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ULTRASTRUCTURAL CHANGE OF CAPILLARIES WHITE RAT SKIN IN ELECTRONOMICROSCOPIC OF EARLY STAGES OF EXPERIMENTAL STREPTOZOTOCIN-INDUCED DIABETES MELLITUS

Introduction. This article represents electronomicroscopic description of rat's skin in early stages experimental diabetes mellitus. It is proved that parts haemomicrocirculatory net in rat's skin disease have specific pathological changes during all disease. Explored, that results of research can be widely used in practice medicine for learn and treatment skin pathology in diabetes mellitus. The prevalence of diabetes mellitus is about 4 – 5% in developed countries. It is known that in patients after 65 years morbidity with diabetes is about 10 – 15%. In 2000, the of people infected with diabetes mellitus amounted to 175 million, according to projections by the International Diabetes Institute (Melbourne) and other researchers in 2030 that number will be 300 million. Diabetes – it is also one of the most important social and economic problems of Clinical Endocrinology. This disease is one of the priorities in clinical endocrinology and today diabetes is called non-infectious epidemic of the XXI century. The problem of morphological changes of the skin in diabetes until now remains open, relevant and important for

both morphologists and for practicing dermatologists. In the specialist literature there are single information about changing the structure of the skin, and its vessels under this pathology, consequently purpose of research was to study the ultrastructural reorganization microvasculature (capillaries) animal skins in experimental diabetes. For the experiment was chosen streptozotocin model of diabetes as the most prevalent, adequate and modern. *The purpose* of research – identify by electronomicroscopic method changes parts of haemomicrocirculatory net in white rat's skin on the early stages of experimental streptozotocin-induced diabetes.

Materials and methods. The research was performed on 21 male white rats, 100-130 gr. We used microscopic methods of research. Modeling of experimental diabetes mellitus was provided with single intraabdominal injection of streptozotocin. Development of diabetes mellitus during the experiment (2^{nd}, 4^{th} weeks) was monitored by the growth of glucose level in blood measured by glucose oxidation method. Investigations were conducted on animal with the level of glucose over 13 mmol/l. Skin were taken from the back and legs of rats after euthanasia of animals during intraperitoneal introduction of thiopental sodium from the calculation 25 mg per 1 kg body weight, in compliance with all applicable rules and making preparations for the electron microscope study. Preparations examined and photographed under electronic microscope EM-100 with increasing 6000-8000.

Results. The development of diabetes mellitus in rat's is accompanied by considerable pathological changes in structure and heamomicrocirculatory system of skin. The fast pathological changes in rat's skin and it's angioarchitecture appeared after 2 weeks of examinations. At ultramicroscopic study of rats skin capillaries of the experimental group after 2 weeks course of streptozotocin diabetes we found that the wall of the vast majority of these vessels has a normal structure, but sometimes there are capillaries of the narrowed internal space as a result of endothelial protrusion area with nucleus. After 4 weeks of experimental streptozotocin-induced diabetes in the capillaries detected significant change. Their wall thicker, internal space is narrows. Endothelial swollen in their cytoplasm there

are numerous mitochondria and free ribosomes. Nuclear protrusion of the cytoplasm into the internal space of capillaries happens.

Conclusions. Was set the result of the study features angioarchitectonics of white rat's skin on early steadies of experimental streptozotocin-induced diabetes. After 2 weeks of experimental diabetes wall of the vast majority of vessels of the skin has a normal structure, but sometimes there are capillaries of the narrowed internal space happen. After 4 weeks of experimental diabetes has already marked significant changes in the wall of the capillaries of the skin - it thickens, while narrowing internal space of blood vessels, indicating that the inclusion of compensatory characteristics of whole organism. Results of research can be widely used in medical practice to deepen the study and treatment of skin diseases, particular vessels, in diabetes mellitus. Researched showed a reliable difference of all morphometric indicators of the rat's skin heamomicrocirculatory system during streptozotocin-induced diabetes mellitus in compares with norm. The achieved data may serve foundation for future exploration of skin in patient with diabetes mellitus and prevent complications. The attained results may enhance the treatment effectiveness and improve life quality in patients with diabetes mellitus. The principal outcomes of the thesis have applied into scientific and academic activities of morphological, dermatological and endocrinological departments. This scientific research work have been included in the program of training at the departments of morphology of medical educational establishments of Ukraine. The essential findings prove to be effective in practice of endocrinological and dermatological clinics.

Key words: skin, capillary, experiment, diabetes mellitus.

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STUDY OF INTERHEMISPHERIC DOMINANT EFFECT OF ANTICONVULSANTS ON THE LEVEL OF NEURO ACTIVE AMINO ACIDS AND GLUTAMATE DECARBOXYLASE IN THE BRAIN OF WHITE RATS

Introduction. The neurochemical and functional changes of the excitatory and inhibitory mechanisms of synaptic transmission are considered to be the key ones in the neuron epileptization formation and seizure development pathogenesis. Therefore the anticonvulsant action of anticonvulsant drugs is related to their effect on the different components of structural and functional arrangement of synapsis. The synaptic transmitters include such neuroactive amino acids as gamma-aminobutyric acid (GABA), glycine and glutamate along with acetylcholine, noradrenaline, dopamine and serotonin. At present the statement about the interhemispheric functional asymmetry of the brain is axiomatic. The interhemispheric functional asymmetry of the brain is based on the genetically determined morphological and neurochemical asymmetry of the left and right hemispheres. The latter is also related to the enzyme systems of metabolism of neuroactive amino acids and also to the amount, neuron density and affinity of their receptors sensitive to the transmitters. The above mentioned components of the synaptic transmission are reported to be the targets for the neurotropic drug action. These aspects can be the objective factors for the formation and development of the independent section of pharmacology defined as interhemispheric psychopharmacology. Taking into consideration the problem importance, the goal of out work was to study the effects of the classic (phenobarbital, carbamazepine, valproate sodium) and novel (Topiramate, Lamotrigine) anticonvulsant drugs on the level of the inhibitory (GABA and glycine) and excitatory (glutamate) neuroactive amino acids and also the activity of the glutamate decarboxylase (GAD) at the left and right hemispheres of the white rats.

Materials and methods. The tests were conducted on the outbread mature white rats (males) with the weight of 180-200 g, obtained from the vivary of Institute of

Pharmacology and Toxicology of the Academy of Medical Sciences of Ukraine. All experiments were performed in accordance with the Guidelines for the Use of Laboratory Animals in Biomedical Research. Anticonvulsants were intraperitoneally administered to the tested animals (n=6 for each study drug) at the effective experimental anticonvulsant doses: phenobarbital - 20 mg/kg, carbamazepine - 150 mg/kg, lamotrigine - 30 mg/kg, topiramate - 300 mg/kg, valproate sodium -155 mg/kg as the aqueous suspension with Tween-80. The distilled water with Tween-80 was intraperitoneally administered to the control animals (n=6). In 60 minutes after the drug administration, the animals were decapitated under the brief ether anesthesia and their brain was removed (the left and right hemispheres without cerebellum).

Each hemisphere was thoroughly rinsed in the cooled 0.9% KC1 solution and homogenized in the liquid nitrogen in the mortar. The cytoplasmic fraction was isolated by the differential centrifugation at the refrigerate centrifuge (Sigma 3-3 0k, Germany) at 1000 g for 10 minutes and then at 1400 g for 10 minutes at 40 °C.

Chromatographic determination of glycine, GABA and glutamate concentration.

Method principle. The method is based on the separation of glycine, GABA and glutamate in the system (n-butanol : acetic acid : water) on the thin layer of sorbent with the further assay by the reaction with alloxan at 540 nm.

Determination of GAD activity.

Method principle. The enzyme activity is determined by the change of NADP level at 340 nm, which is equimolar to the amount of substrate used in the reaction.

Results.

Table. Level of neuroactive amino acids and GAD activity in the control group and under the action of anticonvulsants at the right and left hemispheres of the brain (M ± m)

Experiment conditions	n	GABA, mmol/g of tissue		Glutamate, mmol/g of tissue		Glycine, mmol/g of tissue		GAD, mmol/mg protein / tissue	
		Hemispheres of the brain							
		Left	Right	Left	Right	Left	Right	Left	Right
Control	6	0.81 ± 0.08	0.71 ± 0.11	4.69 ± 0.33	4.39 ± 0.31	3.47 ± 0.25	3.53 ± 0.33	1.91 ± 0.09	1.92 ± 0.13
Carbamazepine	6	4.58 ± 0.32*°	2.3 ± 0.47*	5.91 ± 0.23*	7.31 ± 043*o	2.54 ± 0.26	6.03 ± 0.4*°	3.37 ± 0.31*	4.2 ± 0.28*
Lamotrigine	6	2.32 ± 0.19*	3.37 ± 0.24*o	6.27 ± 0.48*	7.58 ± 0.43*	5.0 ± 0.19*	6.39 ± 0.3*°	3.07 ± 0.16*	3.92 ± 0.32*
Topiramate	6	3.13 ± 0.21*	4.8 ± 0.36*°	7.97 ± 0.79*	10.53 ± 0.49*°	7.54 ± 0.78*	9.2 ± 0.75*	0.93 ± 0.1*	1.94 rh 0.28
Valproate sodium	6	3.19 ± 0.3*	2.24 ± 0.32*	12.3 ± 1.26*°	8.81 ± 0.53*	8.35 ± 0.44*	10.89 ± 0.9*°	3.21 ± 0.31*	2.73 ± 0.19*
Phenobarbital	6	2.98 ± 0.21*	3.96 ± 0.23*°	10.48 ± 0.75*	13.98 ± 1.27*°	10.0 ± 0.48*	8.63 ± 0.52*	2.05 ± 0.18	2.3 ± 0.28

Notes: * $p<0.05$ relative to control, $p<0.05$ between the right and left hemispheres.

Conclusions. The effect of the tested anticonvulsants on the metabolism and function of the neuroactive amino acids is the important aspect in the mechanism of the anticonvulsant action. The change in the ratio of the amino acid increase level was observed - the level of excitatory acid (glutamate) and inhibitory amino acid (GABA) was raised in favor of GABA-ergic system. This predominance of the brain inhibitory mechanisms are supported by the marked increase of the other inhibitory amino acid - glycine. The dominant effect of carbamazepine, lamotrigine and topiramate on the right hemisphere of the brain was demonstrated. The prevailing effect of valproate sodium on the left hemisphere of the brain was

observed. Phenobarbital has a prevailing dextrocerebral effect on GABA and glutamate level. The above mentioned data must be considered prescribing the specified anticonvulsants, taking into account the dominant sinistrocerebral and dextrocerebral localization of the epileptogenic activity focus. Such pharmacotherapeutic approach may facilitate the decrease of the primary resistant patients with epilepsy.

Key words: epilepsy, anticonvulsant drugs, interhemispheric asymmetry, neuroactive amino acids, glutamate decarboxylase.

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SEX DIFFERENCES BASED ON VALUES OF LENGTHEN INDEX OF METATARSAL BONES IN MAN FOOT

Introduction. Setting anthropometric parameters unknown person is an important task in the performance of diagnostic medical and forensic dismembered corpses. The need to establish sex of individual bones of the human skeleton arises in the study of mass casualties with explosive injury. The aim - definition of sex differences in man from 1 to 21 based on the roentgenogrammeasuring parameters of metatarsal bones of the foot.

Materials and methods. We have investigated and analyzed the X-ray film of 426 feet healthy individuals of both sexes aged from 1 to 21 years. All children spent in direct projection radiography. Images of bone X-ray film were digitized. To measure the performance roentgenogrammeasuring parameters of foot bones we using the software UTHSCSA Image Tool® for Windows® (version 3.00). On every roentgenogram determined length and width of the body of I-V metatarsal bone and calculated the lengthen index. These data are processed by methods of

variation statistics. We determined the arithmetic mean ($\bar{x}$), the mean-square error of the arithmetic mean ($s_{\bar{x}}$), "Student's" T - distribution and the probability of error (P).

Results. Roentgenogrammeasuring parameter of lengthen index of first metatarsal bones in persons from 1 to 21 years in male and female population statistically significantly different at the age of 3, 4, 11, 12, 15, 16 ($p < 0,05$), 8 and 20 years old ($p < 0,01$) and 18, 21 years old with certainty $p < 0,001$. Roentgenogrammeasuring parameter of lengthen index of second metatarsal bone in male and female population is statistically significantly different at the age of 4, 6, 10 and 18 years old ($p < 0,05$), 20 years ($p < 0,01$) and 1, 8 years old with certainty $p < 0,001$. For values lengthen index of third metatarsal bones of male and female population is statistically significantly different at the age of 1, 12 and 16 years old ($P < 0,05$), 3, 8 and 19 years old ($p < 0,01$) and 4, 18 and 20 years old ($p < 0,001$). Roentgenogrammeasuring parameter of lengthen index of fourth metatarsal bones at aged from 1 to 21 years in male and female population is statistically significantly different at 15, 17, 19 years old ($p < 0,05$), 4, 8 and 12 years old ($p < 0,01$) and 2, 16, 18 and 20 years old with certainty $p < 0,001$. Roentgenogrammeasuring parameter of lengthen index of fifth metatarsal bone at aged from 1 to 21 years in male and female population is statistically significantly different at 2, 7, 12 and 17 years old with certainty ($p < 0,05$). At the age of 4, 8 years old with certainty ($p < 0,01$) and at age 16, 18, 20 years old with certainty $p < 0,001$.

Conclusion. Thus, we found sex differences of metatarsal bones of foot by the values of the lengthen index in those males and females aged from 1 to 21. Sexual differences especially expressly show up in age from 16 to 21 year, that contingently completion of the sexual ripening. But on some indexes reliable sexual differences show up in age 1, 2, 4 and 8 years. We studied patterns can be taken into account when conducting forensic examinations on the establishment of sex.

Key words: Sex, foot bones, metatarsal bones, roentgenogrammetry.

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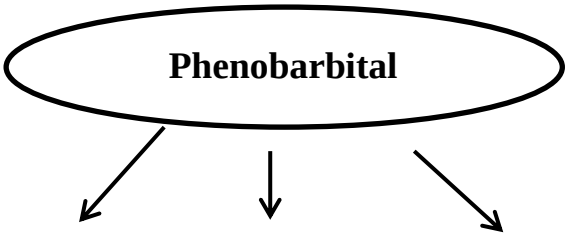
DEVELOPMENT OF TOLERANCE TO THE ANTICONVULSANT EFFECTS

Introduction. The development of the tolerance to the anticonvulsant drugs is one of essential problems of epilepsy treatment. Its importance is emphasized by its separation into a special group called "pharmacoresistant epilepsy". In this regard, the question arises concerning the development of the approaches to eliminate the tolerance to anticonvulsants. However, it is possible to solve this problem only on a theoretical basis of determination of the principles and mechanisms of the development of tolerance to the different anticonvulsant drugs. The aim of this study was to determine the conditions and characteristics of the tolerance development to the anticonvulsant effect of phenobarbital, carbamazepine, sodium valproate, topiramate and lamotrigine. These drugs are known to be most commonly used in epileps treatment.

Materials and methods. Experiments were conducted on the nonlinear white mice, males and females, weighing 19-24 g. The study anticonvulsants included phenobarbital, 20 mg/kg, carbamazepine, 125 mg/kg, sodium valproate, 155 mg/kg, topiramate, 300 mg/kg, lamotrigine, 30 mg/kg. Experimental seizures were modeled using intraperitoneal administration of the chemoconvulsants (corazol, 100 mg/kg, thiosemicarbazide, 20 mg/kg) and maximal electroshock seizure (MES) model.

Results.



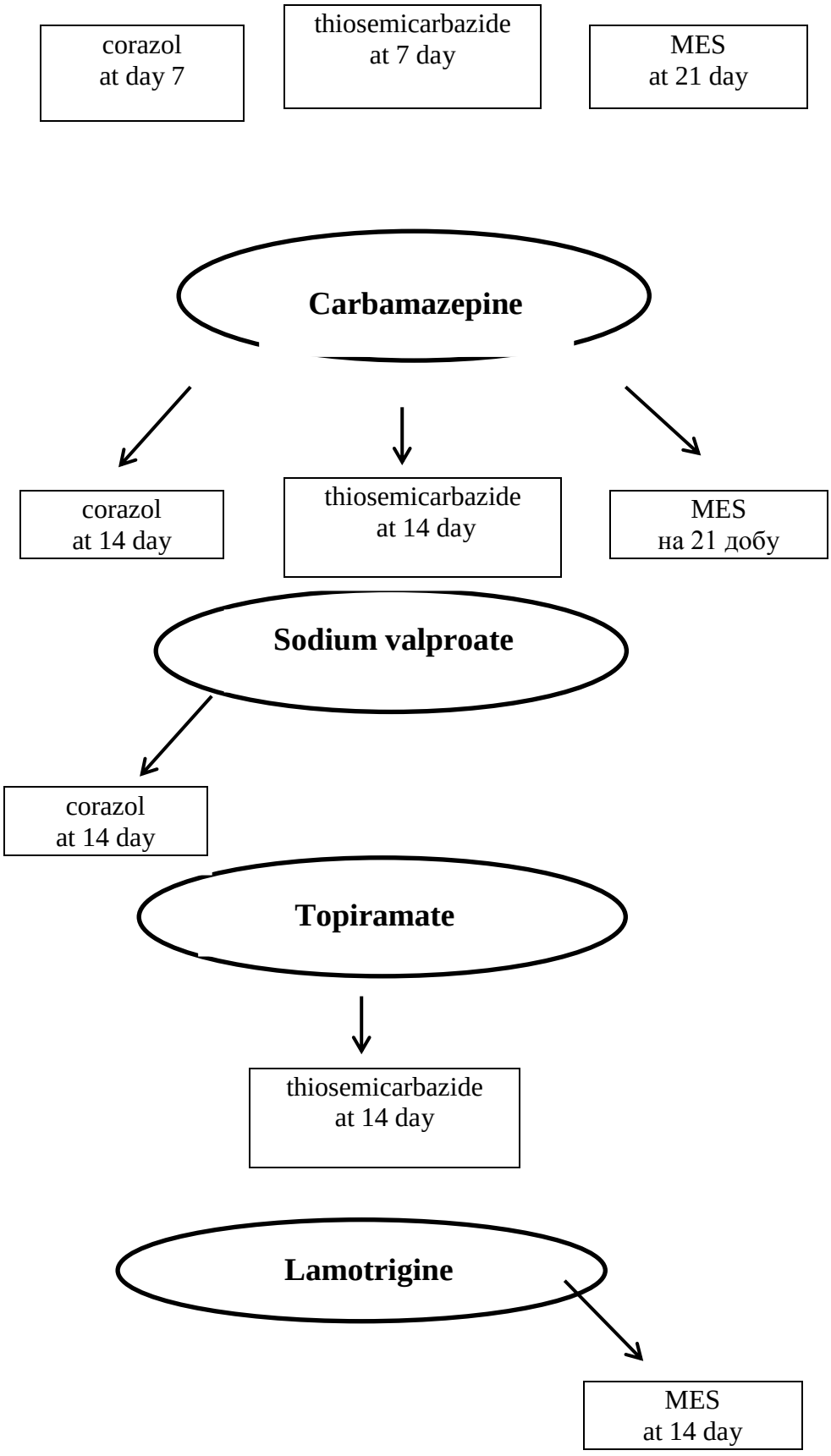


Figure. The development of tolerance to the anticonvulsant effects of antiepileptic drugs Note: The experimental models of the seizure events and timing of the tolerance development are shown in the rectangles.

Table. Cross-tolerance between the antiepileptic drugs.

Animals tolerant to the effect of	The experimental models of seizure events	Cross-tolerance to the effect of	Availability «+», absence «-» of cross-tolerance
Phenobarbital	Corazol	Sodium valproate	+
	Corazol	Carbamazepine	+
	Thiosemicarbazide	Topiramate	+
	MESH	Lamotrigine	-
	MESH	Carbamazepine	-
Carbamazepine	Corazol	Phenobarbital	+
	Corazol	Sodium valproate	+
	Thiosemicarbazide	Topiramate	+
Sodium valproate	Corazol	Carbamazepine	+
	Corazol	Topiramate	+
	Thiosemicarbazide	Phenobarbital	+
Topiramate	Corazol	Carbamazepine	+
	Corazol	Phenobarbital	+
	Thiosemicarbazide	Sodium valproate	+

Conclusions. Long-term use of anticonvulsants (phenobarbital, carbamazepine, sodium valproate, lamotrigine, topiramate) leads to the development of the tolerance to their anticonvulsant effects. We observed the development of the cross-tolerance between phenobarbital, carbamazepine, sodium valproate and topiramate using chemoconvulsant models of seizures. Cross-tolerance between phenobarbital, carbamazepine and lamotrigine was not recorded in the model the electrically induced seizures.

Key word: tolerance, cross-tolerance, anticonvulsants.

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CEREBROPROTECTIVE FEATURES OF DERIVATIVE 3,2'- SPIRO-PYRRHOL-2-OXINDOLE (COMPOUND R-86) IN THE COURSE OF EXPERIMENTAL INTRACEREBRAL HEMORRHAGE

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Introduction. Acute disturbed cerebral circulation of hemorrhagic type is a difficult medical and social problem that forms the essential of illness and death rate. The development of pharmacotherapeutic support for treatment of such patients - is a foreground target for modern pharmacology.

Materials and Methods. The investigations have been held on male rats of Vistar breed. The extreme intracerebral hemorrhage has been simulated with autoblood (30 microliter/100g) introduced into the brain internal capsule.

Results. It has been found that intragastric introduction of derivative 3,2'- spiro-pyrrhol-2-oxindole (compound R-86), in conditionally therapeutic dose 10 mg/kg as well as intraperitoneal introduction of mexidolum (100 mg/kg) and citicoline (250 mg/kg) and intragastric introduction of nimodipine (30 mg/kg) have cerebro-protective action. This effect defines by the reduction of the level of mortality during the acute period of hemorrhagic insult. As for its cerebro-protective activity rate and duration of protective influence on brain the compound R-86 in conditionally therapeutic dose 10 mg/kg intragastric introduced has been better than reference drug Piracetam. As for its effectiveness 3,2'- spiro-pyrrhol-2-oxindole has been not worse than mexidolum, citicoline and nimodipine. In addition, as for the model of hemorrhagic insult the effectiveness of compound R-86 in conditionally therapeutic dose has been 10 and 25 times more than mexidolum (100 mg/kg, intraperitoneal introduction) and citicoline (250 mg/kg, intraperitoneal introduction) correspondingly.

Conclusion. The derivative 3,2'-spiro-pyrrhol-2-oxindole (compound R-86) is of interest for the further research concerning its cerebro-protective action in the course of

intracerebral hemorrhage that can become a background for invention of a home neuroprotector for hemorrhagic insult intensive care.

Key words: derivative 3,2'-spiro-pyrrhol-2-oxindole, hemorrhagic insult, cerebroprotection.

UCC: 612.172.2+612.176

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THE EFFECTS OF DEEP BREATHING IN THE BIOLOGICAL FEEDBACK MODE ON THE SPEED AND QUALITY OF THE VERBAL INFORMATION PROCESSING IN HEALTHY YOUNG INDIVIDUALS

Introduction. It is well known that neurodynamic processes that underlie processing of sensory information in the central nervous system depend heavily on the functional state of the autonomic nervous system (ANS). Favorable background for the successful performance of cognitive tasks is increased vagal activity. On the other hand, inhibition of the parasympathetic part of ANS and excessive sympathetic activation during psycho-emotional stress associates with a slower reaction and increased number of errors throughout the performance of cognitive tasks. One of the possible ways to influence the functional state of ANS is breathing exercises. It has been shown that deep breathing can significantly modulate vagal activity and enhance the physiological respiratory sinus arrhythmia (RSA). It is believed that RSA is one of the most important factors that determine the high-frequency component (HF) of heart rate variability (HRV) in the spectrum (0.15-0.4 Hz). According to this, spectral energy of the HRV curve in this frequency range is commonly used as a noninvasive marker of ANS parasympathetic activity level. Several studies have shown that expression of RSA positively correlates with the level of activation of the parasympathetic part of ANS and can modulate the psychophysiological response to

mental stressors. Therefore, finding non-pharmacological methods to increase heart rate variability, and, in particular, its high-frequency components, in order to optimize the reflex responses to mental stressors, seems physiologically reasonable. In recent years, the particular interest in this context is the breathing exercises using biofeedback of heart rate variability. This method is based on the use of physiological mechanisms of respiratory sinus arrhythmia. Unlike conventional deep diaphragmatic breathing, it leads to better coordination of respiratory cycles with the wave structure of the heart rate. It is due to the ability to monitor a person's own HRV curve and to make necessary correction of the frequency and depth of breathing. Breathing training using biofeedback of heart activity substantially increase HRV and HF in healthy individuals as well as in patients with psychosomatic disorders. However, the optimal duration and frequency of such training for different categories of patients remains unclear. The idea of breathing and heart rate biofeedback is successfully technically implemented in a compact standalone device StressEraser (TM, Helicor, USA), which is widely used as a tool for relaxation and reduction of psychological stress. The purpose of this research is to determine the capability of the use of this device to optimize phychophysiological responses of healthy young people to mental stressors.

Materials and methods. There were 42 healthy males aged 19 to 22 years involved in this study. None of them complained about health and none were professionally engaged in sports. All participants were randomly divided into 2 groups. Members of the first group (22 persons) performed daily breathing exercises using StressEraser for 1 month. In total, each member of the group held 30 training sessions. The duration of a single session ranged from 10 to 15 minutes. During the training each participant adjusted his respiratory rate according to the visual signals indicated by a device that was constantly monitoring heart rate variability. In the case of matching the wave patterns of heart rate with the rate of breathing, the device gave a participant one point, indicating it on the screen. Each training session lasted until the participant earned 30 points. The control group consisted of 20 persons who were not engaged in the respiratory gymnastics. Neurodynamic properties of higher nervous functions of the experiment's participants were evaluated by the method of M.V.Makarenko,

using hardware-software complex "Prognoz". This complex allows for obtaining such objective characteristics of sensory processing as the choice reaction time in identifying 1 of 3 verbal stimuli (CRTIV1-3, ms), the choice reaction time in identifying 2 of 3 stimuli (CRTIV2-3, ms), functional mobility of nervous processes (FMNP, s) and the strength of nerve processes (SNP, the number of stimuli). For objective characteristics of the functional state of ANS, values of heart rate variability were used, obtained by a 5-minute registration of ECG in the first lead, according to the recommendations of the European and American Heart Associations, with the electrocardiographic module of the device “Variocard"(Ukraine). Specifically , we determined the spectral parameters of HRV such as: TP (ms^2), total power of the frequency spectrum of heart rate, reflecting the total effect of all regulatory systems on the heart rate; HF (ms^2) – high-frequency component of the spectrum of heart rate in the range 0,15-0 ,4 Hz , reflecting mainly vagal effects on heart rate associated with breathing; LF (ms^2) – low-frequency component of the spectrum of heart rate in the range of 0,04-0,15 Hz, reflecting mainly the effect of the sympathetic part of ANS on heart rate, including nervous centers of vascular mobility; VLF (ms^2) – very low-frequency component of the spectrum of heart rate in the range 0,003-0,04 Hz, reflecting the total activity of suprasegmental influences on ANS and neurohumoral effects on heart rhythm. In addition, the value of sympathetic-vagal balance (LF/HF) and the percentage contribution of each frequency component in the TR spectrum (HF% / LF% and VLF%) were calculated.

Results. Regarding the effect of breathing with biofeedback on the functional state of the autonomic nervous system, statistical analysis of the data showed that at the beginning of the experiment there was no reliable difference between groups for any value. However, after a month of training, a number of statistically significant shifts in HRV values were identified in the study group. First of all, there was a noteworthy increase in the total heart rate variability in terms of TP 33.6 to 534 ms^2 ($p < 0,01$). It occurred mainly due to the increase of HF by 813+21.4 ms^2 ($p < 0.05$) and decrease of VLF by 278.7+16.5 ms^2 ($p < 0,02$). At the same time, LF was not statistically significantly changed. The changes in the spectral structure of heart rate resulted in a sharp decrease of the value of sympathetic-vagal balance LF / HF to 0.68+0.04 ($p <$

0,05). Such dynamics of HRV values can be interpreted as increase in parasympathetic activity level of ANS with a simultaneous decrease in suprasegmental regulation of heart rate by higher autonomic centers and humoral mechanisms. At the same time, none of the HRV parameters statistically significantly changed in the control group. Also, we obtained positive results studying psychophysiological responses to verbal stimuli in study and control group. According to the findings, in terms of CRTIV1-3, representatives of both groups showed no statistically significant changes. However, members of the study group, after 1 month duration of breathing exercises, performed the test of selecting 1 out of 3 stimuli with 4,2%+0,31 fewer mistakes than at the beginning of the experiment.

In terms of the test that required choosing 2 out of 3 stimuli, differences were revealed in both the dynamics of CRTIV2-3, and the percentage of errors made. Thus, in the study group, after 1 month duration of breathing exercises, CRTIV2 -3 decreased from 572,68±18,63 to 399,08±9,61 ms ($p<0,01$), and percentage of errors decreased from 10,12±0,48 to 5,84±0,77 ($p<0,01$). Participants in the control group showed no statistically significant changes of these values after the month. In the study of functional mobility of nervous processes it was revealed that for representatives of the study group participating in one month of breathing exercises using biofeedback, time of test completion was reduced by 8,2±0,61 s ($p<0,01$), minimum exposition time decreased by 15,7±0,31 ms ($p<0,02$) and time required to achieve minimal exposition decreased by 4,5±0,12 s ($p<0,05$). This shows a substantial increase of functional mobility in processing verbal information in the individuals of this group. Again, no significant changes in any values of FMNP were found in the control group. Similarly, dynamics of the value that indicated the strength of nervous processes were characterized. In the study group, the number of verbal stimuli processed in a fixed 5-minute time period increased by 14,4±1,71 ($p<0,05$), minimum exposition time decreased by 25,8±0,91 ms ($p<0,01$) and time required to achieve minimal exposition decreased by 9,0 ±0,81 s ($p<0,02$).

Conclusion. It was established that a 30-day breathing exercise course using a portable StressEraser device (TM, Helicor, USA), which provides biological feedback between breathing and heart rate variability, lead to the shift in the

sympathovagal balance of the autonomic nervous system towards activation of its parasympathetic branch in 22 subjects in the main group. This alteration of the autonomic functional regulation was associated with increased speed and quality of the verbal information processing, increased functional mobility and intensity of neural processes. This study provides a background for further investigation of new methods for intellectual activity optimization. Particularly, it can applied for reduction of stress in specialists whose work involve lots of psycho emotional tension.

Key words: biological feedback, heart rate variability, breathing, neurodynamic properties.

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PECULIARITIES COMPUTED TOMOGRAPHY SIZES OF MIDDLE CRANIAL FOSSA IN HEALTHY YOUNG MALES AND YOUNG FEMALES OF DIFFERENT SOMATOTYPES

Summary. The percentile scale of the middle cranial fossa (MCF) computed tomography parameters installed in practically healthy urban young males and young females, inhabitants of Podillya of different somatotypes. Somatotype-related and aged-related differences of these computed tomography parameters, as well as signs of MCF sizes asymmetry are set in the representatives of the respective somatotypes.

Key words: computed tomography, middle cranial fossa, healthy young males and young females, somatotype.

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MEASURE OF PSYCHOHYGIENIC CORRECTION AND PECULIAR PROPERTIES THEIR IMPACT ON THE FORMATION OF CHARACTER-MOTIVATIONAL CORRELATES OF MENTAL ADAPTATION PUPILS OF MODERN SCHOOL

Introduction. Psychohygienic correction as a modern highly effective means to increase the adaptive capacity of the organism and the maintenance and health promotion of different groups of people, including schoolchildren, is a system of psychological influences, aimed at creating positive change and providing significant favorable adjustment of mental symptoms and features individual, who played a key role in the occurrence of adverse changes in mental state and the formation of preconditions for the development of adverse changes correlate of mental health based on consideration of a number of personality traits and, above all, the properties of temperament, anxiety, character, level of subjective control and psycho-physiological and mental state. The aim of the study is to determine the impact of features psychohygienic correction on the formation of character-motivational correlates of mental adaptation pupils of modern school.

Materials and methods. Research conducted on the basis of a number of secondary schools in the city of Vinnitsa, during which determined the features of the leading educational and socially important personality traits, adaptive capacity and health of 120 pupils (60 girls and 60 boys). The studied individuals were divided into two comparison groups, namely control group (CG) and intervention group (IG). As the main criteria for evaluating the effectiveness of the program psychohygienic correction of psychophysiological and mental adaptation and changes in the health status of pupils aged 14-17 years, which was developed and proposed, used data on the degree of development of character-motivational correlates of mental adaptation pupils of modern school, such us personality traits indicators of the level of expression of accentuated personalities for emotional, anxiety, excitable and dysthymic types and levels of subjective control in the field of education and

interpersonal relationships and in relation to health and disease. Statistical analysis of the results was carried out based on the application of the standard package of applications of multivariate statistical analysis “Statistica 6.0 for Windows” (owned by the Center for New Information Technologies Vinnytsya National University named Pirogov, license № AXX910A374605FA).

Results. During the evaluation of changes in the structure of character-motivational correlates of mental adaptation pupils of modern school in the use of the developed program psychohygienic correction of psychophysiological and psychological adaptation and changes in the health status of students aged 14-17 years, the attention shifts that registered by the indicators of expression accentuated personalities. Thus, during the study parameters accentuated personalities for emotional type should pay attention to the fact that among the CG registered opposite in content trends: in girls level of expression of characteristics, which was studied increased from 12,33±0,92 to 16,40±0,78 points (33,3%, $p<0,01$), in boys decreased from 12,20±0,76 to 11,20±0,86 points (8,2%, $p>0,05$). However, among the same type in IG observed changes was to decrease the degree of expression of accentuated personalities for emotional type: in girls of criterion values declined from 14,60±0,73 to 12,50±0,86 points (14,4%; $p<0,05$), in boys – from 12,03±0,86 to 10,20±0,83 points (15,3%, $p>0,05$). During the study parameters accentuated personalities for anxiety type in girls who were included in the CG decreased from 13,03±0,96 to 12,90±0,95 points (1,0%, $p>0,05$), in boys – from 10,60±0,95 to 10,30±0,91 points (2,9%, $p>0,05$), among pupils who were included in the IG, decreased from 11,00±1,09 to 8,80±0,93 points (20,0%, $p)>0,05$) in girls and from 11,30±0,99 to 8,70±1,00 points (23,1%, $p(t<0,05)$ in boys.

Conclusion. In the course of the studies identified features psychohygienic impact of correction on the formation of character-motivational correlates of mental adaptation of the modern school pupils, found that their use provides the appearance of positive changes in the structure of indicators that reflect the characteristics of the formation of accentuated personalities by excitable ($p<0,05$-$0,001$) and dysthymic ($p<0,05$) types and characteristics of subjective control level in the field of educational relations and health and disease ($p<0,05$-$0,001$) among girls and boys, and only

among girls in the structure parameters accented by emotional ($p<0,01$) and anxiety ($p<0,01$) types of accentuated personalities traits.

Key words: pupils, modern school, mental adaptation, character-motivational correlates, psychohygienic correction.

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PECULIARITIES PARAMETERS OF ANTERIOR HORNS OF THE LATERAL VENTRICLES OF THE BRAIN ACCORDING TO COMPUTED TOMOGRAPHY DATA IN JUVENILE BOYS AND GIRLS, SUFFERED FROM EPILEPSY, IN GENERAL AND IN BRACHYCEPHAL PERSONS

Summary. In this article reflected differences computed tomography sizes of anterior horns of the brain lateral ventricles between the common groups of healthy and patients with epilepsy juvenile boys or girls and between the groups of healthy and patients with epilepsy juvenile men or women of brachycephal craniotype. It is proved that in healthy juvenile boys of common group and in juvenile boys with epilepsy the length of the anterior horn of the left lateral ventricle of the brain and indices of anterior horns of lateral ventricles are less than in the corresponding groups of juvenile boys with epilepsy. Width of the anterior horn of the right and of the left lateral ventricles of the brain and index of lateral ventricles anterior horns in healthy brachycephalic juvenile girls are higher than in the corresponding groups of juvenile girls with epilepsy. Manifestations of sexual dimorphism under computed tomography parameters (higher values in juvenile boys) are set, in most cases, in both groups of juvenile boys with epilepsy and in the common group of healthy juvenile boys.

Key words: anterior horns of the lateral ventricles of brain, computed tomography research, epilepsy, craniotype, juvenile age.

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DOPPLER-EHOCARDIOGRAFIC INDICATORS OF THE RIGHT HEART DEPARTMENTS AT ATHLETES OF YOUNG AGE AND THEIR COMPARISON WITH INDICATORS AT PERSONS WHO DIDN'T GO IN FOR SPORTS REGULARLY

Summary. At athletes of young age were studied Doppler - echocardiographic indicators of the right heart departments and they were compare with indicators of young men who regularly didn't go in for sports. Statistically significant distinctions of some Doppler - echocardiographic indicators of the right departments of heart between different groups of athletes are established. Existence of statistically significant distinctions when comparing these indicators in various groups of athletes with indicators at young men who regularly didn't go in for sports (from 23,08% to 53,85% of all indicators) is established. The results testify that it is necessary to consider at echocardiographic researches of young men the influence on value Doppler - echocardiographic indicators of sports activities. It is necessary to continue similar researches in the direction of studying of these indicators of the right departments of heart at athletes taking into account a body structure.

Key words: Doppler echocardiography, sports, youthful age, young people.

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FUNCTIONAL CHANGES OF KIDNEYS IN RATS UNDER THE CONDITIONS OF PHARMACOLOGICAL ACTIVATION OF ATP-DEPENDENT POTASSIUM CHANNELS

Introduction. The presented are the results of study of renal effects of a new K_{ATP}-channels activator Flocalin.

Materials and methods. The experiments have been carried out in laboratory white rats after administration of 5 mg/kg Flocalin under the conditions of water-salt load and on the model of sublimate nephropathy.

Results. Flocalin administration was followed by the activation of volume-regulating function of kidneys on the ground of functional load and in the initial stage of acute renal failure. Intensification of excretion of osmotically active cations was not accompanied by decrease of sodium and potassium ions concentration in blood plasma. That excludes the side effects due to ion disbalance. Activation of glomerular filtration rate, modulation of tubular processes, and antiproteinuric effect give evidence of protective capabilities of Flocalin in renal dysfunction. Changes of the indexes of acid-regulating function of kidneys point to the ability of Flocalin to intervene in disturbances of acid-base status.

Conclusions. The results of the present research confirm the advisability of the further study of renal effects of Flocaline in conditions of chronic kidney pathology. That is essential for the extension of the concept of protective features of Flocalin.

Key words: kidney, Flocalin.

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PATHOGENIC SUBSTANTIATION OF COLLAGEN INSUFFICIENCY CORRECTION IN PATIENTS WITH HERNIA DISEASE

Introduction. Today proved that the formation of inguinal hernia is always associated with damage to the back wall of the inguinal canal and one common element of the tissues of the abdominal wll, namely, collagen, pathological changes which lay the foundation for the hernia and a high percentage of its recurrence. It is importance particularly in cases of recurrence inguinal hernias. In the defect is observed progression processes atrophy and sclerosis of the surrounding muscle-aponeurosis tissues especially pronounced in patients with large hernias. Fascial skeleton is replaced with scar tissue loses its strength and ability to reliable seam. Such changes are increasing with each subsequent intervention in the abdominal wall and ligatures granuloma of postoperative wounds leave a «latent infection». According to numerous domestic and foreign sources, the number of relapses after the «traditional» methods is 12-15% in primary and up to 40% of recurrent hernias. The newest alloplastic methods, modern plastic and suture materials will greatly reduce relapses to 0,5-2,7%, but in 4-16% of patients complications are connected with the implant. Despite the biological inertness mesh polypropylene implant, which in 90% use for hernia treatment, occurs inflammatory reaction in tissues, fibrosis, abscesses, fistulas, sensation of foreign body in the place of operation, the emergence of chronic inguinal pain, hernia recurrence, which affect the quality of life of patients. To improve the regenerative and reparative processes in the tissues surrounding the prosthesis is offered implants, which contain collagen and its derivatives (Parietex Composite, Permacol). In Ukraine, these dentures are not widely implemented in connection with a hefty price, which limits their use. These circumstances necessitate experimental studies of the availability of domestic polypropylene mesh pre-treated with a solution of collagen and possibilities of its use in clinical practice for treatment of abdominal disease. Given the pathogenesis of the development of inguinal hernia

repair, to improve the results of treatment of complicated recurrent hernias, is the placement of prosthesis in the preperitoneal space, and the introduction of containing collagen alloplastic materials in plastic surgery that can assist in addressing the problems of collagen deficiency of the abdominal wall. The research aim is to improvement results of treatment patients with hernia disease by means of implantation collagen-containing polypropylene mesh into the preperitoneal space.

Materials and methods. Experimental-morphological study conducted by 37 white mature rats-males weighing 200-280 g., divided into 2 groups. Group I – 17 rats reproduced the experimental defect muscle-aponeurosis layer of the anterior abdominal wall 3 cm, with the subsequent fixation of polypropylene mesh sizes of 0,5 x 1,0 cm in preperitoneal space. Group II – 20 rats under similar conditions of use polypropylene mesh, coated with collagen. Morphological study conducted in 3, 7 days, 2 weeks, 4 and 8 weeks after implantation of the polypropylene prosthetic. When conducting the morphological study of tissue structures of the anterior abdominal wall were guided by the general principles of stereometric analysis set out by G.G. Aftandilov of singing (1981), and to determine the following parameters for all objects: the relative amount of collagen fibers, fibroblasts in the composition of scar tissue, neutrophils, capillaries of vesselsв; surface density and numerical density capillaries of vessels.

Results. In analyzing the dynamics of reduction of neutrophil infiltration was found that most of its velocity was observed in animals of the II-nd experimental group after the application of collagen-coated grid (parameter on the seventh day amounted to 0,087 mkm^3/mkm^3). In group I the value of the corresponding parameter on the seventh day was 0,146 mkm^3/mkm^3 that 68 % ($p<0,05$) higher than the value in the II-nd experimental group. Subsequently, 2 weeks after surgery, the relative amount of neutrophils decreased, but in group I value exceeded the performance of group II animals more than 2 times. Histologically, in the area of implant prosthesis in preperitoneal space in 3 days after surgery in both experimental groups of animals were observed typical signs of active inflammation. In the area of direct contact with the tissue implant there was a large number of blood cells. Among leukocytes predominated sticks nuclear and segmented neutrophils. Special attention in this

research was paid to the analysis of speaker characteristics that reflect the processes of reorganization and cellular elements of the connective tissue fiber. In the study of changes in the relative volume of collagen fibers was observed growth rate in both experimental groups, and it is manifested most clearly in the II-nd group of animals within 1 month after surgery. This fact indicates a greater speed adjustment processes in the fiber structure of the group for the formation of scar tissue. This is also confirmed by using different methods differentiated histological staining of tissue components in the area of implantation after 7 and 14 days after experimental plastic of preperitoneal space. Dynamic growth of the relative amount of fibroblasts was phase character. Drew the attention of activation accumulation of cellular elements of connective tissue in animals after application of collagen-coated grid is from the 3rd postoperative day and the steady growth of the parameter until the 30-th day course of wound healing. In group I during the first phase of healing (up to 7th day) the indicator grew moderately intensify during the 2nd and 3rd phases (30-th day). The value of the relative volume of fibroblasts reached the end of the 1-st month of observations 0,055 – 0,059 mkm^3/mkm^3 and mkm^3/mkm^3 respectively for 1st and 2nd groups. Later, during the formation and reorganization of the scar, there was a progressive decrease in the number of cellular elements of connective tissue, and the intensity drop relative amount of fibroblasts can be regarded as a measure of the rate of reorganization of the scar. Attention is drawn to advance the pace of reduction specified parameter in group II. At the same time, the parameters of the relative amount of fibroblasts in the I-st experimental group decreased slightly, indicating a lower rate of biosynthetic processes and subsequent reorganization of the fiber structures scar formed. The relative amount of collagen fibers and fibroblasts associated with chronological separation of the phases of the biosynthesis of collagen matrix and changes its qualitative structure during reorganization rumen led to distinct of phase dynamic relationship between these parameters. If specific staining of connective tissue, from the 2-nd week after surgery, was characterized by the predominance of thick collagen fibers oriented parallel and forming an ordered matrix. An important factor that determines the morphological-functional reorganization of scar tissue is hemodynamic conditions that were evaluated in our

study the dynamics of changes in the relative blood-capillary volume, surface and numerical density of micro-vessels blood-micro-circulation. Evolution of the relative volume of capillaries characterized by a clear tendency to increase during the 1st month of the experiment, after which came the decline phase values in both experimental groups. In the study of tissue sections on the 7th and 14th day of the 1st and 2nd groups of animals were observed plethoric blood-capillary and venues, and numerous small focal hemorrhages. On the 30th day of observation the relative volume of the capillaries in the scar tissue were 0,121 and 0,159 mkm^3/mkm^3 for the I and II groups, respectively, the difference between them was 31,4% ($p<0,05$). Reduction settings after the 30-th day was due, apparently moderate reduction of blood vessels during the reorganization of the scar. Interest attracts the analysis of processes neo-vascular-genesis in the area of scar formation. Thus, the numerical density blood-capillary in the II-nd experimental group is on the seventh day after surgery was 7486 mm – II and statistically substantially higher than the values in group I (5870 mm - 2) at 27,5%. This predominance was also observed after 2 and 4 weeks of observation. It features surface density in this period differed significantly in the experimental groups of animals depending on the type of material used. At the end of the 1-st month after operation dynamics of the relative amount blood-capillary stabilized and subsequently not experienced any significant fluctuations until the end of the study. A clear reflection of different rates of formation of functional maturity micro-circulative vessels channel, formed, served as changing the values of the surface density of capillaries within 4 weeks after experimental plastic. Comparing the past with the values of the previous stages of the experiment (3, 7, 14 days after surgery), it was found that in group I animals growth rate significantly inferior to the parameters of group II. This fact certainly indicates more optimal hemodynamic characteristics of scar tissues after plastic with polypropylene collagen-coated mesh. During the last stage of healing (scar remodeling) values of the studied parameters generally aligned, and their dynamics were stabilizing character. Vasculature formed the characteristic architecture of associated with orientation along the capillary fiber frame connective tissue.

Conclusion. Dynamics of reduction of inflammation in the early postoperative period

in the experimental implantation of collagen-coated polypropylene meshes by 68% ($p<0,05$) in relation to corresponding parameters in the application the mesh, not processed collagen, which contributed to decrease in inflammatory response of 2 times. The use of synthetic collagen-coated prostheses, promotes reorganization of components of connective tissue, significant activation of biosynthetic processes of the fiber structures with a tendency to a sharp increase in the relative volume of blood-capillary and statistically significant ($p\leq0,05$) increase of 2,5 times at volume collagen matrix and restoration of reparative processes in tissues of the abdominal wall. Established indicators of reduction of inflammation in the tissues of the abdominal wall, shows the feasibility of domestic polypropylene prosthesis treated with a solution of collagen in clinical practice treatment hernia disease difficult to treat recurrent inguinal hernias, especially in elderly patients with impaired reparative processes.

Key words: polypropylene mesh, collagen, preperitoneal fixation, tissue reaction.

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CHANGES IN ELECTRON MICROSCOPY LEVELS IN THE TISSUES OF THE TONGUE UNDER THE INFLUENCE OF SMALL DOSES OF THE OPIOID AT THE END OF 2 AND 4 WEEKS (EXPERIMENTAL STUDY)

Introduction. The purpose of the study – identify at electron microscopy level morphological features in the structures of the tongue at the end of the second and fourth week of administration of low doses of opioid analgesics.

Materials and methods. Material for the study were sexually mature rats - male line "Wistar" in the amount of 16 animals. At the beginning of the experiment the animals were with the initial mass of 160 g , aged 4,5-7,5 months. Injectable opioid analgesic

conducted intra muscle, daily 1 time per day in the same period of time (10-11 am). Test first group of 8 animals for 14 days got out intra muscle opioid analgesic dose was 0,212 mg / kg, after which he was promoted biopsy for histological examination. Second Test in the group of 8 animals within 14 days of receiving intra muscle opioid analgesic dose of 0,212 mg / kg, 14 days following dose was 0,225 mg / kg, after which he was promoted biopsy for histological examination. All animals were kept in a vivarium and the work was carried out according to the "Rules of works using experimental animals." Before conduct sampling biopsy material pet narcotized intraperitoneum administration of thiopental (based on 25 mh/1kh), then the tongue amputation was performed for histological examination. Histological preparations were prepared by the conventional method.

Results. As a result of our investigation found that exposure to low doses of the opioid at the end of 4 weeks in the structures of tongue are available as follows: nuclear membrane forms numerous intussusception keratinocytes, present in the cytoplasm and mitochondria of enlightened dilated cristae and matrix. Basement membrane electron microscopy that separates epithelial cells from the connective tissue is not homogeneous. In the connective tissue lamina propria mucosa - interstitial edema. There is swelling perinevrium in peripheral nerve fibers in the axial cylinders illuminated mitochondria. Christie they sometimes extended destruction. In the cytoplasm forming numerous capillaries protrusion into the lumen of blood vessels. In the peripheral region of the cytoplasm significantly increased the number of endothelial vesicles plazmocytes. Basement membrane of capillaries in the wall is not uniform in structure.

Conclusions. After exposure for two weeks of low doses of opioid analgesics in the structures of tongue present changes in the vascular system, namely in the lumen of the capillaries present stasis of red blood cells, capillary endothelial cells form a protrusion of the cytoplasm into the lumen of the vessel. Among the cells of loose connective tissue of the mucous membrane of the tongue is dominated by fibroblasts and fibrocytes. In the reticular layer of the lamina propria of the mucous membrane of the tongue are usually thickened bundles of collagen fibers. After exposure for four weeks opioid small doses of analgesic in the structure of the mucosa and

muscular body structure changes are as follows: nuclear membrane forms numerous intussusception keratinocytes and mitochondria are present in the cytoplasm of the enlightened and advanced matrix cristae. Basement membrane that separates epithelial cells from the connective tissue is not homogeneous. In the connective tissue lamina propria mucosa - interstitial edema. There is swelling perinevrium in peripheral nerve fibers in the axial cylinders illuminated mitochondria, Christie they sometimes extended destruction. Protrusion of the cytoplasm into the lumen of the capillaries are more numerous than in the previous experimental group of rats. In the peripheral region of the cytoplasm significantly increased the number of endothelial vesicles plazmocytes. Basement membrane of capillaries in the wall is not uniform in structure. As a result of this research established morphological features of tongue structures at the end of the second and fourth week of the effect of small doses of opioids, allowing practitioners to adjust the use of opioid analgesics for chronic pain blocking and carrying with adequate drug therapy for corrective eliminate unwanted complications. This line of research can be a main line in these experiments.

Key words: opioid analgesics, histology, rats tongue.

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SEXUAL FEATURES TIME AND AMPLITUDE ECG INDICATORS OF TEENAGERS WITH DIFFERENT LEVELS OF PHYSICAL LOAD

Introducnion. In this paper established gender-amplitude and time electrocardiographic parameters in the total group of persons involved and not involved in sports, and separately -persons engaged in volleyball and athletics. The aim of our study was to investigate the expressions of sexual dimorphism in size and

amplitude of time ECG parameters among adolescents who are not involved in sports, athletes and volleyball players and athletes alone.

Materials and methods. We surveyed 80 athletes following sports: volleyball (46), wrestling (1) Athletics (27), swimming (2), MMA (4) and 127 people who are not involved in sports. The study was also attended by 267 males, of which 37 volleyball players, 46 wrestlers, 78 athletes, 1 boxer, 5 football players, 5 swimmers, 2 acrobats and 94, which are not involved in sports. All athletes have a high level of athletic training (from the first to the adult category of masters of sports). All studied were aged 16 to 21 years and belonged to the juvenile period of ontogenesis. Sex differences electrocardiographic parameters were studied in four groups: nonsportsmen total group of athletes, volleyball players and athletes. We conducted ECG studies using computer diagnostic system, providing simultaneous registration of the electrocardiogram, phonocardiogram and measuring blood pressure. Analysis of the results carried out using STATISTIC A 5.5. Statistical significance of differences between the values of the independent variables was determined by quantitative normality of distributions by Student t-test, and in other cases - using the U- Mann - Whitney.

Results. Expectancy interval PQ in V2 was significantly greater in volleyball players, volleyball players than ($p<0,05$). In boys engaged in volleyball leads V3 and V4, this figure is statistically significantly greater than in girls volleyball players ($p<0,01$). Established that the figure in lead V5 in male nonsportsmen tends to increase over female nonsportsmen ($p=0,058$), and among volleyball players - greater in boys ($p<0,01$). In male nonsportsmen rate PQ interval duration in lead V6 has a tendency to increase over female nonsportsmen ($p=0,067$), and volleyball, the figure was significantly higher than in volleyball players ($p<0,01$).

In a group of young athletes and volleyball rate duration of the QT interval was significantly smaller than in girls ($p<0,05$ in both cases) in the second and third standard lead extraction and AVR. In the study of expectancy QT interval in lead AVL and AVF and VI set equal sex differences : in volleyball athletes and the figure is less important than the athletes and volleyball players ($p<0,05$ in all cases). In leads V2 and volleyball athletes, the figure is less than the athletes ($p<0,001$) and volleyball

(p<0,01). In the total group of athletes in lead V3, the figure is less than the athletes (p<0,01). Athletes and volleyball in leads V4, V5 and V6, the figure is less (p<0,05-0,01) than women of these groups. Sex differences expectancy QT interval only.

Conclusion. Summarizing the results of our studies on sex differences should be noted that the youth groups in most time ECG parameters have higher values, except for the indicator of the interval QT. Let us at every performance. P wave duration index in the total group of athletes in standard lead I and AVR and V3 significantly greater in boys. In volleyball it was greater in I, II, III, AVR, AVL, AVF, V2, V3, V4, V5 leads. QRS interval duration index in young athletes more than women athletes only extraction AVF; into volleyball in the third extraction, in athletes in II, III, AVF leads. QT interval duration index in the total group of young athletes have lower values in II, III standard leads and leads AVR, AVL, AVF and all thoracic, in volleyball in II, III standard leads and leads AVR, AVL, AVF, VI, V2, V4, V5, V6. The vast amount of peak performance is more important also in groups of males. In particular, the amplitude of the P wave in male nonsportsmen significantly higher in boys in standard lead III, in the total group of young athletes, the figure more in lead V2, and in lead VI is smaller than the females, and in volleyball and standard and in leads VI is greater and in lead VI is less important in males. In young athletes, the figure more in leads V3, V4, V5, V6. Index Q wave amplitude in boys who are not involved in sports, in standard lead III, as well as leads AVF, VI has great value, and in lead AVL - less, in athletes has more value in the extraction V6, compared to the athlete. The amplitude of the R wave in boys male nonsportsmen And in most standard lead and leads V4, V5, V6; athletes in men is higher in I, II standard lead , leads AVR and all thoracic , in volleyball in AVF and all thoracic , in young athletes in leads AVR, VI, V2, V3, V5, V6. S wave amplitude was significantly higher in boys in all study groups: in male nonsportsmen - in I, II, AVF and in all precardial leads, the athletes – in I, II and III standard lead all thoracic, in volleyball - in leads AVR, VI, V2, V3, V5, V6; into athletes – in all of December. T-wave amplitude was significantly higher in boys in all study groups: in male nonsportsmen – in I, II, AVR, AVF and in all precardial leads, the athletes - in I, II, AVR, AVL and all precardial

leads, in volleyball – in standard lead II and leads AVR, AVF and all thoracic, in athletes - and in standard lead and leads AVR, VI, V3, V4, V5, V6.

Key words: sexual dimorphism, electrocardiography, amplitude and time parameters, athletes, volleyball players, athletes, nonportsmen, adolescence.

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ANTHROPOLOGICAL TYPOLOGY OF ANCIENT UKRAINIAN POPULATION IN ETHNOHISTORICAL CONTEXT

Summary. The article reveals the anthropological aspects of ethnic history of ancient population of the modern Ukrainian grounds. For the first time the systematic anthropometric analysis of boundaries of mesolit-neolithic, dnepro-donetsk community is realized in the comparative anthropological context. The auther holds the theory of the depending of racial evolution on haploid chromosome completment of each ethnic collective. The source of Ukrainian ethnogeny is related to assimilative process of northern of East-Baltic and southern of Mediterranean type with not big population influence of Nordic and Front Asian subraces.

Key words: anthropometry, subraces, southern, northern, mesolit, neolithic, eneolithic, bronze age, ethnoanthropogenetic, genogeography, ethnogeny ethnic history.

CLINICAL RESEARCHES

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CLINICAL FEATURES OF IMMUNOLOGICAL STATUS IN CHILDREN WITH HERPETIC INFECTIONS

Introduction. One of the actual problems of the medical modern world is a high incidence of herpes viruses. Viruses are widespread among the human population; they can affect almost all organs and systems of the human body and cause latent, acute and chronic forms of the infection. Herpes virus can persist in the body for a long period and reproduce in immune system cells, causing death and functional activity reduction of immune cells. This process leads to the development of secondary immunodeficiency states, supporting the long-term persistence of the virus in humans. The clinical picture of herpes infection has changed significantly for the last decade. Mixed-infections are widely spread. Relapses increase against the background of secondary immunodeficiency. The clinical disease is severe, atypical forms develop especially among children. *The main aim* of our research is to study the clinical course and investigate changes in immune status according to immunograms in children with chronic forms of herpes simplex virus (CMV) and (EBV) infection.

Materials and methods. 38 patients (100%) aged 7 months to 14 years with chronic forms of herpes infection were supervised. There are mostly children aged 1 to 3 years – 31,5 % and from 3 to 5 years – 37,5 % of cases among the patients. We used PCR and ELISA for diagnostics. Determining the etiological structure of HSV infection it is found out: in 42,1% of cases (16 patients) with chronic Epstein-Barr virus infection, in 26.3 % of patients (10 patients) with chronic CMV infection and in 31.6 % of patients (12 patients) with chronic herpetic mixed-infection.

Results. The mononucleosis-like (100%) and hepatolienal (62,5 %) syndromes dominated in the clinical picture of chronic EBV viral infection. Rash was observed in half of patients. Hepatitis and splenomegaly occurred in all patients with chronic CMV-infection. There was a hemorrhagic syndrome in 90% of cases. Nephritis, interstitial pneumonia, meningoencephalitis are noted in half of patients. The most

severe disease was marked with the chronic herpetic mixed-infection. Multiorgan failures were in the form of mononucleosis-like syndrome with respiratory and intestinal dysbiosis in 9 patients (75%). Nephritis and pyelonephritis were set in 8 patients (66,7 %), hepatitis was diagnosed in 6 children (50%), 5 patients (41,7%) had hydrocephalic syndrome and brain cyst, pancreatitis was observed in 4 children (33.3%). Levels of T-lymphocytes, T-helpers CD4+ and T-suppressors CD8+ were increased in half of the patients with chronic EBV-infection during the immunological test. Reducing of T-helpers cells were found only in 12,5 % (2 patients) and decreasing of B-lymphocytes were noted in 50% (8 children). Levels of NK- and NKT-cells were increased in half of children and immature T-lymphocytes were in 37,5% (6 children). Immunological disorders combining with a low immunoregulatory index of T-helper/T-suppressor (Th/Tc cells) in 18.7 % of children transferred to the stage of sub- and decompensation. The number of immature T-lymphocytes was increased in all patients with chronic CMV- infection. The number of NK-cells and Th/Tc index were decreased in half of patients by T-suppressor CD8+ and CD4+ fractions increasing and T- lymphocytes decreasing. Levels of T-lymphocytes and NK-cells were increased from T-helpers CD4+in half of patients. Significant violations were found in the patients with chronic herpetic mixed-infection. T- and B-immunity inhibition was observed in most patients: T-lymphocytes decreasing were in 66.7% of patients and B-lymphocytes decreasing were in 16.2 % of patients. Reduced immunoregulatory index of Th/Tc cells was observed in 8 children (66.7 %) and decreasing of NK-cells was noted in half of patients. Increased levels of T-lymphocytes by CD4+ and CD8 + fractions were marked in 33.3 % of patients.

Conclusion. Herpetic infections acquired the character of serious medical and social problems due to viruses spreading among the population because of their impact on the human immune system with secondary immunodeficiencies formation. Multiorgan failures in the form of mononucleosis-like syndrome with respiratory and intestinal dysbiosis occur in the clinical picture of herpetic infection. The most manifested symptoms were observed in children with mixed infections (EBV + CMV). Immunological disorders were noted in all children with herpetic infection.

The loss of cellular and humoral immunity leads to reducing of cell survival, decreasing of immune cells phenotypes in the peripheral blood. The set of identified immunological changes causes viral persistence and recurrent diseases among people. The most important disturbances in immune homeostasis were found in children with impermeable mixed-infection (CMV+EBV). This is due to virus abilities of different kinds for cooperation with each other and mutual survival in the host, causing severe secondary immunodeficiencies.

Key words : herpetic infection, immunity, T-lymphocytes, B-lymphocytes.

UCC: 618.146-007.

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THE INDICATORS OF SYNTHETIC AND ENZYMATIC FUNCTION OF LIVER IN THE CERVICAL INTRAEPITHELIAL NEOPLASIA

Introduction. Every year, between 100,000 and 250,000 women in the Ukraine are diagnosed with cervical intraepithelial neoplasia (CIN). While it can occur at any age, the peak incidence is in women between the ages of 25 to 35. Most CIN cases can be cured with proper treatment and follow-up. Without treatment, 30 to 50 percent may progress to invasive cancer. A good knowledge of the etiology, pathophysiology and natural history of CIN provides a strong basis both for visual testing and for colposcopic diagnosis and understanding the principles of treatment of these lesions. The effectiveness of treatment for CIN does not exceed 74.3%, which can explained by the lack of point of view on the pathogenesis of this pathology. The problem of efficiency of treatment of CIN over the years, remains one of the most relevant in clinical practice due to its high frequency, despite having success in the prophylaxis and diagnosis. The clinicians used more attention to the local approaches to therapy CIN: donators of interferon, cryosurgery, laser vaporization, and others., excluding

the impact of the pathogenic factors inhibiting regeneration of the mucous of the cervix. There is a direct correlation between synthetic, enzymatic functions of liver and healing processes of CIN. *AIMS:* The aim of this study was to determine the plasma proteins levels and liver enzymes level in women with CIN.

Materials and methods. The study included 108 women with anatomo-pathologically diagnosed CIN II treated in 2012 at the clinical base of Vinnitsya National Pirogov Memorial Medical University, Ukraine. The plasma proteins levels and liver enzymes(transaminases, glutamyltranspeptidase and alkaline phosphatase) of all patients were assayed at the time of diagnosis and correlated with healing processes of CIN.

Results. We statistically compared the plasma proteins levels of group 1 (cervical intraepithelial neoplasia 2) and group 2 (control group). Patient groups with poor prognosis (groups 1) showed significantly lower plasma protein and albumin levels ($p< 0,05$) than control group (61,4 ± 3,7 g/l vs. 72,6 ± 5,2 g/l and 36,3 ± 2,2 g/l vs. 45,6 ± 2,4 g/l. respectively). Plasma transaminases and glutamyltranspeptidase levels were significantly higher in groups 1 than in group 2 (41,5 ± 3,7 U/l vs. 14,4 ± 1,9 U/l for alanine transaminase and 47,4 ± 4,5 U/l vs. 19,6 ± 2,1 U/l for aspartat transaminase) and (29,1 ± 2,7 U/l vs. 20,4 ± 2,1 U/l for glutamyltranspeptidase). But plasma alkaline phosphatase levels were significantly lower in groups 1 than in group 2 ($p <0,05$). The disorders of protein- and enzyme-synthetic functions of the liver that was find in the studied group of women, give reason to assume that one of the reasons for lack of efficacy of treatment of CIN is a relative shortage of protein material for full recovery of cervical tissue.

Conclusion. In the pathogenesis of the insufficiency of tissue healing at CIN is endogenous intoxication syndrome, accompanied by disorders of protein-synthetic and enzymatic functions of the liver.

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DIAGNOSTIC OF GASTROESOPHAGEAL REFLUX IN CHILDREN WITH BRONCHIAL ASTHMA

Introduction. Objective - To learn particular qualities of GER in children with asthma , to develop criteria and diagnostic algorithm of gastroesophageal reflux in children.

Materials and methods. In the process of work we have examined 62 children aged from 10 to 16 years. In order to study all children were divided into 2 groups. The first (experimental) group includes patients who suffered from asthma, total number of this group-38 children. The control group consisted of 24 children who did not have anamnestic and clinical manifestations of gastrointestinal tract.

The average age of the experimental group patients was 12,82 ± 0,27 years. There were 23 boys (60,53%) and 15 girls (39,47%). The degree of severity for children with asthma the next: 7 children (18,42%) - intermittent asthma, 7 children (18,42%) - mild asthma, 22 children (57,9%) - moderate asthma severity, 2 children (5,26%) - severe asthma.

This group includes children with asthma who have bouts of coughing chiefly at night or after eating, along with respiratory symptoms were present dyspeptic symptoms , children with signs of resistance to adequate basic treatment and mainly non-atopic variant of the disease.

Results. All the patients had intracavitary pH monitoring of esophagus and fibrogastroduodenoscopy. The results of pH monitoring were evaluated by a minimum (min) and maximum (max) pH indicators of internally esophagus , median (Me) and mode (Mo) indicators internally esophageal pH. Took into account the total number of reflux episodes (nW) and reflux longer than 5 minutes with internally esophagus index pH <4,0 and> 7.0. Calculated time of esophageal acid exposure (CHSEK) and time duodenal contents esophageal exposure in the esophagus (CHSED). In patients with asthma observed a significant ($p<0,05$) increase performance nW ↑, n1W ↑, nW ↓, CHSEK and time with pH<4,0, in the horizontal

position compared with the same parameters obtained in the comparison group of healthy children. This indicates the presence of gastroesophageal reflux acidic and alkaline content (duodenogastric reflux - GDR) in children with asthma .

Summarizing the results, it was concluded that 33 children (86.84 %) with asthma is a presence of pathologic gastroesophageal reflux (Fig. 1). Moreover 5 children (13.16 %) diagnosed pH- gram only gastroesophageal reflux alkaline content in 22 children (57.89 %) - gastroesophageal acid and 6 people (15.79 %), mixed (acid and alkaline) refluxes. Based on the analysis of frequency GER in children with varying severity of asthma, the results, according to which the frequency of GER does not depend on the severity of asthma. In a FEHDS in children with asthma and GER endoscopically negative pattern was found in 17 children (51,52%), esophagitis I - 12 children (36,36%), esophagitis II - 2 children (6\,06 %), esophagitis III and Barrett's esophagus - 1 child (by 3,03%). On the basis of the results developed criteria for diagnosing GER in children which include: Complaints of heartburn, belching , pain in the epigastric region; results of the daily pH monitoring: a. total number of reflux with pH <4 for more than 47 for a day; b. of GER lasting more than 5 minutes more than 2; c. total number of reflux with pH>7 more than 5; d. the exposure of acidic contents into the esophagus exceeds 4.2% daily; the exposure of duodenal contents into the esophagus more than 2% per day; Esophagitis I, II, III levels during fibrogastroduodenoscopy; Structural changes in the esophageal mucosa during histological examination.

The presence of GER in children reliably determined in the case of positive criteria 1, 2 and 3, as well as criteria 2 and 3 in children with asthma. If criteria 1 and 2 are positive- set endoscopically negative form of ERT and recommended before confirmation of the diagnosis carrying out of histological examination.

Conclusions. In 86.84 % of children suffering from asthma, there is the presence of pathological GER and DGR , while 48.48 % of them have no complaints to the gastro -intestinal tract. Children with asthma who have bouts of coughing chiefly at night or after eating, along with respiratory signs are present dyspeptic symptoms , children with signs of resistance to adequate basic treatment and mainly neatopichnym variant of the disease should be performed daily pH monitoring esophagus. The prospect of

further development of scientific research is early diagnosis of pathological gastroesophageal reflux in children with asthma and the correct treatment.

Key words: children, diagnostic, gastroesophageal reflux, bronchial asthma, daily pH-monitoring of esophagus.

UCC: 612.2-611.1

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PREDICTORS OF CLINICAL EFFICACY OF ANTIHYPERTENSIVE THERAPY IN PATIENTS WITH CHRONIC OBSTRUCTIVE LUNG DISEASE AND CONCOMITANT ARTERIAL HYPERTENSION

Introduction. *The purpose* of the research was to study the clinical course of a combination of chronic obstructive pulmonary disease (COPD) and hypertension (HT) depending on the age of the patients according to the results of round-the-clock electrocardiography monitoring (ECG) and blood pressure (BP) measurements.

Materials and methods. We have examined 256 patients with combined COPD and hypertension of average age 60,7 ± 3,4 years. Among the examined patients with comorbidity, 158 were men of mean age (59,6 ± 0,8) years, and 98 women of mean age (61,9 ± 1,0) years. In men, the second stage of COPD was diagnosed in 72 (45.6%) and the third stage of COPD was diagnosed in 86 (54.4%) patients, whilst COPD II in women was diagnosed in 59 (60.2%) patients, and COPD III - in 39 (39.8%) subjects. All patients were evaluated for the intensity of dyspnea according to the international scale of severity (MRC, Medical Research Council scale). The degree of respiratory failure was determined using a MasterScopePC computer spirograph (Erich Jaeger, Germany). The indicators of external respiratory function (ERF): forced expiratory volume in 1 second (FEV1), forced vital capacity (FVC), and FEV1/FVC) were assessed. Round-the-clock monitoring of ECG and BP was performed using DiaCard 03500 apparatus (Solveig AOZT, Kyiv). Statistical analysis

of the results was performed using processing of the data by methods of variation statistics, Microsoft Excel 2003, and StatSoft "Statistica" version 6.1 software.

Results. We discovered that the dyspnea score in women was significantly higher than in men (p = 0,041), women had significantly higher comorbidity index than men, perhaps no statistically significant difference was observed (p = 0.29). The analysis of computer spirography data presented no statistically significant differences in the ERF parameters. The assessment of round-the-clock ECG monitoring data evidenced that women had higher level of daily average HR, respectively (82 (74, 86) and 81 (74, 85)), and higher level of average HR in passive period, respectively 72 (65,79) in women and 70 (66, 79) in men. We observed the increase of maximum daily HR in men (p = 0.001) and maximum HR in the active period (p = 0,002). We also discovered that, unlike men, women with combined COPD and HT demonstrated increased average rate of supraventricular extrasystoles (SE), perhaps no statistically significant difference was found. Women, unlike men, showed statistically significant pair/group SE (p=0,004). We discovered that men and women presented no statistically significant difference in average levels of average round-the-clock systolic and diastolic BT and the BT in active/passive period. No statistically significant difference was found in time indices for average round-the-clock systolic and diastolic BT, the BT in and active/passive periods. The variability of heart rate in women, especially in the night time, presented more pronounced disorder characterized by decreased spectral indices of heart rate variability, particularly for low-and high-frequency waves. Women presented significantly more pronounced signs of sympatic vegetal regulation overload.

Conclusions. We established the peculiarities of the COPD/HT comorbidity in men and women. Unlike women, men examined by us were younger, but they were diagnosed with COPD III more often. However, we can state that the course of COPD / HT comorbidity in women was more severe than in men; this was probably due to higher prevalence of sympatic regulation overload and indirect disorder of neurohumoral regulation. Unlike men, women with combined diseases, demonstrated sustained increase in blood pressure at night. Taking into account the widespread COPD and concomitant cardiovascular disease among these patients, the pathogenic

mechanisms in formation of various functional and structural changes, including those by gender and age, are needed to be profoundly researched.

Key words: arterial hypertention, chronic obstructive pulmonary disease, investigation.

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EFFECT ESTIMATION OF THE BASIC THERAPY OF JUVENILE RHEUMATOID ARTHRITIS

Introduction. According to the statistical data in Ukraine there are more than three thousands of children with JRA (0,4 on 1000 of children's population), morbidity for JRA is from 2 up to 16 persons in 10000 of children's population at the age up to the 16 years, from 30 to 50% of the patients loose ability to work after three-five years of the disease. Even with active drug therapy up to 25 years of life 30% of the patients that got JRA in a childhood, high activity of the inflammatory response is saved. For today treatment of the JRA is carried out according to the actual protocol of Ministry of Public Health № 832 since 22.10.2012 and depends on form, activity of the disease, score of the pathological changes progression, opportunistic disorders. Start treatment of the JRA should begin at once after the estimation of the diagnose with using of the medicines of the first line one of them is methotrexate. *The aim* of our study was to estimate effect of the basical treatment course of JRA during the 6 month period.

Materials and methods. At our control we estimated 68 children with JRA, that stayed at the observation and treatment as well in Vinnitsya, Gitomyr and Chmelnytskyi regional hospitals. First group included 32 patients that received methotrexate as basic treatment. The second group was presented with 25 patients,

that received as basic treatment sulfasalazine. To the third group we brought 11 paients that used leflunomide as a basic drug therapy. All Children received as well nonsteroid anti-inflammatory drugs and steroids as MSDCD. Groups were presentable according to points of age, sex and duration of the process. The average meaning of the JRA at the examined children was 18,2±1,3 months. During the investigation we checked patients with clinical and laboratory methods in such positions: estimation of the complains of the child and objective study, activity of the inflammatory response and degree of the degenerative-destructive changes.

Results. At the studied children currency of the JRA was characterized with articular variant of damage in 52 (76,4%) children, in monoarthritis children (41,2%). System variant of the disease was checked (23,6%). In 29 (42,6%) of children disease was characterized with high activity of the process, in 28 (41,2%) and 11 (16,2%) of patients we estimated moderate and mild activity of the JRA. Laboratory characteristic of the JRA currency that was established on levels of CRP (10,73±0,89 mg/l), IL-1β (7,55±0,61 pg/l) and IL-6 (6,38±0,68 pg/l) measuring, indicated high activity of the disease before the treatment in a first group of the children ($p<0,05$).

In a first clinical group of the patients effect of the drug therapy according to the level of ACR 30 was estimated in 17 (53,1%) cases, in 7 (21,9%) we were lucky to receive ACR 50 border. During the period of the study in 6 months in 2 (6%) children exacerbation of the pathological process with severe clinical and laboratory signs was admitted. In a children of the second group during the 6 months of the BT we achieved level of ACR 30 in 11 (44%) patients, and in 2 (8%) effect of the treatment was on the level of ACR 50. Exacerbation of the process we noticed in 3 (12%) cases with a severe clinical manifestation like intensive joint syndrome, astenic and fever signs, laboratory indications of the high inflammatory response that made us to increase the dosage of the GK. In a children of the third group significant therapeutic effect on the ACR 30 level was established in 5 (45,4%) cases and in 1 (9%) child we got ACR 50 border. Exacerbation of the JRA was noticed in 2 (18%) children and followed with high intense signs of the joint syndrome.

Conclusions. The highest effect of the treatment was admitted in case if basic therapy was used with methotrexate in compare with other antirheumatic drugs

according to the signs of clinical (number of painful joints – on 24,2±2,8%) and laboratory (CRP –on 30,8±3,7% and ESR - 35,4±4,9 %) and as well activity of the disease. During the treatment procedures in patients with JRA we noticed significant decreasing of the IL-1β in children of the first group with using of the (28,5±3,5%) and the third with leflunomide (29,1±5,1%), but actual decreasing of the IL-6, that is one of the main inflammatory mediators, was done only in case of mehtotrexate use (36,3±3,8%).

Key words: juvenile rheumatoid arthritis, treatment, children.

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NEW OPPORTUNITIES FOR CORRECTING MYOCARDIAL ELECTRICAL INSTABILITY IN PATIENTS MYOCARDIAL INFARCTION IN COMBINATION WITH HYPERTENSION

Introduction. One of the urgent problems of modern cardiology is timely forecast of electrical instability of the heart (eec), which is crucial in predicting the development of dangerous and life-threatening arrhythmias such as ventricular tachycardia . Forming the substrate of ventricular tachycardia and ventricular fibrillation under the influence of aldosterone due to the development of myocardial hypertrophy and fibrosis, a change in its electrophysiological characteristics of the violation and processes where repolarization, ion transport, which contributes to the appearance of violations automatism, blockade of electrical pulses and the formation of electrical instability of the heart and development of arrhythmias, leading to circulatory arrest and sudden coronary death , and the inclusion of a new selective aldosterone receptor blocker eplerenone treatment standards in cardiac patients is a new step in helping extremely difficult group of patients and improving their survival.

Materials and methods. It examined 46 patients with hypertension combined with coronary artery disease, postinfarction cardiosclerosis average age of 53,5 years. The survey was conducted in 1-1,5 years after myocardial infarction. In all patients studied was observed under arterial hypertension iii. The study included patients transferred from q- myocardial infarction, which for various reasons thrombolytic therapy is not applied. All patients received standard therapy - beta -blockers, aspirin, clopidogrel, statins, ace inhibitors. Observation of examined patients was performed in 1 - 1,5 years. Depending on the nature of the underlying disease, all patients were divided into three clinical groups: group 1 consisted of 20 patients with postinfarction cardiosclerosis, who received standard therapy (control group), 2 - 14 patients with postinfarction cardiosclerosis, who additionally received veroshpiron 25 mg per day; 3 - 12 patients with postinfarction cardiosclerosis, which additionally receive eplerenone 25 mg daily for 1 year after myocardial infarction. Research methods included a general clinical research methods, standard 12- lead ecg with determination of left ventricular hypertrophy, myocardial scarring, holter ecg monitoring with assessment of daily hr structure , character and distribution over days cardiac arrhythmias and episodes of myocardial ischemia; echocardioscopy the definition of indicators of intracardiac hemodynamics and nature remodeling of the left ventricle.

Results. Hrmax, heart rate and hrmin had no significant difference in the different clinical groups ($p>0.05$). Thus, the average heart rate varied from 82,1 to 86,3 beats per 1 minute hrmax – from 112 to 121 beats per 1 minute, hrmin – from 48,5 to 53,3 in 1 minute. In patients with postinfarction cardiosclerosis in history, taking veroshpiron, significant changes in the structure of hr performance compared with the control group were found. While in patients with postinfarction cardiosclerosis in history, taking eplerenone, a significant decrease was determined hr in active period, hr in the night ($p<0,05$) and increased circadian index ($p<0,001$). Patients receiving eplerenone observed a significant decrease in heart rate in the active time of the day and during sleep, circadian significant increase in the index, significantly fewer supraventricular and ventricular extrasystoles. Duration of episodes of ischemia in active and night-time did not differ significantly in the different clinical groups and

ranged between 3,9-7,2 minutes. The results showed that significant differences in different groups of patients on the geometry of the left ventricle was found. No significant differences in hrv parameters for an active day and night period in patients with postinfarction cardiosclerosis control group and the group of patients who received veroshpiron not found. Indices of hrv in active and night-time in patients receiving eplerenone, have shown the fundamental difference. Thus, in this group of patients was defined by a significant increase in sdnn (50,7 ± 4,37 to 32,5 ± 3,41 ms, p <0,01), hf (542± 63,8 vs. 340 ± 85,1 ms2 , p<0,05) and reduced lf / hf (1,38 ± 0,16 to 1,8 ± 0,15, p<0,05).

Conclusion. In patients with arterial hypertension combined with chd postinfarction cardiosclerosis, which additionally receive eplerenone at a dose of 25 mg daily for 1-1.5 years after myocardial infarction determined by changes in the structure of daily heart rate (significant reduction hr in active time of day, hr during sleep, increased circadian index, signs of myocardial electrical instability and ventricular fibrillation (significant reduction of supraventricular , ventricular extrasystoles and graduation). Analysis distribution of hr over days indices of hrv in patients with postinfarction cardiosclerosis found that the use of eplerenone contributes to overall hrv due to the predominance of parasympathetic activity. The latter has an adaptive protective effect on the heart and increases the compensation of the body, including the cardiovascular system under psycho-emotional strain. Eplerenone (inspra) may be recommended for appointment to patients with arterial hypertension combined with postinfarction cardiosclerosis at a dose of 25 mg daily for the prevention of myocardial electrical instability not only in the acute phase of myocardial infarction, but also for long-term therapy.

Key words: myocardial infarction, hypertension, eplerenone, electrical myocardial instability, heart rate variability**.**

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THE PHYSICO-CHEMICAL AND BACTERIOLOGICAL INDICATORS CHANGES IN HEPATIC BILE, DEPENDING ON THE SURGICAL METHOD OF CHOLEDOCHOLITHIASIS CORRECTION

Introduction. Individual publications consider chronic biliary tract infection after endoscopic papilosphincterotomy as a possible source of increased risk of recurrent lithiasis. Other possible factors, affecting the biliary lithogenesis, can be attributed to inflammatory mediators, secreted in response to antigenic stimulation, which can change the phase equilibrium of bile and thereby accelerate the formation of crystals. Objective - to study and compare the physical, chemical and bacteriological changes in hepatic bile in the remote period among patients, which undergone open, laparoscopic and endobiliary surgery for choledocholithiasis.

Materials and methods. The laboratory testing of hepatic bile samples, taken intraoperatively, was conducted in 53 patients, undergoing various methods of open and minimally invasive surgical correction of concomitant gallbladder and common bile duct stones and subsequently in 41 patients in the long term (3-4 years) by endoscopic cannulation of the common bile duct. The indicators that have been studied: bile nucleation time, cholesterol, bile acids, bile acids/cholesterol ratio, the concentration of IL-1 and IgA, bacterial culturing.

Results. When studying samples of hepatic bile taken in long term period we revealed a significant reduction in the nucleation time in I (endoscopic papilosphincterotomy; laparoscopic cholecystectomy) and IV (open cholecystectomy + common bile duct revision + choledochoduodenostomy) groups of patients - 4,1 ± 0,12 days, $p < 0,05$ and 3,8 ± 0,11 days, $p < 0,05$, respectively, compared with groups of sphincter-preserving techniques and preliminary data. Positive bacteriological tests were received on average in 58.18% of patients. In group I 87.5% of patients had bacterial colonization of the common bile duct, which is significantly different from

the results in the second group (open cholecystectomy + common bile duct revision + external biliary drainage) – 28,57%. Biochemical study of the bile in the remote period showed that cholesterol and bile acids concentrations on average were slightly different from the previous data and were 2,82 ± 0,22 and 13,46 ± 0,45 respectively. Bile acids/cholesterol ratio accordingly decreased to 4,82 ± 0,51 ($p>0,05$). Concentrations of IL-1 and IgA in samples of the first group were on average 9,6 ± 0,45 ($p <0,05$) and 2,0 ± 0,1 ($p <0,05$), respectively, in the fourth group parameters were as follows: IL-1 - 11,0 ± 0,34 ($p<0,05$); IgA - 2,42 ± 0,12 ($p<0,05$).

Conclusion. The comparison showed a significant increase in the concentration of immune-inflammatory markers and bacterial contamination, reduced the nucleation time of the hepatic bile in groups with the history of sphincter destructive methods of surgical correction. Violation of the biliary system autonomy leads to the bacterial colonization, the presence of cytotoxic components in the bile and chronic inflammation of the biliary tract. The clinical consequences of these local pathophysiological changes after endoscopic sphincterotomy require further studies.

Key words: choledocholithiasis, assessment of the impact of surgical correction, physico-chemical properties of hepatic bile.

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MATERNAL OUTCOMES AFTER VAGINAL OPERATIVE DELIVERY: A COMPARATIVE STUDY OF TWO VACUUM EXTRACTION TECHNIQUES

Introductions. The past 20 years have seen a progressive shift away from the use of forceps in favor of the vacuum extractor as the instrument of choice. With vacuum extraction becoming increasingly popular, it is important that obstetric care providers

are aware of the maternal and neonatal risks associated with such deliveries and of the options available to effect a safe and expedient delivery. Proponents of vacuum delivery argue that it should be chosen first for assisted vaginal delivery, because it is less likely to injure the mother.

The aim of this study was to evaluate associations of nearest maternal outcomes with usage of different vacuum extraction (VE) techniques (optimized versus traditional VE technique).

Materials and methods. Case-control design has been applied in hospital based study. 97 operative deliveries by VE have been performed throughout the study period in two Maternities. 40 patients from the Hospital 1 compiled the controls (the traditional VE technique) whereas 53 patients from the Hospital 2 - cases(the optimized VE technique). Complications resulting from the use of two VE techniques were compared. Descriptive statistics included proportions, means and SDs has been applied. In the univariate analyses chi-square tests were used for nominal and t-tests for interval scaled variables. Odds ratios (OR) were calculated when cases and controls were compared. The results are presented as univariate Ors with 95% confidence interval (95% CI). Findings of p-value les than 0,05 were considered statistically significant..

Results. No significant differences were found between two groups in maternal characteristics, progress of labour and delivery, and indications for intervention. Duration of operative delivery was similar in both groups. Using of an improved vacuum-extraction (VE) technique for operative vaginal delivery was associated with increased rate of successful VE application because of correct position of the cup (OR: 4,08; 95% CI: [1,18-14,19]. Compared to the control group, the optimized VE technique was associated with a lower rate of episiotomies (OR: 0,098; 95% CI: [0,012-0,794]), manual revision of the uterus and/or manual separation of the placenta (OR: 0,067; 95% CI: [0,024-0,188]). There was a lower frequency of perineal tear (OR: 0,19; 95% CI: [0,05-0,70]) and blood loss ($p<0,001$) in the cases.

Conclusion. The optimized VE technique is associated with significantly lower rate of immediate maternal complications. However, a larger study is needed to confirm these preliminary results.

Key words: delivery, vacuum-extraction of the fetus, maternal complications.

UCC: 616.12-008.331.1+616.72-002-616.12-008.33

Kutynska I.

FEATURES OF DIAGNOSIS AND TREATMENT OF OSTEOARTHRITIS IN PATIENT WITH HYPERTENSION

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Introduction. According to the data of modern clinical research, frequency of arterial hypertension and osteoarthrosis combined pathology is the highest and constitutes 50-80%, and therefore, the risk factors of development of cardiovascular pathologies can be more frequently observed in patients with osteoarthrosis.

Materials and methods. This research is based on examination data of 135 women with arterial hypertension of II degree and accompanying osteoarthrosis. Depending on intensity of pain syndrome and duration period of pathological alterations, all the patients were divided into 4 groups and control group consisted of female patients with arterial hypertension of II degree without accompanying joint pathology.

For examination purpose there were realized the following strategies: questioning of patients, clinical examination, and 24-hours monitoring of arterial pressure (apparatus AVDM-04 "Meditech", Hungary). For evaluation purpose of metabolic processes in the cartilaginous tissue and discovery of lesion of the bone system there was performed detailed questioning of patients and determined the level of hydroxyproline in urine. In the process of research we have determined that correction of arterial pressure in patients with osteoarthrosis should be done using medications that do not influence salt metabolism (ACE inhibitors, calcium antagonist), moreover, the target levels of arterial pressure in these patients were achieved by increase of basic therapy hypotensives doses and additional prescription

of amlodipine.

Results. It should be noted that in patients of I and III groups that did not receive chondroprotective therapy was observed increase of hydroxyproline level, and this increase was directly proportional to the level of expressiveness of the joint syndrome (in patients of I group it increased by 11%, in III group – 12,3%; $p<0,05$). The patients of II and IV groups had an evident decrease of hydroxyproline in urine by 21,6% and 9,1% respectively ($p < 0,05$).

Conclusions. To eliminate the joint syndrome it is worth to use combination of non-steroid anti-inflammation medications with chondroxide, and, in separate cases, with calcemin. With aim of early detection of bone metabolism disorder in patients, there has to be done computational densitometry for determination of mineral density of bone tissue, and defined the level of ionized calcium in blood serum and hydroxyproline content in urine.

Key words: osteoarthritis, hypertension, hydroxyproline.

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State of nonspecific adaptive reactions of patients with caries and it's complications that

Summary. Studied indixes of unspecific adaptative reactions of the 109 patients with deep caries, 18 – acute traumatic pulpitis and hyperemia of the pulp, with an indication for biological method of treatment and 25 – acute and chronic forms of pulpitis with indications to extirpation treatment that required anesthesia for dental procedures. The patients with indications to conservative treatment were identified mostly harmonic physiological reactions of training and activation. The expressed disturbances of adaptive unspecific protection mechanisms of the organism with the development of defective dysharmonic reactions and chronic stress of the 36% of

patients were established whom performed extirpation method of pulpitis's treatment testified necessity of their correction during the treatment.

Key words: caries of the teeth, pulpitis, unspecific adaptative reactions of the organism.

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ANALYSIS OF THE SURGICAL TREATMENT RESULTS OF THE COLON RIGHT-SIDED CANCER DEPENDING ON THE OPERATION METHOD

Introduction. The last decade is characterized by a steady growth of incidence of the colon right-sided cancer. It is stably high in Vinnytsia region and makes up 19,5 per 100 thousand people that exceeds the average state index. The main treatment method of the colon cancer is surgical (hemicolectomy or bowel resection). In case of the right-sided hemicolectomy the natural valve (Ileocecal valve) is removed and the contents from the large intestine pass to the small intestine, deteriorate its function, lead to development of enteritis, dysbacteriosis and influence both the quality of the patients' life and long-term treatment results.

The research *objective* was to evaluate the morphofunctional indices of the large intestine after the right-sided hemicolectomy with different types of ileotransversostomy application.

Materials and methods. The research included 63 patients with colon right-sided cancer that were treated in Vinnytsia regional clinical dispensary during 2005 - 2010 and were done the right-sided hemicolectomy. According to the ileotransversostomy application the patients were divided into three groups: patients for whom the side-to-side anastomosis was performed (S/S) - 21 patients;

patients who underwent end-to-side anastomosis (end of the small intestine – the side of the transverse colon) (E/S) - 20 patients; patients for whom antireflux anastomosis (A/R) was applied according to the author's method - 22 patients.

All the patients were thoroughly examined after 3, 6 and 12 months including: questionnaire poll (to evaluate the life quality); X-ray examination and endoscopic examination (to estimate the morphofunctional state of the bowels); laboratory method (to detect inflammation signs and endogenous intoxication).

Results. Estimation of the treatment results of the patients after 3, 6 and 12 months after the operation showed difference in their general state and morphofunctional state of the bowels depending on the method of the surgical treatment. Thus, 3 months after the operation already the frequency of emptying per 24 hours was significantly lower in the patients with antireflux anastomosis than in the patients with the E/S and especially with the S/S anastomosis, it made up 3,2±0,16 against 4,1±0,13 and 5,4=1=0,15 times in corresponding groups. This difference between the groups increased after 6 months and was especially notable 12 months later. On colonoscopic examination of the anastomosis during the 3rd month after the operation the anastomositis signs were revealed in 23,8% of the patients from the S/S group, in 57,1% of the patients from the E/S group and only in 19% of the patients from the A/R group. Perhaps a smaller quantity of anastomosites in the S/S group was explained by a larger anastomosis lumen and in the A/R group – by its higher physiology. Existence of the reflux of the large intestine contents into the small intestine was checked by colonoscopic and irigoscopic method. The reflux was revealed in all 100% of the patients with the S/S anastomosis and patients from the E/S group within a year. While in the patients with the A/R anastomosis the reflux was observed only in one patient (4,5%) within 12 months. The comparative analysis of the laboratory indices in the patients from different groups showed a slow renewal of the level of hemoglobin and total protein in the patients from the S/S group. A similar situation could be observed as to the total protein level. If the primary protein level and the level 3 months later did not differ significantly then after 6 and 12 months the increase of its level in the A/R group differed significantly from the indices of the E/S group and especially of the S/S

group. So application of the antireflux ileotransversostomy is the most physiological operation. Impeding the reverse motion of the bowels contents the A/R anastomosis prevents development of enteritis and anastomositis, consequent atrophy of the bowels mucosa, normalizes its function within the period of 6 to 12 months following the operation. In the patients with the A/R anastomosis the level of hemoglobin, total protein and fibrinogen recovers more quickly, there are no symptoms of inflammation and endogenous intoxication.

Conclusions. The colon cancer is one of the most common oncological diseases of the population in Vinnytsia region and it often leads to development of the bowel obstruction and anemia. The majority of patients with colon cancer (about 70%) are aged from 60 to 79 years. The main method for treatment of tumors located in the cecum, ascending gut and in the hepatic part of the colon is right-sided hemicolectomy with formation of ileotransversostomy "side-to-side" or "end-to-side". The generally accepted methods of ileotransversostomy application lead to deterioration of the bowels function with development of its chronic inflammation, motility increase, diarrhea and chronic intoxication. Application of the antireflux ileotransversostomy can be a prospective method for improvement of the bowels morphofunctional indices that will allow to reduce the number of anastomosites, frequency of inflammation and mucosa atrophy, will normalize the nature of emptying and their frequency, provide quicker recovery of the level of hemoglobin and other biochemical blood indices.

Key words: cancer of colon, right-sided hemicolectome, antyreflux anastomosis.

UCC: 616.127-005.8+616.233-002+616.092+616.072.7-08

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DYNAMICS OF THE LEVEL OF LYSOZYME OF BRONCHIAL AND ALVEOLAR SECRET, EXTERNAL RESPIRATION FUNCTION AND

MYOCARDIUM FUNCTIONAL RESERVES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) ASSOCIATED WITH ISCHEMIC HEART DISEASE (IHD).

Summary. The indices of external respiration function, level of lysozyme of bronchial and alveolar secret (LBAS), the left ventricular ejection fraction were studied in a group of 60 patients with COPD associated with IHD. Patients were divided into 2 subgroups depending on the administered therapy: subgroup 1 – 30 patients that received standard therapy; subgroup 2 – 30 patients that in addition to standard therapy received tincture of Echinacea and Chlorophyllipt. The obtained results confirmed reduction of the level of lysozyme of bronchial and alveolar secret (LBAS) in patients of both subgroups that improved under the influence of the administered therapy, though more significant dynamics of mentioned index was observed in patients of subgroup 2 concomitantly with improvement of indices of external respiration function and functional reserves of the myocardium.Addition of Echinacea and Chlorophyllipt preparations to complex therapy will enable prevention of complications development and will improve disease prognosis in such category of patients.

Key words: COPD, IHD, level of lysozyme of bronchial and alveolar secret, Echinacea, Chlorophyllipt.

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JUSTIFICATION LOCAL DETERGENT TREATMENT OF FOOT MYCOSES IN MINERS

Introduction. In relation to the foot mycoses in miners factors are able to cause damage to the skin cells are not only such factors as the direct action of pathogenic fungi, mechanical impact, high temperature in the workplace, but also indirectly when damage occurs as a result of hypoxia and other violations of sustainability internal environment. Action on healthy skin cells interdigital folds foot above the physical and biological factors, the intensity of which exceeds normal excitatory influences to which they are adapted cells, leads to violations of protective and compensatory homeostatic mechanisms of cells, ie, pathogenic mechanisms triggered factors, as opposed to natural excitatory incentives for these cells are excessive and unhealthy conditions which are damaging production, accompanied by their deterhents membranes. These factors can be used deterhent and "in favor" of the patient if used tools that are governed by the same mechanism, but – with respect to cell membranes of pathogens of foot mycoses (on one side), while at the same time they are able to help restore the functioning of the body's cell membranes rights (the other side). Tyrotrytsyn belongs to this group of antibiotics, and which can be used either alone or together with other medicinal substances (in the form of powder, gel) are not absorbed by the skin and does not agitating or toxic effects is safe for use even in children. *The purpose* of the study: to improve the treatment of miners suffering from athlete's foot, through the use of the drug, which also has a deterhent action on cells and disease pathogens reparative effect on skin cells (Tyrozur).

Materials and methods. Under the supervision 101 miners, men aged 20 to 55 years suffering from athlete's foot. During their standard treatment in the past 65 (68.4 %) of them observed the appearance of scars around the diverse nature of the damaged main mycoses of the skin and/or – in remote areas. Major groups (59) topically to areas of damaged skin mycosis administered powder or gel Tyrozur (depending on clinical symptoms) against the background of their standard therapy. Patients comparative group (42) received only standard therapy, in accordance with the recommended treatment regimens.

Results. According to our data term regression of clinical manifestations of the pathological process in the skin differ for different types of reactions to the treatment of patients and were recorded: 1) in the comparison group, in the absence of adverse

reactions to standard treatment (9 out of 42 – 21.4%) – for 21-27 days, the appearance of the rash in the form of so-called "mikides " or "piodermites" (18 – 42.9%) – for 26-32 days, when the signs "eczematization" or "mikotyc eczema" (15 – 35.7%) – for 31-38 days; 2) in the study group that received treatment with Tyrozur, terms of pathological regression of skin manifestations in patients with absence of adverse reactions (30 of 59 – 50.9%) were recorded for 17-22 days, with the presence of "mikides" or " "piodermites" (18 – 30.5%) – for 19-24 days, with the presence of symptoms "eczematization" or of "mikotyc eczema" (11 – 18.6%) – for 26-32 days. A good clinical outcomes of treatment with Tyrozur may be due to the fact that tyrotsydyn destroyed by osmotic barrier membranes of bacterial cells by a mechanism similar to that of cell deterhents (separation of nitrogen and phosphates). And tyrotsydyn effect on the cell membrane of bacteria is straight , which provides both bacteriostatic (growth inhibition or division many infectious skin lesions) and baktertsyd effects. Tyrotsydyn also provides prevention of cross-resistance bacteria, which they observed in the application of systemic antibiotics. With gramicidin in the cell membranes of bacteria formed cationic channels, which leads to loss of potassium and subsequent cytolysis. In addition, gramicidin gives phosphorylation respiratory chain of bacteria. Use not only powder Tyrozur but gel promotes granulation processes, especially for complications pyococcus skin infections, cleaning the damaged surface contributes to the process of epithelialization.

Conclusions. Use Tyrozur for local effects on the fire damage to the skin with athlete's foot the miners significantly reduces the development of both allergic and pyococcus complications.

Key words: athlete's foot, a local detergent treatment, Tyrozur.

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SYSTOLIC-DIASTOLIC FUNCTION AND RIGIDITY OF THE LEFT VENTRICLE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND COMORBID ARTERIAL HYPERTENSION

Introduction. Studying of the myocardial infarction (MI) and arterial hypertension (AH) is an urgent issue of the current cardiology. It is known that every year about 50 thous. new MI occur in Ukraine and in 2009 about 12 mln people (31% of the adult population) suffered from AH. A new "Conception of the State Program of Arterial Hypertension Prevention and Treatment in Ukraine for 2011-2020" was adopted [Expert Consensus of the American College of Cardiology Foundation (ACCF) and American Heart Association (AHA), 2011]. The urgency of this problem is proved by the fact that in the last Consensus – 11 experts of the American College of Cardiology Foundation and American Heart Association concerning AH in elderly people [Zhelnov, 1993] – it is stated that the rigidity of the left ventricle (LV) and vessels is an important component of the current cardiology that should be studied in the near future in the fundamental and clinical researches. Thus, *the objective of our research* is to determine the functional status of the LV systolic-diastolic function and rigidity in patients with MI and comorbid AH.

Materials and methods. 23 patients with MI and comorbid AH were examined, among them 12 patients suffered from acute myocardial infarction (AMI) with the ST-segment elevation and 11 patients – without elevation. Recurrent MI was observed in 7 patients, chronic cardiac aneurysm – in 3 patients. The systolic arterial pressure (AP) made up 157,0±3,24 mm Hg, diastolic – 96,5±1,62 mm Hg, the average age – 56,7±1,51 years. EKG, M- and B- mode echocardiograms, Doppler echocardiography were performed in the examined patients; the blood troponin content, blood lipids were defined and other general clinical tests were conducted. Different instrumental examinations are used to evaluate LV diastolic filling. We studied the indices of the LV active relaxation and rigidity of the transmitral flow. The phase of the *active relaxation* was evaluated according to such indices: 1) early LV diastolic filling velocity (V_E, m/s); 2) isovolumic relaxation time (IVRT, ms). The *LV rigidity indices* included the values characterizing late diastolic filling: 1) late

diastolic filling velocity (V_A); 2) deceleration time of early diastolic filling (DT). For general characteristics of the LV transmitral flow we determined the ratio of the early diastolic filling velocity (V_E) to the late diastolic filling velocity (V_A), that is V_E/V_A.

Results. The conducted tests allowed us to determine the indices of the active relaxation (V_E and IVRT) and rigidity (V_A, DT) of the LV. The examined patients had disorders of relaxation (IVRT increase) and deceleration time of early LV diastolic filling (DT decrease) that proved increase of its rigidity. The late diastolic filling velocity (V_A) can both increase and decrease depending on three types of the LV diastolic dysfunction. In our patients with MI and comorbid AH the LV diastolic dysfunction was accompanied by the following changes: relaxation deceleration was observed in 52,2%, pseudonormal dysfunction – in 13,0% and restrictive – in 17,4% of the patients. At the same time the diastolic dysfunction was unchanged in 17,4% of the patients. In the patients with AMI and comorbid AH the systolic dysfunction accompanied by decrease of the ejection fraction (EF) of less than 50% was determined by us in 65,2% of the patients. The LV EF was considerably lowered in the examined patients and made up 46,3±1,47% on the average. Reduction of the LV contractility was accompanied by CH development according to the classification of NYHA FC III in 13 (56,5%) of the patients, FC II – in 10 (43,5%) of the patients. It should be emphasized that combined LV systolic-diastolic dysfunction was detected in 56,5% of the patients.

Conclusions. The following types of the left ventricle diastolic dysfunction were revealed in the examined patients: decelerated relaxation – in 52,2%, pseudonormal – in 13,0%, restrictive – in 17,4% of the patients. The diastolic function did not develop in 17,4% of the patients. According to the results of Doppler echocardiography and echocardiograms the patients with MI with/without ST-segment elevation and comorbid AH had the left ventricle rigidity disorders and in 55,2% of the patients the systolic dysfunction was revealed. On this joint pathology the combined systolic-diastolic dysfunction was observed in 56,5% of the patients. In our opinion there is every reason to continue researches in this direction that are both of scientific and practical importance.

Key words: myocardial infarction, hypertension and systolic-diastolic dysfunction of the left ventricle.

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COMPARATIVE CHARACTERISTICS OF HORMONAL STATE IN WOMEN OF EARLY REPRODUCTIVE AGE WITH EDEMATOUS FORM OF PREMENSTRUAL SYNDROME (PMS)

Introduction. Premenstrual syndrome is a complex of symptoms which arises 2-10 day before menstruation, which is characterized by somatic, psychosomatic and metabolic-endocrine disorders. *The purpose* of the research. The purpose of the research is the analysis of the hormonal indexes dynamics on the background of the edematous form of premenstrual syndrome treatment in women of early reproductive age.

Materials and methods. According to the set goal there was carried out the clinical-laboratory examination of 130 women of early reproductive age, from 18 till 26 years old on the basis of Viktor Polishchuk Rivne Regional Clinical Diagnostic and Therapeutic Center and Gynecology Department of M.I. Pirogov Regional Hospital (the city of Vinnytsya). The patients with edematous form of PMS were divided accidentally into two similar groups. In the first group (65 women) within three menstrual cycles (MC) the traditional therapy was carried out. In the second group (65 women) the therapy with administration of combined oral contraceptive Midiana (GEDEON RICHTER), which contains 30 mcg of Ethynilestradiole and 3 mg of Drospirenone, maximally approximated to the endogenic progesterone was carried out within three menstrual cycles (MC).

Results. In the prevailing part of women with edematous form of PMS the hormonal indexes results were not accompanied by the significant deviations beyond the norm limits. During the examination of the Prolactine (PRL) indexes there was established that in 27 (41,5%) of women of the first group and in 29 (44,6%) of women of the second group the indexes were increased from 531 mMO/l up to 708 mMO/l in the first group and from 538 mMO/l up to 806 mMO/l in the second one, at maximal norm indexes of 690 mMO/l.

The progesterone (Pg) indexes in the examined persons of the first group in six women proved to be decreased (from 2,13 up to 3,01 nmol/l) regarding the lowest norm limit (3,02 nmol/l) that was equal to 9,23% of the number of examined persons in the first group. In the second group also were six women with decreased Progesterone indexes which were within 1,24 nmol/l to 2,93 nmol/l and it was equal to 9,23% from the number of persons in the second group. The reliable differences of the Progesterone results in both groups were absent at the beginning of the examination. In 11 women of the first group (16,9%) and in 15 women (23,8%) of the second group the Cortisol indexes were increased, from 531,0 nmol/l till 708,0 nmol/l in the first group and from 538,0 nmol/l till 806,0 nmol/l in the second group at the upper norm limits of 530,0 nmol/l. During the analysis of reproductive system hormonal changes in the first group of women we have detected that during the treatment without hormonal drugs administration the insignificant changes took place. The Prolactine level has decreased from 408,65±98,92 mMO/l till 339,82±51,52 mMO/l and this was in correspondence with insignificant statistical changes ($p<0,1$). The progesterone indexes have increased from 12,19±6,2 nmol/l before the treatment till 25,66±3,99 nmol/l after the treatment, being a subject of insignificant statistically significant changes ($p<0,1$). The Cortisol concentration in the blood increased after the treatment from 622,14±105,33 nmol/l to 399,72±65,17 nmol/l and this corresponded to statistically insignificant changes ($p<0,1$). Thus, having examined the results of the examined hormones indexes one can make the conclusion that after the carried out therapy in women with edematous form of PMS with administration of tranquilizers, spasmolysants, diuretics and vitamins within three subsequent menstrual cycles the statistically insignificant changes of

Progesterone index in the direction of increase and Prolactine and Cortisol ones in the direction of decrease took place, that shows the insignificant influence of the carried out treatment and condition of ovaries and adrenal cortex functioning according to the mechanism of central regulation links stimulation. Having analyzed the hormonal indexes dynamics in women of the second group after the Midiana administration within three subsequent menstrual cycles according to the schema 24+4, we have obtained slightly differentiating results. The Prolactine index in women of the second group after the treatment was accompanied by statistically significant changes ($p<0,05$) in the direction of decrease: from 517,56±96,06 mMO/l till 297,43±53,71 mMO/l. On the background of treatment in women of the second group the indexes of progesterone have statistically significantly increased ($p<0,05$), from 11,23±6,0 nmol/l till 33,41±8,12 nmol/l that confirms the effectiveness of Drospirenone administration in women with the above pathology. The Cortisol level, having decreased from 614,38±105,32 nmol/l till 381,78± 50,43 nmol/l has statistically significantly changed ($p<0,05$) after the carried out treatment in the second group of examined persons. Taking into consideration the statistically significant increase of Progesterone level and decrease of Prolactine and Cortisol indexes on the background of treatment with the drugs Midiana one can assert the effectiveness of the above drugs in hormonal disorders regulation in women with edematous form of PMS.

Conclusions. The women of early reproductive age with edematous form of PMS have the tendency to the blood hormonal indexes imbalance. The Progesterone indexes change in the direction of decrease and the Prolactine and Cortisol indexes change into the direction of increase. The Midiana is an effective hormonal remedy for edematous form of PMS treatment. The statistically significant changes of Progesterone, Prolactine and Cortisol indexes in the aggregate with PMS symptoms disappearance in the result of treatment with the Midiana confirm the expediency of the above remedy use in women of early reproductive age with edematous form of premenstrual syndrome. On the basis of the obtained results of hormonal homeostasis changes and improvement of clinical picture of edematous form of PMS the tissues hydratation condition examination by means of bioimpendance analysis is expedient in this group of women.

Key words: premenstrual syndrome, Midiana, tissues hydratation.

UCC: 616.516.5

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METHOD OF TREATMENT FOR PATIENT WITH NEURODERMATITIS USING DRUGS WITH METABOLIC ACTIONS, PHYSIOTHERAPEUTIC METHODS AND HEALING FACTORS PODILLYA

Introduction. The present article represents data concerning pathogenetic mechanisms of inflammation process development in patients with neurodermatitis. The problem of peroxidation of lipid and protein molecules has been studied as well as the problem of toxic violations, while occur by this. *The aim* of this work is to study the metabolic and toxic violation, peroxidation processes, system of antioxidant protection and immune - allergic indicators in patients with neurodermatitis and the development of a combined treatment method that will improve treatment efficiency, reduce its term and extend the remission.

Materials and methods. We examined and treated 115 patients of atopic dermatitis. 58 patients (50,4%) had been diagnosed with a limited atopic dermatitis and 57 patients (49,6%) - the diagnosis of diffuse neirodermit. All patients were divided into 2 representative groups: experimental and comparative. Experimental group included 58 patients (male 32, female 26, respectively 55,2% and 44.8%). The average age of the patients was 41,76 minus 1.9 years and ranged from 21 to 76 years. Comparative group consisted of 57 patients with atopic dermatitis (30 men (52.6 per cent) and 27 women (47,4%)). The average age was 41,09 minus 1.9 years and ranged from 21 to 76 years. The control group consisted of 34 practically healthy person.

Results. The research results of toxic violation in the examined patients with neurodermatitis showed significant intoxication changes accompanied by an increasing content of homocysteine and EDN of blood serum. The growth of toxic metabolites content indicates a reduction of adaptative and coping capacities of a patient body and creates conditions for further strengthening of metabolic violation. Study of levels for lipid hydroperoxides, malonic dyaldehid, superoxide dismutase, glutathione peroxidase, catalase, GSH and tocopherol established a considerable increase of in lipid peroxidation products level in patients with neurodermatitis, which is accompanied by a substantial rate reduction of enzyme and nonenzyme links of antioxidant protection in comparison with a control group. The obtained results indicate about a reduction of compensatory capacity of antioxidant system and its exhaustion. Research of information - index figures IgE and EDN and IgE showed a slight increase of IgE level in the examined patients and a significant increase of EDN content, indicating the development in patients with neurodermatitis immuno - allergic processes on the background of less evident IgE - dependent mechanisms of the immune response. The represented results of clinical and laboratory studies became the basis for the development of complex pathogenetically justified treatment method with the combination of health aids and drug-free aids: Tivortin aspartate, folic acid, Decamevitum of sodium chloride mineral water "Bronnychanka" and local treatment with topical corticosteroid cream sterokort and laser therapy.

Conclusion. In patients with neurodermatitis we have found the presence of toxic violation, the markers of which are indicators of homocysteine, blood serum EDN and indicators of prooxidant - antioxidant system. The revealed changes of the studied indicators show the important role of toxic and metabolic violation in the pathogenesis of dermatitis. The found toxic - metabolic violation in patients with neurodermatitis are accompanied by immuno-allergic processes. The obtained results of the conducted researches indicate a high efficiency and safety of the proposed combined treatment mehod of patients with neurodermatitis using the following drugs: Tivortin aspartate, folic acid tablets, Decamevitum of sodium chloride mineral water "Bronnychanka", laser therapy, topical corticosteroid cream sterokort and moistening agent "Cu-Zn + - Cream". In our opinion, promising is further study of effectiveness of long-term combined treatment of patients with neurodermatitis in regard to its impact

on the manifestation of endothelial dysfunction with further development of anti-relapse treatment methods.

Key words: neurodermatitis, endothelial dysfunction, lipid peroxidation, antioxidant system, toxic violation, immuno - allergic indicators, lipid hydroperoxides, malonic dyaldehid, superoxide dismutase, glutathione peroxidase, GSH, IgE, EDN, homocysteine, carbonyl group of proteins.

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EXPERIENCE OF THE TREATMENT OF PSYCHOSOMATIC DISORDERS OF PATIENTS WITH BRONCHIAL ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Introduction. With the aim of diagnosis and correction of emotional-psychological disorders of the patients with BA and COPD in the case of the help of dry extract of hypericum to establish the clinical, functional and psychological effectiveness of the chosen mode of therapy.

Materials and methods. The 30 patients with BA and COPD were examined with the complex clinical and instrumental examinations and psychological testing using the international standard questionnaires for assessment of levels of neuroticism, anxiety and depression. The dynamics of clinical symptoms, lung function, psychological status on the basic treatment (fluticasone propionate/salmeterol) in comination with the dry extract of hypericum 900 mg per day during 40 days was diagnosted. For the control 39 patients with BA and COPD, were representative for age, sex, severity of disease and received only the standard treatment, were examined.

Results. It is shown that the inclusion of dry extract of hypericum in the complex treatment of patients with BA and COPD potentiates the effects of baseline therapy

significantly due to fast dynamics of physical, functional, emotional and mental characteristics of the patients, increases the level of control of BA and COPD.

In patients with asthma decreased levels of state anxiety by 19,4%, personal anxiety – by 12,6%, the level of neurotism – by 26,5%, the level of depression of 16,1%, significantly better determined inverse dynamics of clinical symptoms of asthma – reduction the number of attacks by an average of 64,1%, the frequency of use of inhalers on demand – by 63,1%, the intensity of coughing – by 68,2%, shortness of breathing – by 25,7%, while the observed improvement in FVC – 21,2 % FEV1 – 25,2%, FEF25-75 – 33,8% in comparison with the basic drug, increases the level of disease control at 32,9%. In patients with COPD diagnosed decline in state anxiety by 23,7%, the level of personal anxiety – by 13,1%, the level of neuroticism – by 37,9%, the level of depression – by 26,1%, there is a significantly better regression of clinical symptoms of the disease – decreasing in the cough intensity – 58,3% and shortness of breathing – 30,8%, improves FVC – by 8,1%, FEV1 – by 9,3%, FEF25-75 – by 17,2%, as compared with the use of basic drugs, generally leads to higher levels of disease control in average 16,9%.

Conclusions. Preparation of a dry extract of hypericum is a high-quality natural (vegetable) psychoactive means, along with traditional antidepressant effect manifests antianxiety and asthenic activity in patients obstructive lung pathology of respiratory organs.

Key words: bronchial asthma, COPD, psycho-emotional disorders, treatment.

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MARKERS HYPOXIA, INFLAMMATORY ACTIVITY AND PHOSPHOLIPID RANGE OF BLOOD SERUM OF CHILDREN WITH NON-HOSPITAL PNEUMONIA DEPENDING ON THE PRESENCE AND DEGREE OF HYPOXEMIA

Summary. The article presents the comparative results of the character of changes of inflammation markers (interleukins, nitric oxide metabolites) and hypoxia (indicators of purine exchange, lactate, pyruvate) in children with non-hospital pneumonia, depending on the presence and degree of hypoxemia. It was established that level of pro-inflammatory interleukins and metabolites of purine exchange in the blood act as sensitive and objective criteria of the severity of pneumonia and degree of the respiratory failure. At the same time their levels increase during the preclinical stage of toxicosis and in the limits of referential measuresof oxygen provision, which indicates the possibility of these indicators to serve as predictors of hypoxia and severity of pneumonia.
Key words: non-hospital pneumonia, mortality risk, proinflammatory interleukins, markers of purine metabolism.

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VALUE OF CYSTATIN C, INTERLEIKIN-18 AND LIPOCALIN AS AN EARLY MARKERS OF RENAL DAMAGE

Summary. The article presents getting results of research contents of cysthatine C in serum, interleukine-18 (IL-18) and lipokalin, associated with gelatinous neutrophils (NGAL), in the urine of premature infants with hypoxic nephropathy, depending on their body weight. We found significant increase of cystathine C (2,6 ±0,21 ng/ml) in the group of infants with birth weight < 1500 g and the group of infants with birth weight > 1500 g (1,9±0,12 ng/ml), comparing with a comparison group 0,7±0,10 ng/ml, p <0,01. The content of lipokalin (NGAL) in the urine of infants with hypoxic nephropathy has exceeded results significantly in 2,5-3 times than the comparison group results (89,9±12,42 mkg/mg of creatinine and 73,4±13,43 mkg/mg of

creatinine vs 27,7±6,54 mkg/mg of creatinine), p<0,01. The indicators of interleukine -18 (IL-18) in the urine of infants with hypoxic nephropathy on 3-5 day of life were 28,5±1,64 pg/mg of creatinine and 22,6±1,56 pg/mg of creatinine, significantly exceed getting results in the comparison group (16,5±0,83 pg/mg of creatinine), p < 0,01. Our findings show us the importance of cysthatine C, IL-18 and lipokalin as early markers of kidney damage in premature infants , who exposed the influence of perinatal hypoxemia.

Key words: premature infants, hypoxic nephropathy, cysthatine C, interleukine-18, lipokalin.

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RESULTS OF ABDOMINOPLASTY IN VENTRAL HERNIAS TREATMENT

Introduction. Ventral hernias belong to widespread surgical pathology. Their appearance is associated both with risk of severe and dangerous complications, and with the general disorder due to impaired function of the abdominal wall, and the presence of a cosmetic defect, reduced quality of life. Alohernioplasty combined with abdominoplasty, besides correction of the hernia defect can actually get rid of excessive subcutaneous fat and skin, which is one of the factors contributing to the emergence and progression of ventral hernias. Abdominoplasty also provides better cosmetic result, improve appearance of the abdominal wall and the body.

The *aim* of the study is to substantiate wider application of abdominoplasty in surgical treatment of patients with overweight and ventral hernias to impruve results of their treatment.

Materials and methods. In the Department of Surgery of Medical Faculty number two 51 patients with ventral hernias were operated on during the past two and a half

years, besides alohernioplasty they were performed abdominoplasty. The age of patients ranged from 36 to 61 years, all of them were women. According to SWR-classification hernia defect size within W1 was in 7 (13.73%), within W2 it was in 15 (29.41%), within W3 it was in 25 (49.02%), within W4 it was in 4 (7 , 84%). 15 (29.41%) patients had recurrent hernias, in 6 (11.76%) of them it was a repeated relapse. Irreducible hernias were found in 20 (39.22%) patients. Obesity of II-III degree was observed in 39 (76.47%) patients, of IV degree it was in 9 (17.64%). Also, a significant part of patients had hypertension, coronary heart disease, diabetes and other related diseases. Among 51 patients onlay aloplasty was completed in 37 (72.55%), this group include patients with hernia defect size within W1, W2, and 16 patients with W3. The remaining 14 (27.45%) patients were performed sublay aloplasty.

Results. The average duration of treatment in a hospital for patients with hernias W1, W2 was 8.7 days, in patients with hernias W3 – 12.5 days. There were following complications: seromas were in 7 (13.73%) patients, infiltrates of postoperative scar in 4 (7.84%). There were no deaths. To prevent the development of pulmonary complications early activation of patients was used, but 2 (3.92%) patients developed postoperative pneumonia, which prolonged duration of their treatment in hospital. In the remote postoperative period from 3 months up to 1.5 years 22 patients were observed. No relapses were found. Among these patients 14 had a significant degree of obesity befor surgery with severe cutaneous fat "apron", 5 of them in the remote postoperative period showed a trend to further weight gain.

Conclusion. Alohernioplasty combined with abdominoplasty in ventral hernias allows to minimize the number of hernia recurrence, does not lead to increase the frequency of complications, improves cosmetic results, improves the appearance of the abdominal wall and the body.

Key words: abdominoplasty, alohernioplasty, ventral hernias

METHODS

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PECULIARITIES OF MAKING UP NON-TYPICAL SITUATIONAL TASKS FOR COURSE "CLINICAL PHARMACOLOGY"

Summary. The quality of educating a medical worker is largely specified with intensity, regularity, diligence of training, when solving non-standard, non-typical tasks of the third level. The main methodical requirement of training tasks is the differential approach to their preparation and application, taking into consideration the aims of professional training. Situational tasks in Clinical Pharmacology, totally five of them, are made up for each of the topics on various sections of diagnosing diseases, their syndromic approach, clinical pharmacology of drugs of different pharmacological groups. Solving situational tasks enables a student to apply the most rational drug therapy for a particular patient, referring to material of evidence-based medicine; to choose the most effective and safest remedies, adequate dosage form and mode of taking; to interpret and take into account the peculiarities of clinical pharmacokinetics, pharmacodynamics, side effects and interactions of major medication groups in clinical practice, regarding an organism's individual characteristics, course and form of disease, availability of concomitant pathology.

Key words: situational problems, clinical pharmacology, methodology of solving problems.

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CHARACTERISTICS OF INVASIVE AND NONINVASIVE METHODS FOR DIAGNOSIS OF HELICOBACTER PYLORI INFECTION

Introduction. Helicobacter pylori (HP) is a pathogenic agent of the active chronic gastritis, gastric and duodenal ulcers, development cofactor of cancer and stomach MALT lymphoma. A reliable test for HP determination is of critical importance. The necessity to validate commercial diagnostic tests for every region, population and age is emphasized in literature. *The research objective* was to estimate the accuracy of 5 diagnostic methods of helicobacter pylori infection: 3 invasive: rapid urease test, histological and bacteriological, and 2 noninvasive: stool-test and urea breath test.

Materials and methods. 74 out-patients with dyspepsia phenomena that underwent diagnostic endoscopy of upper gastrointestinal with gastric mucosa biopsy were examined prospectively. Noninvasive tests were performed before the fibrogastroduodenoscopy (FGDS). All commercial test-systems were used according to the producers' instructions. *Histology.* The samples were fixed in 10% of formaldehyde solution and stained with hematoxylin and eosin, also according to Giemsa. *Rapid urease test (RUT).* The commercial set Ure Hp-test (Erba Lachema, Czech Republic) was used. *Culture.* The biopsy samples were inoculated in Columbia Agar of 5% of sheep blood and selective supplement: vancomycin, nalidixic acid and amphotericin B. The bowls were incubated at 37 °C during 7 days in the microaerobic incubator (5-10% O_2 and 5-10% CO_2) with the use of gas-generating packages Genbox Microaer (Bio-Merieux, France). *The stool-test* was carried out by the immunochromatographic method determining Ag HP in the faeces using the test-system Cer Test Biotec SL. (Spain). *Urea breath test (UBT).* The ammoniac breath test "Helic-Test" (AMA-med, Russia) with the use of indicator pipes filled with selective chemisorbent was used.

Results. The age of 74 patients ranged from 19 up to 69 years (the average value was 52,5 years), among them there were 55,4% of women and 44,6 of men. Helicobacteriosis was totally present in 67,6%. In this research the patients were

considered to be infected with HP when 3 and more methods showed a positive result and uninfected when 3 and more methods showed a negative result. All the methods agreed in 73% of the patients, negative results agreed in 70,8%, positive - in 74%, $p<0,05$. We observed that the greatest conformity was among the invasive methods: 89,2% - between histology and rapid urease test, 85,1% - between cultivation and RUT and cultivation and histology. The highest specificity was received while using the microbiological (100%) and histological (100%) methods, then: RUT (91,7%), UBT (87,5%) and stool-test (79,2%). RUT manifested the highest sensitivity (96%), then: stool-test (93,75%), UBT (92%), histology (90%) and cultivation (86,0%).

Conclusions. In our research the prevalence of helicobacter pylori infection among the patients with a pathologic endoscopic view made up 74,6%. None of the HP tests can be used as a standard and for the maximum accuracy it is required to use a combination of tests for diagnosis of Helicobacteriosis. For the patients that undergo gastroscopy the best combination is the rapid urease test and histology and in cases when endoscopy is not performed the patients require a combination of the studied noninvasive tests. It is required to develop and use commercial serological tests that correspond to the HP antigenic structure of the studied population to the maximum.

Key words: Helicobacter pylori, diagnostics, cultivation, histology, urease tests, stool-test.

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PROBLEMS OF DOCTORS TRAINING IN THE SPHERE OF MEDICAL REHABILITATION

The main purpose of the state social policy is the conservation of the population health, the disease and disability prevention, because health has a paramount importance in the system of universal values.

Lately the rehabilitation role in the applied medicine becomes more essential. Until recently the rehabilitation as a process of the realization of set of measures directed at the restoration of a social and professional status of an invalid was used basically by the social services. But recently it has become more needed in the medical sector due to the growth of the chronic pathology. The creation of the effective system of medical rehabilitation is impossible without the special preparation of rehabilitologists. The rehabilitologist is not "a methodologist who performs the doctor's orders", but an independent specialist with the knowledge of theoretical propositions and methodological aspects of the medical rehabilitology. Only a doctor who knows deeply physiological, etiopathogenetic and sanogenetic mechanisms can and must develop and realize the comprehensive rehabilitation and preventive programmes.

For the purpose of the task performance for the future doctors training in the sphere of medical rehabilitation and in order to perform the p.9 of Health Ministry Board of Ukraine of 02.11.2012 №1 "About the provision of medical and social aid to the population of Ukraine" it was created the department of medical rehabilitation and medical & social examination by the decision of the Academic Council of the Vinnytsia National Pirogov Memorial Medical University of 25.04.2013.It gave an opportunity to concentrate in one department the doctors' training in the sphere of physical and medical rehabilitation. Before it the teaching of theses disciplines was held in 10 departments.

Taking into consideration the urgency of the problem of the future doctors training, the main scientific direction of the department activity is the development of the multilevel medical rehabilitation for the pathology of different organs and systems. It is carried out the development of the through training program which will enable to provide educational services of high quality for the preparation of skilled rehabilitologists. For the efficiency of the training, its clearness, its approach to the practical conditions, for the comprehensive students' understanding of the essence

and task of the rehabilitation, it was necessary to create the center where all components of the rehabilitation process could be concentrated: physical, physiotherapeutic, balneological, psychological and social ones. As a result of the two-year work the Center of medical rehabilitation and sports medicine was created (7 medlevels). Taking into account the state of the modern rehabilitation, as well as suggestions of the government and of the President of Ukraine about the intensification of intellectual reserves for the purpose of the implementation of the programme "Ukrainian breakthrough", the landmark programme of the medical rehabilitation(7 medlevels) has been proposed. Such programmes don't exist in Ukraine or in other countries in the world. The aim of seven rehabilitation levels is maximum possible recovery of person's health, prophylaxis of new pathological states, the drastic change of a patient's opinions about the problems of physical and psychosocial health, the formation of deliberate views of the notion "healthy life-style", "exercise therapy", "physical culture", "sports for oneself", "professional sports".

Conclusions. For the realization of the main idea it was developed the scientific conception. The group of scientists under the direction of the professor P.F.Kolesnik has created the landmark model of health recovery (7 medlevels) which stipulates 7 levels of the medical rehabilitation: somatic, systemic, organic, tissular, biochemical, biophysical, information-energetic ones. The important step of the realization of the main idea was the development of the choice principle of the treatment methodology for a concrete patient at a certain stage of the rehabilitation, in the concrete period of time. Following the laborious scientific work (including the experimental one) our scientists have come to the conclusion that only the method of the anatomical structure restoration to wide extent (from macrostructures to the cell shape changes and even intracellular structure changes) can be considered as a treatment. One of the important conclusions of this work stage is the understanding that functional diseases don't exist. A "functional disease" is a pathological state when the pathologic changes are not found but it doesn't mean that they don't exist. The basic conclusion of the second stage and at the same time the grounds for the third stage of the performance of the main idea is the understanding that the treatment method must

foresee the mode of the anatomical structure restoration (macro- or micro-). Another significant step of the work is the development of treatment conceptions, methodologies and principles at each rehabilitation level. For this purpose it was necessary to develop in theory and in practice the notion of the key moment for every level. At this stage the development of the interaction scheme of the rehabilitation levels isn't less important or less complicated. This scheme provides the correct choice of treatment methods according to the level tasks of the rehabilitation. Perhaps the fundamental step of the idea performance (7 medlevels) is the understanding that the success and development of our scientific conception depends on the right forming of the team which will consist of the staff able to carry out the scientific, educational and treatment activity at the same time (without giving preferences).

Key words: medical rehabilitation, sanogenetic mechanisms, disability, restoration.

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ANTIMICROBIAL PROPERTIES OF SURGICAL POLYPROPYLENE SUTURE MATERIAL MODIFIED BY ANTISEPTIC

Introduction. Postoperative septic complications are frequent consequences of shortcoming suture materials and tissue connections in conditions of high microbial contamination. Therefore, the development of new types suture materials with antimicrobial properties remains an urgent problem of surgery.

The aim of this research was to investigate the antimicrobial activity of the new surgical suture material modified by antiseptic of guanidine group.

Materials and methods. Antimicrobial activity of the new surgical suture material was evaluated in comparison with the known antiseptics effects in dry form, after exposure in saline and tissues, as well as after sterilization. Also was studied the

effects of other antiseptics and developed suture material on adhesive properties of microorganisms.

Results. Our studies have shown that antiseptic of guanidine group had high antimicrobial activity against aerobic both anaerobic microorganisms, and in this respect its significantly prevailed of chlorhexidine bigluconate and wasn't worse then decametoxine and aethonium. Also fogutsid significantly reduced the adhesive properties of microorganisms. New suture material maintained high antimicrobial activity up to 7th days being in tissues, after which its gradually decreased and on 30th days of observation was low. When autoclaving sterilization of suture material was fixed nonsignificant decrease of its antimicrobial activity, whereas after sterilization with ethylene oxide this capacity was not lost.

Conclusions. New suture material has high antimicrobial activity against aerobic and anaerobic microbial pathogens of chronic inflammatory diseases and is able to retain antimicrobial activity up to 7th days after implantation in tissues, which gradually decreases to 30th days of observation. Sterilization of the developed suture material with using ethylene oxide retains its high antimicrobial activity, unlike sterilization by boiling both autoclaving which lead to decrease this capacity. These data suggest the need for further study of the effectiveness of the developed material in experiment and clinic for the prevention of postoperative septic complications.

Key words: surgical sutures with antimicrobial properties, antiseptic fogutsid, antimicrobial activity.

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INTRODUCTION OF "CASE-STUDY" METHOD IN TEACHING OF SECTION OF PEDIATRIC THERAPUTIC DENTISTRY "PERIODONTAL DISEASES IN CHILDREN AND ADOLSCENTS"

Introduction. The method of "case-study" is an instrument that allows to apply theoretical knowledge for decision of the practical tasks. It promotes the development of students' independent thinkings, the ability to listen to and consider alternative views, express their arguments. Using this method, students have the opportunity to demonstrate and improve analytical skills, learn to work in teams, to find the most efficient decision of the problem.

Particular importance of these skills have important place in the learning of one of the most important section of pediatric theraputic dentistry: "Periodontal diseases in children and adolescents." The importance of this medical problem is that periodontal diseases arising in childhood cause of tooth loss in adults over 40 years, which explains their great medical and social significance. *The purpose* of this investigation was to approve and to introduce in the educational process of the chair department of pediatric dentistry the method "case-study" and to determine its efficiency by the example of teaching the section "Periodontal diseases in children and adolescents."

Educational aims of lesson: acquiring skills in using the theoretical material, to analyze practical problems, development the abilities to form questions, to develop an integrated system of clinical thinking and professional clinical skills.

The methods of leading of the practical lessons consists of three stages:

1. Preparatory . On this stage the teacher explains to students the essence and variants of practical introduction of this method. Students examine their own case, pick up additional information and literature for its decisions.

2. Main stage: the lesson begin from control knowledge of students, clarify the clinical situation to be resolved. After the division of students into small working groups the teacher supervises their work, helps avoiding direct consultations. Students provide diagnosis, evaluate and select the optimal resolution of clinical situations.

3. The final stage. Estimation of knowledge, acquired skills of students by teacher have conducted in five-scores system. To estimate the report, participate in their discussions, questions, decisions of intermediate and major problems. The lesson will be finished with subsume of results and marks for theoretical and practical skills of students.

The usage of case-method in educational process of the department of pediatric dentistry enables today to implement such educational methods as individual attention to each student teacher in an academic group in particular, to provide an opportunity for students to depict graphically the results, do not load the student large volume of theoretical material and concentrate it only on the major topics of practical lessons; create practical clinical skills, operational skills and professional ability to work with information.

Conclusions. Using of interactive educational methods such as case- study method allows activated students to independent learning of methodical and scientific literature, forms of self-education skills, allows to acquire the methods of analysis of facts. Case method is an instrument of communication in dental practice activities, help students to collectively decide specific clinical problems. Metod can objectively assess the knowledge, practical skills and professional skills students, develop clinical thinkings of each individual student based on his own intellectual potential. The method promotes professional growth and efficiency of teacher. So the educational usage of such technologies as case-study method overcomes the classic stereotype of traditional education, related with dryness, "without emotion" teaching of learning material. It improves the quality of clinical preparing the doctor dentist in the section "Periodontal diseases in children and adolescents," allows us to formulate his skills in complex approach and is recommended for implementation in practical lessons and seminars of the pediatric dentistry and another dental chair departments.

Key words: «case-study» method, interactive methods, pediatric theraputic dentistry, periodontal diseases.

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EXPERIENCE OF APPLICATION OF TEST CONTROL FOR STUDY OF MICROBIOLOGY, VIROLOGY AND IMMUNOLOGY

Introduction. The included of Ukraine in the European system of higher education accompany transformation processes. Higher school of our country has a goal to prepare competitive specialists. The pedagogical collectives of medical institutes of higher enter modern educational technologies of studies with the use of analytically-searching work and scientific information. An important task is introduction of new technologies of studies, presentation of them on a new high-quality level, embodiment of them in practice of collectives of departments. *Research purpose*. A ground of application of test control is for the estimation of quality of knowledge of future doctors.

Materials and methods. Study of microbiology in preparation of doctors it is necessary for a fight against infections. Knowledge from microbiology are base for clinical disciplines, as assist logical perception of clinical data, form clinical thought without which it is impossible to become a highly skilled specialist. For the improvement of quality of preparation of specialists there is a necessity of application of modern methods of studies, control, which provide the increase of creative activity of students, sent to forming and development of professional thought.

Results. According to an executable code from microbiology on the study of discipline 8 credits are taken, 240 hours. During the course of study 3 modules are foreseen: module №1 - 90 hours/3 credits, module №2 - 90 hours/3 credits, module №3- 60 hours/2 credits. On completion of course of study students fold final module control which is examination. The continuous checking of knowledge of students system is widely used. To that end test tasks geared-up on the topic of every practical employment (current control of initial level of knowledge). Writing test control is conducted at the beginning of employment, occupies 7-10 minutes and allows to define the initial level of preparation of every student. Final control is conducted for to the tests which include task different to the type. Test control provides simultaneous verification of knowledge of students of all group and forms for them motivation for preparation to every employment. Main advantage of tests is the fully

automated verification of knowledge of students, which provides maximally possible her Current verification is this studies, повязане with fixing, reiteration and analysis of educational material. With the purpose of exposure of end-point of studies it is necessary to apply final control on which it is possible to judge students about general achievements.

Conclusion. For the choice of method of control of knowledge it is necessary to take into account both advantages and lacks of different methods. The study of microbiology mortgages the important base of fundamental knowledge, to estimate which one method it is impossible. Therefore test control it one of modern and optimal methods. The prospects of further developments is a necessity to estimate knowledge and ability not only by means of tests, and in a complex with other methods.

Key words: Microbiology, virology, immunology, test control.

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USE OF INTERACTIVE LEARNING TECHNOLOGIES FOR TEACHING AT HIGHER MEDICAL EDUCATIONAL INSTITUTIONS

Reformation of the national educational system of Ukraine, modern tendencies of the world integration make the issue of a personality development a foreground task. Studying implies partnership, cooperation of a teacher and a student, activity and initiative of a student, his/her independence.

At present the following teaching models are distinguished: a passive model (monologue), active model (dialogue), interactive model (polylogue). Unlike active methods the interactive ones are directed at more broad cooperation, students study both with the teacher and with each other. Work in a small group is an integral part of

the majority of interactive methods. It allows all the pupils to take part in the work, practice cooperation skills, skills of interpersonal communication. This is often impossible in a big group. That is why *the objective* of our research was to organize the work in small groups of students at practical trainings in dental surgery using interactive learning technologies by the example of the "case method", "brainstorm" and the method of "competitive groups".

There is a certain regularity of learning described by the American researchers R. Carnicau and F. MacElroy: people remember 10% of what they read; 20% of what they hear; 30% of what they see; 50% of what they see and hear; 80% of what they say themselves; 90% of what they learn while doing sth.

A correctly organized scenario includes three obligatory stages: preparatory, main and final. The stages differ in organization and rules of their performance.

One of the interactive methods that has become popular in Great Britain, USA and other countries is the "case study". The principle of the method is to use certain cases, situations for common analysis, discussion and solution of the issue that has many alternative ways and methods of solution. Work over the case implies study of a specific situation from a certain scenario, involving independent work; "brainstorm" within a small group; public speaking with presentation and protection of the proposed decision; control check of the participants for knowing the facts of the studied case. The teacher controls the work of small groups, helps, avoiding direct consultations. During the training questions to the speaker, speeches and additions of the group members are allowed, the teacher watches the progress of the polylogue and by stage-by-stage discussion a common solution of the problem situation is chosen.

The "brainstorm" is an operative method of an issue solution based on stimulation of the creative activity when the participants of the discussion are proposed to suggest the largest number of solution variants, particularly the most fabulous, unusual and original. After completion of the idea suggestion session the group starts discussing. From the total number of the suggested ideas the most successful ones are chosen for use in practice.

One of the methods that embodies the possibility of the use of one's own theoretical knowledge, creative search and productive thinking is the method of "competitive groups". Mini-groups of students receive a number of tasks consisting of typical and non-typical issues with the topic special methodological support. The tasks are the same for everyone. Working with each other in mini-groups the students solve a number of tasks and by the methods of a dialogue, polylogue, mutual study and discussion form a collective decision. Then each competitive group announces its variants of the stated issue solution. Controversial issues are determined and a discussion is started between the competitive groups for determination and making of the most correct collective issue solution.

Conclusion. Interactive forms of learning provide a high motivation, strength of knowledge, creativity and fantasy; develop sociability, active life position, team spirit, value of individuality and freedom of self-expression. In comparison with the traditional forms of training the interactive learning implies change of cooperation of a teacher and pupil: the teacher's activity gives place to the pupil's activity and the teacher's task is not to take control over him/her but over the process of his/her personality development. Use of interactive learning technologies allows to increase the efficiency of the actual material learning; improve practical skills of clinical use of theoretical knowledge; student's professionalization; it contributes to development of the personal and professional traits of a future medical expert.Thus, interactive learning methods favourably influence the development of a personality and intellect, give better study results as compared to the traditional forms and methods, that is why they are prospective for preparation of doctors-dentists at higher educational institutions of Ukraine.

Key words: interactive technologies, "case-method", "brainstorm" method, method of "competitive groups".

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DYNAMICS OF ULTRASTRUCTURAL CHANGES IN THE SPLEEN OF THE RATS EARLY AFTER (1, 3, 7 DAYS) BURN OF THE SKIN OF 2-3 DEGREE AND 21-23 % AREA OF BODY SURFACE AND THEIR CORRECTION BY INFUSION SOLUTION HAES-LX-5%

Summary. The paper presents the results of studies ultrastructural changes in the spleen of the rats after burn of the skin of 2-3 degree and 21-23% area of body surface and their correction by infusion solution HAES-LX-5%, and the effect of the investigated drug without modeling of burn disease. Ultrastructural changes of the spleen early after burn injury are established. Infusion therapy by 0,9% solution of NaCl, at a dose 10 ml per kg of body weight after burn of the skin had no effect on the development of degenerative and destructive changes of stromal cells and spleen parenchyma which have progressed from the first to the seventh day of observation. The animals administered infusion solution HAES-LX-5% during seven days after burn injury of the skin, changes in the stroma and parenchyma structure were much less denominated than in the rats which administered 0,9% solution of NaCl in similar terms after burn injury of the skin.

Key words: burn disease, spleen, rats, ultrastructure, HAES-LX-5%.

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ALGORITHM OF DIAGNOSING THE DEATH GENESIS AND THE DURATION OF DYING ACCORDING TO THE CONTENT OF CATECHOLAMINES IN BODY FLUIDS IN CASE OF LETHAL INFLUENCE OF A TRAUMATIC FACTOR

Introduction. When numerous bodily injuries are discovered, the investigation is interested in establishing the cause of death and the duration of dying. There are few methods in the arsenal of a forensic expert that allow achieving this goal. For example, histological test is significant if the duration of dying is several hours, and such a test takes much time to be conducted. On the contrary, biochemical determining the amount of biological active substances in tissues and fluids of a corpse allows finding the duration of dying that had lasted for a very short period of time, and this test takes significantly less time to be carried out. Consequently, it is the most optimal and significant for establishing the death genesis. We have found out that depending on the duration of dying after the influence of a lethal factor the quantitative content of adrenaline and noradrenaline in cerebrospinal and pericardial fluids changes. However, the frequency with which diagnostically significant values are detected varies greatly. Thus, creation of an optimal algorithm for diagnosing the death genesis and the duration of dying may contribute greatly to the diagnostic process and allows a forensic expert to shorten the time of finding the answers to these questions that are extremely important for the criminal investigation.The objective of our research was to find an optimal algorithm for diagnosing the traumatic death genesis and the duration of dying based on the content of adrenaline and noradrenaline in cerebrospinal and pericardial fluids.

Materials and methods. During forensic medical examination samples of cerebrospinal and pericardial fluids were taken from the bodies of the persons whose death had been caused by a trauma. The received samples were combined into groups depending on the trauma duration: those who had died immediately after the trauma – 10 persons; those who had died within a short period of time – 10 persons; those who had died 1 to 2 hours after the trauma – 10 persons. The control group included the persons whose death had been caused by ischemic heart disease (sudden death) – 20 persons. In each sample of cerebrospinal and pericardial fluids the contents of adrenaline and noradrenaline were analyzed at the same time using an in-house method based on a combination of chromatographic detection of catecholamines and their fluorometric definition. The research results were statistically studied using the Student method.

Results. Diagnostic criteria of the quantitative content of adrenaline in cerebrospinal and pericardial fluids as well as the occurrence of the diagnostically significant values depending on the duration of dying in comparison with the standard (sudden death) are shown in Table 1.

Table 1.

No.	Cause of death	Duration of dying	n	Adrenaline in CSF X±2σ (ng/ml)	Occurrence of value %	Adrenaline in pericardial fluid X±2σ (ng/ml)	Occurrence of value %
1	Ischemic heart disease	Sudden death (control)	20	6.12 – 88.96		6.1 – 107.1	
2	Trauma	Immediately after trauma	10	Not studied		-50.2 – 148.9	50
3	Trauma	Within a short period of time after trauma	10	- 8.51 – 190.7	40/20	- 51.1 – 320.84	50/30
4	Trauma	1-2 hours after trauma	10	0.96 – 127.52	40	-13.1 – 154.1	20

Note. 40/20, 50/30, where _/20 and _/30 mean occurrence of the diagnostically significant values in the cases when the traumatic death genesis is doubtless.

Diagnostic criteria of the quantitative content of noradrenaline in cerebrospinal and pericardial fluids as well as the occurrence of the diagnostically significant values depending on the duration of dying in comparison with the standard (sudden death) are shown in Table 2.

Table 2.

No.	Cause of death	Duration of dying	n	Noradrenaline in CSF X±2σ (ng/ml)	Occurrence of value %	Noradrenaline in pericardial fluid X±2σ (ng/ml)	Occurrence of value %
1	Ischemic heart disease	Sudden death (control)	20	23.49 – 99.49		13.5 – 125.9	

2	Trauma	Immediately after trauma	10	Not studied		7.1 –153.6	10
3	Trauma	Within a short period of time after trauma	10	- 54.73 – 345.07	60/40	- 47.4 – 397.4	50/40
4	Trauma	1-2 hours after trauma	10	- 12.77 – 159.07	20	7.1 – 174.2	20

Conclusions. The research has shown that for the purpose of establishing the traumatic death genesis the diagnostic algorithm may be the most optimal that is based on studying the quantitative content of noradrenaline in cerebrospinal and pericardial fluids. If the received result is diagnostically insignificant, the content of adrenaline in these objects must also be studied. This type of the research algorithm is also the most optimal in the cases when the traumatic death genesis is doubtless. It can help to establish reliably the duration of dying when it lasted for a short period of time (from several minutes to some tens of minutes).

Key words: catecholamines, adrenaline, noradrenaline, lethal trauma, duration of dying, diagnostic algorithm.

SOCIAL MEDICINE, PUBLIC HEALTH ORGANIZATION

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THE ANALYSIS OF MODERN ORGANIZATIONAL AND ECONOMIC PROBLEMS OF INTRODUCTION OF THE PILOT PROJECT OF STATE REGULATION OF THE PRICES OF MEDICINES FOR TREATMENT OF PERSONS WITH THE HYPERTENSIVE ILLNESS IN VINNYTSIA REGION

Summary. In article the analysis of organizational and economic problems concerning a condition of issue the medicines included in the pilot project, to the persons having a hypertensive illness, characteristic for drugstores is provided in Vinnytsia region. It is shown that for the period 01.01.2013 - 01.09.2013 the number of subjects of the economic activity participating in the pilot project, grows and makes 73,84%. From them only 42,1% of the pharmaceutical enterprises release medicines with partial compensation with use of computer programs. At the first stage of introduction of the pilot project we revealed the insignificant shortcomings connected with rules of invoicing of the recipe which are liquidated on 1.09.2013 by adjustment of interrelation the doctor - the pharmacist - the patient. Besides, the conclusion is drawn on need of activization of carrying out information and sanitary and educational work of drugstores and treatment-and-prophylactic institutions among the population. Result of the conducted research are the offered measures and recommendations about improvement and improvement of providing patients by a hypertensive illness by medicines.
Key words: pilot project, hypertensive illness, partial compensation, reference price, pharmaceutical legislation.

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THE STATE AND FEATURES OF THE HOMEOPATHIC MEDICINES RETAIL (the example of Homeopathic Pharmacy No12 of Kyiv Municipal Enterprise “Pharmacia”)

Introduction. Ensuring the availability of homeopathic medicines to patients is one of crucial issues in modern health care. The scientific literature has few publications regarding business analysis of homeopathic pharmacies. The analysis of results of these studies showed that these issues did not have adequate coverage.

The purpose of this study was to identify trends in marketing of homeopathic medicines at the level of individual pharmacies, as well to analyse the homeopathic medicines price conjuncture in the pharmaceutical market of Ukraine.

Materials and methods. The object of the study was analysis of the business activities of pharmacy No. 12 KP "Farmatsiya", Kyiv, within 2009-2012, and the average retail price of homeopathic medicines in Ukraine in June 2013. The subject of the study was marketing aspects of homeopathic medicines retail sales. In the course of studies we used economic-statistical method.

Results. The results of the study evidence faster growth of homeopathic medicines sales compared with a total turnover of the pharmacy. It was determined that the share of homeopathic medicines in total turnover of the pharmacy is approaching the half. The share of sales of individual formulations was about half the turnover of homeopathic medicines (HomLZ), pharmacy`s formulations - has increased almost five times, and HomLZ of industrial production - fell at least three times.

Conclusions. It was shown that there had been a decrease in the total number of sold HomLZ packages. The above happened due to slower sales of individual formulations and HomLZ of industrial production. However, there was an increase in sales of pharmacy`s formulations. It was found that HomLZ of industrial production were characterized by much lower economic affordability for patients compared with ordinary medicinal products in the pharmaceutical market. Due to pharmacy manufacturing of HomLZ as individual medicines and pharmacy`s formulations, the average cost of single HomLZ sold by the pharmacy was less than the average price of single ordinary medicine in the pharmaceutical market of Ukraine.

Key words: homeopathic medicine, pharmacy, retail sales, turnover, number of packages, price.

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THE ECONOMIC PROBLEMS OF THERATIONAL NUTRITION AND ITS ROLE ON IMPROVING HEALTH OF THE POPULATION OF UKRAINE

Introduction. In forming and keeping health, promotion of the high human efficiency and its active longevity the important role belong to the nutrition. According to the experts of the World Health Organization (WHO), the level of human health is 50% dependent on the socio-economic conditions and lifestyle, including - 30% of the diet. Because of the poor nutrition there is a loss of 4.5% of healthy years of life due to premature mortality and disability community carries significant economic losses. *The aim* of the article is to analyze the existing situation of rational nutrition and its impact on health and outline the main directions of solving economic problems of nutrition of all population groups.

Results. Analysis of statistical data on the current nutritional status of the population of Ukraine during the 1990-2011 indicates the presence of negative trends in the nutritional status of our population. There was a clear reduction in consumption of all food except egg, oil and other vegetable fats, vegetable and melon crops food, bread and cereal. At 1.28 - 1.82 times decreased consumption of such foods as fish and fish products, meat and meat products, milk and milk products, sugar. Compared with rational nutrition standards for meat and meat products consumption in 2011 was 61.4%, for milk and dairy products - 53.9%, fish and fish products - 67.0%, fruits, berries and grapes - 58.9%. The most important fact of low consumption of foodstuffs of Ukraine is first of all low efficiency agriculture, agriculture in particular and low purchasing power. The low quality of food Is observed. Analysis of the research shows that in 2012 the State Inspectorate for Consumer rejected 36% of food received for review. There is no proper control of the product quality in our country today. Particular attention should be paid to solving nutritional problems of pupils and students. The results indicate the insufficient level of compliance with the diet. The problem of nutrition is closely connected with the problem of providing the

population with clean drinking water. 61% of domestic water does not meet the standards and norms.

Conclusion. For saving and health promotion of the population of Ukraine we should:

- develop and adopt on the governmental andregional level the concept of healthy food;
- develop and implement national and regional levels destination food programs;
- develop and implement a program of highly agriculture and processing industries based on the use of science and the best of national and international experience, aimed at increasing quality of food;
- ensure a constant state quality control of products nutrition, increase the role of the State Standard of Ukraine, State Inspectorate of Consumer perform continuous monitoring of adherence to technical conditions for production;
- to increase the level of payments to employees productive and non-productive areas, social benefits to population by improving the efficiency of social production;
- inform the public about healthy eating in schools, workplaces, shops, catering;
- medical staff of primary health care level produce effective educational measures to comply with a population of healthy nutrition skills;
- improve the quality of drinking water, followed in its supply to consumption of the sanitary standards for drinking water quality Surveillance Service of the Ministry of Health of Ukraine.

Key words: health, nutrition, food, morbidity, longevity, efficiency.

SCIENTIFIC REVIEWS

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FEATURES OF AORTA ANEURISM IN PATIENTS DIFFERENT AGE

Aorta dissection is one of the most serious complications of aorta aneurism that at its development causes high lethality. Necessity of timely diagnostics and early medical treatment demands learning of additional factors associated with aorta aneurism which can be the predictors of dissection that in its turn will allow to determine the risk of its development, define more clearly the way patients should be treated, and estimate the necessity of early surgical interference. In the last years frequency of atherosclerosis and essential hypertension was increased in Ukraine, as a result, frequency of their complications will grow. Therefore this problem is actual enough and needs differential going near tactic of supervision and treatment of patients with the factors of risk of the complicated motion of aorta aneurism. In the article we have reviewed the literature dedicated to study on aorta aneurism and its complications that reflects the modern opinions concerning the said problem. We have examined the origin of aorta aneurism and its complications, difference in etiology and structural peculiarities of aorta aneurism at patients. The etiology peculiarities of aorta aneurism considerably differ depending on age of patients. Risks of the complicated motion of aorta aneurism are increased with age, arterial hypertension, dilation entry of aorta, hypercholesteremia, diabetes mellitus and in smokers. In the patients of senior age the ascending department of aorta is more frequent all struck. A disease is more widespread among men. The main etiology peculiarities in these patients are arterial hypertension and age-old degenerative changes of vessels, which result in disorganization of collogen, muscular elements and elastic fibres. In the people of young and capable of working age principal reasons of development of disease are the syndrome of Marfana and other dysplasia by connective tissue, rheumatic defects of heart, bivalve aortic valve, vaskuliti, syndrome of Gzelya-Erdgeyma. In addition, there is information which testify to genetic dependence of origin of aorta aneurism.

Diagnostics of aorta aneurism is difficult enough and a correct diagnosis is set only in the half of cases. The instrumental methods which are used in diagnostics of disease are: sciagraphy, echocardiography, transesophageal echocardiography, computer tomography and contrasting aortography. In addition, there are laboratory markers of sharp damage of aorta - determination in blood miosin of wall of aorta (D-dimer). The sensitiveness of this method is high, but this marker also rises at other cardiac pathologies, such as a myocardial infarction, pulmonary embolism et al. The basic complaint at aneurism of pectoral aorta – is pain in overhead part of thorax or back. The clench of organs of mediastium can cause hoarse of voice, cough, shortbreathing, odynophagia. Aneurism of abdominal aorta in 50% cases have symptom-free motion. In other cases the most frequent complaint is feeling of pulsating education is in a stomach. There are a stomach-ache, sides, back, groin**,** sickliness palpation of stomach. At embolisms of arteries of feet - "marbleness" of skin, cyanosys. Presently there is a general idea, that patients with proximal stratification of wall of aorta (type A) must treat oneself operatively, while patients with distal stratification (type B) can set time get medicinal therapy. An operation is rotined at unefficiency of medicinal treatment. The purpose of operative treatment is a resection the proximal fragment of aorta (to the place of break of intimi), obliteration of erroneous road clearance of aorta proceeding in its integrity by prosthesis or rapprochement of ends. Clear criteria which specify on the necessity of operative interference are not now certain. Summarizing the above-mentioned facts it is possible to mark that the methods of diagnostics of aorta aneurism and its complications are in detail enough studied and in one or another measure inculcated in everyday practice on different levels, however factors, what aortas associated with noncomplicated aneurism, especially for young people, so to say "markers" or predicter of making progress or stable motion of aorta aneurism, after which it is possible it would be to make a prognosis for every separate patient, remain the debatable questions of modern cardiology. The not finally decided questions in relation to tactic of conduct of patients with aorta aneurism, distributing criteria are on groups for conservative and surgical treatment, because of that even at the identical sizes of aneurism a risk of development of

complications can be different for patients with different etiology of aorta aneurism , by different co-factors for patients different age.

Key words: aorta aneurism, aorta dissection, predictors of dissection, etiology peculiarities.

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KERATODERMAS. DIAGNOSTIC AND TREATMENT METHODS

Keratodermas constitute one of the urgent problems of dermatovenereology. A complicated clinical course of this group of diseases often leads to disablement since childhood that makes the problem of timely and correct diagnosis and treatment urgent. At present aetiology, pathogenesis and curative treatment of this pathology is studied insufficiently. It is due to the fact that keratodermas combine many diseases as the symptoms are included into a number of other syndromes and are also characterized by a different degree of thickening of the stratum corneum due to its excess formation or delay in rejection of horny scales. There is no generally accepted classification of keratodermas in literature that creates certain difficulties for a practicing physician during establishment of the correct diagnosis. Most often they are classified taking into account the following two criteria: the affection type (diffuse, focal, linear) and causes of occurrence (acquired, hereditary). One should pay attention to Unna-Thost syndrome among diffuse hereditary keratodermas as this type of keratosis is the most common form of palmoplantar keratodermas (PPK). As to the acquired keratoses one should pay attention to the climacteric keratoderma (CK, Haxthausen's syndrome). While diagnosing hereditary keratodermas a dermatologist should mainly take into account manifestations of the clinical picture. In case of hereditary PPK each patient suffers from different extension and intensity

of keratosis, accompanying symptoms also differ in severity. Availability of marriages among blood relatives that often cause PPK is obligatory traced in the family history. Besides, one of the main confirmations of the hereditary keratoderma is the result of the skin histologic examination that, as a rule, will be the same for all the diseases of this group: acanthosis, hyperkeratosis, sometimes focal parakeratosis. There are no changes in the basal layer and basal membrane as well as inflammations in the derma. The patients' blood is characterized by immune and cytochemical enzymic disorders, changes in the peroxidation processes.

Taking into account the peculiarities of the clinical course, immunological status, other data of laboratory studies, conclusions of associated specialists, an appropriate method of complex treatment is developed for each patient. As PPKs are accompanied by disorders of the cytokine status, patients are prescribed the corrective treatment in the form of the immunomodulatory drug “Glutoxim” that shows a differential effect on normal and transformed cells. The effect of retinoids, retinol palmitate, aevit and vasoprotectives has been justified in practice. Symptomatic therapy in the form of keratolytic ointments is effective as well. Use of bathes (hot soap-soda, salt bathes, with the oil “Balneum”) is also rather important. Patients are treated using mechanical means: retinoic peeling, carbon dioxide laser. The main treatment of CK is aimed at correction of endocrine disorders considering the specificity of the pathogenesis branches. The corrective treatment implies prescription of estrogens no more than for 3 weeks. 0,05% estradiol and 0,1% synoestrolum creams are prescribed locally under the occlusive dressing. Also additionally a symptomatic therapy is conducted, as in case of hereditary keratodermas, and namely during hospital treatment vitamins of the group A, E and laser therapy are prescribed to the patients.

One should remember that whatever monumental efforts are made for PPK treatment they won't lead to absolute recovery. At present the aim of the complex therapy is just to reduce keratosis. That is why such patients require constant preventive medical examination, dermatologist's examination twice a year, referral to the medical and social examination, appropriate employment and selection of the orthopedic footwear to reduce the load on the sole skin. And during a complex therapy of CK one should

remember that treatment will not lead to full recovery while a woman experiences the mesopause period. When it finishes in some cases further chronic course of the disease is possible.

So, different morphological changes in the skin in case of acquired and hereditary keratodermas and as a result different peculiarities of their clinical course attest different development mechanisms of the disease process at their occurrence. Thus, exactly timely detection and diagnosing of the disease and exclusively complex treatment of keratodermas that includes use of both local and general means, dispensary observation, will lead to the process positive dynamics, and namely to recovery.

Key words: keratoderma, classification, diagnosing, treatment, prevention.

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MODERN IMAGINATION ABOUT THE ROLE OF VEGETATIVE NERVOUS SYSTEM IN THE PROCESS OF SLEEP

The authors analyse enough wide range of literature concerning the questions of the vegetative phenomenon observing in the process of the sleep. The authors give the data which show the stable connection of the vegetative changes with the phases and stages of the sleep. The literary data about the rhythm described vegetative phenomenon is given. Analysing the given literary data, the authors have the opinion that the vegetative nervous system is independent participant of the cycle sleep-wakefulness of the functional potential of the higher departments of CNS, in the period of the sleep, limiting their connection with the visceral system, and the other

side – providing the support of homeostasis on the level which is adequate to the adaptation of the organism to the external environment.

Key words: sleep, vegetative nervous system.

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PATHOPHYSIOLOGICAL ROLE OF OBESITY IN THE DEVELOPMENT OF PANCREAS DISEASES

Summary. There is there view of literature on the study devoted to the relationship of obesity and diseases of the pancreas. The analysis of publications shows that obesity is a predictor of the development of acute chronic pancreatitis.

Key words: obesity, pancreatitis.

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THE METABOLISM OF ESTROGENS. FACTORS THAT AFFECT THE METABOLISM OF ESTROGENS

The development of such diseases as uterine fibroid, endometrial hyperplasia, endometriosis, fibrocystic breast disease, uterine cancer, and breast cancer is greatly

influenced by a hormonal status in women. Excessive concentrations of estrogens and their metabolites is the basis for the above changes. The purpose of our study is to analyze the functional metabolism of estrogens, the factors that affect these processes, and to identify preventive aspects for managing hyperestrogenism. The process of transformation (detoxification) of hormones is a two-stage one. The first stage is characterized with estrogen transformation by cytochrome P450 enzymes, which leads to formation of intermediate products (2-hydroxy, 16-hydroxy, 4-hydroxy estrogens). The best way to destruct female hormones before menopause is the one that leads to formation of 2-hydroxy estrogens. It has a weak estragenous effect (about 48% of the activity of estradiol) and has no proliferative effect on cells. Unlike 2-hydroxy estrogen, a 16-hydroxy estrone is more active. The activity of this metabolite is 8 times higher than the activity of estradiol, therefore the high rate of its formation elicits the hyperestrogenism in women.

Once estrogens are exposed to cytochrome P450 1V1, the 4-hydroxy estrogens emerge and, despite of their relatively low activity (approximately 79% of the activity of estradiol), they have a genotoxic effect (i.e, damage DNA), and cause malignant degeneration of cells.

After completion of Phase 1 detoxification, 2-hydroxy and 4-hydroxy metabolites of female hormones have two ways of elimination - either by transformation into semiquinines, the substances that have a genotoxic effect, or, through intermediary methylation process, into 2- and 4-methoxy estrogens, the substances completely safe for human health. A sulfitation is also used for detoxification of estrogens. This way of homocysteine transformation requires the following co-factors: serine, vitamin B6, and magnesium.

Serious disturbances in the metabolism of sex hormones are attributive to the combination of the following factors: gene polymorphism, stress, vitamin-mineral components and protein deficiency, smoking, physical inactivity, obesity, pesticides, and the administration of hormonal contraceptives or female hormones for therapeutic purposes.

Taking into account the above mentioned, a physician can complement the standard treatment with functional medicine recommendations based on the results of serious

research. We are looking forward to using these findings for the prevention of the most frequent gynecological diseases in over thirty year old women.

Key words: estrogen, detoxification, factors.

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COMPARATIVE CHARACTERISTICS OF THE LOOP DIURETICS

The article analyzed the available information about the comparison of the pharmacokinetics, diuretic and nondiuretic effects of loop diuretics. The conclusions were made that torasemid has certain pharmacokinetic advantages over furosemide and ethacrynic acid: negligible effect of food and stage of heart failure on the speed and completeness of absorption after oral administration, a low degree of binding to the protein gives advantages in patients with hypoproteinemia; expressed biotransformation in the liver reduces risk of the accumulation in renal failure. Torasemid proved higher efficiency of the patients with chronic heart failure (CHF): a significant reduction in mortality, improved functional class of CHF, reducing the number and duration of hospitalizations. These are conflicting data comparing the effectiveness of furosemide and torasemidu on edema caused by the syndrome of chronic renal failure and decompensated cirrhosis do not allow reliable conclusions about the benefits of one or the other drug. Do not confirmed the positive impact of the slow release torasemide on myocardial fibrosis and course of the CHF. Therefore slow release torasemide should be considered only as an alternative to thiazide diuretics in combined therapy of hypertension.

Key words: loop diuretics, furosemide, torasemid, ethacrynic acid, pharmacokinetics, diuretic effect.

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CARPAL TUNNEL SYNDROME. HISTORY OF THE SUBJECT

The events in the history of scientific thought about carpal tunnel syndrome indicate a variety of theories, with which ones tried to explain the cause of this extremely widespread disease. But, as always, enthusiastic individual researchers favored the emergence of knowledge about the etiology of tunnel neuropathy of the median nerve in the carpal tunnel, and then, spread this knowledge among doctors. The results of 70-years discussion was the formulation of the concept of «carpal tunnel syndrome». Determination of this disease gradually expanded to include all cases of compression of the median nerve in the carpal canal. It is interesting how to develop scientific thoughts in a historical context. And at the moment, with the advent of new, minimally invasive technologies, enough questions remain in the differential diagnosis, and in the selection of treatment strategies.

Key words: carpal tunnel syndrome, median nerve, transverse carpal ligament, decompression of carpal tunnel.

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ISCHEMIC HEART DISEASE WITH COMORBID DEPRESSIVE DISORDERS: CONTEMPORARY VIEWS, UNSETTLED ISSUES (REVIEW OF LITERATURE)

Ischemic heart disease (IHD) was a leader by incidence and mortality of population in the 20th century and remains such in the 21st century despite new achievements in the diagnostics and treatment. IHD refers to multifactor diseases, that is why considering the rise in incidence and mortality new risk factors and pathogenetic mechanisms are studied. Important risk factors that are intensively studied include psychosocial stress, depressive and anxiety disorders [Netiazhenko et al., 2003] often accompanying heart diseases. Studying of depression influence on the IHD development and clinical course is urgent in cardiology.

The objective of our work was to study pathophysiologic mechanisms of the depression influence on the IHD clinical course and treatment of depressive disorders in such a category of patients using the literature data.

In the Guidelines of the European Society of Cardiology on Cardiovascular Disease Prevention in Clinical Practice (2012) depression and anxiety are considered as independent risk factors for development of cardiovascular diseases of atherosclerotic genesis and their prevention and correction constitute a part of the primary and secondary prevention [Oganova, 2011; Perk et al., 2012].

Pathophysiologic mechanisms of the depression influence on the IHD clinical course.

The following pathogenetic factors of depression contributing to the IHD development were determined:

1. activation of sympathicoadrenal, hypophysial-adrenal systems in case of depression accelerates progression of atherosclerosis, arterial hypertension, aggravates development of the endothelium dysfunction;
2. increase of function of the sympathetic and decrease of activity of the parasympathetic nervous system in case of depression contribute to reduction of the heart rate variability that leads to development of gastric arrhythmias, increase of adhesiveness and aggregation of thrombocytes causing cardial mortality;
3. development of inflammation during depression contributes to progression of atherosclerosis in case of IHD and HD due to increase of synthesis of cytokines, interleukin-1,6 and the factor of tumor necrosis that leads to affection of the vascular endothelium. In turn microphages and T lymphocytes in case of depression penetrate

into the vascular wall and lead to proliferation of smooth muscle cells of the vascular intima, intensification of the atherosclerotic process;

4. negative influence of depression accompanying IHD leads to thrombosis enhancement (activation of thrombocyte aggregation as a result of increase of the catecholamine synthesis);

5. depression negatively influences the IHD clinical course by dysfunction of the vascular endothelium (increase of the function of endothelin-1, thromboxane A2, angiotensin-converting enzyme, decrease of the relaxing factor and prostacyclin).

At present depression accompanying IHD is preferably treated with serotonin reuptake inhibitors (SRI) (fluoxetine, fluvoxamine, cipralex, sertraline, paroxetine) and serotonin and noradrenaline (venlafaxine) reuptake inhibitors that do not have cholinolytic and quinine-like side reactions.

The prospect of our work is further study of pathophysiologic mechanisms of the depression influence on the IHD clinical course and the possibility to create a single algorithm that will allow to develop more effective approaches to treatment of patients suffering from IHD with comorbid depressive disorders.

Key words: ischemic heart disease, depressive disorders.

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ARGON PLASMA COAGULATION – DEVELOPMENT AND INTRODUCTION IN SURGICAL PRACTICE

Summary. The goal of the research is the assessment of the implementation and effectiveness of the argon plasma coagulation in the surgical practice. The results of 46 national and international examined sources are given. The history of development of electrosurgery, in particular argon plasma coagulation is presented. It is found out that argon plasma coagulation is an effective and safe the newest method of

electrocoagulation in the modern surgical practice. Using argon plasma coagulation in the surgical practice improves the results of the treatment of operated patients and facilitates the work of surgeons.

Key words: electrosurgery, argon plasma coagulation.

CHRONICLE

75 FROM THE DAY OF BIRTH OF HODOROVSKIYG.I. – DOCTOR OF MEDICAL SCIENCES, PROFESSOR, EMERGENCY AND PLENIPOTENTIARY AMBASSADOR OF UKRAINE

70 FROM THE DAY OF BIRTH OF I.P. SHLAPAK - DOCTOR OF MEDICAL SCIENCES, PROFESSOR