0,0018
Cadence, step/min	112,31±3,27	110,86±1,81	0,5500
Velocity, sm/sec	129,40±3,27	108,45±4,08	**0,0014**
Single Support Time left, sec	0,44±0,01	0,44±0,01	0,8399
Single Support Time right, sec	0,44±0,01	0,44±0,01	0,6102
Double Support Time left, sec	0,19±0,01	0,21±0,01	0,5967
Double Support Time right, sec	0,19±0,01	0,21±0,01	0,6959
Stance Time, left, sec	0,63±0,01	0,65±0,01	0,6979
Stance Time right, sec	0,63±0,01	0,65±0,01	0,5694
Swing Time left, sec	0,44±0,01	0,44±0,01	0,6102
Swing Time right, sec	0,44±0,01	0,44±0,01	0,8399

Table 1b. Spatio-temporal parameters of normal gait and gait with an additional motor task in young men (mean ± st.err.).

parameters of gait	normal gait	gait with cogn. task	P
Step Length, left, sm.	69,18±1,08	60,96±1,27	**0,0004**

Step Length, right, sm.	69,08±1,13	60,75±1,29	**0,0006**
Stride Length left, sm.	138,52±2,19	121,97±2,53	**0,0003**
Stride Length right, sm.	138,40±2,16	121,68±2,56	**0,0005**
Step/Extremity Ratio left	0,75±0,01	0,66±0,01	**0,0001**
Step/Extremity Ratio right	0,75±0,01	0,66±0,01	**0,0001**
Toe In/Toe Out left	8,21±0,75	6,78±0,78	0,9509
Toe In/Toe Out right	10,47±0,81	9,47±0,92	0,9418
H-H Base of Support left, sm.	9,74±0,39	8,87±0,37	0,8954
H-H Base of Support right, sm.	9,80±0,39	8,88±0,36	0,8621
Distance, sm.	672,83±6,85	689,93±7,08	0,6566
Step Time left, sec.	0,56±0,01	0,56±0,01	0,6587
Step Time right, sec.	0,55±0,01	0,56±0,01	0,6656
Gait Cycle left, sec	1,11±0,01	1,12±0,02	0,6211
Gait Cycle right, sec	1,11±0,01	1,12±0,02	0,6867
Ambulation Time, sec	5,55±0,20	6,62±0,26	**0,0278**
Cadence, step/min	109,02±1,29	108,30±1,58	0,7667
Velocity, sm/sec	126,26±2,98	110,78±3,32	**0,0470**
Single Support Time left, sec	0,45±0,01	0,45±0,01	0,7462
Single Support Time right, sec	0,46±0,01	0,45±0,01	0,6141
Double Support Time left, sec	0,20±0,01	0,22±0,01	0,8895
Double Support Time right, sec	0,21±0,01	0,22±0,01	0,8462
Stance Time, left, sec	0,66±0,01	0,67±0,01	0,7026
Stance Time right, sec	0,65±0,01	0,67±0,01	0,4098
Swing Time left, sec	0,46±0,01	0,45±0,01	0,6141
Swing Time right, sec	0,45±0,01	0,45±0,01	0,7462

Conclusion. 1. The direction of the space-time adjustment of loop gait while performing additional cognitive task in adolescents and young age men was the same. Statistically significantly reduced Step Length and Stride Length on both sides. 2. Proved to be stable temporal parameters of gait with additional motor task, due to the control mechanisms of balance. 3. Demonstrated that control of gait require considerable expenses attention, and therefore is not automatic in the classic sense.
Prospects for further research are more detailed study of the impact of additional task while walking on neurophysiological machine control of gait.

Key words: gait spatio-temporal parameters, gait with simultaneous task, various age groups.

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ANALYSIS OF THANATOGENESIS OF POLYTRAUMA WITHIN THE COMBINED DIED AS A RESULT OF DAMAGES

Introduction. *Objective*: To study a retrospective analysis thanatogenesis trauma in the structure of deaths due to combined injuries.
Materials and Methods. For 2008 to 2012 analyzed 4,700 acts forensic death investigation of acts of regional forensic bureau.
According to the 4700 regulations forensics, death due to closed and open (injuries) injuries was 799 cases (17%), while in 582 (72.8%) cases the cause of death were closed damage, while 217 (27.2%) open (different types of injuries including gunshot). The greatest number of deaths undergoing forensic - medical examination were persons who died from various diseases outside hospitals, 2820 cases - heart attacks, strokes, surgical pathology, which is 60% of all forensic autopsies results - medical research from 2008 to 2012. As a result of poisoning, including carbon monoxide and 10% died. As a result of asphyxia and hanging alien objects lost 9%, 3% from hypothermia, burns 1%.
Results. In the overall structure of traumatic injuries caused by the action of blunt objects, in the first place was a head - brain injury 727 cases (90.1%), with only isolated in 67 (9.2%) affected, while 660 (90.8%) combined. The structure dominated by men died 573 person and 226 women. Age victims ranged from 20 to 80 years.
According to the analysis of forensic-medical research cadavers acts, in the year there were about 1000 deaths. Of the total of dead wood in 17% of the cause of death was severe traumatic injuries of which accounted for 2/3 closed.
The structure of closed trauma caused by blunt objects influence fatalities has always been linked severe trauma to the body that 90.1% of the cases combined with cranio - cerebral trauma. The structure of deaths with severe combined trauma was often a combination of skull - brain injury 100% with closed head injury was found in 81.5%, and an open head injury - in 18.5% of the victims. Liver damage was observed in 52% of patients, broken limbs segments detected in 49% of the victims, of which 30% - lower extremities and 19% - the upper, while damage to the lower extremities with fractures 2 - D and 3 - segments occurred in 7%.
Conclusions. The percentage of mortality due to severe traumatic injuries reaches 17% of the total array dead, with closed far outweigh damage.Based on the analysis of autopsy material mechanogenesis most frequent injuries were accidents and katatrauma. First place in frequency of deaths by gender males occupied 78% Among the 799 deaths victims in 90.8% combined damage. 799 deaths (17%), while in 72.8% of cases the cause of death were closed damage, while 27.2% are open. Males who died of traumatic injuries received in a traffic accident, katatrauma under the influence of blunt objects, and the fall from the height of a person dominated by middle age.
Unlike males, women who have died as a result of the above described travmohenezu were much younger.
Key words: thanatogenesis, polytrauma, associated injuries.

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DETERMINING LEVELS OF SYSTOLIC AND LEVELS OF DIASTOLIC HEART FAILURE OF THE LEFT VENTRICLE AT ACUTE CORONARY SYNDROME

Introduction. Actual problem of modern cardiology is the study of systolic and diastolic heart failure of the left ventricle . In recent years, special attention has been paid to systolic heart failure the left ventricle with preserved ejection fraction. For the diagnosis of systolic and diastolic heart failure of the left ventricle using echocardiography. The main criterion for the diagnosis of systolic heart failure is the value of LVEF, according to Ukrainian and European recommendations is 45% or less and characterizes the contractility of the heart. However, so far not offered clear criteria for the diagnosis of degrees of systolic heart failure the left ventricle, which would give an opportunity to more objectively assess the severity of the decompensation of the heart. Along with this, by using Echocardiography to determine diastolic heart failure the left ventricle. Identify the following types of diastolic heart failure: And (slow relaxation), II (pseudonormal) and III (restrictive). However, these types dustlane heart failure of the left ventricle in acute coronary syndrome has not been studied.
Objective: To offer diagnostic criteria and levels of systolic figure types diastlolichnoyi left ventricular dysfunction in acute coronary syndrome.
Materials and methods. We examined 143 patients with unstable angina, average age 56.3 years who have had myocardial infarction in anamnesis at 60.1 %, heart failure NYHA classification functional class I-II – 15.4%, III class at 84.6%, ventricular contractions 2-5 grades by Laun – 4.9%. We examined patients underwent general clinical research methods, ECG, EchoCG, lipid spectrum of blood.
Results. Proposed the following criteria for the diagnosis of systolic heart failure in cardiovascular diseases, which are accompanied by changes in the value of ejection fraction: I (initial) degree – the ejection fraction is 45,0 – 40,1%, II (moderate) – 40,0 – 30,1%, III (major) – 30,0% and less, there is no decompensation of the heart – 45,1% and more. In patients with unstable angina initial systolic heart failure the left ventricle was determined at 35.0 %, moderate – 18.9%, a significant – 1.4 %, absent – 44,7 % of patients. In the study dastans heart failure was determined 3 types: slow-relaxation – 54, 6%, pseudonormal – 23.5%, restrictive – 13,6%, normal – 8.3% of patients. Type slow relaxation and pseudonormal meet for minor changes in the myocardium, restrictive type of diastolic heart failure is defined when organic changes in the myocardium and the occurrence of various complications.
Conclusions. Determined the degree of systolic and diastolic types of heart failure left ventricle in patients with unstable angina are useful to monitor the effectiveness of treatment and correction of the revealed changes in the indices of cardiohemodynamics. Proposed criteria for the diagnosis of systolic heart failure and

the results obtained are useful in cardiological practice in the various cardiovascular diseases.

Key words: acute coronary syndrome, systolic and diastolic heart failure.

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FEATURES RELATIONSHIP BETWEEN THE CHARACTERISTICS OF LIVING AND SOCIAL CONDITIONS OF LIFE, MODE OF DAILY ACTIVITIES AND ADAPTIVE RESOURCES OF THE ORGANISM OF STUDENTS DEPENDING ON THE LEVEL OF PHYSICAL ACTIVITY

Introduction. Defining features of adaptation of the organism and comprehensive assessment of the current health of pupils and students makes the evaluation and its objective correlate, and their subjectively meaningful indicators and an essential precondition of scientific evidence of effective prevention technologies, finding effective ways creation of a preventive educational environment [Korenev, Danilenko, 2007; Polka, Serheta, 2012, Serdyuk and others., 2012]. In this context, the establishment has a great interest on the basis of correlation analysis application procedures, features links between the conditions and the performance characteristics of adaptive resources of the organism students different features of their motor activity and above all, the level of habitual physical activity (PA) [Sukharev, 1991, 2006; Serheta, 1997; Sukharev, Shelonyna, 2012].

The aim of the study is to determine the characteristics of the relationships between the characteristics of housing and living conditions and social life, the daily regime of resources and adaptive body of students depending on the level of physical activity.

Materials and Methods. Research conducted at the Vinnitsa National Medical University by Pirogov, where under supervision were 285 students (150 girls and 135 youths) 3rd year medical faculty, which according to the level of PA is defined according to the value of daily energy were divided into 3 groups of comparison. By comparison groups were involved persons in accordance with high (group 1 PA 50 girls and 45 youths), medium (2 PA group: 50 girls and 45 youths) and low (Group 3 PA: 50 girls and 45 youths) level PA. How criterion parameters of PA should identify indicators of daily energy within to 9000 kJ (low PA) from 9000 to 11000 kJ (average PA) and more than 11000 kJ (high PA) - the girls, and indicators of up 11000 kJ (low PA), from 11000 to 13500 kJ (average PA) and more than 13500 kJ (high PA) – of the youths.

The level of daily energy was determined according to the time and motion-tabular method. Top features of the housing and living conditions and social life, activities of daily treatment, lifestyle and adaptation of training students studied under specially developed questionnaire. Features links between housing and household characteristics and social living conditions, daily regime of adaptation resources and

students body, depending on the level of physical activity was determined by applying the procedures of descriptive statistics and correlation analysis, conducted on the basis of the use of standard application package multivariate statistical analysis "Statistica 6.1 for Windows" (owned by Vinnytsia National University of Pirogov, license №AXX910A374605FA).

Results. Among girls who belonged to the second group of PA parameters that determine the level of academic achievement of students as a whole and, above all, professionally-oriented disciplines, characterized by the presence of statistically significant correlations with indicators concerning the length of time spent outdoors in working (training) days ($rs = -0,28$, $p < 0,05$), movement features range transport students during the day ($rs = -0,28$, $p < 0,05$), there is time to organize during light sleep day ($rs = -0,28$, $p < 0,05$), duration of training activities ($r = -0,42$, $p < 0,01$) and time of the training, which is carried out at home and focused on execution provided curriculum tasks ($rs = -0,31$, $p < 0,05$), features rest during breaks in training ($rs = 0,34$, $p < 0,05$) and characteristics of the organization and first degree of tension, the regime of the day ($rs = -0,33$, $p < 0,05$),

However, among young men who belonged to the second group of PA parameters that determine the level of academic achievement of students as a whole and, above all, professionally-oriented disciplines, there were significant correlations presence of indicators regarding the presence of a separate room in the structure of permanent dwellings stay ($rs = 0,30$, $p < 0,05$), movement features range transport students during the day ($rs = -0,39$, $p < 0,01$), duration of training activities ($r = -0,40$, $p < 0,01$), length of time of the training, which is in the home and aimed at the fulfillment of curriculum tasks ($rs = -0,36$, $p < 0,05$), features rest during breaks in training ($rs = 0,40$, $p < 0,01$) and characteristics of the organization and first degree of tension, the NPT regime ($rs = -0,41$, $p < 0,001$).

Conclusions. The data clearly confirm the fact that, as the largest number of correlations that have been established between the characteristics of housing and living conditions and social life, the NPT regime and adaptive resources of the organism students depending on the level of physical activity (namely, the phenomenon is more a sign of a high level of interaction between the individual components of a multidimensional system in which there is a process of becoming, self-organization and development), and the most deep and close their character found among girls and young men who belonged to the second group of PA. A much smaller number of correlations between the studied parameters was typical for students who belonged to the third group of PA and especially to the first of PA.

In the course of research relationships between features of life and characteristics of adaptive resources of the students organism depend upon the level of physical activity require further consideration in the development and improvement of modern technology and the creation of healthy preventive educational space in medical universities.

Key words: students, physical activity, living and social conditions of life, mode of daily activities, adaptive resources of the organism, the relationship.

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FACTORS OF EMERGENCE PERIPRATETIC FRACTURES OF THE HIP JOINT

Introduction. Peripratetic fractures (PPF) occur infrequently, but still represent a serious problem. The endoprosthesis may be accompanied by a fracture of the hip, sometimes a fracture of the acetabulum. As with most complications, it is easier to prevent fracture than to treat its effects. Hence, knowledge of predisposing factors should minimize these complications. For convenience, organize factors of PPT hip Morrey C. F. created a table depending on them from three groups of factors: those related to the patient is controlled by the surgeon and depending on the used variant of the prosthesis. This is largely true for fractures of the plot of the acetabulum. Currently well-known Vancouver classification peripatetic fractures. Interesting to consider the definition of the relationship between factors and localization of fractures according to the Vancouver classification Subcommittee.
The aim of the study is to determine the factors of peripatetic fractures of the hip joint
Materials and methods. The analysis of the medical records and radiographs of 25 patients who were treated in hospital with the diagnosis: "peripatetic fracture". To determine the status of bone tissue was determined index Barnett-Nordin and type PPT according to the Vancouver classification. When determining factors in the development of the PPT used a modified table Morrey, where he identified three groups of factors: controlled by the surgeon, associated with the patient and with the instability of the femoral component of the endoprosthesis.
Results. Given the well-known table factors in the development peripratetic fractures Morrey identified three groups of factors: controlled by the surgeon, associated with the patient and with the instability of the femoral component of the endoprosthesis. The main reasons for software development include high-energy trauma, disorders of the structural-functional state of bone tissue and the influence of unstable legs of the endoprosthesis. Identified statistically significant ($p \leq 0.01$) prevalence of breaches of the structural-functional state of bone tissue in patients with risk factors for the PPF fractures which were the factors controlled by the surgeon and related instability of the femoral component of the endoprosthesis. In cases of PPF associated with the patient is the main factor in the development of postoperative complications is the impact of high-energy trauma.
Conclusions. The definitions of the main reasons for the development of PPF in various factors will help to develop further methods of treatment and prevention of this complex surgical complications.
Key words: factors of emergence, fracture, hip replacement.

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THE TREATMENT OF DISTAL OCCLUSION OF CHILDREN WITH CHEWING AND MIMIC MUSCLE MALFUNCTION AND MIMIC MUSCLES BY MEANS OF REMOVABLE, FUNCTIONALLY ACTIVE DOUBLE-JAW ORTHODONTIC ACTIVATOR OF OWN DESIGN

Introduction. Today, with the help of the effort made by many professionals, including Ukrainian, certain successes are achieved in orthodontic treatment of separate forms of distal occlusion. However, the presence of errors, complications, occurrence of recidivism of the illness requires the development of a new approach to prevention and treatment of distal occlusion.

The aim of the research was the development and introduction of removable functionally active double-jaw orthodontic activator into practical use, regulation of chewing and mimic muscle tonus, the restoration of nose type of breathing.

Materials and method. 110 persons were examined aged from 9-12 years: 27 persons (30%) with distal occlusion and physiological type of breathing who made up the clinical group 1; 63 persons (70%) with distal occlusion and pathological type of breathing who made up the clinical group 2; 20 persons – with orthogonal occlusion and physiological type of breathing, who made up the 3 (control) group. The treatment has been done over clinical groups 1 and 2. Orthodontic activator is made individually for a patient in specialized dental laboratory. The research was performed before the start of the treatment and after three months of suggested device. Myographic research of chewing and mimic muscles was performed with the help of computerized four – channel complex for electromyography "REPORTER"(manufactured by "ESAOTEBIOMEDIKA", Italy). Clinical research was performed by using static and dynamic examination of the patients , tele- X-Ray examination of the head in side projection was done to 23 persons with distal occlusion aged from 9 to 11 with the permission of their parents, and when there were no general contraindications on the X-Ray machines "Morita", Varaviewpocs and 3D Accuitomo XYZ.

Results. We determined, that children aged from 9 – 12 with distal occlusion and physiological(nose) type of breathing compared to control group, have the deviation of received data from normative fluctuating in the range 2.3 – 13.4 +/- 3.21%. These changes are the result of forming of compensatory reaction of muscles and do not affect the appearance of the patient. The analysis of the research data of children aged from 9-12 with distal occlusion and physiological(mouth) type of breathing compared to control group, have the deviation of the received results from the normative ones fluctuating in the range of 16.0 – 35.9 +/- 2.56 %. The given deviations might be classified as the result of forming of pathological reaction of muscles, accompanied by the negative changes in the appearance of the patient.

Conclusions. By means of Clinical and laboratory research, the effectiveness of the usage of developed removable, functionally active double-jaw orthodontic activator is proved. The restoration of decreased and uneven electromyographic parameters of

the examined muscles was observed after 3 months after the start of the treatment. All EMG – parameters of clinical group 1 after 3 months of treatment were improved in the range 4.0 - 8 +/- 3.21% for temporal muscles, 4.9 – 9.8+/- 3.95% for chewing muscles, 5.3 – 9.5 +/- 3.3% for circular mouth muscle. The overall improvement of the examined indicators fluctuates in the range 4.0 – 9.8 +/- 3,48%. EMG – parameters of clinical group 2 after 3 months of treatment have improved in the range 5.3 – 13.8 +/- 2.97% for temporal muscles, 5.7 – 20.3 +/- 3.12% for chewing muscles, 7.2 – 31.2 +/- 3.33% for circular mouth muscle. The overall improvement of the of the examined indicators was in the range 5.3 – 31.2+/- 3.14%.

Key words: distal bite, dentition apparatus, muscle tone, electromyography, mouth type of breathing.

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DYNAMIC CONTENT PRO- AND ANTI-INFLAMMATORY CYTOKINES IN SERUM BLOOD IN RESPONSE TO POLYTRAUMA IN THE EXPERIMENT

Introduction. Injuries currently is an important problem in Ukraine and the world. In general, the list of causes of death, it is the third after cardiovascular diseases and cancer, among people of working age - belongs to the leading causes of death [Ельский, Зяблицев, 2008; Baguley et al., 2008].

Despite significant achievements in the diagnosis and treatment of injured persons, the effects of treatment are disappointing, due to significant disability and mortality [Агаджанян и др., 2005]. Therefore, the actual direction of theoretical and practical medicine are depth study of the pathogenesis of severe trauma and development on its basis grounded pathogenesis of correction.

The pathogenesis of traumatic disease is the development of multiple organ failure caused by pathological changes of cell membranes [Ельский и др., 2004]. In this process, a key role is played by traumatic shock, lipid peroxidation, the formation of pro-inflammatory mediators, which are distributed by the blood from the place of direct injury and cause the development of systemic disorders [Малыш и др., 2007; Grottke et al., 2007]. Today it is believed that the major signaling molecules that stimulate the development of complex system violations in terms of polytrauma are pro- and anti-inflammatory cytokines. However, their dynamics during early and late manifestations of polytrauma in experiment studied little.

Objective - find out the dynamics of pro- and anti-inflammatory cytokines in serum in response to polytrauma in experiment.

Materials and methods. In experiments used 48 nonlinear white rats which were kept on a standard diet of the vivarium. 6 animals in the control group.

Polytrauma modeled by the method of Kozak (2011) [Пат. 63997 Україна … , 2011]

in terms of thiopental sodium anesthesia (40 mh kh^{-1} body weight). The content of model consisted in the fact that the first anesthetized rat caused external bleeding from the femoral vein, which averaged 20-22% of circulating blood volume. Auto blood at a dose of 0.5 ml per 100 g of animal intraperitoneally injected with a syringe to form haemoperitoneum. Further broken femur. The wound is sewn on the thigh.

The animals that remained alive, drew from the experiment after 2 hours, 1, 3, 7, 14, 21 and 28 days by total bloodletting from the heart in terms of anesthesia. Cytokine profile of blood serum was assessed by tumor necrosis factor-α concentration (TNFα), interleukin-1β (IL-1β), interleukin 6 and 10 (respectively, IL-6, IL-10) ELISA using a set of reagents of firm "USCN, Life Science Inc", adapted to the type of experimental animals, on analyzer STAT-FAX.

When working with laboratory animals follow international standards of humane treatment of animals under the rules of the "European Convention for the Protection of vertebrate animals used for experimental and other scientific purposes" (European Convention, 1984); SPC methodical recommendations of Ministry of Health of Ukraine "Preclinical studies of drugs".

The resulting digital material treated in the department of systematic statistical studies SHEI "Ternopil State Medical University Ministry of Health of Ukraine" in the software package STATISTICA ("StatSoft Inc.", USA) using Student's t test in case of normal distribution comparable statistical collections and nonparametric Mann-Whitney in the absence of normal distribution. The differences are considered significant at the probability of the null hypothesis is not more than 5% ($r \leq 0,05$).

Results. As shown in Table 1 and Figures 1-3, in response to a polytrauma content in serum TNFα in all periods of observation posttraumatic period was significantly greater than in the control group. Its dynamics analysis showed that this cytokine inherent two periods of increase - on 3 and 21 days (respectively on 40.0 and 48.1% compared with the control group ($p<0,05$) and an average of 18.1% in relation to other terms of observation ($p<0.05$)).

Dynamics of a serum IL-1β was similar. On 3 and 21 days studied rate exceeded the control at 2.8 and 2.6 times ($p<0,05$) and similar size in other periods of observation.

Attention is drawn to the fact that after 28 days after injury the content of serum IL-1β reached the level of control and essentially no different from him ($p<0,05$).

In its turn, the content of serum IL-6 has undergone a change in vibrational dynamics of polytrauma. In relation to the control group after 2 h after injury significantly decreased its size (13.8%, $p<0,05$) after 1 day - returned to control levels after 3 days - again decreased (on 19.3%, $p<0,05$). On day 7, it increased significantly and exceeded the level of control by 44.3% ($p<0,05$). Later came the normalization of IL-6 in blood serum.

The content of IL-10 in response to a simulated polytrauma experienced such deviations in relation to the control group. The value of this indicator had only a tendency to decrease after 1 day (on 24.5%, $p<0,10$), but after 3 days became significantly lower compared with controls (on 25.4%, $p<0,05$). At other terms traumatic period deviation of rates were not statistically accurate, except for 14 days, when the contents of IL-10 is 33.9% lower than in the control group ($p<0,05$).

Thus, in response to a simulated polytrauma significantly increased content in blood serum proinflammatory cytokines TNFα and IL-1β, the concentration of which was increased during the period of acute response to injury and the early and late manifestation of TD. Only the contents of IL-1β normal up to 28 day experiment.

Defining feature of these cytokines was 2 times increase - after 3 and 21 days. The content of serum IL-6 has been subjected to severe vibration changes with a reduction to 3 days, a significant increase on day 7 and normalization for 14-28 days. The above dynamics, obviously related to it as pro- and anti-inflammatory properties, which are manifested suppression of secretion of TNFα and IL-1β, activation of liver production of acute phase proteins and stimulation of the hypothalamic-pituitary-adrenal system [Lyson, McCann, 1991], which promotes regulation of inflammatory response.

Vibrational dynamics in response to polytrauma showed and the contents of serum IL-10, which noted the increase after 7 and 21 days, but the result was not statistically significant due to the large variability of this indicator in the experimental groups.

The above dynamics of pro- and anti-inflammatory cytokines was similar to the dynamics for similar clinical conditions where after 7 days after application of severe injuries decreased content of proinflammatory cytokines and anti-inflammatory - growing [Малыш и др., 2007]. The authors interpret these deviations as a compensatory anti-inflammatory response that underlies the decline of immune protection and development of secondary infections.

However, the results of our research indicate that the increase in content of inflammatory cytokines in terms of maximum growth corresponded the largest deviation other markers of traumatic disease, lipid peroxidation, antioxidant protection, cytolysis and endotoxemia [Козак, 2012 а, б, в].

Thus, the assessment of the dynamics of pro- and anti-inflammatory cytokines are important in understanding the basic pathological disorders that occur in conditions of severe trauma, which greatly expands the scope of practical application we have developed models of polytrauma.

Conclusions. 1. In the pathogenesis of systemic disorders in conditions of experimental polytrauma leading value has growth content in blood serum proinflammatory cytokines tumor necrosis factor-α and interleukin-1β. A characteristic feature of their dynamics is 2 times increase - at 3 and 21 days (respectively in 1.40 and 2.76 times and 1.48 and 2.63 times, $p<0.05$). The content of serum interleukin-6 undergoes severe vibration disorders with a significant decrease to 3 days, a significant increase on day 7 and normalization on 14-28 days. Vibrational dynamics in response to polytrauma shows and content in serum interleukin-10, which noted an increase of 7 and 21 days, but the result is not statistically valid.

The prospect of further development revealed violations in the work pro- and anti-inflammatory cytokines in the serum consists in disclosing pathogenetic mechanisms of traumatic disease course and develop an effective method of correction.

Key words: polytrauma, cytokines.

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FEATURES OF TREATMENT OF ANEMIC SYNDROME IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

Introduction. The influence of various treatment options on the dynamics of red blood indices, ferrokinetics and severity of the disease in systemic lupus erythematosus (SLE) patients with different types of anemic syndrome has been evaluated.

The aim - to assess the impact of possible treatment options for dynamics of red blood ferokinetyky and severity of disease in SLE patients with various types of anemia syndrome.

Materials and Methods. To study included individuals who agreed to participate in it, aged 18-70 years, with I and II level process activity and the presence of anemia syndrome. It was formed four groups of patients with systemic lupus erythematosus SLE with anemic syndrome. The control group included 96 patients with SLE. The first group (I) included 22 people with anemia of chronic disease who received traditional treatment of the underlying disease. The second group (II) were 26 anemic patients with chronic diseases, WHO together with basic therapy corrected anemichnyysyndrom epoetynom alpha. Up to 3 group (III) included 23 patients with iron deficiency anemia, for which the prescribed iron sulfate of D, L-serine. A fourth group (IV) includes 25 people with chronic anemic disease with iron deficiency who received epoetyn alpha and 1 month - in addition of iron sulfate D, L-serine.

Efficacy of treatment was assessed by the dynamics of clinical and laboratory parameters. Among the clinical criteria of treatment effectiveness controlled dynamics of total clinical and laboratory parameters of activity SLEDAI (Sistemic Lupus Erythematosus Disease Activity Index) and SLAM (Sistem Lupus Activity Measurement).

Results. It is established that the use epoetynu alpha in patients with chronic anemic syndrome has provided increasing levels of Hb 20 g / l - in 65.4% of patients and in 11.5% - from 10 to 20 g / l. Do not respond to treatment, 19.2% of patients. Among patients with mixed anemia (iron deficiency with AHZ) that simultaneously with the repo treated with iron sulfate D, L-serine, a complete response to treatment at the end of the controlled period gave 72.0%, partly - 16.0% appeared nonresponderamy 3 (12.0%) patients. In the group of IDA, which received a treatment of iron sulfate of D, L-serine, outcomes were better anemic syndrome. The proportion of full or partial responderiv was, respectively, 78.3% and 17.4%.

With the completion of 12 weeks of treatment positive dynamics of Hb was in the second group of people (16.8%), and patients in the third group - 17.7%. Among patients of the fourth group the figure was significantly higher than that of the first group in 5,6 times and amounted to 15.6%.

After 4 weeks of treatment was likely growth dynamics of the number of red blood cells (3.1 and 4.0%, respectively) only in the second and third groups. Marked positive trend to increase the number of red blood cells and the fourth group of patients that are treated as antianemic therapy REPO and iron sulfate of D, L-serine. An examination after 12 weeks of treatment this trend continued.

Number of red blood cells most significantly increased in patients receiving monotherapy with iron sulfate D, L-serine, or repos (4.63 and 4.39%, respectively). A somewhat lower (3.52%) was the dynamics of this index in the fourth group treated with iron sulfate repo + from D, L-serine. As before, the lowest (1.6%), proved dynamics of the number of red blood cells in patients receiving conventional treatment.

Conclusions. It has been established that the effectiveness of a pathogenetic correction of anemia in patients with SLE depends on its type, and the inclusion in the therapeutic complex treatment of recombinant erythropoietin-alpha for 12 weeks contributes to an improvement of the outcome of treatment. 1. Effectiveness of pathogenetic treatment of anemia in patients with SLE depends on its type. Inclusion in the complex treatment of patients with AHZ epoetynu alfa at a dose of 150 U / kg for 12 weeks can achieve target Hb levels in 65.4% of patients improved iron stores by 17.5%, and significantly improve the efficiency of pathogenetic treatment, as evidenced by positive dynamics of total activity indices SLAM and SLEDAI, SHZE, content proinflammatory cytokines: TNF-α, IL-1β, IL-6. 2. The use of iron sulfate D, L-serine in the medium therapeutic doses for 3 months almost no effect on the severity of inflammation in patients with IDA, but can achieve target Hb levels in 78.3% and improves iron stores in the blood serum 25,7%. 3. Combining epoetynu alfa (150 IU/kg) and iron sulfate of D, L-serine (200 mg / day of iron) in patients with iron deficiency AHZ not only improves the effectiveness of treatment of anemia syndrome, increasing the number of full responderiv the end of 12 week to 72.0%, but at the same time reduces laboratory (SHZE, TNF-α, IL-1β, IL-6) and clinical (SLAM, SLEDAI) markers of inflammatory activity. 4. High output levels of proinflammatory cytokines (IL-1β, IL-6, TNF-α), and high levels rRtf and rTF/logFer are unfavorable prognostic factors (predictors) resistance to therapy epoetynom alpha.

Key words: systemic lupus erythematosus, anemia of chronic disease, iron deficiency, iron deficiency anemia, erythropoetin.

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EFFECT OF CHOLECALCIFEROL (VITAMIN D3) SUPPLEMENTATION ON RELAPSES AND DISEASE PROGRESSION IN PATIENTS WITH MULTIPLE SCLEROSIS: RESULTS FROM A CLINICAL INVESTIGATION

Background: There are many different opinions about vitamin D in multiple sclerosis (MS). Patients with MS have relatively low serum 25(OH)D, with evidence that disease activity may increase when UVB exposure is limited. Correlations of lower MS prevalence, activity and mortality with high levels of vitamin D nutrition have led to the hypothesis that high levels of vitamin D could be beneficial for MS. However, there remains a lack of definitive evidence regarding the clinical efficacy of vitamin D for the treatment of patients with MS.
Purpose: The aim of this study was to assess the impact of oral Colecalciferol (Vitamin D3) – Aquadetrim®Vitaminum D3 on clinical outcomes in patients with MS prospectively.
Materials and methods. There have been examined 158 relapsing-remitting MS patients (48 men, 110 women). The mean age of all subjects was 36.97±8.67 years (20–60), with mean EDSS 3.82 (1.5–6.0) and disease duration of 9.44±6.47 years (1–36). Patients received Aquadetrim® Vitaminum D3, as monotherapy (n=32) or with disease modifying drugs (interferon beta or glatiramer acetate) (n=29), or disease modifying drugs only (n=22), while 75 patients with MS remained untreated (control). 61 patients received 4,000 IU/day of Aquadetrim® Vitaminum D3 in late fall and winter and 500-1500 IU/day in spring and summer. MS patients were assessed using the Expanded Disability Status Scale (EDSS) at baseline and in 12 months after initiation of Vitamin D3 therapy. Efficacy endpoints included relapse frequency and EDSS score. Safety and tolerability of vitamin D3 supplementation are further outcome parameters. The data was analysed by the SPSS 13 programme.
Results. The mean vitamin D status was 54.23±15.19 nmol/L (15.6–75.4), mean serum calcium was 2.32 mmol/L (2.1–2.58) at baseline. There was significant difference between patients using vitamin D3 as add-on treatment to disease modifying drugs and control group in annualized relapse rate (OR 0.38, 95% CI 0.146-1.006). No differences in changes in functional capacity measured by EDSS were observed between the four groups. Some trends favoring the treatment group were seen in EDSS measures, but the majority of patients had EDSS scores ≤ 4, throughout the trial with changes typically of 0.5 to 1 EDSS point.
Conclusion. Compared to controls, we found that treatment in MS patients with oral vitamin D3 was associated with significant decreases in annualized relapse rate and a greater proportion had a stable or improved EDSS at study end.
Key words: multiple sclerosis, Cholecalciferol (Vitamin D3), disease-modifying therapy.

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LINEAR SONOGRAPHIC SIZE AND ACOUSTIC DENSITY SPLEEN IN PRACTICALLY HEALTHY MEN FROM PODILLYA WITH DIFFERENT SOMATOTYPES

Introduction. The features of the linear dimensions and acoustic density of spleen in practically healthy men with different somatotypes from Podillya are set. A number of studies is talking about a broad range of variant anatomy and parameters spleen in healthy studied adolescent and youth of both sexes and of different types of constitution that has great practical value in the diagnosis of the pathology of the spleen, planning and performing surgery and requires further study said issues in older age groups.

The aim of our study was to determine the features of linear dimensions and acoustic density spleen in healthy men Somatotypes different skirts.

Materials and Methods. Based on the research center of Vinnitsa National Pirogov Medical University for the selection contingent on a healthy population survey volunteers were selected 657 men living in the city (21 to 35) Ukrainian ethnic groups that live in the third generation the territory skirts. They were re-survey was conducted on a history of any disease, bringing been selected for further examination 236 persons. A sample of 90 healthy men first mature age who had anthropometric survey by V.V.Bunakom [1941]. Determining the absolute amount of fat, bone and muscle components of body weight was calculated according to the formulas J.Matiegka [1921] and the muscular component addition - the formulas of the American Institute of Nutrition [Heymsfield, 1982]. The evaluation was carried out by somatotype mathematical scheme J.Carter i B.Heath [1990].

Vivo study of morphometric parameters spleen was conducted sonographic method using ultrasonic diagnostic system CAPASEE model SSA-220A (Toshiba, Japan), convex probe PVG-366M 3,75 MHz and diagnostic ultrasound system Voluson 730 Pro (Austria), 3.5 convex probe MHz.

Results. When comparing the length of the spleen in men with different somatotype found that this size statistically significantly lower in men with ektomorfnym somatotype than men with mesomorphic and endo-mesomorphic somatotype ($p<0,05$ in both cases).

In men with mesomorphic and endo-mesomorphic somatotype thickness spleen statistically significantly higher than in men with ektomorfnym ($p<0,01$ in both cases) and ecto-mesomorphic somatotype ($p <0,05$ in both cases).

Splenic index statistically significantly lower in men with эktomorfnым somatotype than men with mesomorphic and endo-mesomorphic somatotype ($p<0,01$ and $p<0,05$ respectively).

Conclusions. 1. Found that in men with ectomorphic somatotype length, thickness, height of the spleen and splenic index was significantly larger or have significant tendency to greater value compared with men with mesomorphic and endo-mesomorphic somatotype. Determined significant tendency to greater value splenic index in men with endo-mesomorphic somatotype compared with men with an average somatotype intermediate. 2. Acoustic density of spleen in longitudinal section statistically significant smaller or has a significant tendency to lower values in men with mesomorphic somatotype compared with men with endo-mesomorphic somatotype and middle intermediate. 3. Significant differences in the diameter of splenic vein between men with different somatotypes not installed.

Key words: sonography of spleen, somatometric-anthropo indexes, healthy male, somatotype.

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MEDICAL TACTICS OF THE CYSTIC FORMATIONS OF PANCREAS

Objectives. Design of tactics and assessment of the direct results of the application of laparoscopic and endoscopic treatment of pancreatic cysts.
Materials and methods. For the period 2014 – 2015 we observed 472 patients with pathology of pancreas in the surgery department of organs of digestion. 65 patients had cysts of the pancreas.
Results. Elective operations were not executed in 34 (52.3%) patients with cystic formations of pancreas: clinical-laboratory and instrumental studies revealed an unformed (immature) small size pancreas cysts (diameter 3-4 cm) against the backdrop of active inflammation. Surgical procedures were performed in 31 (47.7%) patients. The type, amount and duration of surgical intervention depended upon origin, location and size of pancreatic cysts, as well as the ductal system of the pancreas (presence of strictures, extensions of various lengths, virsungolitiaz), correlation of cysts and the main pancreatic duct, we also took into account the active signs of inflammation of the pancreas and the extent of its fibrosis. Surgeries were divided on IV types by functional orientations: I - draining (were performed in 16 (51.6%) patients), II – organ-saving cystectomy operation (were performed in 2 (6.4%) patients); III – organ-saving resection-draining (were performed in 3 (9.7%) patients) and IV - resection (were performed in 8 (25.8%) patients).
Patients with immature (unformed) small size (3-4 cm) pancreatic cysts, with an active inflammation without complications were subjected to conservative therapy and dynamic observation. Patients with immature (unformed) pancreas cysts, inactive inflammation, underwent conservative treatment, and minimally invasive intervention, if necessary. Patients with mature (formed) pancreatic cysts, active inflammation and late fibrosis received conservative treatment for the reducing of inflammation, afterwards they were operated. Patients with mature (formed) pancreatic cysts and inactive inflammation were operated. Resection method was the only choice for the patients with cystic tumors over 3 cm.
Conclusions Thus, it is necessary to use differentiated approach to the choice of treatment of patients with the cystic formations of pancreas. Surgical tactic depends on the location of the cyst, its nature and size, maturity of the pancreatic cysts, taking into account activity of inflammation of the pancreas and the degree of its fibrosis.
Key words: pancreas, pancreatic cysts, surgery of the cystic formations of pancreas.

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HYGIENIC ASSESSMENT OF FEATURES AND SOCIAL AND HOUSING LIVING CONDITIONS OF THE STUDENTS ENROLLED IN HIGHER EDUCATIONAL INSTITUTIONS OF MEDICAL PROFILE

Introduction. One extremely important components of scientific research in the field of health of children, adolescents and young people should be considered defining characteristics of housing and living conditions and establishing patterns of its impact on the health of pupils and students [Serheta, Bardov, 1997; Degtyarev, 2004; Bardov et al., 2007; Zabroda, 2007].

This approach is the starting components and research, the center of which are issues on development of healthy modern technologies, the center of which is the introduction of a number of psychophysiological measures, and corrective psychogigienic content [Korobchansky et al., 2006; Serheta et al., 2007; Polka, Serheta, 2012; Serdyuk et al., 2012].

A research aim is a hygienical estimation of features of features of housing and social conditions of life of students,that study in higher educational establishment medical.

Materials and methods. The research was carried out on the basis of Vinnytsia national medical University named after N. And, Pirogov, where we observed 307 students (150 boys and 150 boys) who studied at the 1st, 3rd and 6th course of medical faculty. The leading features of the living and social conditions of life of student young people was studied on the basis of specially designed questionnaire and through interviews.

Results. During the studies that have been conducted, it was found that the majority of people surveyed lived in conditions hostels. Among students of 1st year their share was 34.0% in boys and 25.0% girls among the students of 3rd year - respectively 36.0% and 39.2%, among students of 6th course under 52 , 0% and 54.0%. In terms of housing hired among first-year students living 52.0% of boys and 53.6% girls among students third-- respectively 30.0% and 33.3% of people, including graduate students - respectively 14.0% and 20 0% of individuals. In his apartment living under 12.0% of boys and 10.7% girls studied in the 1st year, 24.0% of boys and 17.7% girls studied in the 3rd year, and 24.0% boys and 18.0% girls studied in 6th year. Was significant enough to be recognized and the proportion of students living in individual houses, which was 2.0% in first-year boys and 5.3% girls first-year, 6.0% in third-adolescent and 7.8% in girls of 3-rd cours and 10.0% boys graduate and 8.0% of female graduates

In the context of providing optimal conditions for the organization of independent work aimed at preparing for workshops and consolidation of educational material that passed, it was necessary to draw attention to the fact that a separate room in the structure of the premises of permanent residence (apartment, individual house,

dormitory, etc.) have 46.0% of boys and 58.9% girls students of 1st year, 62.0% of boys and 49.0% girls students of 3rd year, and 50.0% of boys and 62.0% girls students 6- year student.

Conclusions. Data on assessment features welfare aspects of the organization of life of students enrolled in higher education, have to conclude that most favorable domestic housing and material conditions stay constant current students.

However, there is a tendency to increase with the age of efforts to improve their financial situation through the implementation of additional works that were paid in extracurricular period serednomisyachnyyserednomisyachnyy budget family that falls on one person usually does not reach limits of UAH 1,000, most of the students lived in environment where floor space, which accounts for 1 person is below the standard values, separate room within the structure of permanent residence dwellings had about ½ of students in terms of living wage housing 1/3 (graduates) to ½ (among first-year) students and students.

For sufficiently high proportion of students (from 1/3 to ½ of girls and boys) had significant value inherent vehicle movement relative to the radius of the students during the school day, as well as accommodation in the region, celebrated elevated levels of air pollution. After all, can alarm and trend of deterioration over time teaching in higher education features in family relationships, as communication with parents and family is an important factor that influences the health of adolescents.

The data need further consideration in hodы development, improvement and implementation of modern technologies in the Health-medical universities.

Key words: students, higher educational institutions, social and housing and living conditions, hygienic assessment.

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PULMONARY COMPLICATIONS IN HIV-INFECTED PATIENTS WITH MULTIPLE INJURIES

Introduction. One of the main causes of death among patients with polytrauma and HIV infection is lesions of the respiratory system. Severe pulmonary infection in HIV-infected patients with polytrauma can be caused by bacterial, viral and fungal pneumonia. Given the growing number of HIV-infected patients with polytrauma that various complicated pulmonary pathology, and taking into account different degrees of immunosuppression is, in our opinion, necessary and appropriate to determine the etiologic spectrum, frequency and nature of lesions in the lung tissue of patients**.**

The aim of our work was to study the peculiarities of infectious complications of the pulmonary system in HIV-infected patients with polytrauma

Materials and Methods: To fulfill the purpose of research, we analyzed the diagnosis and treatment of 74 patients with polytrauma and other infectious

complications were hospitalized in one of the city hospitals. The men were 51 people (68.92%), women under 23 (31.08%). The age of patients ranged from 18 to 66 years. All the victims were divided into 3 groups. The first group included 26 HIV-infected patients with polytrauma CD4 cell count which was at ≥500 cells / microliter. The second group included 32 HIV-infected patients with polytrauma and infectious complications in which the level of CD4 stanovyv.200-500 cells / microliter. The third group included 22 HIV - infected affected level. CD4 where stanovyv.≤200 cells / microliter.

Results. Clinical manifestations of lung disease in HIV-infected patients with polytrauma differs considerable variety. Diagnosis and differential diagnosis of pulmonary infectious complications among this category of victims is difficult enough. Etiological spectrum of this disease can be wide, especially given the severe immunosuppression. Opportunistic infections often occur atypically, have a combined character. Lung pathology in HIV-infected progresses quickly pathological process prone to generalization, severe course fatal. In HIV-infected patients with low immune deficiency inherent pulmonary infectious complications caused by bacterial pathogens. For patients with moderate immunodeficiency characterized as bacterial and fungal infectious pulmonary complications. Among patients with immunodeficiency pulmonary infectious complications caused by opportunistic pathogens.

So summing up the above data, we concluded that pulmonary infectious complications among HIV-infected victims have certain characteristics, and depending on the level of immunosuppression clinical and nosological characteristics are considerably changed.

Conclusions. 1. Clinical manifestations of lung disease in HIV-infected patients with polytrauma significantly different variety. Diagnosis and differential diagnosis of pulmonary infectious complications among this category of victims is quite complicated. 2. Etiological spectrum of this disease can be wide, especially given the severe immunosuppression. Opportunistic infections often occur atypically, have combined nature. Lung pathology in HIV-infected progresses quickly pathological process is prone to generalization, severe course fatal. 3. HIV-infected patients with low immune deficiency inherent complications of pulmonary infections caused by bacterial pathogens. For patients with moderate immunodeficiency characterized as bacterial and fungal infectious pulmonary complications. Among patients with immunodeficiency pulmonary infectious complications caused by opportunistic pathogens. Prospects for further research is to study the microbiological characteristics of infectious pulmonary complications among HIV-infected patients with polytrauma.

Key words: HIV infection, polytrauma affected, infectious complications.

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THE PRESSURE INDICATORS IN THE LEFT AND RIGHT HEART COMPARISON AT ATHLETES OF YOUTHFUL AGE AND AT PERSONS WHO DIDN'T PLAY SPORTS REGULARLY

Introduction. Sports and training process involving changes during significant in all organs and systems of an athlete. The nature of the change depends on the individual abilities of the organism and adaptive processes that provide the ability to adapt to significant physical activity. In turn, regular exercise is a means of increasing the adaptive capacities of the organism, positively affecting the functioning of the organism as a whole and its individual organs and systems. The pressure indicators in cavities of heart were studied at athletes of youthful age and comparison with indicators at young men who didn't play sports regularly was carried out them.

The aim is to identify indicators of pressure in the cavities of the heart in young athletes and youths who do not regularly involved in sports, and establish the presence or absence of statistically significant differences between the two groups of subjects.

Materials and methods. Athletes surveyed 149 male youth (17 - 21) [Koveshnykov, Nykytyuk, 1992] who regularly engaged in exercise intensely for at least 2 years is the minimum period to form the features of "sporting heart" [Makarov, 2010]. The nature of training loads athletes were divided into 3 groups according to the classification A.H.Dembo [1988] 1 group (45 people) - those that develop speed and strength; Group 2 (70) - those that develop agility, speed and strength; 3 group (34 people) - those that develop skill and speed. Up to 4 groups (control) included 43 young men who do not regularly engaged in sports.

All surveys conducted anthropometric survey as directed V.V.Bunaka [Nikolaev et al., 2005], which included the definition of total (length and weight) obhvatnyh (shoulder, arm, leg), transverse (width distal epiphysis shoulder, forearm hips) size and thickness of skin and fat folds (on the back of the shoulder, under the lower angle of the scapula on the side, on the lower leg). To determine the somatotype used mathematical scheme J.Carter i B.Heath [1990].

Results. A comparison between the total pressure indicators group of athletes and a group of people who are not engaged in regular exercise found that the group of athletes performance end systolic pulmonary artery pressure (14,04±5,99 mm. Hg. In.) And pulmonary embolism midΔR (10,61±3,17 mm. Hg. in.) statistically significantly greater ($p<0,05$ for both indicators) compared with persons who are not engaged in regular exercise (11,89 ± 4,65 mm. Hg. Art . and 9,32 ± 2,17 mm. Hg. Art., respectively).

When comparing the pressure of the first group of athletes with those people who do not regularly engaged in exercise significant difference has not been established.

When comparing the pressure of the second group of athletes with those people who do not regularly engaged in exercise, significant difference was found only for end-diastolic left ventricular pressure ($p<0,05$), which was lower in athletes (5,37±1,29 mm. Hg. Art. against 7,27±2,24 mm. Hg. in.).

It is established that the majority of indicators (81,8%) at athletes significantly doesn't differ from indicators at persons who didn't go in for sports regularly. It conected both with the general group of athletes, and separate groups of the athletes divided depending on character of training loads and features of a constitution. Besides, at athletes all indicators of blood pressure don't exceed border of the standard standard indicators. The received results show the opportunity during studying the indicators of pressure in cavities of heart to be guided, unlike an assessment of echocardiographic and Doppler indicators, the standard indicators.
Conclusions. 1. A comparison between the total pressure indicators group of athletes and a control group of people who do not regularly engaged in sports, established statistically significant differences in only two of the eleven indicators (18.2%). 2. The allocation of total group athletes into subgroups by nature of training loads and their performance compared with the control group statistically significant differences between the two indices of eleven (18.2%) set only for athletes, developing skill and speed (third group). 3. When prevention echocardiographic examinations athletes when assessing the pressure in the cavities of the heart can be guided by the generally accepted standard indicators excluding sporting character and somatotype loads athletes.
Key words: sports, echocardiography, somatotype.

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TUMOR CELLS MITOTIC ACTIVITY MARKER KI-67 IN ASSESSING THE NEOADJUVANT CHEMORADIOTHERAPY EFFECTIVENESS IN PATIENTS WITH RECTAL CANCER.

Introduction. The emergence and progression of any tumors, including rectal cancer (RC) is the result of imbalance in the life cycle control system of the cells. This applies imbalance in levels of cell proliferation and cell death with the formation of stable uncontrolled mitotic activity [Cartron et al., 2003; Hector, Prehn, 2009;]. A widely recognized marker of cell proliferation is Ki-67 – a protein found in the nuclei at the stages of cell division. All the data in the scientific literature regarding the possibility of using Ki-67 as an independent criterion for assessing the RC properties and prognosis of the disease remains controversial [Menezes et al., 2010; Huh et al., 2010; Losi et al., 2006; Maksimovic, Jakovljevic, 2007; Fluge et al., 2009; Kuremsky et al., 2009; Spolverato et al., 2011].
The aim of the study was to determine the expression patterns of protein Ki-67 in rectal cancer tissue depending on the pathological characteristics of the tumor and to establish the possible relationship between marker level and the results of neoadjuvant chemoradiotherapy (NCRT).

Materials and Methods. The study involved 18 patients with RC who were treated in Ivano-Frankivsk Clinical Oncology Center (Ukraine), 12 of them were diagnosed with rectal adenocarcinoma of the II stage (T3-4N0M0G1-3) and 6 – stage III (T2-4N1-2M0G1-3). Mean age of patients was 62,3±2,04 years. At the first phase of treatment, Patients received a preoperative course of radiochemotherapy to the tumor region to a total focal dose of 40 Gy with the usage of peroral tegafur intake. A single focal dose constituted 2 Gy with 20 sessions, 5 sessions per week. Tegafur intake was at the rate of 800 mg per day for patients weighing 70 kg or 1200 mg for patients weighing more than 70 kg each day throughout the course of radiochemotherapy. A radical surgical intervention was done after 4-6 weeks of treatment.

The object of the study were fragments of intact rectal mucosa at a distance of 3 cm from the edge of the tumor and RC fragments obtained during biopsy before starting the treatment and from surgical specimens. Serial paraffin sections with thickness of 4-5 mm were stained with hematoxylin and eosin and studied by microscope Leica DME (Germany) at magnifications x40, x100, x200 and x400. The effectiveness of neoadjuvant course of hemoradiotherapy was estimated one month after the end of it, considering the level of therapeutic pathomorphism in tissue specimen of surgical material while applying the Lavnikova's technique.

Primary antibodies anti-Ki-67 (Santa Cruz, CA, USA, dilution 1: 200) and secondary fluorescein-containing antibodies Alexa Fluor 546 (Invitrogen, USA, 1: 500) were employed in order to determine the immunohistochemical marker Ki-67. Immunopositive tissues were examined using a confocal laser scanning microscope Zeiss LSM 510 with oil-immersion lens 40X/1.4NA. Each slice was photographed in 5 randomly selected fields. Immunosignale intensity analysis was determined when applying the ImageJ 1.48 software. Statistical analysis was being performed while using the licensed software Statistica v.6.1.

Results. An average level of Ki-67 expression in the fields of view in intact rectal mucosa before treatment constituted 33,2 ± 2,61 conv. units. Marker expression was most pronounced in areas of glandular rectal epithelium. Ki-67-positive epithelial cells were located throughout the intestinal crypts with a slight predominance of expression in their basal departments compared to luminal. Ki-67 expression in epitheliocytes was invariable along the perimeter of the crypts. Ki-67 expression proved to be minimal in the stromal connective tissue membrane. Mucosal expression of Ki-67 in epitheliocytes was uneven around the circumference of the crypts in 4-6 weeks after NHPT and somewhat less intense than at the time of the initial examination of patients (29,7±3,61 conv. units, $p>0.05$), including in the epithelium of basal parts of the crypts.

In RC tissue samples before treatment of Ki-67 expression was high in most cells of atypical glandular structures. Its average level was 46,08±3,14 conv. units. It appeared to be significantly higher in cases of poorly-differentiated tumors than in highly differentiated, accounting respectively 52,65 ± 4,48 conv. units and 38,01 ± 2,94 conv. units ($P<0.001$). In the stromal connective tissue Ki-67 expression was significantly lower compared with cancer epithelium, but more pronounced in locuses of reactive cell infiltrates. The data obtained on reciprocal interdependence of RC differentiation degree and Ki-67 level in the tumor before treatment are consistent

with the findings of other researchers [Menezes et al., 2010; Huh et al., 2010; Losi et al., 2006], describing the increased expression of Ki-67 as a biological characteristic that contributes to the development of local recurrence and distant metastases even in clinically favorable cases at the early stages of RC.

Ki-67 expression intensity in CR tissue decreased dramatically – to an average of 32,45 ± 1,19 conv. units ($P<0.001$) after the course of NCRT and had uneven distribution in epithelial glandular structures. In the case of III-IV levels of therapeutic pathomorphosis Ki-67 expression was significantly lower compared to pathomorphosis of I-II levels, accounting 24,24 ± 2,19 conv. units and 37,58 ± 3,21 conv. units ($P<0.001$) respectively. In areas of severe desmoplastic stromal reaction, Ki-67 glowing was found in cells of reactive lymphocyte-macrophage infiltrations and vascular endothelium. Thus, the effect of NCRT on tumor parenchyma not only decreases the area of cancer cells, but also decreases proliferative activity of residual tumor cells.

Conclusions. 1. The negative correlation between Ki-67 expression after the course of NCRT and response level to applied treatment indicates the feasibility of using the definition of Ki-67 to monitor the effectiveness of CR NCRT. 2. High Ki-67 expression in the tumor tissue before treatment, being characteristic for tumors with low differentiation, correlates with the level of tumors malignant potential.

Key words: rectal cancer, proliferative activity, therapeutic pathomorphosis, chemoradiotherapy.

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MECHANISMS OF PLATELET DYSFUNCTION IN PATIENTS WITH GASTRODUODENAL ULCER BLEEDING

Introduction. Gastric and duodenal ulcer bleeding is a common cause of hospital admission and life-threatening medical emergency [Laursen et al., 2012]. Recent studies of clinical, laboratory and endoscopic features of peptic ulcers and their complications have revealed the wide list of factors which are associated with this pathology [Bratanic A. et al., 2012]. The most widely known risk-stratification tool for gastroduodenal bleeding is the Rockall scoring system [Marmo et al., 2010]. It represents an accurate and validated predictor of rebleeding and mortality [Jensen, 2012]. This approach is perfect for short-term management of GDB, but not in development of novel strategy of treatment and prevention of ulcer bleeding. Indeed, the treatment of ulcer bleeding remains only partly successful, despite the wide use of endoscopic methods, eradication of H. pylory and progress in antisecretory therapy [Holster, Kuipers, 2011]. In our view, the solution may lie in development of a new approach, directed on assessment of mechanisms of hemostasis failure rather than on detection of stigmata of bleeding. The integrative link of hemostatic system is

platelets, which are the first cells activated in the place of injury, tightly related with plasma coagulation system, endothelium and connective tissue homeostasis. These blood cells have numerous receptors for different molecules, which are involved in regulation and realization of blood clotting. That is why we suggested that in vitro assessment of platelet reaction to different stimuli can be useful for understanding of hemostasis instability and establishment of pathogenetic mechanisms of unsustainable trombogenesis after bleeding.

The aim of this paper is to identify factors associated with risk of unsustainable hemostasis in patients with gastric and duodenal ulcer bleeding by in vitro assessment of platelet reactivity.

Material and methods. A cohort study was conducted in 140 patients with a diagnosis of gastroduodenal ulcer bleeding. Patients considered eligible for enrollment had to be over 18 years of age, suffer from typical symptoms of acute bleeding from gastric and duodenal ulcers, confirmed by positive upper gastrointestinal endoscopy. Exclusion criteria were age younger than 35 years or over 75 years, any allergy to established medications, coagulopathy, infarction of myocardium and ischemic stroke in the last 6 months, pregnancy, cirrhosis or use of a proton pump inhibitor or H_2-receptor antagonist in the 2 weeks prior to enrollment in the study. The patients with malignant ulcers or trauma were also excluded. Patients were divided into two groups according to initial endoscopic data: group 1 with sustained hemostasis; group 2 with failure of initial hemostasis corresponding to Forrest classification. It is commonly used when stratifying patients with upper gastrointestinal hemorrhage into high and low risk categories for mortality. It is also a significant method of prediction of the risk of rebleeding. High risk category (with un-sustained hemostasis) includes Forrest grade I and IIa-b [Chiu, 2010]. Patients who had these endoscopic stigmata were included into the 2^{nd} group. Low risk lesions (with sustained hemostasis) correspond to Forrest grade IIc and III. Patients with these endoscopic features belonged to the 1^{st} group. Whole blood for the in vitro study was sampled from patients with peptic ulcer bleeding at the moment of hospital admission before therapy. Blood was collected from the antecubital vein into plastic syringes containing sodium citrate at a final concentration of 0.38% with proportion 9:1 and centrifuged at 200×g for 20 minutes at 25°C to prepare platelet-rich plasma (PRP). We evaluated the platelet aggregation in the presence of different proaggregants as followed: adenosine diphosphate (ADP; 5 μM), epinephrine (2.5 μM), 5-hydroxytryptamine (10 μM), collagen (1 μM) and thrombin (0,05 NIH Unit/ml). The reaction tubes were pre-incubated for 1 min at 37°C, and then 20 μL of each agonist in EC50 concentrations were added [Баринов и др., 2011; Barinov at al., 2013]. Measurement of platelet aggregation with aggregometer was carried out according to the method previously described [Баринов и др., 2006; Lombardi, 2012]. The aggregometer was 490-2D (Chrono-log, USA). Collagen, ADP, Epinephrine, Thrombin and 5-hydroxytryptamine were from Sigma (USA).

Data were collected and analyzed using the statistical package MedCalc version 12.3 (MedCalc Software Inc., 1993-2012). Descriptive statistics were used to analyze and report the data. For presentation of nominal data the % and standard error (m) were calculated; for presentation of numerical data the median (Me) and standard error (m)

were calculated [Petrie, Sabin, 2005]. The chi-squared and the rank Kruskal-Wallis and Dunn's tests were used to determine differences between patients with sustained and unsustainable haemostasis. The significance threshold was set at $P<0.05$.

Results. Discussion. Acute peptic ulcer bleeding occurred in 185 men (74,9±2,8%), average age 54±1,4 years old and in 62 women (25,1±2,8%), average age 70,2±1,9 years old. One hundred and six patients had a bleeding from gastric ulceration, 128 had duodenal ulcers and thirteen patients had both gastric and duodenal ulcers. In 130 cases ulcer bleeding occurred in patients with comorbidities including the pathology of cardiovascular system, digestive system diseases and acute inflammatory processes. There were no gender differences in frequency of cardiovascular pathology in patients with ulcer bleeding. Disorders of thrombogenesis were more often in patients with such comorbidities as cancer, portal hypertension and acute inflammatory diseases. According to endoscopic characteristics the most often location of ulcers complicated by bleeding was duodenum (128 patients; 51,8±2,6%), rather than gastric body and pylorus ulcers (22,2±1,5% and 20,6±1,3% of patients respectively). In 13 patients (5,3±1,3%) several ulcer were found. However, location and size of ulcers were not related with the efficacy of hemostasis. Endoscopic study revealed active bleeding (F1) in 21 patients (8,5±1,8%); 121 cases (48,9±3,2%) of F2a and F2b class; Forrest class 2c in 83 (33,7±3,1%) and F3 in 22 (8,9±1,8%) patients.

There were no significant differences in coagulation system indexes ($p>0,05$) and platelet count in patients of the 1st and the 2nd groups. Nevertheless, analysis of platelet aggregation has shown the difference in platelet response to all agonists. Despite the absence of significant links between collagen- and thrombin-induced platelet aggregation and ulcer size or location, association of platelet reactivity with endoscopic characteristics of hemostasis was found. The lowest platelet response to collagen and thrombin was detected in patients with F1 ($p<0,001$) or F2a-b Forrest classes ($p<0,01$). The decrease of collagen- and thrombin-induced aggregation was associated with reversible pattern of the curve. This fact can be explained by the defect of platelet degranulation or impairment of secondary agonists effects. To verify these points we analyzed the platelet response to ADP and ATP, which are considered to be the main paracrine factors magnifying the effect of tissue (collagen) and coagulation system (thrombin) stimuli to platelets. Interestingly, characteristics of ADP-induced aggregation in patients with gastroduodenal ulcer bleeding were similar to thrombin and collagen-induced aggregation – higher in patients with sustainable hemostasis and low or absent in cases with recent or active bleeding respectively. There were significant differences in platelet aggregation induced by ADP ($p<0,01$), collagen ($p<0,01$) and thrombin ($p<0,001$) in patients with different state of hemostatis according to the endoscopic features.

Analysis of purine signaling in platelets has shown the decrease of ADP-induced platelet aggregation, the degree of which was associated with different endoscopic characteristics ($p<0,01$) and correlated with platelet response to thrombin ($r=0,714$; $p<0,001$) and collagen ($r=0,584$; $p<0,01$). Another association of platelet reactivity with clinical and instrumental data were shown during analysis of epinephrine and 5-HT effects. In vitro measurement of platelet aggregation induced by epinephrine has

shown its relation with temporal and chronological characteristics. During the first 6 hours after bleeding manifestation, high epinephrine-induced platelet aggregationn was observed; later, however, the decrease of platelet adrenoreactivity was detected. This fact can reflect the phases of compensatory reaction of sympatho-adrenal system and time-dependent changes of platelet sensitivity to systemic regulators after 12 hours after the manifestation of the ulcer bleeding. There was no significant relation between size, Forrest class, severity of bleeding and 5-HT-induced platelet aggregation. Nevertheless, the relation between 5-HT effect and location of ulcer was shown: the minimal 5-HT-induced platelet aggregation was measured in patient with gastric ulcers, and the highest values ($p<0,01$) were found in cases of duodenal ulcer bleeding which were associated with associated pathology of gastrointestinal tract ($p<0,01$).

Thus, analysis of functional state of platelet in patients with gastroduodenal ulcer bleeding allows to establish the following: 1) variability of platelet response to different agonists used in EC_{50}. 2) relationship exist between platelet aggregation and spatial-temporal characteristics of ulcers complicated by bleeding; 3) platelet reactivity was associated with different parameters of hemostasis and outcome.

In this work we analyzed in vitro the mechanisms of hemostasis failure in patients with gastroduodenal ulcer bleeding. In order to study the mechanisms of unsustainable hemostasis platelets were chosen as a model. The choice is explained by the following facts: 1) platelets are the first and obligatory participants of thrombogenesis [Michelson, 2013]; 2) platelet surface is the place for reactions of coagulation cascade realization, reacts with thrombin and tissue factor through PAR-1 and PAR-4 [Schlagenhauf et al., 2014]; 3) platelets are the targets for different systemic factors, involved in reaction of organism to bleeding, including epinephrine, norepinephrine, 5-HT and so on [Stalker et al., 2012]. Molecular and functional characteristics of platelets can be informative in assessment of the individual reactivity of an organism and the key mechanisms that lead to the defects in thrombogenesis. According to this concept, we assessed the efficacy of platelet model for investigation of mechanisms of platelet dysfunction in patients with ulcer bleeding by in vitro analysis of platelet aggregation.

Despite the classical postulate that there are four major risk factors for bleeding peptic ulcers namely Helicobacter pylori infection, non-steroidal anti-inflammatory drugs (NSAIDs), stress and gastric acid and that the reduction or elimination of these risk factors lessen ulcer recurrence and rebleeding rates, we support another hypothesis. According to the current theories of ulcerogenesis we suggest that development of ulcer bleeding and alteration of thrombogenesis mechanisms, which might determine the spontaneous resolution of bleeding, are related to the factors involved both in regulation of haemostasis and inflammation [Petaja, 2011]. And assessment of platelet aggregation induced by different agonists indirectly confirmed this thought.

In this work we found out that the changes in agonist-induced platelet aggregation and hemostasis failure in patients with ulcer bleeding can reflect the role of systemic, tissue, paracrine and coagulation factors in platelet dysfunction and failure of thrombogenesis. The specific relations between platelet response to different

regulators and special-temporal characteristics of ulcers and hemostasis characteristics were shown. The results of platelet aggregation analysis had shown the significant differences in thrombin induced aggregation in patients with spontaneously stopped bleeding (1^{st} group) and active or recent bleeding (2^{nd} group). Really thrombin is considered to be a potent inductor of platelet aggregation and in control group it induced high irreversible aggregation. So reduction of platelet reactivity on this agonist was a big surprise. Thrombin effect on platelet is realized through PAR-1 and PAR-4 which are the most numerous type of receptors on platelet (1500-2000 per platelet), and additional;y through GP Ib [Баринов, Сулаева, 2012].

According to our results the risk of unsustainable hemostasis significantly increased with combined failure of platelet response to thrombin and ADP. It is well known that ADP is a weak agonist for platelet aggregation that is explained by low number of purine receptors on platelet surface (near 150 per platelet) [Баринов и др., 2014]. However, ADP release from dense granules during primary induction and activation of two types of receptors ($P2Y_1$ and $P2Y_{12}$) induce potent stimulation of Gq- and Gi-protein-associated signaling. The latter includes activation of phospholipase C, inositol-3-phosphate, protein kinase C, calcium release, inhibition of adenylyl cyclase with additional stimulation of phosphatidylinositol-3-kinase γ, Akt and Rap 1b, that provide the potent amplification of primary agonists (collagen, thrombin et al) effect [Stalker et al., 2012]. The results of ADP effect are recruitment of new platelets into aggregation with progression of clot formation and activation of GPIIb-IIIa for fibrinogen links necessary for clot stabilization. Alteration of platelet response to purines can explain the failure of clot stabilization (according to endoscopic characteristics of ulcers) under the high level of fibrinogen on one side and reversible character of platelet aggregation curve after potent agonist stimulation on the other side.

Conclusion and perspectives of the further investigation. Thus, estimation of platelet reactivity in vitro allows indicating key mechanisms of hemostasis failure in patients with ulcer bleeding. Additionally to gender-associated factor, the important determinants of unsustainable hemostasis were a decrease of platelet response to thrombin and ADP.

Further investigation of molecular mechanisms of abnormal platelet response among patients with ulcer bleeding could be important for new therapeutic strategy development.

Key words: gastric and duodenal ulcer, bleeding, hemostasis, platelets.

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SIMULATION OF PROPER PARAMETERS CENTRAL HEMODYNAMICS PARAMETERS BY VOLLEYBALL PLAYERS OF DIFFERENT POSITIONS

DEPENDING ON ANTHROPOMETRIC NAD SOMATOTYPOLOGICAL CHARACTERISTICS OF THE ORGANISM

Introduction. Modeling appropriate central hemodynamic parameters depending on the characteristics of the body structure is extremely important and can be used for diagnostic purposes and due to the wide spread of cardiovascular diseases and high mortality from cardiovascular disease, both in children and adults and of sudden death in the sport.

The aim was to build a regression model of rheographic parameters of central hemodynamics volleyball players in different positions depending on the characteristics and anthropometric and somatotypological parameters.

The study involved 116 volleyball players of high level sports training of youth (16 to 20 years). For sports roles were divided into 3 groups: hitters - 78 (67.24%); setters - 29 (25%); libero - 9 (7.76%). We conducted anthropometric research methodology Bunaka [1941] somatotypological - calculated by a modification of the method of Heath-Carter [1990], the definition of a component of body weight by the method Matejko [Koveshnykov, Nykytyuk, 1992] and rheographic study using computer diagnostic complex . Construction of mathematical models of central hemodynamic parameters depending on the characteristics of the body structure held in the package "STATISTICA 5.5" for Windows (belongs to CNIT VNMU Pirogov, license № AXXR910A374605FA) through direct incremental regression analysis.

In carrying out step by step regression analysis revealed that a group of volleyball players hittets position accuracy describe of all regression depending of *parameters of central hemodynamics* of constitutional characteristics of the body is less than 50%, respectively analysis of these indicators was not carried out.

We found that volleyball player with internal command of specialization of setters 10 rheographic central hemodynamic parameters dependent on anthropometric and somatotypological characteristics of the body more than 50%, so for they were built mathematical models. On the variability of other indicators of central hemodynamics we found significant effect anthropo-somatotypological components, but the accuracy of the description of the data attributes was not high: for systolic blood pressure - 27.4% for the power of the left ventricle - 38.4%, so for them to create mathematical models not advisable. Were built models to determine the appropriate values of diastolic pressure (R^2 =0,67) and average blood pressure (R^2 = 0,54), stroke volume (R^2 = 0,63), minute volume of blood (R^2 = 0,58), stroke index (R^2 = 0,74), cardiac index (R^2 = 0,59), specific peripheral resistance (R^2 = 0, 76), total peripheral resistance (R^2 = 0,55), the velocity of blood volume (R^2 = 0,60) and energy consumption (R^2 = 0, 68).

In the group of volleyball players who have a position sport libero, all 12 parameters of central hemodynamics rheographic dependent on external physical parameters of the body more than 50%, but as this group of athletes was not numerical to use for prediction appropriate hemodynamic parameters constructed mathematical models for them is not correct. Thus we only detailed analysis of predictors which influence on changing parameters of the cardiovascular system.

Conclusions. 1. The allocation of volleyball players on the sports position mathematical models to determine the appropriate parameters of central hemodynamics built only for setters, in which 10 rheographic parameters are accurate descriptions of signs of more than 50.0%. 2. In binding the accuracy of the description of signs is 54-76%. In the largest degree the value of central hemodynamic parameters determining the thickness of the skin-folds of fat (in the shin and forearm), craniometircsize (width of the face width of the lower jaw, the maximum length of the head), the longitudinal dimensions (height finger point). 3. In the group of volleyball players who have a position of libero, all 12 parameters of central hemodynamics dependent on external physical parameters of the body more than 50%, but due to the small number of groups, models are not built. 4. In Liberia accurate description of signs is 83-89% except cardiac index, where it is $R^2 = 0, 65$. In the largest degree the value of the hemodynamic parameters determined girth size (feet), the diameter of the body (intervertebral distance, cross the lower chest), craniometric dimensions (width faces, the smallest width of the head, the maximum length of the head).

Key words: rheographic, parameters of central hemodynamics, anthropometry, somatotype, turn-based regression, volleyball, position.

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CHRONIC ISCHEMIC ARTERY DISEASE ON THE BACKGROUND OF NON-DIFFERENTIATED DYSPLASIA OF CONNECTIVE TISSUE: FROM PHENOTYPIC PREDICTORS TO HEMODYNAMIC PECULIARITIES

Introduction. Coronary artery disease (CAD) is the most common pathology in Ukraine. During 2008-2014 yrs. its performance in the adult population, gradually increasing by 6.7% annually, reached 24.0881 persons per 100,000 populations. Over the past year the number of patients increased by 60,332 persons (1.0%). Despite the achievements in modern cardiology diagnostics and treatment, the number of new cases and deaths from coronary artery disease, especially in young people of working age, continues to grow. The above data encourages in-depth study of factors that influence the development of coronary artery disease and its complications. One of the risk factors for non- atherosclerotic genesis CAD that remains poorly studied is the pathology of collagen, particularly non-differentiated dysplasia of connective tissue (NDCT). *The aim* is to study the phenotypic, clinical and biochemical, and hemodynamic peculiarities of chronic ischemic artery disease in patients with the NDCT syndrome.

Materials and methods. The study involved 120 men with verified chronic forms of CAD with and without NDCT, aged 26 to 86 years (mean age 61,53±1,07 years). All patients were fully conducted clinical, laboratory, anthropometric and instrumental

studies, Doppler echocardiography. NDCT diagnosis is based on a specially designed original survey questionnaire based on phenotypic map of M. J. Glesby with modifications of A. Martynov et al. Revealing 6 or more positions of microanomalies lead to finding NDCT in patient. Main group (I group) consisted of 60 patients with CAD on the background of NDCT. Comparison group (II group) consisted of 60 patients with CAD without NDCT (number of phenotypic and visceral NDCT stigmas - 5 or less). Each group was divided into two subgroups. Subgroup Ia included 30 patients with chronic forms of CAD (CCAD) and postinfarction cardiosclerosis (Q-myocardial infarction) on the background of NDCT, and the subgroup Ib - 30 patients with CCAD on the background of NDCT. Accordingly, the IIa subgroup included 30 patients with CCAD and postinfarction cardiosclerosis without NDCT, and the IIb - 30 patients with CCAD without NDCT.

Results. In all patients of subgroup Ia, and in the vast majority of patients of subgroup Ib - 28 (93.33%) were observed various microanomalies of hands and feet connective tissue. The second highest frequency of lesions among patients with NDCT had ocular stigmas (radial-lacunar iris, blue sclera) and ears microanomalies (diagonal earlobe crease, small lobe) - in 28 (93.33%) in Ia, and in 26 patients (86.67%) in subgroup Ib; changes in the oral cavity (abnormalities of dentition, diastema) were found in 24 individuals (80%) of Ia and only in 16 patients (53.33%) of Ib subgroup. Average total cholesterol was statistically significantly lower in the subgroup Ia and amounted to 4,42±0,14 mmol/L vs 5,03±0,12 mmol/l in IIa subgroup ($p<0.05$). At the same time, in Ib subgroup average cholesterol level (4,96±0,22 mmol/L) was not statistically different from that of the patients of subgroup IIb - (4,85±0,19 mmol/l). The largest percentage of complications after myocardial infarction accounted for arrhythmias. Thus, attacks of paroxysmal supraventricular tachycardia were detected in 26.67% of subgroup Ia patients, and 10% of subgroup Ib patients, paroxysmal atrial fibrillation was found only in 30% of subgroup Ia patients. Chronic postinfarction aneurysm of the left ventricle was found only in a subgroup Ia (10% patients). The predominant type of left ventricular diastolic dysfunction (LVDD) in patients with NDCT of Ia subgroup was grade II (pseudonormal) - 18 patients (60%), and in subgroup Ib patients - type I (slow relaxation) - 14 (46.67%). Grade II LVDD was significantly more frequently detected ($p<0.05$) among patients of the main group than in the comparison group. Direct correlation of medium strength found in patients with NDCT of Ia subgroup between the number of NDCT phenotypic markers and frequency of detection grade II LVDD ($r=+0,57$; $p<0.05$), paroxysmal supraventricular tachycardia ($r=+0,48$; $p<0.05$), atrial fibrillation ($r=+0,51$; $p<0.05$).

Conclusions. 1. Such dysplastic stigmas as radial-lacunar iris of the eye and diagonal earlobe crease, and also "blue sclera" symptom and anomalies of the dentition were identified among the phenotypic predictors of unfavorable CCAD course on the background of NDCT. 2. Predomination of grade II LVDD – pseudonormal – is the peculiarity of intracardiac hemodynamics violations in patients with CCAD on the background of NDCT. 3. CCAD flow in patients with postinfarction cardiosclerosis on the background of NDCT characterized by decreased quality of reparative fibrosis as chronic postinfarction heart aneurysm, severe arrhythmias (paroxysmal

supraventricular tachycardia, atrial fibrillation), grade II LVDD, which, however, were associated with lower total serum cholesterol. 4. Found violations of left ventricular diastolic function in patients with CCAD and postinfarction cardiosclerosis on the background of NDCT can be considered as one of the links in the adaptation mechanism of postinfarction left ventricular remodeling in the further study of peculiarities of connective tissue skeleton of the heart in this category of people.

Key words: chronic coronary artery disease, undifferentiated connective tissue dysplasia, diastolic dysfunction.

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FORENSIC-DENTAL ASSPECTS OF MAXILLOFACIAL INJURIES ASSESEMTNS CAUSED IN ROAD TRAFFIC ACCIDENTS

Aim of our work – To conduct the retrospective analysis of literary domestic and foreign sources with the use of methods of kontent-analysis for the argumentation of basic priorities judicial-stomatological examinations of traumas maxillufacial areas and systematizations of scientific issues of the day, povyazanikh with development of criteria of expert estimation of complex stomatological rehabilitation of a victim in dorozhne-transportnikh adventures with the use of modern methods of diagnostics of pathologies zubo-jaw to the vehicle.

Materials and methods. By the use of searching system Google and kontent analysis of base of scientific publications of Pubmed with the use of keywords “injury”, “Maxillofacial region”, “Road traffic accident”, “Dental status”, “Forensic evaluation”, and their analogues by the Ukrainian and Russian languages, retrospective research was realized 143 domestic and foreign literary sources.

Results. However much it always follows to take into account circumstance that duration and result of treatment of breaks maxillufacial bones depends on time of grant of the first medical aid, terms of receipt of a victim, in the specialized stomatological separation, and also from quality of grant of medicare both in the conditions of permanent establishment and in the conditions of laboratory. Defects of diagnostics and inadequate replicon of wreckages, late hospitalization, absence of control sick a doctor-surgeon, are on the stages of ambulatory treatment**.** The term of proof violation of health is considerably increased in parallel instances, the percent of loss of capacity is increased, and the expert estimation of qualification of trauma is already determined not character of damage, namely by quality grants of medicare, which are specific direction of judicial stomatology.

Results. 1. at present in Ukraine there is insufficient peer review opportunities injuries maxillofacial received in an accident in accordance with forensics and criteria of reasoning volume of preventive measures in terms of financial compensation for voluntary health insurance authorities. 2. The actual analysis of the prevalence and

specific injuries received in an accident with regard to modifications of modern vehicles and trends technocratic society, development and study of approaches to assess the severity of injuries maxillofacial unit, as well as providing assistance to victims in terms of prevention of irreversible morphological and functional disorders, neurogenic and vascular complications and persistent defects in the head is timely scientific challenge that requires a comprehensive approach to integrated solutions.
Key words: road traffic accident, maxillofacial injury, forensic dentistry.

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DISLOCATIONS OF THE HEAD OF THE ENDOPROSTHESIS OF THE HIP JOINT: STRUCTURE AND CAUSES OF

Introduction. Dislocation in the hip joint is one of the most common complications of arthroplasty. Frequency it is second only to late aseptic instability of endoprosthesis components is according to the literature from 0,7 to 11 % after primary operations and 4 – 25 % after the audit. All it proves is medical-social significance of this complication of surgical treatment of diseases and injuries of the hip joint. Data from the literature highlight a number of possible factors that can lead to dislocation. Any first discovered the dislocation of the prosthesis at various stages of the postoperative period requires a comprehensive analysis of the possible causes that led to the occurrence of dislocation, the surgeon should make an algorithm further evaluation and possible actions. Therefore considered interesting to analyze the structure and factors of occurrence of dislocation of the endoprosthesis of the hip joint of the operated patients in the clinic.
Objective: to identify the structure and factors of occurrence of dislocation of the endoprosthesis head of the hip joint.
Materials and methods. The analysis of case histories and radiographs of 62 patients who were treated at the clinic with a diagnosis of "dislocation of the head of the endoprosthesis of the hip joint". Were made rosrob table, which took into account the following clinical, anamnestic and radiological signs: a name, a history number, home address, residence, gender, age, type of arthroplasty and endoprosthesis, particularly primary and revision arthroplasty, dislocations classified by etiology, mechanism, and time of occurrence. For calculations used the database of examination of patients with dislocation of the head that were put into table in Microsoft Excel – 2003, statistical package of this program and the program Statistica – 6.0.
Results. The structure of the frequency of occurrence of dislocation of the femoral head in the overall number of total endoprosthesis replacement of the hip joint and postoperative complications. The frequency of occurrence of dislocation of the endoprosthesis head amounted to 2.2% of the total number of total endoprosthesis

replacement of the hip joint and 15.6% among postoperative complications. These data correspond to the best results of the leading clinics in the world. Among the possible factors in the development of dislocation of the head of the endoprosthesis of the hip joint takes place leading opercula experience of the surgeon and the design features of the prosthesis. So the use of heads of large dimensions, we use the last 5 years and the increased experience of surgeons, reduce the trauma of surgical intervention has allowed to reduce the share of dislocation of the endoprosthesis head with 2.8% in the period from 2003 to 2007 to 1.7% in the period 2008 – 2012.

Analyzing the data it should be noted the predominance of elderly and senile age according to who criteria.In the overall structure of patients with dislocation of the endoprosthesis head these groups constitute 67,7 %.Gender difference in patients is not revealed.

Analyzing the data the statistically significant ($p \leq 0,01$) and the prevalence of patients of elderly and senile age in the cases of spontaneous dislocation of the endoprosthesis head that may be associated with decreased muscle tone with age, the preventive postoperative recommendations. Traumatic dislocations associated with high-energy trauma was observed mainly in patients of younger age, 66,7% were patients middle, of working age.

One of the known factors in the development of dislocation of the femoral head may be errors in the orientation of the acetabulum endoprosthesis. It is proved that the decrease in the angle of inclinatio during the implantation of the acetabulum below 50 degrees decreases the proportion of spontaneous SVAV more than 2.5 times and may be recommended for arthroplasty of elderly and senile age.

Conclusions. 1. The frequency of occurrence of dislocation of the endoprosthesis head amounted to 2.2% of the total number of total endoprosthesis replacement of the hip joint and 15.6% among postoperative complications. These data correspond to the best results of the leading clinics in the world. 2. The use of heads of large dimensions and increasing experience of surgeons, reduce the trauma of surgical intervention has allowed to reduce the share of dislocation of the endoprosthesis head with 2.8% in the period from 2003 to 2007 to 1.7% in the period 2008 – 2012. 3. The statistically significant ($p \leq 0.01$) and the prevalence of patients of elderly and senile age in the cases of spontaneous dislocation of the endoprosthesis head that may be associated with decreased muscle tone with age, the preventive postoperative recommendations. Traumatic dislocations associated with high-energy trauma was observed mainly in patients of younger age, 66,7% were patients middle, of working age. 4. The decrease in the angle of inclinatio during the implantation of the acetabulum below 50 degrees decreases the proportion of spontaneous SVAV more than 2.5 times and may be recommended for arthroplasty of elderly and senile age.

associated with high-energy trauma was observed mainly in patients of younger age, 66,7% were patients middle, of working age.

Key words: dislocation of the endoprosthesis head, structure, factors of origin.

Kiev

MECHANOGENESIS OF PATHOLOGICAL CHANGES IN THE SLIPPED CAPITAL FEMORAL EPIPHYSIS

Introduction. Youth epifizeoliz femoral head - a disease of adolescence, which is characterized by severe progressive lesion of the proximal femur. Although the incidence of the disease is low, it is one of the main causes of disability and early arthrosis in young people. The situation is complicated by the fact that in the early stages of the disease is characterized by clinical signs are absent, leading to delayed diagnosis and treatment. By hospitalization correct diagnosis is established only in 30% of cases.

Purpose: to theoretically prove the mechanism of occurrence and development of pathological changes in the proximal femur in youth epifizeolizi for further sequential improvement of diagnostic and therapeutic management.

Materials and Methods. Material for clinical research were 37 children with juvenile epifizeoliz femoral head. Among patients dominated by males (ratio 1.3: 1). The average age of patients - boys - 12.2 years, girls - 11.3 years. It noted that most of the patients were males aged 12-14 years, whereas among females predominated girls aged 10-11 years, that the disease in boys began on average 11 months later than girls.

Localization process patients were divided as follows: 17 teenagers were left-sided lesions, 13 - sided, 7 - bilateral (respectively 46%, 35%, 19%).

Results. When anthropometric survey YUHSK patients we identified a number of general constitutional symptoms: overweight, obesity preferentially localized in the area of the chest, abdomen, pelvis; round moon face; less pronounced completeness forearms, legs, hands and feet; velvety thin skin with striae and vascular pattern; inferiority ligaments (flat feet, genu valgum, cubitus valgus). The above symptoms occurred in 94.5% of cases and favor the syndrome Perhkrantsa-Babinski-Frohlich. Identified similar constitutional symptoms confirm the systemic nature of the disease.

On our assessment of puberty in patients with YUEHSK the development of secondary sexual characteristics showed a lag in violation of girls' performance in six months, boys a year or more. A study of sexual development. In 20% of girls had been a violation of the menstrual cycle as Algodysmenorrhea, metabolic dysfunctional bleeding. In addition, it was found that patients in the study group as comorbidities frequently occurring thyroid disease (in 36.1% of patients) and ovarian cancer (2.8% female patients). We know that the defeat of the thyroid gland, genital organs leads to growth disorders and weight parameters, ie virtually disharmonious physical development.

Conclusions. The proposed concept of emergence and development of youth epifizeolizu femoral head reorientation contributes ideas about the causes and nature of the pathological process leading to a consistent improvement of diagnostic and treatment strategy, and thus - to improve the treatment results of patients.

Key words: juvenile capital femoral epiphysis, etiology, pathogenesis, endocrine pathologies, structural changes of osseous tissue, conceptual model.

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INFLUENCE OF LONG INHALED CORTICOSTEROIDS USE ON COMMUNITY-ACQUIRED PNEUMONIA COURSE IN PATIENTS WITH CHRONIC RESPIRATORY DISEASES

Introduction. Inhaled corticosteroids (ICS) are the drugs recommended for the basic treatment of common respiratory diseases such as bronchial asthma (BA) and chronic obstructive pulmonary disease (COPD).

Long-term use of ICS for COPD treatment according to some researchers increases the risk of community-acquired pneumonia (CAP) which has non-severe course and does not worsen the prognosis. But other researchers have not found such connection. In patients with BA use of ICS was not associated with increased risk of CAP.

Information about clinical features of CAP in patients with BA and COPD who take basic therapy with ICS is very limited. The effectiveness of antibiotic therapy and long-term outcome of CAP has been poorly understood in this patient population.

Aim of the study: finding clinical features, estimation of accordance and effectiveness of antibacterial therapy, early and late outcome of community-acquired pneumonia (CAP) in patients with chronic respiratory diseases used inhaled corticosteroids (ICS).

Materials and methods. A prospective comparative study of 143 patients (male - 78 (54,5%), average age - 64,0±14,5) was conducted. ICS were taken by 44 patients, 99 patients did not use ICS.

Results. Clinical presentation, severity and dynamics of CAP, duration of hospitalization were not statistically differed in both groups. Main symptoms were productive cough and dyspnea. Objective signs of the bronchial obstruction occulted signs of the CAP.

Moderate severe or severe obstructive or mixed disorders of the lung function were accompanied with low blood oxygenation and development of the moderate severe or severe respiratory failure. Differences of death risk assessment with CRB-65 and PSI scores were not revealed.

Almost all patients received antimicrobial medicines recommended for CAP therapy in hospital. Initially prescribed antibiotics were effective half of the patients in both groups. Basic treatment with ICS for chronic respiratory diseases did not influence on the early and late outcome of CAP.

Conclusions. 1. Long-term use of inhaled corticosteroids for the basic treatment of chronic obstructive pulmonary disease and asthma does not affect the clinical picture and dynamics of flow, compliance and effectiveness of antibiotic treatment community-acquired pneumonia in patients with chronic respiratory diseases.

2. Basic therapy with inhaled corticosteroids patients with asthma and chronic obstructive pulmonary disease early and did not modify the effects department community-acquired pneumonia.

Key words: community-acquired pneumonia, inhaled corticosteroids, chronic respiratory diseases.

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MORPHOMETRIC FEATURES OF LATERAL VENTRICLES IN PERSONS OF DIFFERENT AGE

Introduction. Literature highlights various data about the formation of lateral ventricles of the brain in human ontogenesis, structural and functional organization of the vascular plexus of ventricles of the brain, mechanisms of regulation of cerebrospinal fluid circulation.

The aim of our study was to evaluate morphometric characteristics of lateral ventricles in both sexes depending on age.

Materials and methods. Surveys were conducted in the department of radiation diagnosis of «Rivne regional hospital» on computer tomography General Electric Nealthcare «SignaMRI 1,5T» and in the office of magnetic resonance imaging at the «Lutsk town hospital» on the computer tomograph Signa Profile Ce Medical Sistem – 1,5 Tl in standard anatomic planes (sagittal, frontal and axial). Measurements were carried out in people without visual signs of organic lesions of the brain and skull.

It was analyzed 80 magnetic resonance tomograms of people of different ages: youth, the I and II periods of adulthood.

Results. Comparing the indices of lateral ventricles was revealed: in males compared with the opposite sex prevailed: length of front and rear horns, the body of ventricles, anteroposterior size of lateral ventricles on both sides, the width of the body of lateral ventricle on the left side, in females – width of front and rear horns and length of the lower horns of lateral ventricles on the both sides. In adulthood in males increase following parameters: the length of the front and lower horns, the body and anteroposterior size of both lateral ventricles, the width of the body of the left lateral ventricle, the length of posterior horn of the right lateral ventricle. In women, increases the length and width of the front and rear horns, the body and anteroposterior size of lateral ventricles on both sides.

Mathematical analysis between the values of structures of ventricular system in females characterizes hormonal influence on the development of this system in individuals in adolescence. We can assume that organs which are a part of circumventricular system (subcomissural and subfornical bodies, median increase, etc.). in some way provide anatomical connections of these components. Undeniably one – their functional unity in maintaining of homeostasis.

Conclusions. The presented lifetime morphometric characteristics of lateral ventricles of the human brain in times of youth and adulthood, and identified on it basis age criteria of brain reorganization may make an equivalent of anatomical standards.
Key words: MRI, adolescence, mature age, lateral ventricles, men, women.

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WIDTH LATERAL FOSSA OF THE CEREBRAL HEMISPHERES IN PRACTICALLY HEALTHY YOUNG MEN AND WOMEN OF VARIOUS SOMATOTYPES

Aim of our work – set features width lateral fossa of the cerebral hemispheres in healthy young men and women with different somatotypes.
Materials and methods. Almost 82 healthy boys and 86 girls in the third generation residents of Podilskiy region of Ukraine, conducted a CT scan of the head, lumbar spine and chest within the planned checkups by voluntary written consent of their parents or investigated (effective dose does not exceed 1 mSv / year).
Committee for Bioethics VNMU named after Pirogov (protocol № 4 of 03.06.2014) found that conducted research correspond to bioethics and moral-legal requirements of the Helsinki Declaration, the European Convention on Human Rights and Biomedicine (1977), the relevant provisions of WHO and the laws of Ukraine under order of the MOH 01.11.2000.
Computed tomography of the head performed using spiral CT «SeleCT SP» the company «Elscint» (Israel) (10 slices, voltage and amperage 120kV / 2-25mA - effective exposure dose 0,3 mSv).
Lateral transverse size fossa defined as the parallel to the frontal plane distance from the most remote from the bones of the cranial vault edge eponymous fossa.
Anthropometric survey of healthy young men and women were held by the scheme V. Bunak (1941). To evaluate the somatotype used mathematical scheme J. Carter i B. Heath (2003). To determine the component composition body mass used formula J. Matiegka (1921).
Statistical analysis of the results was done using the package "STATISTICA 6.1", which belongs SRC VNMU named after Pirogov, using parametric and non-parametric estimation methods.
Results. It is known that in the distribution for somatotype found that most transverse dimensions of paired brain structures (grooves cerebral hemispheres, front horns of the lateral ventricles) increased significantly in the direction of dolichomorph→ mesomorph → brachimorph.
Thus in our study found that only width of the lateral fossa left has a tendency ($p = 0.063$) to higher values in boys ecto-mesomorph compared to boys ectomorph. This

small amount of differences is consistent with the data of S.V. Saveliev (2005), which determined that the site of Sylvian fissure is the least variable structure of the human brain.
However, to preliminary our research established that during distribution of healthy city boys or girls depending on the shape of the skull among apparently healthy young men of different craniotypes, in most cases, established statistically significant, or the tendency to lower values of CT parameters lateral fossa cerebral hemispheres in mesocephals than that of the other craniotypes.
K.D. Tkachenko (2004) found extreme variations of structure and shape of cistern of the lateral fossa of the brain: long and narrow with branching trunk type middle cerebral artery - in dolichocephals and short and wide with alluvial type of branching arteries same name - in brachycephals.
The special individualization of operative interventions requires detailed entire range of individual variability dimensional of the lateral fossa brain and its structures to a greater extent considering typology of the skull, and to a lesser - of the type of constitution.
Conclusions. 1. Only the width of the side holes left tends to larger values in young ecto-mesomorph compared to boys ektomorfamy. 2. The vast majority of lateral holes settings cerebral hemispheres were not significantly different in girls or boys Somatotypes different.
Key words: lateral fossa, brain hemisphere, boys, girls, somatotypes.

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EFFECT OF RADIOFREQUENCY ABLATION AND ENDOVENOUS LASER COAGULATION ON THE VASCULAR WALL OF VARICOSE VEINS OF LOWER EXTREMITIES

Introduction. One of the most common and radical treatments for varicose veins of the lower limbs is considered flebektomiya, but injuries, a long rehabilitation period and unsatisfactory cosmetic defect causing search more benign methods. Despite the emergence of many new ways to treat varicose veins of the lower limbs, caused by a single pathogenetic approach to solving this problem. One of the most effective ways to treat varicose veins of the lower extremities is endovazalna laser coagulation and radiofrequency ablation. However, their impact on the venous wall is not clarified.
The aim - to study and conduct comparative characteristic pathological changes of venous walls in patients with varicose veins of the lower extremities after exposure endovazalnoyi laser coagulation and radiofrequency ablation for further optimization of therapeutic tactics of these patients.

Materials and methods. The study was conducted at the Department of Surgery №1 VNMU and vascular department vauclaix. During the period from October 2013 through April 2015, 168 patients were treated with varicose veins of the lower limbs with symptoms of chronic venous insufficiency classes C2, C3, C4 (classification CEAP). Of these, 148 completed in the radiofrequency ablation and 20 - endovazalnoyi laser coagulation. The groups were homogeneous in age and gender.
For making preparations for further morphological studies using standard protocols compaction and dewatering. To assess morphological changes in blood vessels of patients with varicose veins of the lower extremities macropreparations fixed in 10% formalin solution neutral. Specimens prepared by the standard method, histological sections 5-7 microns thick were stained with hematoxylin and eosin, van pikrofuksynom for ghisoni, resorcinol-fuchsin for Veyhert.
Results. The results of the pathomorphological study of veins wall of 168 patients with varicose veins of the lower extremities are presented in this article. In this cohort 148 patients were performed radiofrequency ablation of veins, 20 – endoveous laser coagulation. It has been demonstrated better treatment using radiofrequency ablation. The positive effect of radiofrequency ablation was achieved through a more gentle effect on the wall of the vein and on the surrounding tissue.
Patients with a long history of illness (along with diffuse intimal thickening due to coarsening of elastic elements) observed loosened and destroyed the internal elastic membrane over most of its area. In the thickened intima along with the accumulation of plasma proteins noted the phenomenon hyalinosis. Collagen fibers grown in thickened intima layer surrounding the longitudinally arranged smooth muscle cells, sometimes with their atrophy. This proliferation of collagen fibers of the muscle atrophy observed circular beams in the middle shell.
Conclusions. 1. Along with the depth of coagulation necrosis should take into account the degree of sclerotic changes varices, as well as in patients with sklerozovanymy walls and a significant degree of fibrosis penetration necrosis was less than in the initial stages. 2. According to our data, a best practice in the early stages of treatment VHVNK is radiofrequency ablation.
Key words: varicose veins of the lower extremities, pathomorphology, endovenous laser coagulation, radiofrequency ablation.

METHODOLOGICAL ARTICLES

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THE RESULTS OF LAPAROSCOPIC SURGERIES USING THE METHODS OF TENSED AND DOSED LIFT-ASSISTED CARPOXYPERITONEUM

Introduction. To date, the range of miniinvasive surgical procedures is expanding from conventional laparoscopic cholecystectomy to the operations on the stomach and intestines, extrahepatic biliary tract, organs of the retroperitoneal space. With the increase in the volume of surgical interventions the duration of interventions under conditions of pneumoperitoneum also increased. The indications for surgery in elderly and senile patients with serious underlying diseases of the cardiovascular and pulmonary systems, for which additional "aggression" in the form of pneumoperitoneum becomes clinically significant, were expanded.

Materials and Methods. The study performs the analysis of the treatment results in 97 patients with cholelithiasis complicated by choledocholithiasis, who were treated on clinical bases of the Department of Surgery №2 Vinnitsa National Pirogov Memorial Medical University. I group (n = 52) included patients for whom the working space during laparoscopic procedures was created using standard tensed carboxyperitoneum (TCP) with the level of intra-abdominal pressure of 10-12 mm. Hg. In this group, in 38 patients (39.17%) laparoscopic cholecystectomy was performed as a second stage of minimally invasive correction after the previous EPST, EBPD. In 14 cases (14.43%) one-step minimally invasive surgery was done, which involved laparoscopic cholecystectomy with simultaneous revision of the bile ducts and their external drainage. Group II (n = 45) consisted of patients for whom the workspace during laparoscopic surgery was provided by the method of dosed lift-assisted carboxyperitoneum (DLCP) with the level of intra-abdominal pressure of 4-6 mm. Hg. with the usage of the proposed laparolifting device.

To evaluate the results of surgical treatment we determined the conversion frequency, the number of intraoperative and postoperative complications. Also, we took into account the average length of hospital stay and the average duration of laparoscopic surgery. To assess the postoperative period we took into account the dynamics of clinical and laboratory parameters (temperature reactions, leukocytosis, indicators of total and direct bilirubin, ALT, AST, alkaline phosphatase, GGTP). Local complications associated with mechanical lifting of the abdominal wall were evaluated by visual examination of the traction region using laparoscope with lateral optics during surgery and before removing of the trocar.

In the early postoperative period (after 24 and 48 hours) pain indicators were assessed by examining the three pain intensity rating scales: verbal rating scale (VRS), numeric rating scale (NRS), visual analogue scale (VAS). Statistical analysis was performed using STATISTICA 6.0 (StatSoft Inc®, USA). Parametric and nonparametric criteria were used (Student, Mann-Whitney, Wilcoxon, "chi-square» tests). The differences were considered significant at $p<0,05$ and $p<0,001$.

Results. In the study group the switch to open surgery was necessary in 6 cases (11.8%). In the comparison group conversion was carried out in 5 (8.77%). Comparative analysis of conversion frequency did not show significant differences between the two groups of patients ($X2kr. = 3.84$, $X2rec. = 0,26$). The total number of intraoperative complications in the study group was 5 (11.54%). In the comparison

group - 6 (11.54%). A comparison between the groups did not show statistical difference (X2kr. = 3.84, X2rec. = 0.004). In the postoperative period 6 (10.53%) complications were registered in the main group. After the surgery with standard carboxyperitoneum 8 (15,38%) complications were recorded. The results of the comparative analysis did not show the significant difference (X2kr. = 3.84, X2rec. = 0.08).The average length of hospital stay in the two groups of patients as a whole and by the type of surgery did not differ significantly (study group - 8,1±0,24, comparison group - 7,96±0,26, p = 0,40 > 0.05). The average operation time was 79,27±4,91 minutes when using tensed carboxyperitoneum and 87,87±4,62 minutes when using dosed lift-assisted carboxyperitoneum, however, without the statistical significance (p = 0,17> 0, 05). In the subgroup of patients, in which only laparoscopic cholecystectomy was performed, the use of DLCP prolonged surgery almost 14 minutes, statistically significant (p <0,001). During the comparative analysis of the changes in total and direct bilirubin, ALT, AST, alkaline phosphatase, GGTP, body temperature, leukocytosis before surgery and at 1, 3, 5 days after the intervention statistically significant differences on any index in the two groups were not found. According to the observations of all 45 patients who underwent surgery with the use of lift-assisted carboxyperitoneum no peritoneal ruptures, bleedings, hematomas in the area of balloon-retractors were found. The usage of DLCP provided significantly lower rates of pain in the early postoperative period compared with the TCP method (p = 0,02-0,04).

Conclusions. The data obtained during the investigation, give the reason to recommend the proposed way of creating the working space and the laparolifting device for clinical use.

Key words: tensed carboxyperitoneum, laparolifting, complications, conversion, pain syndrome.

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RADIOLOGICAL FEATURES OF INFLUENCE OF METAL INTRAMEDULLARY FIXATOR VARIETY OF ELASTICITY ON THE HEALING OF FRACTURE AND STRUCTURAL-FUNCTIONAL STATE OF BONE TISSUE IN THE EXPERIMENT

Introduction. Today on the territory of Ukraine for the year is registered about 2 million injuries, and therefore it is more than 150 thousand surgical procedures on bone. In the treatment of diaphyseal bone fractures, according to domestic and foreign experts, the cases of disorders of reparative osteogenesis (DRO) ranged from 2.5% to 18%. In recent years, great importance in the process of reparative

osteogenesis is paid to the use of different kind of biological materials with osteoinductive and osteoconductive properties.

In 2008 Japanese scientists had invented a new metal alloy that is elastic modulus approaching the elastic modulus of the bone tissue, i.e. 60-63 GPa. It was found that the use of implants with high modulus of elasticity introduced into the intact femur of rabbits leads to a syndrome of "stress-shilding", i.e. resorption of bone tissue due to the decrease of elastic deformations of the bone. At the same time, the implantation of clamps of metal alloys developed by the Japanese scientists does not lead to negative changes in the structure of bone tissue. Engineers materialsystem Kiev research Institute of metal physics of National Academy of Ukraine invented a metal alloy that in terms of modulus of elasticity (young's modulus) is close to that of the modulus of elasticity of the bone tissue. Namely, the alloy is zirconium-titanium (ZrTi). When the elastic modulus of bone is 15-30 GPa, the modulus of elasticity of the alloy of metals is 47 to 53 GPa.

Interesting in scientific terms, we believe the pilot study on the impact of the implant from domestic ZrTi alloy on the reparative process in fractures of the diaphysis of the femur of laboratory animals.

Materials and methods. An experimental study was performed on 27 adult rabbits breed "chinchilla" at the age of 8-10 months. weight 3.2-3.5 kg. the Animals were divided into 3 research groups – 9 rabbits each. All rabbits received the same type of injury of the femur, proximal third of the diaphysis, in pdfarchive plot – transverse fracture made using the veterinary osteoma with subsequent reposition and fixation of bone fragments with metal rods. Animals of first (control) group was performed intramedullary metal osteosynthesis with help of rod-stainless steel (316L); animals of the second group core with titanium-wanadio alloy (W-6) and the animals of the third group stem from stable titanium alloy (Zr-Ti). Each animal in the first week of experiment was carried out ligation. During the first 3 days after surgery the animals received a course of antibiotic therapy balanced and fortified food. Terms of clinical and radiological follow-up was 30, 60 and 90 days. On the above date, the test animals were withdrawn from the experiment by intramuscular injection of a lethal dose of a solution of ketamine and thiopental sodium, and then performed the removal of the removed macroscopic specimen of the femur.

Results. Radiographs of bones with simulated fracture of the femur for osteosynthesis of bone fragments used rods of alloys VT-6 and 316L, apparent lower density of the regenerate bone calluses that developed on the site of the fracture, and less clear contour of the diaphysis of the bone outside the fracture site, indicating more activity resorbing the processes of bone tissue, especially in areas adjoining stud alloys 316L and W-6 to the inner surface of the cortical layer of the bone. In addition, radiographs of the femur at 90 days when using alloys VT-6 and 316L implant around the set of observed polling stations, the reduction of bone density, which point to disorders of physiological adjustment of the diaphysis of the femur of experimental animals, which are dominated by the processes of resorption of bone tissue. Such “enlightenment” suggests that bone does not experience a sufficient level of stress. This is because a metal rod with a much greater modulus of elasticity than

the modulus of elasticity of the bone, taking much of the load itself, thereby not allows you to increase the amount of bone tissue, i.e. its recovery.
The above processes of the bone tissue and the formation of callus can be attributed to the influence of the used rods of alloys VT-6 and 316L and are manifestations of the effect of screening. The result of this is the effect of demineralization and osteoporosis, resulting from increased resorption of bone tissue that may lead to the slowing down of fusion of bone fragments and the occurrence of re-fracture.
At the same time, when using the intramedullary rod of low-modulus β – (Zr-Ti) alloy by reducing the difference of the elastic moduli of bone tissue and the material of the rod is observed the best regeneration dynamics of bone formation. As a result of the use of a rod made of alloy with a low modulus of elasticity, which level is approaching the level of the modulus of elasticity of the bone tissue, the proportion of mechanical loads on femur is increased, by reducing their adaptation, due to the osteosynthesis of bone fragments of a more elastic core, and a better distribution of mechanical stresses in bone valenkah of the femur.
Key words: fracture, zirconium-titanium alloy, radiological features, fracture healing, structural-functional state of bone tissue.

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STANDARDIZED TRADITIONAL ANTHROPOMETRIC TERMS AND THEIR EQUIVALENTS IN THE ENGLISH LANGUAGE WITH UKRAINIAN TRANSLATION

Introduction. at the research center of Vinnitsa National Pirogov Medical University for many years, scientists and employees of a number of departments Vinnitsa National Pirogov Medical University performed scientific and planned work.
The aim was the standardization and unification of translation anthropometric terms of the Selection of appropriate synonymiv in English and then translated into Ukrainian.
Materials and methods. Unfortunately, there is still confusion about the terms that denote the same anthropometric point. So, if you take only anthropometric parameters related to the head and face, on each of which there are many equivalent terms, which complicates their perception and translation into Ukrainian. In this regard, there is an urgent need to develop a terminology guide that would accommodate not only a unified term in the English language and its translation into Ukrainian, but most common alternative designation of the term, which is found in English-language publications, which were able to use anthropologists. English and domestic scientific literature was analyzed; face and head anthropometric measurements were compared in the English and Ukrainian language.

Results. 1. Nose breadth traditional uniform is a term that has the following alternative names found in English literature: bialar diameter, nasal breadth, bialar breadth, bialar width, soft nose width, soft nose breadth, nasal width and nose width. Ukrainian language it is translated as the width of the nose, or mizhkrylna distance. Traditional measurement definition: nose breadth is bilateral distance between right and left alare landmarks of the nose or the maximum horizontal breadth of the nose. 2. Lip length uniform is a traditional term that has the following alternative names found in English literature: bicheilion diameter, bicheilion breadth, mouth breadth, lip width, labial fissure width, labial width / breadth and mouth width / breadth. Ukrainian language it is translated as the width of the mouth or lip-angular distance. Traditional measurement definition: lip length is bilateral distance between right and left cheilion landmarks without facial expression or the distance between the corners of the mouth is measured while the facial muscles are relaxed. 3. Biocular breadth is a traditional unified term that has the following alternative names found in English literature: biectocanthus breadth, maximum biocular diameter, lateral canthus diameter, outer intercanthal distance, biocular diameter, outercanthal width, biocular width / distance, exocanthal width / breadth / distance; external biocular width / breadth / distance; external interorbital width / breadth / distance and external bipalpebral width / breadth / distance.

It was noticed that in different surveys related to English scientific articles and reports investigators using different anthropometric terms for the same parameters. It enormously complicates work on the foreign scientific data and their perception. To eliminate these inconsistencies and the confusion they create during translation a unified manual was developed. It includes standardized traditional anthropometric terms together with their equivalents in the English language applying by different countries investigators and also their Ukrainian translation.

Conclusions. Thus, the guide includes traditional standardized anthropometric terms concerning anthropometric points of the head, and the most commonly used alternative names these terms with their translation into Ukrainian and locate places measuring anthropometric points and their schematic representation, namely: nose breadth, lip length , biocular breadth, interocular distance, bigonial breadth, biorbital breadth, interpupillary distance, bizygomatic breadth, head breadth, head length, nose protrusion, menton-nasal root depression (sellion), nose length.

Key words: anthropometric terminology, equivalent terms, translation, English language.

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PATHOLOGICAL CHANGES IN THE PARASITIC AND NON-PARASITIC HEPATIC CYSTS IN THE CONDITIONS OF USE OF ARGON PLASMA COAGULATION

Introduction. No criteria to justify the choice of minimally invasive surgery, depending on the size and location of focal liver disease. Many issues related pathologic characteristics cystic (parasitic and neparazytarnyh) and liver disease are still not clarified [Aoki et al., 2007].

The aim - to study postmortem changes that occur in parasitic cysts and neparazytarnyh, as well as the surrounding liver parenchyma under the influence arhonoplazmovoyi coagulation compared to conventional surgical treatment.

Materials and Methods. The study laid retrospective and prospective analysis of treatment of 216 patients operated in Vinnytsya regional hospital named Pirogov and the National Institute of Surgery and Transplantation behalf O.O.Shalimova (Kiev). A retrospective analysis of 100 patients per treatment period from 2005 to 2010 (group) and complex examination of 116 patients operated at the clinic between 2010 and 2015 (study group). Total men was 68 (31.92%), women - 148 (68.50%).

Patients were divided into 2 groups. The main group consisted of 116 patients who performed during the observation of "open" and laparoscopic interventions using argon plasma coagulation in the comparison group included 100 patients, which in the same period performed traditional ("open") surgery. Porivnyaoly represented groups by gender, age, pathological forms of focal liver disease. The average age of patients was $52,0 \pm 3,4$ years.

In about half of all subgroups surgery was performed with the use of mini-invasive technologies.

Results. Histologically cystic walls of parasitic cysts in 95% of cases, as arhonoplazmovoyi after coagulation and after conventional surgery is determined characteristic of hidatydnoho echinococcal layered chitinous shell, consisting of germ layers and kutykulyarnoho. Parenchymal inner shell - embryonic (germ) was represented by granular tissue rich in glycogen and formed protrusion (clamps camera) with protoskoleksamy subsidiaries and bubbles.

We can say that fibrous capsule echinococcal a similar organic structure that differentiates it from scarring in tissue that occur around foreign bodies. The parasite alters the protective inflammatory response of the surrounding tissue. Instead of destroying the parasite macrophages or isolation scar, is the formation of vascularized capsule. The current structure of the capsule remains until viable parasite.

In bile capillaries turned stagnant bile in the blood vessels - hypertrophy elastic membrane, often of easing. Blood vessels near the capsule cysts were expanded and filled thrombotic masses, consisting of fibrin and red blood cells. On the part of microcirculation observed deformation and narrowing of capillaries, the walls of small arteries and arterioles of swelling and razvoloknennnyam perivascular connective tissue with predominantly mononuclear infiltration, vasculitis and perivaskulit of transformation in perivascular sclerosis. From the endothelial cells marked hyperplasia of swelling and degenerative changes. These changes were accompanied by the formation of small aggregates of blood cells. PAS positive

substances and acid mucopolysaccharides detected in moderation in vascular walls, but in the perivascular connective tissue layers defined more intense reaction by the accumulation of acid glycoprotein.
In cases of parasitic cysts that complicated suppuration in 30% of the changes in the germ and kutykulyarniy membrane cysts perykistozniy tissue were interconnected and manifest degenerative, inflammatory response from the surrounding liver parenchyma, indicating chronic potsesu because of delayed immune response of the microorganism. Paralellno occurred kolahenizatsiya fibrous capsule around the parasite with the emergence of foci of calcification in it. All this is accompanied by a decrease in biological activity cysts, numbness of certain parts of the parasite Echinococcus collapse and sequestration.
The analysis of pathological changes in the liver parenchyma following treatment of parasitic and non-parasitic cysts using argon plasma coagulation and in the conventional surgical treatment is presented in this article. In patients with parasitic cysts were found persistent proliferative inflammatory reaction that leads to severe cirrhotic restructuring of surrounding liver parenchyma. Sparing effect of argon plasma coagulation on liver parenchyma, compared to conventional surgery was demonstrated.
Conclusions. 1. Supervision In patients with parasitic cysts, unlike parasitic cysts, consider the persistent proliferative inflammatory reaction that leads to severe adjustment cirrhotic surrounding liver parenchyma, due, in our opinion, zhyttyediyalnityu parasite and the immune response to an antigen microorganism.
2. As in the case of parasitic and neparazytarnyh cysts, the application arhonoplazmovoyi coagulation demonstrated significantly ($p < 0,001$) lower zone of necrosis and atrophy of the liver parenchyma than in the conventional surgical treatment.
Key words: focal lesions of the liver, argon plasma coagulation, hepatic cysts, pathomorphology.

REVIEW ARTICLES

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OVARIAN HYPERSTIMULATION SYNDROME. THE NEW APPROACHES FOR DIAGNOSIS, TREATMENT AND PREVENTION

Ovarian hyperstimulation syndrome (OHSS) is encountered in practice as an iatrogenic complication of controlled ovarian stimulation (COS). COS is aimed at producing multiple ovarian follicles during assisted conception cycles in hope of increasing the number of oocytes available for collection. OHSS, however, is characterised by an exaggerated response to this process [ASRM., 2008]. OHSS was first described in 1943, and the first fatal cases were documented in 1951. As many as 33% of IVF cycles have been reported to be associated with mild forms of OHSS. While these are often described as not being clinically significant, the severity of OHSS can worsen over time and even initially mild presentations should be kept under review. More severe OHSS has been reported in 3,1-8,0% of IVF cycles. This calculation lends important perspective on the potential impact of this condition. Notably, mortality is rare but several cases have been reported. The incidence of OHSS is increased in young women, women with polycystic ovaries and in cycles where conception occurs, particularly multiple pregnancies [Nastri et al., 2015].

The precise cause of OHSS is currently unknown and is the subject of controversy, however, ovarian response is directly correlated with risk of OHSS. Typically, OHSS is a phenomenon which is associated with gonadotrophin use during COS. There are instances, however, where OHSS has been documented to arise spontaneously either in conjunction with clomiphene or with gonadotrophin releasing hormone use [Tan, Mathur, 2013]. Increased estradiol levels occurring in such a scenario are important, but are unlikely to be high enough to cause OHSS; nevertheless, in the presence of human chorionic gonadotropin (hCG), high estradiol levels may increase the expression of cystic fibrosis transmembrane conductance regulator leading to a massive shift in body fluids through epithelial ion channels. There is also evidence of an increased secretion of inflammatory mediators, vascular endothelial growth factor (VEGF) and activation of the renin–angiotensin system in women with OHSS. VEGF seems to play a key role in the pathophysiology of OHSS, with a probable mechanism of action dependent on hCG, acting on cell-to-cell adhesion complexes in the endothelium, particularly claudin [Papanikolaou et al., 2010]. VEGF concentration has also been shown to be increased in the follicular fluid, but not in the blood, of women who undergo final oocyte maturation triggering with hCG, compared to maturation triggering with a gonadotropin-releasing hormone (GnRH) agonist. The first objective of the present review was to identify, appraise and summarize the predictive accuracy of tests aimed at identifying women who develop an exaggerated response to COS and/or who develop OHSS during ART. The second, and equally important, objective was to identify and estimate the effect of interventions aimed at reducing the risk of a high ovarian response during COS and/or the occurrence of OHSS [Nastri et al., 2015].

This review aims to examine the pathophysiology of OHSS and the evidence behind the various methods employed by clinicians to prevent its occurrence.

A literature search was carried out on the following electronic databases (until April 2015): MEDLINE, EMBASE, PubMed database, and the Cochrane central register of controlled trials. Only articles in English were taken into consideration and abstracts were excluded. A combination of text words or Medical Subject Headings (MeSH) terms were subsequently utilized to generate a list of citations: (“OHSS” OR “ovarian

hyperstimulation syndrome") AND ("diagnosis, treatment, prevention"). Articles and their references were then examined in order to identify other potential studies which could provide perspective for the following review.
Systematic reviews, meta-analyses, and randomized controlled trials (RCTs) were then preferentially selected over other forms of data where feasible in order to formulate the following review and recommendations.
OHSS is an exaggerated response to COS characterized by the shift of protein-rich fluid from the intravascular space to the third space, mainly the abdominal cavity that occurs when the ovaries become enlarged due to follicular stimulation [Delvinge, Rozenberg, 2002]. This shift in fluid is due to increased vascular permeability in response to stimulation with human chorionic gonadotropin (hCG). Prostaglandins, inhibin, the renin-angiotensin-aldosterone system and inflammatory mediators have all been implicated in the aetiology of OHSS, however, vascular endothelial growth factor (VEGF) has been identified as the major mediator. The expression of VEGF and VEGF receptor 2 (VEGFR-2) mRNA increases significantly in response to hCG, and peak levels coincide with maximum vascular permeability. The clinical manifestations of OHSS reflect the extent of the shift of fluid into the third space and the resulting hemoconcentration due to intravascular volume depletion. Symptoms range from mild abdominal distention due to enlarged ovaries alone or with an accompanying fluid shift into the abdomen, to renal failure and death as a result of hemoconcentration and reduced perfusion of organs such as the kidneys, heart and brain.
We found seven different classifications based on the severity of OHSS (Tab. 1). Although many of the studies were published decades ago, they are still valid and might be useful in clinical practice [Nastri et al., 2015].
Seven studies were included, the number of participants in each ranging from 107 to 256. The incidence of moderate/severe OHSS in these studies was 3.8% (95% CI, 2.3-5.6%). All studies were considered to be at low risk of bias and concerns regarding applicability, according to QUADAS-2 (Quality Assessment of Diagnostic Accuracy Studies-2).
Hormonal markers are also increasingly being utilized in predicting ovarian response to stimulation. Anti-Müllerian Hormone (AMH) in particular is a marker which shows much promise. Gnoth et al., in their prospective study of 316 women, have demonstrated that AMH [AMH≤0,18pmol/L (1,26 ng/mL)] can identify normal responders (≥4 oocytes retrieved) to COS with a success rate of 98% [Broer et al., 2011]. This predictive capacity extends to identifying women at risk of developing OHSS as well. Using receiver operating characteristics (ROC) curves, Lee et al. have identified a high pretreatment basal AMH concentration [AMH >0,47 pmol/L (3,36 ng/mL)] as a useful predictor of developing OHSS (sensitivity 90,5%, specificity 81,3%). Moreover, AMH performed better than weight, age, or ovarian response markers in identifying these women. Given its low inter- and intracycle variability, AMH has the potential to become an excellent predictive tool should issues surrounding its validity be completely resolved [Dewailly et al., 2014].
Absolute serum oestradiol (E_2) concentrations, however, have performed poorly in identifying women at risk of developing OHSS. This can mostly be attested to the

marked heterogeneity in studies with regard to the threshold E_2 levels used to define high risk women [Aboulghar, Mansour, 2003].

Ultrasonographic markers, such as the antral follicle count (AFC), are also another facet worthy of mention in the prediction of OHSS. Available evidence suggests that the AFC is equally predictive of excessive response to COS and OHSS as the basal serum AMH. Jayaprakasan et al., in their prospective study of 1012 subjects, noted an AFC≥24 to be correlated with an increased risk of moderate to severe OHSS in comparison to an AFC<24 (8.6% versus 2.2%). These findings are mirrored by Delvigne and Rozenberg who cite an increased risk of OHSS with an AFC (2-8 mm) ≥12. There are, however, variances amongst the studies regarding the definition of what constitutes antral follicles on ultrasound which limits their applicability [Delvinge, Rozenberg, 2002].

Body mass index was found to be a moderately useful test, though with lower accuracy compared to the aforementioned tests, but it, also, was only evaluated in one small study. During COS, OHSS may be predicted successfully by three markers of high ovarian response: estradiol levels, medium/large follicle count on the day of hCG administration and the number of oocytes retrieved subsequent to follicle aspiration. These three tests were evaluated by more than one study, and accounted for a relatively high number of participants. The estimate on vascular endothelial growth factor (VEGF) was too imprecise to reach any conclusion regarding its applicability [Nastri et al., 2015].

Eight studies evaluated high ovarian response, which was defined as more than 15-20 oocytes retrieved. We identified eight studies encompassing 34 databases; the number of participants in each study ranged from 110 to 4650. One study was an individual patient meta-analysis that included databases from five other identified studies, accordingly these five studies were removed from the analysis to avoid duplication of the participant count. Another study was reported by four articles and information from all of them was used in this review. This study was deemed to be at high risk of applicability bias because extremely strict inclusion/exclusion criteria were adopted. All other studies were considered as being at low risk of bias according to QUADAS-2 [Nastri et al., 2015].

The calculated estimates of interventions to reduce the occurrence of OHSS and its precision, the interpretation of the observed effect, the assessed heterogeneity, the number of studies and participants included and the overall quality of evidence was described considering all evaluated interventions and comparisons.

The mechanisms underlying the potential effect of intravenous fluids on OHSS is unknown, however, some theories have been suggested. One theory attributes a beneficial effect of the binding properties of albumin in neutralizing vascular permeability mediators that could be responsible for the onset of OHSS. Another theory is that intravenous fluids, such as albumin and hydroxyethyl starch (HES), promote a rapid increase in intravascular volume, which could maintain the volume in the event of capillary leakage, thus avoiding hypovolemia and hemoconcentration. This theory is, however, somewhat inconsistent, as two-thirds of the infused albumin is rapidly distributed across the capillary membrane, even when permeability is normal, thus increasing the albumin concentration in extracellular fluid. Similarly,

16% of the infused HES shifts to the extravascular space soon after administration. HES is a plasma expander that has been mooted as an alternative to albumin as it is nonbiological and therefore negates the above-mentioned risks associated with albumin use. The evidence behind its benefit is certainly more robust as well. The Cochrane Review by Youssef et al. noted that there was a statistically significant decrease in severe OHSS (OR 0,12; 95% CI 0,04-0,40) with HES use without any effect on pregnancy rates (OR 1,20; 95% CI 0,49-2,95). There is also a systematic review on the topic51, the authors of which included eight of the 10 studies evaluated in the present review. They also observed a decrease in rates of OHSS with a small decrease in rates of clinical pregnancy [Venetis et al., 2011].

The GnRH antagonist competes with the natural GnRH for its receptor, causing a fast and reversible suppression of gonadotropin release, and constitutes an alternative for the prevention of premature luteinizing hormone (LH) surges during COS. The introduction of a GnRH antagonist in COS enables the use of shorter protocols with reduced amounts of gonadotropin. We identified 28 studies that compared the effect of using a GnRH antagonist with long GnRH agonist protocols in women undergoing ART. In 12 studies, the antagonist was used in daily doses, beginning on a fixed day of COS; in one study a single dose of long-lasting antagonist was used; in 14 studies the antagonist was used in daily doses beginning on a flexible day depending on the size of the leading follicle. Although the stimulation protocols differed between the studies, the heterogeneity found was not substantial and the estimates could be pooled together. We observed moderate-quality evidence showing that antagonist protocols are associated with a lower risk of OHSS and that they are unlikely to have a clinically relevant impact on clinical pregnancy rate [Nastri et al., 2015].

Aspirin inhibits a cyclo-oxygenase enzyme in platelets, preventing the synthesis of thromboxane, thus having been tested as an intervention to improve pregnancy rates in ART. Two studies evaluating the effect of administering 100 mg/day aspirin during COS reported OHSS. The average rate of OHSS in the control groups was 6%. Both reported rates of OHSS incidence and clinical pregnancy. They described very low-quality evidence for the benefit of aspirin compared with no intervention with regard to rates of OHSS and found no effect on clinical pregnancy. Considering these two studies, along with the other 15 studies that evaluated the effect of aspirin on clinical pregnancy, pooled for two published systematic reviews, we observed high-quality evidence that aspirin does not reduce rates of clinical pregnancy [Nastri et al., 2015].

We identified 11 studies that utilized dopamine agonists for the prevention of OHSS. Cabergoline is a dopamine antagonist which prevents the excessive increase in VEGF mediated vascular permeability encountered with OHSS through its antiangiogenic properties [Venetis et al., 2011]. Tang et al. in their Cochrane Review of 230 women in 2 RCTs found cabergoline to be effective in significantly reducing the incidence of moderate OHSS (OR 0,38; 95% CI 0,19-0,78) with no significant effect on clinical pregnancy rate and miscarriage rates. This protective effect, however, did not extend to severe OHSS, possibly due to the number of studies available for comparison [Tang et al., 2012]. A recent systemic review by Leitao at el. on the issue, which took 7 RCTs into consideration, has further established its efficacy in preventing the

occurrence of moderate and severe OHSS (RR 0,38; 95% CI 0,29-0,51) as well as without a negative impact on clinical pregnancy or oocytes retrieved. Therefore, the use of cabergoline is recommended and it is suggested that treatment be commenced on the day of hCG trigger at a dose of 0,5 mg for 8 days [Kasum et al., 2014].

Amongst the novel therapies being investigated for the prevention of OHSS, the vasopressin V1a receptor antagonist, relcovaptan, has been studied for its ability to inhibit VEGF by modulating vasoconstriction and vascular smooth muscle proliferation. Relcovaptan, in the hyperstimulated rat model, has shown lower concentrations of VEGF-A in the peritoneal fluid and lesser ovarian weight gain significant decreases in the number of corpora lutea in contrast to control groups. Further research in this area remains rather promising and may broaden the management protocols which clinicians have for OHSS in the near future [Cenksoy et al., 2014].

"Coasting" is defined as the withholding of ovarian stimulation drugs for a few days, waiting for a time when it would be safer to trigger the final maturation with hCG. Coasting is a commonly used first line secondary prevention strategy by clinicians [Delvinge, Rozenberg, 2002]. Question marks remain however about the evidence behind the procedure. D'Angelo et al., in their Cochrane Review, identified 4 RCTs which highlighted that there was no difference in the incidence of moderate and severe OHSS (OR 0,53, 95% CI 0,44-1,08) with coasting. In addition, a lower number of oocytes were retrieved from the coasting group which prompted them to recommend that there was no benefit of coasting in comparison to other interventions [SOGC-CFAS, 2011]. An earlier meta-analysis also came to the conclusion that coasting may decrease the risk of OHSS in high risk women but does not completely prevent it. Coasting, however, seems to have no effect on live birth rates and clinical pregnancy rates [Nastri et al., 2015].

Aspiration of the follicles from one ovary before this final maturation has been proposed as an intervention to decrease the risk of OHSS. Follicle aspiration is believed to cause intrafollicular hemorrhage and a decline in some ovarian substances, such as estradiol, progesterone and hCGThree studies evaluated unilateral follicular aspiration before final oocyte maturation: one compared this with standard care, one with coasting and one with albumin 50 g. In two studies, complete aspiration of one ovary was performed before hCG was administered, and in one study, aspiration was performed 10-12 h after administration of hCG. All three studies reported cases of OHSS but only two reported rates of clinical pregnancy, however, the estimates were too imprecise for any conclusion to be drawn [Nastri et al., 2015].

One strategy to decrease hCG exposure would be to limit the use of hCG to the trigger dose only, avoiding extended exposure to the natural hCG from pregnancy, which could prolong and worsen an otherwise brief OHSS. In 'freeze all' following oocyte retrieval, all oocytes/embryos are cryopreserved and, afterwards, transferred in a non-stimulated cycle. A Cochrane Review only identified 2 RCTs for analysis and came to the conclusion that there was insufficient evidence to support routine cryopreservation [Nastri et al., 2015]. Recent evidence however strongly supports the use of a GnRHa trigger followed by cryopreservation as being the most effective

method in preventing OHSS, best illustrated by Devroey and colleagues through their OHSS-Free Clinic.
OHSS-related complications could theoretically be eliminated if hCG was not used, and very few cases of OHSS without the use of hCG for final maturation have been reported. In order to completely avoid OHSS, cycle cancellation before final follicular maturation with hCG is a simple and safe alternative. It is, however, associated with significant emotional and financial burdens for the couple. Other options would be to replace hCG with GnRH agonists therefore reducing the hCG dose. There is consensus on the fact that reducing the duration of gonadotrophin exposure reduces the risk of OHSS. One way this is achieved is through "mild" stimulation protocols which delay the administration of FSH till the mid or late follicular phase. However, the addition of GnRH antagonists for late cycle suppression of gonadotrophin release has resulted in improved clinical outcomes, a lower risk of OHSS, and multiple pregnancies and made it cost effective as well. On a side note, the pooled data of 3 RCTs have shown mild stimulation to be less effective than conventional "long" regimens in terms of the pregnancy rates per cycle (15% versus 29%) [Mathur, Sumaya, 2008].
Ketoconazole inhibits key steroidogenic enzymes of the p450 family. In the ovary, it acts in the theca and granulosa cells, leading to reduced estradiol production, and high estradiol levels are correlated with an increased risk of OHSS. Two studies were included, one of which evaluated the use of ketoconazole 50 mg/day starting on Day 4 of stimulation until hCG administration compared with no drug, and the other compared ketoconazole 50 mg every other day, from Day 1 to the last day of administration of human menopausal gonadotropin (hMG) compared with placebo. Both reported rates of OHSS and clinical pregnancy, the average rate of OHSS in the control groups was 17,3%. The estimates of the effect on both OHSS and clinical pregnancy were too imprecise for any conclusions to be drawn [Nastri et al., 2015].
PCOS may be associated with some hormonal changes, such as hyperandrogenism and hyperinsulinemia, and anovulation. The granulosa cells' intracellular metabolism of glucose, dependent on insulin, is impaired in women with anovulatory PCOS while their LH-dependent glucose metabolism is normal. Metformin is a biguanide that enhances insulin sensitivity not only in the liver but also peripherally, in target tissues. One of these target tissues is the granulosa cells in the ovaries. Metformin changes the insulin-dependent metabolism of glucose in granulosa cells, and decreases ovarian sensitivity to FSH, possibly ameliorating the response to COS. Metformin is theorized to exert its influence in preventing OHSS by inhibiting the secretion of vasoactive molecules, such as VEGF, during OI and thereby modulates vascular permeability. In the recent Cochrane Review by Tso et al., based upon 8 RCTs with 798 women, it was noted that there was a lower risk of OHSS with metformin use (OR 0,29; 95% CI 0,18-0,49). It was also of note that metformin reduced the risk of OHSS by 63% and increased the clinical pregnancy rate (OR 1,52; 95% CI 1,07-2,15) without an effect on live birth rates [Tso et al., 2014]. These findings were consistent with an earlier systemic review by Palombo et al., which described a significantly lower OHSS rate with metformin administration too (0,27; 95% CI 0,16-0,46). Based on the studies, a daily dose between 1000 and 2000 mg at

least 2 months prior to COS is recommended for the purpose of preventing OHSS [Nastri et al., 2015].

Extensive ovarian stimulation may take several weeks, cause discomfort and increase the risk of adverse symptoms. OHSS is dependent on the degree of ovarian stimulation and is expected to be more frequent as more follicles are stimulated. Moreover, there is concern regarding the abnormal luteal-phase endocrinology and its impact on embryo genetics and endometrial receptivity. Stimulation protocols that include daily FSH doses of less than 150 IU are considered to be milder than the traditional protocols and are expected to cause fewer adverse events, including OHSS. Eight studies evaluated milder ovarian stimulation compared to the long-agonist protocol. They all reported OHSS and clinical pregnancy rates; the average rate of OHSS in the control groups was 4,6%. We observed moderate-quality evidence that mild stimulation reduces OHSS without producing a clinically relevant difference in clinical pregnancy rate [Nastri et al., 2015].

Aromatase Inhibitors (AIs), such as letrozole, function by downregulating oestrogen production through inhibition of cytochrome P450 enzymes. This causes an increase in pituitary secretion of FSH which promotes folliculogenesis. In addition, the central negative feedback mechanisms still remain intact, which leads to the theory that it may reduce the incidence of OHSS during ovulation induction (OI). A recent Cochrane Review by Franik et al., however, failed to show any difference in OHSS rates through utilization of AIs in contrast to other methods of OI. As such, AIs are not routinely recommended [Franik et al., 2014].

This meta-analysis combined data from studies that differed in the baseline OHSS risks as well as in nuances in the interventions or predictive tests analyzed. Before starting COS, the assessment of either AFC or AMH levels allows prediction of the risk of facing a high ovarian response to COS. Other baseline parameters, such as age, FSH and inhibin-B levels, have lower predictive accuracy. At this point, COS might be planned according to the assessed risk. The use of a GnRH antagonist protocol (with either standard or, preferably, mild stimulation) is beneficial to high-risk women as it markedly decreases the incidence of OHSS without affecting clinical pregnancy. Another option is the use of aspirin throughout COS until the pregnancy test is performed, as it possibly reduces the risk of OHSS without interfering with reproductive outcome; increased bleeding during oocyte retrieval due to aspirin is not an issue [Nastri et al., 2015]. However, there is one point to consider before deciding to use this intervention: aspirin is unlikely to reduce the occurrence of a high response to ovarian stimulation, and some patients/clinicians will probably consider using additional strategies in such a situation.

On the day of hCG administration, the risk of OHSS may be predicted by serum estradiol levels and a medium/large follicle count. In the case of a high-risk situation, administration of cabergoline or another dopamine agonist may be initiated, as they markedly decrease the incidence of OHSS without affecting clinical pregnancy. If an imminent risk of OHSS is identified, a possible alternative is to use an agonist for the final maturation, as it strongly reduces OHSS risk. There is, however, concern regarding a possible negative effect on clinical pregnancy, and the freezing of all oocytes/embryos for later transfer would constitute a conservative approach. The

other interventions identified that seem to be beneficial, but for which the evidence is still of very low quality, are: albumin or other plasma volume expander, coasting, metformin for PCOS women and intravenous calcium gluconate. Some studies also evaluated early unilateral follicular aspiration, the use of lower doses of hCG for the final maturation and luteal support after agonist triggering, glucocorticoids following oocyte retrieval, ketoconazole, increased progesterone for luteal support and laparoscopic ovarian drilling; however the estimates of effect are imprecise and no conclusions may be drawn. There are useful predictive tools and several preventive interventions aimed at reducing the incidence of OHSS. Having a good understanding of these tools and interventions is of crucial importance for planning the treatment of, and, ultimately, eliminating the occurrence of, OHSS, while maintaining high pregnancy rates.

Conclusion. 1. OHSS is a complication associated with COS which clinicians have no complete way of preventing at present. 2. Through the various prevention strategies reviewed in this paper, there are avenues by which its incidence can be greatly reduced. 3. This begins with the identification of the "high risk" woman through to the woman who is "at risk" and subsequently initiating the appropriate therapies.

Key words: ovarian hyperstimulation syndrome, in vitro fertilization, human chorionic gonadotrophin, anti-müllerian hormone, cabergoline, relcovaptan, GnRH agonists, cryopreservation.

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NEW FACTS ABOUT HUMAN VIROME AND INFLUENCE OF MICROBIOTA TO ITS FUNCTIONING

According to the latest scientific estimates human gut accommodates about 100 trillion of bacteria. 70-80% of these bacteria can't be cultivated for today. At the same time, great viral populations present in different body systems and in the gut too. Understanding of these populations roles normally and in pathology requires of thorough study of compositions and interactions with microbiota.

The aim of this review is presenting of the problem of virus persistence in human intestine and their cooperation with microbiome.

Complex of human body viruses are called today as virome. Hourly vitalized virome includes bacteriophages and human "eukaryotic" viruses, which cause acute, chronic and latent infections, as well as viruses which can integrate into the human genome independently, for example, endogenous retroviruses. 10^9 viral particles are contained in 1 feces gram normally, and bacteriophages dominate among them. Some researchers consider that bacteriophage number is ten times more then procariotes.

Recent studies of the microbial composition have revealed that viruses present in gastrointestinal tract in human body predominantly without clinical symptoms and pathology. For example, Picornaviruses were revealed in feces of healthy person and person with unknown origin diarrhea. These facts are motivation for scientists to study of viral pathogenicity additionally. Today the experimental results using the latest technology to viral detection lead to the assumption that virus not only parasite in human body. Persisting in a healthy human viruses have unbeknown functions. Perhaps in the near future we should consider human viruses as commensals. It is supposed that viruses may be very beneficial for healthy body and microbial flora.
In a review article the latest scientific facts are described which regard to viral persistence in human gut. Role of viral-bacterial association is characterized in pathology and healthy body. Based on literature facts, a conclusion is formed that gastrointestinal tract is environment for the most complex microbial ecosystem. It needs of profound study of composition, roles in physiological processes and dynamics under the influence of the environment.
Today enough scientific investigations demonstrate possible interactions between human organism and virome. Further research sure should provide more potential for treatment of infectious diseases.
Conclusions. 1. Thus, the human digestive tract is a medium for one of the most complex microbial ecosystems. 2. Scientific progress using modern sequencing methods allows not only to establish the presence of viral agents, but also to determine their impact on human health, in particular, to clarify the pathogenesis of certain intestinal and extraintestinal diseases.
Key words: Virome, microbiota, bacteriophages, contagiousness, associations, normal microflora, intestinal infections.

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THE ROLE OF ETIOLOGICAL FACTORS IN THE DEVELOPMENT OF COLON INJURIES

Medical and social importance of digestive diseases is determined by their common prevalence among different population groups, including young people, accompanied by work disability, both temporary and permanent, high levels of disability and mortality. Diseases of the digestive system in most cases are subjected to recurrance and are difficult to be treated.
According to the World Health Organization, the diseases of the digestive system are among the most common in the world and rank the third place after cardio-vascular and oncological pathologies. The spread of gastrointestinal diseases is caused by the following factors: poor nutrition, pollution, uncontrolled use of medicines, the growth

of drug addiction, alcoholism, use of chemicals in all spheres of human activity. In gastrointestinal science one of the issues is the study of chronic colitis. By their prevalence such diseases can be attributed as the diseases of civilization. More than 50% of patients who sought medical care due to various disorders of digestion are suffering from chronic colitis. We can observe a growing incidence of secondary chronic colitis that developed against the background of various diseases of the digestive system. The most common inflammatory disease of the colon pathology is observed in the hepatobiliary system.

In recent years, leading local gastroenterologists show concern about over-diagnosis of chronic colitis as functional bowel disease, chronic constipation, dysbiosis considered as chronic colitis. This tendency to over-diagnosis should be considered due to the lack of reliable criteria for clear distinction between organic and functional intestines diseases.

According to A.M. Nohaller, in the etiology and pathogenesis of IBS (irritable bowel syndrome) a major role is given to psychogenic (neurosis, depression, asthenic conditions, etc.), neurogenic (dystonia, etc.), endocrine-hormonal, nutritional, toxic, medication, traumatic, hypodynamic factors, as well as dysbiosis and reflex reaction. According to some authors, the most common cause of CNUC is infection. Among enteric pathogens with tropism to the mucosa of the colon, the most commonly found ones are Shigella and Salmonella. Chronic infections – tuberculosis, syphilis, actinomycosis, malaria – may also be the cause of the disease. Chronic colitis may be caused by protozoa (amoeba, ljamblii, balantydiyamy, Trichomonas) and worms. The development of chronic "drug"-caused colitis is possible with prolonged treatment by means of laxatives containing antrahlikozyds, antibiotics, salicylates and other nonsteroidal anti-inflammatory means such as digitalis drugs, chemotherapeutic agents, and others.

There are other factors that can also contribute to the development of CNUC (chronic non-ulcer colitis): exogenous intoxication (poisoning by lead, mercury, arsenic, alcohol, mushrooms, phenol, alkalis, acids), endogenous intoxication (chronic glomerulonephritis, uremia, hyperthyroidism, liver cirrhosis, cancer intoxication). This results in the emission of toxic substances by mucosa of the colon that promotes its inflammatory and degenerative changes and necrobiotic.

Among the contributing factors in causing CNUC there is a nutritional factor: the use of coarse food, bad food, irregular meals, monotonous food with advantage of carbohydrates and protein deficiency.

CNUC often develops in patients suffering from chronic gastritis with secretory insufficiency, chronic pancreatitis with exocrine pancreatic insufficiency, chronic cholecystitis, peptic ulcer and 12 duodenal ulcer, chronic hepatitis, cirrhosis, congenital or acquired deficiency of enzymes. These are the so-called secondary colitis.

In recent years, researchers pay more attention to microcirculatory disorders in chronic colitis, as well as their related violations trophic and physiological regeneration of the mucosa of the colon. Morphologically in this pathology deterioration of blood supply of the mucous membrane of the colon has been proved. Thus, when CNUC we can observe hemodynamic disorders in the mucosa of the

colon, violation of blood rheology, morphometric changes of small arteries sigmoid colon.
All organs of the gastrointestinal tract make up a single functional system whose elements are closely linked together by neurohumoral and endocrine regulation.
Conclusions. The main reasons for the emergence and spread of gastrointestinal diseases have been verified. It has been found out that the etiological factors result in the violations of neurohumoral regulation, lead to the changes in the colon microbiota, immune status of the organism, the emergence of endogenous intoxication syndrome, morphological changes in the mucosa of the colon.
Key words: colon, chronic colitis, etiological factors.

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ABOUT THE POSSIBLE CONNECTION OF NONALCOHOLIC FATTY LIVER DISEASE WITH HYPERHOMOCYSTEINEMIA (REVIEW)

Nonalcoholic fatty liver disease (NAFLD) covers up to 40% of the population, in some cases - up to 75%. Since approximately 30% of patients with steatosis have nonalcoholic steatohepatitis (NASH), which in 10% of cases can be transformed into cirrhosis, so NAFLD is one of the most pressing health problems. Therefore, we need widely study issues of etiology and pathogenesis of NAFLD, in particular study hyperhomocysteinemia (HHC) as predictor of NAFLD.
Epidemiology. NAFLD and NASH occur in all human age groups, including children. But mostly it is diagnosed in people of 40 - 60 years. NAFLD is registered in 20-35% of adults in developed countries and in 75% of women, who have reached the postmenopausal age. The prevalence of NAFLD in Ukraine is still has not been studied in detail. The reason is the absence of symptoms and delayed treatment of patients for medical help. Fatty liver is more common in people with obesity, second type of diabetes, metabolic syndrome and cardiovascular diseases.
Etiopathogenesis. The basis of modern ideas about the pathogenesis NAFLD traditionally is the hypothesis of "two strikes", proposed by S.R. Day and O.F. James in 1998. The first "hit" is the process of laying lipids in the liver - fatty infiltration of the liver. There are three main mechanisms of primitive accumulation of fat in the liver: excessive entering, excessive synthesis and / or slow oxidation of fatty acids, insufficient removal of fat from the organ. The accumulation of fat in the liver is triggered by several factors - dietary, hormonal, metabolic syndrome and more. If there are prolonged action of triggering factors and lipid accumulation in the liver from 1.5% (normal value) to above 5% - processes, that lead to NAFLD progression ("second blow") run automatically. The implementation of the "second strike" is the progressing of lipid accumulation in the liver, the occurrence of steatohepatitis, fibrosis and cirrhosis. The driving force of this process is the activation of oxidative

stress and mitochondrial dysfunction, aided by obesity, insulin resistance, other hormonal disorders, metabolic syndrome and so on. Some role is played by the phenomenon of so-called «lipotoxicity» of products of lipid peroxidation, activation of stellate cells and mobilization of profibrogenic cytokines: connective tissue growth factor, transforming growth factor beta.

Hyperhomocysteinemia. HHC - a condition characterized by increased content of aminoacid homocysteine (HC) in plasma. HC is a normal intermediate metabolite of the aminoacid methionine metabolism. Normally the level of overall HC in plasma is low (nearly 10-15 mmol/l). Elevated level of HC in blood is quite common. For example, in Ukraine HHC is detected in 10% of healthy people. Therefore, there is a high probability of a patient with both syndromes simultaneously - liver steatosis and HHC. Many pathogenic mechanisms of action HHC are described. Basic among them - it's inhibition of methylation, activation of oxidative stress and protein homocysteinylation. They trigger other pathological processes - destabilizing the genome (due to the decrease DNA methylation), dysregulation of some redox-sensitive genes, decrease of hydrogen sulfide synthesis, thrombophilia, etc..

Possible involvement of HHC in the etiopathogenesis of NAFLD. In the series of works carried out in VNMU named after M.I Pirogov on rats, as well as in clinic, were studied biochemical parameters (more than 30) of the liver and other organs under the influence of carbon tetrachloride (CCl_4, including the additional administration of HC), high-fat diet and pharmacological correction of violations. The correction were carried out by means vitamins, trace elements, S-adenosylmethionine. The study showed that when liver damage by means of CCl_4, significantly increased levels of homocysteine in the blood. Artificial HHC, achieved by the administration of the Homocysteinethiolactone, enhances hepatotoxic effects of CCl_4. In this case, the serum concentration of the marker of fibrogenesis (TGF-beta) is significantly increased. Preparations with hypohomocysteinemic actions (vitamins B_6, B_9, B_{12}, microelement complex preparation «Esmin», S-adenosylmethionine) also have antitoxic, antioxidant and hepatoprotective effect.

Conclusion. Experiments confirm the view that hyperhomocysteinemia is one of the pathogenetic factors of the emergence and progression of NAFLD. Hyperhomocysteinemia induces hypomethylation, protein homocysteinylation and activates oxidative stress. These phenomena are biochemical mechanisms of steatogenous action of hyperhomocysteinemia. Therefore, one of the additional measure of prevention and treatment of hepatic steatosis may be in using of hypohomocysteinemic therapy.

Key words: Nonalcoholic fatty liver disease, homocysteine, hyperhomocysteinemia.

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IMMUNE HISTOCHEMICAL AND MOLECULAR-GENETIC MARKERS OF HYPERPLASTIC AND NEOPLASTIC ENDOMETRIUM

The diffuse endometrial hyperplastic processes are one of the most common pathologies of the mucous membrane of the uterus. The interest in this issue is due to the ability of this process to be taken as a self-healing and to its malignancy. In recent years the endometrial cancer in the developed countries is a leader in the structure of the onco-gynecological pathology, second only to the breast cancer, and in some countries it is at the first place.

The differential diagnosis of the endometrial hyperplasia is based not only on the morphological data, but in using of the different biochemical, immunohistochemical, immunocytochemical, molecular genetic and the studies of other kinds.

Objective: To analyze the modern methods of investigation of samples of the endometrial tissue, to study the appropriateness of the differentiated approach to the diagnostic accuracy of the different methods and further specification of their use in clinical practice.

Under the malignancy the cell division dominates over the elimination, either by an activation of the proliferation or inhibition of apoptosis, or under their combined abuse. The location data of sex steroids and their receptors in the regulation of proliferative processes in the endometrium are widely available in the current literature. Most authors prefer the unbalanced estrogen stimulation in the development of proliferative processes. At the same time the study of hormone-endometrial cancer, autonomous one, non-estrogennovym connected exposure which occurs in 30-40% of cases is of interest ~~in~~,.

Recently many works are devoted to the study of markers of the proliferative activity. A nuclear protein Ki-67 is one of the most studied, and its expression allows identification of cells found in all the cell cycle phases except the phase of rest. The relationship between its expression and estrogen receptors content is detected and according to the researchers the index of the proliferative activity is the predictive feature which is determining the likelihood of relapse appearance in neoplastic processes.

In the study of apoptosis, by which the unwanted or defective cells are eliminated, much attention is paid to the study of apoptosis induktora - p53 inhibitor -bcl-2. The results of research in this area are quite mosaic and require~~s~~ the further study.

Many works are devoted to the study of gene expression and their possible connection with the malignancy proliferation of endometrial tissue. PTEN, MSH1, BCL2, BAX, BAG1, BIRC5, NDRG1, CYP1A1, KRAS, PT53, CDH1 and many others are the most studied of these ones. During the last decade the research on the study of genetic dualism and estrogen in depended forms of endometrial cancer are conducting. under estrogen depended.

The unlimited replicative potential of cells which is associated with the expression of telomerase is one of the essential features of the tumor process.

Last few years showed the increased expression of hTERT gene in cancer of the endometrium, the lack of changes in a simple and atypical hyperplasia. The reasonability of the telomerase expression measuring ~~of~~ is recommended in the differential diagnosis of benign and malignant tumors of the uterus, as well as early detection of malignancy.

Recently the possibility of using the suppression of telomerase activity in tumor therapy is widely studied and discussed. It is found that the stabilization of telomeres is an important step in the development of tumors, which suggests the telomerase as a target for the tumor therapy.

Conclusions. 1. Methods of research samples endometrial tissue are used, in recent times, they have certain advantages over traditional methods in modern practice and scientific practice. 2. Methods of investigation of samples of endometrial tissue are used, in recent times, they have certain advantages over traditional methods in modern practice and scientific practice. 3. The above confirms the relevance of this problem and urges the advisability of carrying out comparative studies of the diagnostic accuracy of different methods, the purpose of which is to specify their use in clinical practice based on evidence-based medicine.

Key words: endometrial hyperplasia, endometrial cancer, proliferation, apoptosis, telomerase.

CHRONICLE

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SELFLESS SERVICE TO SUFFERING HUMANITY (in memory of nurses Catherina Mikhailovna Bakunina)

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ILYA ILYICH MECHNIKOV. 170-TH BIRTHDAY