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ORIGINAL RESEARCHES

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HYGIENIC CONDITION RESEARCH INDICATORS OF THE ORAL CAVITY IN PATIENTS WITH DIFFERENT TYPES OF DENTAL PLAQUE

Introduction. The cause of the pathological process in the hard tissues of the tooth and periodontal tissues may be different factors as exogenous and endogenous origin. From local factors the most important is dental plaque with combined mechanical, chemical and biological effects. It is a scientific and practical interest to study the state of oral hygiene and plaque formation rate in patients with different types of dental plaque and their comparative characteristics.

Analysis of dental disease in the country and abroad suggests an increase in the prevalence of tooth hyperesthesia symptom - hypersensitivity of dental hard tissues to mechanical, chemical and thermal stimuli. However, a comparative evaluation of the symptoms in the presence of different types of plaque did not become the subject of special research and poorly understood.

Purpose. To study the performance of hygienic condition of the oral cavity, the rate of formation of plaque and tooth sensitivity in the cervical region in patients with different types of dental plaque and their comparative characteristics.

Materials and methods. The study was conducted in 540 patients with various types of dental plaque , which were divided into 3 groups of 180 persons: 1 - patients with soft plaque ; 2 - with mineralized dental plaque ; 3 - with smokers plaque. Used the following methods - dental examination, study of the nature of dental plaque, index of oral hygiene (Green Vermilion , Tureski , Silnes - Loe , PHP , API), index rate of plaque formation (PFRI) for Axelsson, the index of the intensity of hyperesthesia of the teeth necks, dental hyperesthesia prevalence index.

Results. Studies of Oral hygiene status showed its dependence on the type of dental plaque: in patients with smoker plaque - satisfactory, but the close to poor, with soft plaque – dissatisfaction, with mineralized dental plaque - bad. Research of plaque in the cervical area of the teeth (index Tureski , Silness-Loe, PHP) confirmed the low level of hygiene of the oral cavity and the poor condition of patients with soft and mineralized dental plaque. Similar confirmation of poor oral hygiene in patients with mineralized dental plaque and its lack of patients with soft plaque and smoker plaque set at index API. These results suggest careless personal hygiene measures conducting to help create the conditions for more rapid and intense accumulation of microorganisms, plaque and disturbances of oral environment homeostasis.

Conclusion. The high rate of formation of plaque in patients, including 3, 4 and 5 degrees on the index PFRI, evidence of increased susceptibility to the occurrence of caries process in all the examined groups of patients, and may reduce caries resistance of enamel. Diagnosed hard tissue hypersensitivity of teeth and severity in all groups of patients, as well as localized form in patients with soft plaque coating and a smoker and generalized - of mineralized dental plaque indicating the macroscopically intact enamel ability to the perception of pain sensitivity in its functional failure.

Key words: dental plaque, oral hygiene, tooth hypersensitivity.

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RESEARCH OF FRANKINCENSE AS A MEDICINAL RAW MATERIAL OF PLANT ORIGIN AND OBTAINMENT OF THE ESSENTIAL OIL FROM IT

Introduction. The research of plants for extraction of biologically active substances is the important problem of complex rational use of medical resources today. In ancient times the frankincense essential oil widely used in medicine as a sedative, antidepressant, anti-inflammatory, wound healing, hemostatic, anti-aging agent. Today frankincense is used only in homeopathy. Medics are again exploring its various properties. *Objective.* Botanical and pharmaco-technological research of frankincense as a raw material for obtaining the essential oil by steam distillation and exploration its main quality parameters in accordance with the requirements of State Pharmacopoeia.

Materials and methods. During botanical diagnosis of the Burseraceae family was discovered that frankincense is obtained from resin of trees of the genus Boswellia in the family Burseraceae which grows in East Africa and Arabia. Although it's possibly that it was obtained from the Boswellia sacra which grows on the islands of the Indian Ocean and Boswellia dalzielii of West Africa which resin is used by local people in disorders of the gastrointestinal tract, rheumatism, fever and so on.

The chemical composition of frankincense was identified and qualitative and quantitative reactions have been conducted during the study. Essential oil of frankincense obtained by steam distillation and it was found that 0,15 - 0,02 g essential oil were obtained from 1 kg of aromatic water. It was determined the basic quality indicators: organoleptic characteristics (comparison with the standard model), the presence of impurities (alcohol, fat, mineral oils), chemical constants (acid number, ether number).

Results. Comparison standard models were essential oil of frankincense manufactured by company "Aromatika", Kyiv and "Kingdom of aromas", Sudak .

Conclusions. The morphological characteristics of the genus trees (Boswellia carteri) of the Burseraceae family were researched and the type and origin of medicinal raw materials were established. The technology of obtaining the essential oil of selected frankincense (Olibanum electum) by steam distillation was perfected. The critical points of manufacturing were established, they are: monitoring the completeness and endpoint of distillation; control of accuracy of separation of oil and water phase. the basic quality parameters obtained essential oil were determined.

The article authors hope that the results of their work will contribute to mastering the theoretical knowledge of pharmacy and medicine, the formation of future specialist scientific outlook and help practical implementation of medical, botanical and technological achievements.

Key words: frankincense, resin, medicinal raw materials, essential oil, steam distillation, quality indicators.

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FEATURES THICKNESS OF SKIN-FAT FOLDS IN PATIENTS WITH MYOPIA RURAL BOYS AND GIRLS FROM PODILLIYA REGION OF UKRAINE

Introduction. In the study of the relationship between physical development of man and the occurrence of myopia should be considered the most valuable individual typological approach based on indicators not only of overall dimensions but also on the thickness of skin and fat folds (TSFF), a component body composition (fat, muscle and bone mass) and proportionality physique. This approaches us to evaluate the state of

metabolic processes in the body and their effects on phenotypic expression of myopia, constitutional features of its origin and course. In connection with the above study of constitutional features of myopic boys and girls is very important.

Aim of our work – installation features thick of skin and fat folds in patients with myopia rural boys and girls from Podilliya region of Ukraine.

Materials and methods. From data bank of scientific and research center Vinnitsa National Medical University named after Pirogov taken initial anthropometric and somatotypological indicators of practically healthy and patients with myopia girls and boys period of the second childhood (63 healthy and 46 patients with myopia boys aged from 9 to 12 years and 54 healthy and 49 patients with myopia girls aged from 9 to 11 years) that in the third generation living in rural areas in the territory of Podilsky region of Ukraine. Anthropometric survey of adolescents conducted in accordance with the scheme of V.V. Bunak. Definition of somatotype by method J. Carter and B. Heath. Statistical data processing was performed using licensed software package «Statistica 6.1» using parametric and nonparametric methods for assessing the results.

Results. Established that TSFF on the back of the shoulder in healthy girls ectomorphes and patients ecto-mesomorph girls was significantly ($p<0,05$) higher compared with boys of similar comparison groups. TSFF on the front of the shoulder in healthy girls ectomorphes patients and ecto-mesomorph girls was significantly ($p<0,05$-$0,001$) greater compared with boys of similar comparison groups. TSFF on the forearm in healthy girls ectomorphes and patients ecto-mesomorph girls respectively significantly ($p<0,001$) greater and has the significant trend ($p=0,052$) compared to larger values of boys of similar comparison groups. TSFF under shovel in patients and healthy girls ectomorphes according significantly ($p<0,001$) greater and has the significant trend ($p=0,053$) compared to larger values of boys of similar comparison groups. TSFF on the chest in healthy girls ectomorphes significantly ($p<0,01$) greater compared to a similar group of boys comparison. TSFF on the stomach in patients boys ectomorphes significantly ($p<0,05$) higher and in patients boys ecto-mesomorph significantly ($p<0,05$) lower compared to healthy boys of similar somatotype. This

indicator in healthy girls ectomorphes significantly (p<0,01) higher compared with boys of similar comparisons. TSFF on the side in patients ectomorphes boys was significantly (p<0,05) higher and in patients boys ecto-mesomorph significantly (p<0,05) lower compared to healthy boys of similar somatotype. This indicator in healthy girls ectomorphes significantly (p<0,05) higher compared with boys of similar group of comparisons. TSFF on the thigh in healthy or sick girls ectomorphes and patients ecto-mesomorph girls respectively significantly (p<0,05-0,001) greater and has the significant trend (p=0,056) compared to larger values of boys of similar comparison groups. TSFF on the shin in healthy girls ectomorphes significantly (p<0,01) greater compared with boys of similar comparison groups.

Conclusion. Established that TSFF on the stomach and on the side of patients ectomorphes boys significantly higher and in patients boys ecto-mesomorph significantly lower compared to healthy boys of similar somatotype. The majority of TSFF in healthy girls ectomorphes and also TSFF under the shoulder blade, on the hip in patients girls ectomorphes and TSFF on the back and front surfaces of the shoulder, on forearm, on the hip in patients girls ecto-mesomorph significantly larger or have significant trend to higher values compared groups of boys of similar comparisons.

Key words: boys, girls, thickness of skin and fat folds, myopia.

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DETERMINATION OF PATHOGENICITY ENZYMES IN STRAINS OF *E.COLI*, ISOLATED DURING PYO-INFLAMMATORY PROCESSES

Introduction. Suppression of the immune system, damage of the body's natural protective barriers, the presence of obstructive changes, intoxication and

major surgery underlie the mechanisms of pyo-inflammatory process. Sensitivity to pyo-inflammatory process is connected not only with changes in immune state, but with the change of the biological properties in bacterial pathogens. In this regard, the study and analysis of the biology and ecology characteristics in bacteria that are causative agents of pyo-inflammatory processes remains an urgent problem in modern microbiology.

The aim of this study was to deturmine the activity of pathogenicity enzymes in clinical strains of *E.coli*.

Materials and methods. The objects of the study were strains of *E.coli* (n = 38) isolated during pyo-inflammatory processes; from venflons, catheters and drainage structures after surgery and the reference strain of *E.coli* (ATCC 25922 F50 = NCDC F50), obtained from the L.V. Gromashevsky Institute of Epidemiology and Infectious Diseases NAMS Ukraine. Isolation of pure culture of *E.coli* and deturmination of pathogenicity factors was conducted by conventional methods. For statistical analysis of results the program «Statistica» for the PC was used.

Results. It was revealed that among 38 strains of *E.coli* high lecitinase activity was in 73,7 % of strains, including: 36, 8 % isolated during pyo-inflammatory processes, 15,9 % isolated from venflons, 21,1 % isolated from catheters and drainage structures. The high DNA-se activity was showed by 57,9 % of strains of *E.coli*. It was determined that high hemolytic activity had 81,6 % of strains of *E.coli*. The results showed the presence of direct correlation of lecitinase, DNA-se and hemolytic activity in strains of *E.coli*.

Conclusions. The research of studing the activity of pathogenicity enzymes showed that all isolated strains of *E.coli* produced such enzymes as lecitinase, DNA-se and hemolysins.

Key words: factors of pathogenicity, isolates of *E.coli*, pyo-inflammatory processes, catheters, venflons, drainage structures.

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DETECTION OF UNIDENTIFIED FACTOR TRANSGENIC SOYBEANS IN THE INTERNAL ORGANS OF RATS FED WITH ITS LONG

Introduction. In experiments on laboratory animals (mice, rats and hamsters) at different feeding them GM crops as feed consisting of diet, found pathological changes in the liver, pancreas and thyroid glands, spleen and testes. Along with this breach of reproductive function in rats, changes in hormonal balance and fertility in subsequent generations. In the study on mice impact protein isolate derived from GMO soybean (40-3-2 line, "Monsanto K", USA), was observed amplification in the females aggression relative to their offspring and loss of maternal instinct [Nosenko, 2008]. And, despite the results of these studies, discussions relations to the use in nutrition of people GM products continue. Since any opinion regarding the use of GMO soy in food must be justified results of researches, we have for the object of research was taken internal organs of rats, which lasted (for a year) fed GM soy. The aim of the study was detection possible toxic, is not yet identified the factor of GM soy in the internal organs of rats.

Materials and methods. Research conducted conditions the vivarium in Vinnitsa National M. I. Pirogov Memorial Medical University. Rats (in number of 36 animals) research group from 2 months of age fed in addition to the standard diet throughout the year roundup resistant transgenic soybeans in the form of ground, thermally processed beans. The control group of rats maintained in a standard balanced diet. Access to basic diet of feed, water and the GM soy was free.

A year after feeding rats GM soy to 6 animals from experimental and control group were decapitated. Euthanasia was performed under light ether anesthesia, no violations of norms humane treatment of laboratory animals and given the generally

accepted bioethical norms [Shevelev et al., 2008]. From each animal were taken liver, kidneys, heart and lungs. The internal organs 2 rats in both groups parallel were placed in glass glasses fill up to 100 ml of distilled water and were boiled for 30 minutes. Thus received 3-sample internal aqueous extract organs rat experimental and control groups to study a possible factor in them transgenic soybeans.

In our view, the GM soya beans may be present yet unidentified active compounds synthesized genes introduced soil bacterium *Agrobacterium tumefaciens* or metabolites of glyphosate (roundup).

To detect factors possible toxic effects of GM soy in the internal organs of rats that consumed her lasted by us had taken the method of determining the toxicity bioassay on infusorians tetrahimena piriformis [ISO 3570-97]. The method is based on extraction with acetone toxic compounds studied samples with subsequent evaporation and subsequent dissolution of the residue in water and aqueous solutions actions of these on ciliates tetrahimena piriformis. The degree of toxicity of the investigated material is determined by the number of the living ciliates through 30 and 60 minutes after the test. In this method us were made changes, namely with the internal organs of rats obtained aqueous extract (broth at boiling), that is a breeding ground for ciliates, monitoring by them carried not 60 minutes, and within 3 days.

Results. When boiling in distilled water rat internal organs (liver, heart, kidney and lung) in an aqueous solution of passing heat-resistant soluble proteins, minerals, nucleic acids and other low molecular weight compounds. In this case the experimental versions, perhaps the solution to get plasmids, i.e. circular DNA structure of the soil bacterium *Agrobacterium tumefaciens*, products of synthesis of the gene of this bacterium in beans of soy that is toxic low molecular weight compounds or residues glyphosate and its metabolites that are toxic for unicellular of living organisms — ciliates.

When setting bioassay on infusorians with aqueous extracts of the liver, kidneys, heart and lungs of rats that were fed GM soy a long term by us envisaged inhibitory effect of water extracts on the viability of single-celled of living organisms — tetrahimena piriformis and detected to stimulate their reproduction and enhance

vitality. Confirmation of this is the reaction tetrahimena piriformis ciliates in culture medium aqueous extract of the liver, kidneys, heart and lungs of rats that obtained throughout the year additional to diet vivarium roasted GM soy compared to same-age rats, but which not obtained GM soy.

The analysis of the obtained results of research certifies that the internal organs, including the liver, kidneys, heart and lungs of rats fed throughout the year transgenic soybeans obviously are biologically active compounds synthesis which, in our opinion, cause the plasmid *Agrobacterium tumefaciens*, which are the factor stimulating reproduction and the viability of ciliates tetrahimena piriformis, and do not have a toxic effect on their viability.

Conclusions. The aqueous extract of the internal organs of rats which were fed GM soy lasted contains biologically active compounds that activate reproduction ciliates and increase their vitality. There is a probability that in the human body these compounds can stimulate certain types of cells to uncontrolled reproduction, so the impact of GM of soy in food to people in need of further study.

Key words: transgenic soybeans, rats, extract of the internal organs, ciliates.

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CHANGES IN HEMOLYTIC RESISTANCE AND PERMEABILITY OF THE ERYTHROCYTIC MEMBRANES IN TOXIC DEFEAT OF 1,2-DICHLOROETHANE AND CORRECTION BY NICOTINAMIDE

Introduction. Physico-chemical properties of erythrocyte membranes resulting in their resistance to the action of harmful factors. Therefore, performance stability of red blood cells is widely used in experimental medicine for the purpose

characteristics of their functional status. Activation of lipid peroxidation and oxidative modification of proteins that occur in poisoning 1,2-DCE lead to the destruction of biomembranes, which was manifested in the strengthening of the acid hemolysis erythrocytes.

*Purpose – t*o investigate the changes of hemolytic stability and permeability of erythrocyte membranes with toxic lesions 1,2-dichloroethane and correction by nicotinamide.

Materials and methods. Hemolysis of red blood cells was carried out by adding two volumes of + 40˚C distilled water and double freeze thawing of cells in liquid nitrogen. Hemolisate was separated from the stroma and intact cells by centrifugation for 5 min at 3000. Functional state of plasma membrane of erythrocytes was evaluated by acid resistance using the kinetic method. Permeability of erythrocyte membranes (erythrocyte intoxication index) was determined by a method based on the ability of erythrocyte membranes absorb some colors, which greatly varies in disorders of red cell membrane structure.

Results. Studies have been conducted stability of different populations of red blood cells to the action of acid hemolytic and general, non-specific red cell membrane permeability. Given the toxicity of 1,2-DCE significantly increases the rate of lysis of red blood cells, time of maximum unfractionated peripheral blood erythrocytes of experimental rats was reduced by 43%. Analysis of typical acid erythrogram of unfractionated erythrocytes shows a pronounced curve to the left, which is conditioned by the combined action of two factors: shortening spherical formation of red blood cells and the time to reach maximum hemolysis. Unfractionated peripheral blood erythrocytes is a collection of cells of different maturity and functional activity, which time in the bloodstream is different. Accordingly, the individual erythrocyte population significantly differ in resistance to acidic hemolytic which may be due to age-related characteristics as well as the action of compounds that initiate processes of lipid peroxidation and oxidative modification of proteins erythrocyte membrane.

At damage of erythrocyte membrane under the influence of 1,2-dichloroethane also indicates an increase in its general, non-specific permeability. As seen from Table 1, endogenous intoxication in rats, 1,2-DCE, leads to an increase in the average (34%), nonspecific permeability of erythrocyte membranes.

Conclusion. Our studies indicate significant activation of lipid peroxidation and protein erythrocyte of poisoned rats under acute intoxication of neurotoxic xenobiotics 1,2-dichloroethane, which can be seen as a key pathobiochemical mechanism of biocidal action of chlorine alkane.

Conducted research confirmed cell protective effect of coenzyme vitamins - nicotinamide for the actions of highly toxic industrial poisons.

The results point to the prospects of further explore for the implementation of nicotinamide in pharmaceutical and medical practice.

Key words: 1,2-dichloroethane, xenobiotics, nicotinamide, erythrocytes, hemolysis, lipid peroxidation.

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MORPHOLOGICAL GROUNDING FOR ADVISABILITY OF LOCALLY APPLIED COMBINATION OF LIASTENUM AND LEVOMEKOL DURING COMPREHENSIVE TREATMENT OF PURULENT WOUNDS

Introduction. At present the increase of efficiency of purulent wound treatment is a question of principle for the current medicine. Recently researchers have been more interested in the local use of immunostimulants of the topical effect

allowing both to compensate disorders of the immune protection factors and to stimulate the activity of different components of the immune system reducing the treatment terms and recurrence rate. One of such drugs is a domestic biologically sourced immunomodulator Liastenum that apart from its main properties can potentiate the effect of antimicrobial drugs.

That's why the objective of our study was to get morphological confirmation of advisability of locally applied combination of the drug Liastenum and ointment Levomekol during comprehensive treatment of purulent wounds of soft tissues.

Materials and methods. The subject of the study included infectious wounds of 24 patients. The studied patients were divided into two groups: after the operation during the purulo-necrotic stage, apart from the traditional treatment, the patients of the main group (12 patients) had the combination of the antimicrobial hydrophilic ointment Levomekol and immunostimulant Liastenum in the proportion 1:0,000025 locally applied; the treatment of the patients from the control group (12 patients) was restricted to the use of traditional drugs during that period. Samples for the histological study were taken on the 1st, 5th, 7th, 10th and 14th days after the surgical intervention. After preparation and staining of the histological material it was studied using a microscope and the composition and condition of tissues in the wound as well as availability and nature of pathological and reparative changes were assessed.

Results. The comparative assessment of the histological study results proves that the wound process of the patients from the main group is distinguished by a qualitatively favourable clinical course that manifested itself by active remitting of the inflammatory process, absence of suppurative complications, acceleration of reparative processes with earlier occurrence of granulation tissue, formation of scar tissues, epithalization of the wound defect and further restoration of skin structural elements typical of its normal structure.

Conclusions. The obtained results confirm the efficacy of such a combination of medicinal products and advisability of its use during comprehensive treatment of purulent wounds.

Key words: purulent wound, wound process, Liastenum, combined ointment.

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THE MORPHO-FUNCTIONAL STATE OF THE PANCREAS IN THE CONDITIONS OF NITRIC OXIDE DEFICIENCY IN RATS IN EXPERIMENT

Introduction. Previously a model of experimental pancreatitis was established which involves blocking of this regulation by the ways of using NG-nitro-L-arginine in duration of 6 and 12 day, which leads to circulatory distress accompanied by the activation of exocrine function. However, no reported data exists on the impact of NG-nitro-L-arginine on pancreatic fibrogenesis in chronic pancreatitis.

Purpose. Determine the dynamics of the fibrotic processes in the rat pancreas in response to oxidative stress caused by deficiency of NO in experimental long-term administration of non-specific inhibitor (NG-nitro-L-arginine).

Material and methods. The study was conducted in 48 male Wistar rats with weight 180-230 g NG-nitro-L-arginine, "Sigma-Aldrich" (USA) was everyday administrated intraperitoneal at 40 mg/kg for 1 day (n = 6), 2 days (n = 6), 6 days (n = 7), 12 days (n = 8), and 30 days (n = 6). The control group (n = 15) was formed of intact rats and recieved 0,9% NaCl. Rats were sacrificed at the 1, 2, 6, 12 and 30 days. Sections were deparafinized and stained with hematoxylin-eosin or Mallory Trichrom. Biochemical process of fibrosis was evaluated on the content in the serum of free and protein-bonded hydroxyproline and hexosamines. NO production was determined by the total content of nitrite / nitrate in serum using Gris test. To estimate the exocrine function activity of pancreatic enzymes were measured in serum - amylase and trypsin-α.

Results. In one day after the administration of NG-nitro-L-arginine morphologically were observed acinar cells with inhibition of the secretion accumulation (all rats); in 2 days - the number of suchlike cells increased, and scattered degenerative changes were observed and in 50% of animals - focal adipose degeneration. After 6 days the percentage of acinar cells with inhibition of the secretion accumulation again began to decrease to the level of first day, while the spasm of blood vessels with stasis of blood cells and focal accumulation of lymphoid cells in the parenchyma were observed. On the 12th day visible signs of circulatory hypoxia was developed on the background of cells degeneration and atrophy changes of acinar tissue without signs of inflammation. All animals after 30 days of experiment demonstrated the development of fibrosis tissue with varying degrees of severity, which may indicate that the physiological antioxidant reserve slowly depleted and can no longer prevent the induction of stellate cells.

Morphological signs were accompanied by the changes in biochemical parameters that characterizes metabolism of collagen. Processes of connective tissue anabolism on 30th day illustrated through content of protein-bonded oxyprolyn in blood - which was increased by 1.6 times from (178,67 ± 26,39) mkmol / l (control group) to (288,92 ± 13,05) mkmol / l ($p < 0,05$) and catabolism through content of free oxyprolyn - which was increased by 1.5 times (to 14,74 ± 1,84) mkmol / l ($p < 0,05$) and 1.9 times (to 19,30 ± 0,83) mkmol / l ($p < 0,001$) at 12th and 30th days, respectively. Compared with controls (9,96 ± 0,71) mkmol / l, those values indicated increased collagen synthesis and destruction.

One day after the introduction of NG-nitro-L-arginine significant decrease of nitrite / nitrate concentrations was observed in blood – by 2.2 times, to (14,85 ± 4,77) mkmol / l ($p < 0,05$) in comparison with the control group (32,61 ± 4,55) mkmol / l, whereas at 12th day there was a significant increase by 2.5 times, to (80,22 ± 19,90) mkmol / l ($p < 0.05$). Hereon those concentrations remained increased till the 30^{th} day by 1.6 times, to (50,56 ± 7,12) mkmol / l ($p < 0.05$).

After the first day of experiment significant decrease in the activity of α-amylase was noted - by 2.6 times, from (96,02 ± 20,30) mg / s • l (control) to (36,72

± 1,54) mg / s • l ($p < 0.05$), with maximum decrease on the 2nd day – by 6 times (16,03 ± 1,42) mg / s • l ($p < 0,01$). Upon 6 days of NG-nitro-L-arginine administration activity of this enzyme in serum increased by 3.2 times, to (311,26 ± 37,39) mg / s • l ($p < 0,001$). After 12 days there was a gradual decreasing by 2.1 times (205,49 ± 31,47) mg / s • l ($p < 0,05$), but the activity of α-amylase was still higher than the control group and after 30 days was still decreased by 1.3 times (72,78 ± 14,80) mg / s • l compared with controls.

Trypsin is the best marker for the detection of pancreas pathology, as it is specific to this organ. Significant decrease of enzyme activity by 5.4 times from (4,19 ± 0,92) mkmol / ml • min (control group) to (0,77 ± 0,08) mkmol / ml • min ($p < 0,01$) observed after the first day, followed by the maximum increase at 2nd day of NG-nitro-L-arginine administration by 3.1 times (13,00 ± 1,05) mkmol / ml • min ($p < 0,01$), upon 6th day by 2.5 times to (10,45 ± 1,76) mkmol / ml • min ($p < 0,01$) and with a following decrease to the levels of the control group at 30th day of the experiment.

Conclusions. Non-specific inhibitor of NOs NG-nitro-L-arginine was administrated for the duration of the experiment, and the most significant changes (discirculation and dissecretion) were observed on the 12th day, whereupon the reaction slows due to a compensatory response. On the 30th day of experiment tiny bands of fibrous tissue were formed, which also evidenced by the increase of collagen synthesis markers in blood - protein-bound hydroxyproline ($p < 0,05$). Incompetence of pancreatic cells was manifested by the reduced activity of pancreatic enzymes ($p < 0,05$), and the visible hyposecretion of acinar cells on the morphological study. The maximum decrease of nitrite / nitrate concentration was observed after the first day ($p < 0,05$), with a gradual increase to a maximum on 12th day ($p < 0,05$).

Key words: nitric oxide, NG-nitro-L-arginine, pancreas, experimental pancreatitis, fibrosis.

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OPTIMIZATION OF THE EXPERIMENTAL MODEL OF SYMMETRIC STOMACH ULCERS

Introduction. The prevalence of the peptic ulcer of stomach and duodenum is 12.83% among the digestive system disease. It is necessary to mention that the quantity of ulcers with severe chronic course and resistance to conservative treatment rises. It leads to increase of the frequency of peptic ulcer complications that are dangerous for life. Taking into account these facts the question regarding development and implementation of new treatment methods is still open. The promising approach is a local treatment of peptic ulcers.

The model of acetated ulcer III type developed by S. Okabe and K. Amagase is the most similar on morphological peculiarities to peptic ulcer among all experimental models of stomach ulcers. However, this experimental model of ulcer has some drawbacks. They are difficulty of execution, frequent formation of internal stomach fistulas with development of local peritonitis and adhesions. Furthermore, additional ulcerative impairments can appear inside stomach.

Aim of study was to make the performing of symmetric stomach impairment easier and to decrease a quantity of complications during this process by improvement of "window-similar" clip.

Materials and methods. An experimental study was conducted on the base of vivarium of Vinnytsia National Medical University n.a. M.I. Pirogov. All the experiments were conducted with permission of Committee of Bioethics.

The study was performed on 14 rats. They were equally divided into control and experimental groups. All the experiments were performed in sterile conditions under general anesthesia.

In control group of 7 rats ulcers were made in accordance to method of Susumu Okabe, 2005. In experimental group which consists of 7 rats ulcers were made with device designed by author. The result of experiment was estimated macro- and microscopically on the third day.

Results. A leakage through a needle was observed in 5 (71.4%) cases at the beginning of injection of acetic acid. On the third day adhesions appeared in the area of perforation as a result of chemical burn. The same situation was in one another rat despite we did not see a leakage of acetic acid.

The square of ulcerous impairments of the front and rear stomach wall was 9.8±0.8 mm² and 9.8±1.11 mm² respectively. There were no statistically significant differences between them ($p>0.05$, Student's t-criterion).

An additional ulcerous defects were detected in 2 (28.6%) rats on rear stomach wall. They were located closer to large curvature of the stomach and their size was about 1.5 and 2.5 mm.

The morphological peculiarities were typical for stomach ulcer and did not differ from the morphology of peptic ulcers.

There were no cases of a leakage of acetic acid from the place of injection in experimental group. The square of impairment was 9.4±1.1 mm² on the front wall and 9.3±1.07 mm² on the rare wall. There were no statistically significant differences between them ($p>0.05$, Student's t-criterion).

Macro- and microscopic peculiarities of mucosa were identical to the control group with the exception of absence of additional ulcerous defects on the rare wall of stomach.

After statistical comparison follow data were received.

It was difficult to make a positioning of needle in 5 (71.4%) cases. A perforation occurred and adhesions appeared in 6 (85.7%) cases. An additional ulcerous defects were detected in 2 (28.6%) cases. In experimental group there were

no cases of any kind of complications and the results differed significantly ($p<0.05$, Fisher's exact bilateral criterion).

Moreover, we did not detect significant difference between sizes of all ulcerous impairments in control and experimental groups ($p>0.05$, Student's t-criterion).

Conclusions. Using of the proposed modification of symmetric ulcerous stomach impairments permits to make a positioning of injection needle easier ($p<0.05$, Fisher's exact bilateral criterion). This approach also decreases a frequency of perforations and adhesions, i.e. complications that make any further manipulations on the front stomach wall impossible. It is prospective to develop methods of a local acceleration of reparative process on symmetric stomach impairments modified model.

Key words: peptic ulcer of stomach, acetic acid ulcer, experimental model of stomach ulcer.

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PHARMACOLOGICAL STUDIES OF A NEW DERIVATIVE OF 2-OXO-INDOLINE

Introduction. Nonsteroidal anti-inflammatory drugs (NSAIDs) are a group of drugs that are widely used in clinical practice, many of them can be bought without a prescription. More than thirty million people worldwide take NSAIDs daily. Great "popularity" of NSAIDs explained by their anti-inflammatory, analgesic and antipyretic effects and bring relief in many diseases.

Modern medicine give a preference for NSAIDs, which together with anti-inflammatory effect show other pharmacological activities, such as antimicrobial,

considering the fact that the majority of inflammatory diseases associated with different microbial etiological factors.

The *aim* of our work was to study the antimicrobial and antiexudative effects of a new substance – the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid.

Materials and methods. The object of the study was the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid. Experiments were carried out on 30 white male rats nonlinear weight of 180-200 g.

Antiexudative effect was determined on a model of acute carrageenan edema caused by subplantar injection of 0.1 ml 1% carrageenan solution to the test animals. Antiexudative effect of substances was evaluated by the ability to inhibit the development of edema at the moment of its maximum expression (4 hours after carrageenan injection). The antimicrobial effect of an aqueous solution of the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid in different concentrations (0.5%, 1.0%, 5%, 10%) was studied by diffusion of the substance in agar (the method of "wells"). For the research was used the Mueller-Hinton agar. To assess the activity of substance were used test-strains of Staphylococcus aureus ATCC 26923, Escherichia coli ATCC 25922, Pseudomonas aeruginosa ATCC 27853, Bacillus subtilis ATCC 6633, Proteus vulgaris ATCC 4636, Candida ablicans ATCC 885/653. Microbial load was 10^7 microbial cells per 1 ml of medium, which was set by McFarland’s standard. For the experiment was used a 18-24-hour culture of microorganisms. The level of antimicrobial activity determined by the diameter of delay the growth zone of microorganisms around wells with substance.

Results. Established that inflammation in rat hind limb foot accompanied by a typical increase in its volume, which was stored in the control group of animals for the duration of the experiment. Experimentally proved that the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid shows high antiexudative activity (76.7%), which is 15.4% higher than the effect of comparison drug Diclofenac Sodium, which inhibits inflammatory swelling by 61.3% compared with the control group of animals.

The results obtained in the experiment showed that the investigated substance in various concentrations (0.5%, 1.0%, 5%) shows antimicrobial activity against strains of Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Bacillus subtilis, Proteus vulgaris, Candida ablicans. The strains of Staphylococcus aureus, Pseudomonas aeruginosa, Bacillus subtilis showed high sensitivity to a 5% solution of the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid. Antimicrobial activity of the test compound in 5% concentration exceeded the activity of the comparison drug dimethyl sulfoxide.

Conclusions. The new compound – the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid, as a potential anti-inflammatory drug, shows pronounced antiexudative activity (76.7%), surpassing the effect of the comparison drug Diclofenac Sodium by 15.4%. 5% aqueous solution of the methyl ester of N-[(2-oxoindolinylidene-3)-2-oxyacetyl]-aminoacetic acid shows more pronounced antimicrobial activity against strains of Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Bacillus subtilis, Proteus vulgaris, Candida ablicans than the comparison drug dimethyl sulfoxide.

Key words: 2-oxoindolin derivatives, anti-exudative and anti-microbial activity, anti-inflammatory agents.

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SUBMICROSCOPIC STATE OF AERO-HEMATIC BARRIER OF THE LUNG ALVEOLI AFTER EXPERIMENTAL THERMAL INJURY AND APPLICATION OF SURFACTANT

Introduction. The development and introduction of new methods of treatment of burn disease is actual problems in combustiology. *The aim* of this study was to the ultrastructural reorganization of aero-hematic barrier of the respiratory portion of the lung was studied after thermal injury and injection of surfactant.

Materials and methods. Experiments conducted at 20 mature white male rats that were divided into 2 groups: 1 - animals with burn injury (10), 2 - animals with burn injury who underwent correction drug surfactant (10).

We caused the third degree burn under ether anesthesia copper plates heated in boiling water to a temperature 97-100ºC on the epilate body surface of animals.

Dimensions of the affected areas were 18-20%. The animals of the second experimental group were injected intratracheally exogenous drug "Kurosurf" at a dose of 300 mg / kg. The animals were decapitated at 7, 14 and 21 days. For electron microscopic studies took small pieces of the respiratory department of lungs.

Results. We found that on day 7 of the experiment occur compensatory changes and there are signs of destruction of all structural components of the respiratory department, founded submicroscopic signs of exhaustion secretory alveolocyte, partly damaged ultrastructure organelles that provide synthetic processes. Submicroscopic in the later stages of the experiment (14, 21 day after the burn) installed deep, destructive changes of respiratory and secretory alveolocyte, endothelial cells and the basal membrane hemocapillaries. Electron microscopic study of the respiratory department of lungs animals which after heat injury surfactant administered drug, showed that at day 7 of the experiment destructive changes of components of aero-hematic barrier markedly smaller than in the group burn animals without correction. The positive effect of surfactant in the study revealed the ultrastructure of secretory alveolocyte. Most of them are in a state of increased functional activity.

Conclusion. It was established that the using of this preparation reduces the extent of damage of the aero-hematic barrier, activates the regenerative processes and improves the state of alveoli in the later stages of the experiment.

Key words: aero-hematic barrier, submicroscopic state, thermal injury, surfactant.

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STRUCTURAL CHANGES IN HUMAN MYOCARDIUM UNDER CONDITIONS OF ACUTE ISCHEMIA USING CORRELATIONAL PHASE LASER ANALYSIS

Introduction. Knowledge about structural changes in the myocardium under conditions of acute coronary insufficiency up to six hours is currently not at a sufficient level. This is because the development of macro- and micro-structural changes can be detected with a sufficient level of necrosis. On the other hand, this pathology is fairly widespread and its share in the nosology structure of disease does not tend to decrease. The difficulty of diagnosis and frequency distribution of ACI necessitate the study of structural rearrangements in human myocardium under conditions of ACI and determination of reliable criteria.

The aim of the study was to establish the rearrangements of myocardial structures under conditions of ACI through research of laser polarimetric images by using laser phase analysis. To achieve this goal we did as follows: established optical criteria for changes in the structure of myosin fibers under conditions of ACI up to six hours after onset of ischemia; determined the diagnostic efficiency of phase analysis of laser polarization images for establishing ACI.

Materials and methods. Myocardial tissue slices, which were divided into two groups: 97 samples of myocardium from corpses of people who died as a result of ischemic heart disease and myocardial samples of 94 corpses, who died from acute coronary insufficiency.

In this paper, we used the method of phase analysis of laser polarimetric images. The study was performed on a Mach-Zehnder interferometer.

Results. Under conditions of acute coronary insufficiency in ischemic duration less than six hours morphological changes in the structure of the myocardium occur as changes in the structure of myosin fibers.

We have set coordinate distributions of phase shifts and random value histograms of laser images of sections of myocardial tissue in both groups.

Results of the study of coordinate distribution phase shifts indicate a high sensitivity of the phasometry method to optical anisotropy of extracellular matter in the matrix of myocardial tissue.

The obtained data shows that the coordinate values of the distribution phase shifts of laser images of sections of myocardial tissue of group 1 were less homogeneous than group 2. This fact indicates a slower decrease of the relative values of the autocorrelation function for the phase map of laser images of myocardial tissue under conditions of ACI compared with the same correlation that was obtained for tissues in group 1.

Conclusion. From the data obtained experimental studies of the correlation structure of the distribution of polarization sections of myocardial tissue samples there is a clear demonstration of the objective possibility of accurate diagnosis of death due to acute coronary insufficiency.

The most informative turned out to be correlation moments of the 2^{nd} and 3^{rd} order, characterizing the autocorrelation function of the distribution of values of phase shift laser images of myocardial tissue samples

In the case of acute coronary insufficiency, dispersion Q_2^{δ} is reduced by 1.7 times, and excess Q_4^{δ} by 2 times.

Key words: acute myocardial ischemia, laser, forensic examination.

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SPECIES COMPOSITION OF OFFICINAL HERBS OF MEADOW LAND PHYTOCEOENOSIS OF THE SOUTH BUH RIVER MEADOW LANDS IN NEMYRIV DISTRICT

Introduction. Officinal herbs have become the basis for development of the perspective trend – folk medicine. Medicinal plants used in scientific and folk medicine as an effective natural, biologically an effective tool for the treatment of various diseases. *Purpose* – to explore the features of the spread of wild medicinal plants, identify species of rare and endangered medicinal plants.

Materials and methods. In order to spot out officinal herbs as well to preserve rare species of plants in Vinnytsia Region the expedition was organized to explore species structure of vegetation within local landscape park «Nemyriv Pobuzhzhia» near the village of Hvozdyv in Nemyriv district of Vinnytsia Region.

Results. During examining phytoceoenosis of meadow land there were found following herbs: *Potentilla erecta* (L.) Henpe, *Potentilla anserina* L., *Agrimonia eupatoria* L., *Achillea millefolium* L., *Taraxacum officinale* Wigg., *Artemisia absinthium* L., *Urtica dioica* L., *Plantago lanceolata* L., *Polygonum persicaria* L., *Polygonum hydropiper* L., *Verbascum phlomoides* L., *Linaria vulgaris* Mill., *Capsella bursa-pastoris* L., *Elymus repens* (L.) Gould.

Gosling from Ranunculaceae Family also belongs to the discovered rare herbs used in folk and traditional medicine.

According to the plant classification of rarity the Family belongs to the IV category of protection. On the slope meadows near the village of Hvozdyv there were found 4 populations of the plant, with 16-30 flower buds each.

Conclusion. Each year anthropogenesis activity influences the structure of the natural ecosystems more essentially, that is why defining of the rare species density on the regional level is one of the Red book plants protection.

Alongside with measures aimed at vegetation protection there is increasing need in usage of the herbs there is increasing need in usage of the herbs in the traditional medicine. So the following logical stage in studying the species of Nemyriv Pobuzhzhia is evaluation of the vegetative cover as well as reserve of the officinal herbs.

Key words: Nemyriv Pobuzhzhia, meadow phytoceoenosis, species of the officinal herbs, rare and disappearing plants, Gosling meadow (*Pulsatilla pratensis s. l. incl. P. bohemica*) family.

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BIOCHEMICAL ALTERATIONS IN THE BRAIN AND BEHAVIORAL REACTIONS IN OPEN FIELD TEST IN RATS WITH HOMOCYSTEINE THIOLACTONE-INDUCED HYPERHOMOCYSTEINEMIA

Introduction. Hyperhomocysteinemia (HHC) is associated with the development of neurovascular, neurodegenerative and psychiatric diseases. The question concerning the role of high homocysteine as pathogenic factor or as marker of neurological disorders is still debatable. HHC induces oxidative stress, hypomethylation, disturbances of neurotransmitters production in the brain. Disposal of homocysteine in the brain associated with the synthesis of hydrogen sulfide (H_2S) - neuromodulator, vasodilator, cytoprotector. Brain neurotrophic factor (BDNF) plays

an important role in the regulation of the functional state of neurons and synaptic plasticity. Violation of brain BDNF expression can be a pathway in the development of neurodegenerative processes, depression, cognitive dysfunction and psychiatric disorders. Pathogenic role of H_2S and BDNF in HHC still poorly understood. The *aim* was to study the BDNF blood level, biochemical alterations in the brain and behavioral reactions in the open field test in rats with homocysteine thiolactone-induced hyperhomocysteinemia.

Materials and methods. Research conducted on 38 white laboratory male rats weighing 220-280 g in accordance with the requirements of the European Convention for the protection of vertebrate animals used for research and other scientific purposes (Strasbourg, 1986). HHC aroused in 4 groups of rats by the administration of the thiolactone D,L-homocysteine (Sigma, USA) intragastrically in a dose 100 mg/kg during 28 days or in a dose 200 mg/kg during 14 days. Biochemical alterations in the brain and behavioral reactions in open field test in rats with homocysteine thiolactone-induced hyperhomocysteinemia (HHC) were investigated.

Results. The administration of homocysteine thiolactone caused a dose-dependent increase of homocysteine serum level and decrease of H_2S content (in 2.0-2.1 times) in the brain of rats. HHC induced the formation of the unfavorable metabolic pattern in the brain - deficiency of H_2S, energy deficit, reduction of adenosine synthesis (decrease in the activity of S-adenosylhomocysteine hydrolase, methionine adenosyltransferase, 5'-nucleotidase). Indicators of energy exchange reliably correlated with H_2S content in the brain and homocysteine content in the blood serum, connections are oppositely directed. HHC-induced metabolic changes in the brain were associated with the increase (on 48-73%) of neuron-specific enolase, decrease (on 34-44%) of brain neurotrophic factor in the blood serum. Neuronspecific markers reliably correlated with H_2S content in the brain and homocysteine level in the blood serum.

Conclusion. Unfavorable metabolic pattern in the brain was associated with disorders of orienting-exploratory activity and vegetative balance in open field test in rats with HHC.

Key words: homocysteine, hydrogen sulfide, nucleotide metabolism, brain, behavioral reactions.

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ANALYSIS OF THE IMPACT OF PROPYLENE GLYCOL EXTRACTS OF MEDICINAL PLANTS AND ROYAL JELLY ON THE MANIFESTATIONS OF OXIDATIVE STRESS AND ANTIOXIDANT DEFENSE SYSTEM IN BLOOD OF RATS WITH METABOLIC SYNDROME

Introduction. Metabolic syndrome (MetS), also called insulin-resistance syndrome, is a complex of disorders, associated with imbalance between production and inactivation of reactive oxygen species. In the last years the potential role of oxidative stress in MetS is rapidly evolving. The present study was designed to investigate the effect of propylene glycol extracts (PGE) of nettle, raspberry, walnut, mountain ash and Royal jelly on oxidative stress markers in serum of rats with MetS.

Materials and methods. Experimental modeling of MetS in white rats was performed by complete replacement of drinking water by 60% fructose solution. State of the antioxidant defensive system in given experimental conditions was estimated by determining the activity of superoxide dismutase (SOD). The intensity of lipid peroxidation was measured by estimating serum malondialdehyde (MDA) levels. Oxidative modification of proteins in serum was assessed by early (aldehydephenylhydrazones, APH) and late (ketophenylhydrazones, KPH) markers of oxidative degradation of proteins.

Results. MetS in rats is accompanied by an increase of blood levels of free radical oxidation products of lipids (MDA) and proteins (APH and KPH) as well as

suppression of antioxidant defense (SOD). Application of PGE of nettle, raspberry, walnut, mountain ash and Royal jelly in the course of 14 days in rats with MetS reduces the manifestations of oxidative stress in varying degree in blood of experimental animals. Pronounced inhibition of the activity of free radical oxidation and increase in the activity of antioxidant defense system in animals with MetS was noted after administration of PGE of Royal jelly, raspberry and mountain ash.

Conclusions. This study indicates an important role of oxidative stress in the pathogenesis of MetS. In experimental model of MetS the largest antioxidant efficacy was observed for propylene glycol extract of Royal jelly.

Key words: experimental metabolic syndrome, propylene glycol extracts, lipid peroxidation, oxidative modification of proteins, blood.

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REGISTRATION OF DENTAL STATUS FOR CHILDREN AND ADOLESCENTS USING CIPHERS AND CODES

Introduction. One or the most perspective directive in the forensic dentistry is the development of ciphers and codes (abbreviations) that can represent complete information on the dental status of children and adolescents and should be based on the generally accepted classifications of dental pathologies and the protocols of providing dental care for the child population. These principles are reflected in the relevant completing of the form N 043 /o provided by the Ministry of Health of Ukraine. New adapted codes may serve as an effective tool for identification ofyoung agedindividuals and evaluation of the quality of dental services during comprehensive forensic examinations

Materials and methods. Method of content analysis of medical documentation and ID forms of DVI protocols was used for detections of similarities and differences of ciphers and codes in those two samples of documentation. Method of systematical analysis was used for categorization of codes samples and new proposed abbreviations. Analytical methods were used for creation of registration algorithm for identification of iatrogenic interventions and further verification in childhood dentistry with forensic and expert purposes.

Results. System of ciphers and codes developed for medical documentation filling should consist of abbreviations that represent nosology, and contain additional information of the location, characteristics and features of an existing items or pathologies. The results of dental procedures and basic nosological units are presented as unique casts specially adaptedfor designed F1 and F2Interpol forms for the evaluation and comparison of dental status. Overall condition of the jaws and teeth should be described in form F1, which indicates all available data of living person. The form F2 describes the clinical status of each element of the dental status post-mortem indicating clinical status: caries, sealed cavities, additional features of the teeth, in the case of sealed teeth thatindicates the material used and the surface description, possible prosthodontic of orthodontic devices.

Conclusions. An analysis of the actual classification of dental diseases of children and adolescents provided by Ministry of Health and principles of identificationDVI systems argument the need of development of a national system of unique codes and ciphers to describe the basic elements of dental identification (existing pathologies and treatment results due to their characteristics, location, used materials, damaged surfaces, etc.). Adaptation of codes is an important issue to the integration of the national system of dental identification to the international database. The system of abbreviations should include already existing system of codes proposed in official documentation of Ukraine and dominant codes and ciphers used in DVI protocol. This way different abbreviations can be conversed in computer program. In addition, the proposed list of codes and ciphers focusing on the identification of the child population, takes into account the anatomical features of

deciduous teeth, root formation stages, terms of eruption et al. Developed ciphers and codes for recording dental status of children and adolescents can be used by law enforcement agencies for the purpose of identification, determination of age and sex, identification of victims of mass disasters and victims of criminal offenses in the program of dental identification during medical and forensic dental examinations.

Key words: ciphers, codes, children and adolescents, dental identification, dental status.

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CORRELATION ANALYSIS OF THE RELATIONSHIP DOPPLER ECHOCARDIOGRAPHIC INDICES WITH THE RIGHT HEART AND ANTHROPOMETRIC INDICES IN SOMATOTYPICAL ADOLESCENCE MALE ATHLETES

Introduction. Athletes need regular medical examinations to rule out diseases that may be the cause of acute myocardial ischemia, or life-threatening arrhythmias. At a time when the structural indicators and their deviations from the athletes covered widely, ultrosound Doppler indices received less attention, particularly Doppler indices ultrasound right heart devoted only a few works. The *purpose* of work is to carry out a correlation analysis of the relationship between the Doppler ultrasound indices right heart with anthropometric and somatotypical indices in boys-athletes with the different nature of training loads.

Materials and methods. The study involved 137 people age youth (17 - 21), which are regularly engaged in intensive sports. By the nature of the training load athletes were divided into three groups according to the classification А.Г. Дембо [1988]. Conducted anthropometric studies [Николаев и др., 2010], on the assessment

of somatotype method J.E.L. Carter i B.H. Heath [1990] was determined by total muscle mass [Heymsfield et al., 1982]. Ultrasound examination of the heart was performed in accordance with the recommendations of the European Association of Echocardiography. Doppler echocardiography was performed using standard techniques [Вилкенсхоф, Крук, 2008; Рыбакова и др., 2008]. Statistical analysis was performed using the software "STATISTICA 6.1" package (owned VNMU named after N.I. Pirogov, the license number VXXR901E246022FA).

Results. The studies found that with the group of athletes from 924 possible connections have statistically significant 71 (7.68%). Of these 32 communications (45.1% of all statistically significant) is a direct medium-strength, 39 bonds (54.9% of all statistically significant) is the inverse of medium strength. Athletes of the first group identified 32 statistically significant relation (10.4%) out of 308 possible between Doppler indices and anthropometric ultrusound and somatotypical performance, the athletes of the second group showed a statistically significant association 21 (6.8%) out of 308 possible, the athletes the third group of 18 found statistically significant associations (5.8%) out of 308 possible.

Conclusion. Athletes, developing speed and strength, found the highest among all groups statistically significant number of medium-strength forward and backward linkages between the Doppler indices ultrusound and anthropometric indices and somatotype. Athletes develop dexterity and speed, set the lowest among all groups statistically significant number of medium-strength forward and backward linkages between these indicators. Athletes who train agility, speed and strength, take the number of intermediate position. It was found that the nature of training loads affect the Doppler ultrosound indices right heart that must be considered when echocardiographic examinations of athletes.

Key words: sports, dopler-echocardiography, anthropometry, somatotype.

CLINICAL RESEARCHES

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PECULIARITIES OF THE CLINICAL COURSE OF PYOINFLAMMATORY DISEASES IN CHILDREN WITH DIABETES MELLITUS

Introduction. Every year the number of children with type I diabetes mellitus increases by 200 persons in Ukraine. An important aspect of DM1 in children is its complications contributing to occurrence of pyoinflammatory diseases (PID) having a more severe clinical course. The *objective* of our research was to study the level of endogenous intoxication in children with pyoinflammatory diseases against the background of type I diabetes mellitus and to improve the treatment results of these children.

Materials and methods. The scientific research was based on the analysis of the treatment results of 141 patients. The children were divided into 4 groups – 3 comparison groups: comparison group №1 – somatically healthy children, without disorders of homeostasis and laboratory indices; comparison group №2 - patients with PID; comparison group №3 – children with DM1 admitted to hospital at the stage of the disease decompensation. The main group included children getting PID against the background of DM1. In this group the children were divided into those who received only baseline therapy – A-subgroup and children who were prescribed both the baseline therapy and enterosorbent "Atoxil" – B-subgroup. The dehydration expression was determined for all the children as one of the factors of the diabetic ketoacidosis occurrence. The ill children with the diagnosis "Type I diabetes mellitus" had the level of the diabetic ketoacidosis examined that was considered to be a DM complication. According to the results of the laboratory examinations all the children had the level of the endogenous intoxication examined according to the

following indices: Leukocytal intoxication index (LII); Leukocytal intoxication index modified by Kostiuchenko (LIIk); haematological intoxication index (HII); Ostrovskii leukocytal index (LIIo). Taking into account absence of the age physiological norm (APN) of the EI indices in the children, declared by the authors, the EI level was determined in comparison group №1 - healthy children that made up: LII - 0,57±0,05; HII - 0,55±0,05; LIIo - 1,23±0,08; LIIk - 0,81±0,07.

Results. The research results showed that: on admission the dehydration in comparison group №2 was 2,06%, there was no diabetic ketoacidosis at all; according to the studied indices the level of the endogenous intoxication was: LII - 1,18±0,12 , HII - 1,60±0,20, LIIo - 1,97±0,13, LIIк - 1,88±0,21. After elimination of the suppurative focus on discharge from hospital the endogenous intoxication indices were: LII - 0,57±0,07; HII - 0,58±0,08; LIIo - 1,10±0,10; LIIk - 0,73±0,08 that corresponded to the level of APN.

In comparison group №3 the dehydration on admission was 2,68%. One patient did not have DKA, 1st degree DKA was revealed in all the rest 24 children. The endogenous intoxication was: LII - 1,80±0,32, HII - 2,07±0,40, LIIo - 2,69±0,29, LIIк - 2,58±0,36. After the complex treatment the clinical manifestations of DM1, DKA and dehydration disappeared. However, the level of the endogenous intoxication decreased a little but still exceeded the age physiological norm and was: LII - 0,91±0,11, HII - 0,92±0,11, LIIo - 1,64±0,14, LIIк - 1,18±0,10.

In the main group in A-subgroup 21 patients had the 1st degree dehydration on admission - 3,38% , 7 - the 2nd degree dehydration corresponding to 6,61%. The 1st degree DKA was revealed in 21 patients while 7 patients had the 2nd degree DKA. The endogenous intoxication on admission was: LII - 2,36±0,33, HII - 3,74±0,64, LIIo - 3,26±0,30, LIIк - 3,24±0,39. After the complex treatment, elimination of the suppurative focus, compensation of type 1 diabetes mellitus, the dehydration and DKA disappeared completely. However, though the level of the endogenous intoxication decreased it exceeded the APN significantly and was: LII - 1,02±0,12, HII - 1,16±0,15, LIIo - 1,69±0,13 , LIIк - 1,21±0,15 ($p<0,05$).

After the analysis of the results of the endogenous intoxication indices in the main group, B-subgroup – the children with PID against the background of DM1 that took sorbent "Atoxil" during 7-10 days from admission to hospital, it was established that the endogenous intoxication indices made up: LII - 0,66±0,13, HII - 0,68±0,12, LIIo - 1,33±0,06, LIIк - 0,86±0,08, that was significantly lower than the EI level of the main group, A-subgroup on discharge ($p<0,05$), and corresponded to the APN ($p>0,05$).

Conclusion. In case of pyoinflammatory diseases children got the syndrome of the endogenous intoxication conditioned by the infectious agent and available focus of inflammation which elimination leads to normalization of the EI indices. In the children with type 1 diabetes mellitus the syndrome of the endogenous intoxication of the metabolic-productive genesis develops, leading to increased endogenous intoxication even under the conditions of diabetes mellitus compensation. During treatment of children with pyoinflammatory diseases against the background of diabetes mellitus two pathogenetic sources of the endogenous intoxication, strengthening each other, should be taken into account. The use of the peroral sorbent "Atoxil" by the children with PID against the background of DM1 is effective as it decreases the level of the endogenous intoxication significantly as compared to the children that do not take "Atoxil".

Key words: children, 1 type diabetes mellitus, surgical implications, endogenous intoxication.

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WAYS TO IMPROVE THE TREATMENT OF CHRONIC SALPIHOOFORYTIV AND OVARIAN FAILURE

Introduction. Pelvic inflammatory disease occupy one of the first places in the structure of gynecological pathology. *Purpose* - to evaluate the effectiveness of comprehensive rehabilitation of women with chronic salpingoophoritis.

Materials and methods. The study involved 60 women immediately after treatment exacerbation of chronic salpingo aged 25 to 34 years, the control group consisted of 30 healthy women active (25-34 years) of reproductive age. The main group was divide into 3 groups of 30 women appointed in accordance with rehabilitation therapy. The first group consisted of women after treatment exacerbation of chronic adnexitis which was intended traditional absorbable therapy ("vitreous body", "aloe"), the second group includes women after treatment exacerbation of chronic salpingitis which proposed a new scheme of comprehensive rehabilitation comprising the enzymatic two-component drug - Distreptaza. The mechanism of action is based on a combination of active ingredients (streptokinase 15000 IU, streptodornaza 1250 IU), which contribute lysis of necrotic masses, layers of fibrin and clots, improve blood circulation and microcirculation in the area of inflammation increases therein concentrations of drugs, the rapid reduction of infiltration, edema and clinical manifestations. The drug is used for circuit 1 suppository per recnum 2 times a day for 3 days, then 1 suppository 1 time a day for 4 days. The total treatment duration was 7 days. A survey of women conducted at the Centre for Reproductive Medicine "REMEDI" (Vinnitsa), Clinical deliver Centre №2 (Vinnitsa). To determine the level of hormones used immunological and radioimmunological methods. Basal level follicle-stimulating hormone (FSH), luteinizing hormone (LH), estradiol, prolactin were determined at 2-4 day menstrual cycle. Functional status was evaluated using ovarian investigation of doplerometriya with sonographic mapping, which was carried out on the machine Voluson-730 pro using abdominal and vaginal transdyuser accordance phases of the menstrual cycle (days 5-6, 19-20 days) and conducted in accordance with the definition peryfolikulyar blood flow cycle phases.

Results. Was found in 36 (60%) of women surveyed adnexitises violation ovario-menstrual cycle, with 26 (43.3%) of them had a history of 1 to 3 abortions, 42 (70%) had a history of more than 3 and exacerbation of chronic salpingitis prescription from 2 to 10 years. After the hormonal studies 2-4 day menstrual cycle (determining the level of FSH, LH, FSH/LH, estrogen, progesterone) in 46 (76.7%) women with adnexitis were changes of the functional state of the ovaries, which amounted to about 20 (33, 3%) - monophasic cycle, 26 (43.4%) - shortening or menstrual cycle. When ultrasound signs of serous inflammation. In 34 (56.6%) was marked adhesions between the uterus and the body of the uterus or adjacent organs. In 28 (46.7%) occurred ovarian capsule thickening and decreased blood flow to the ovaries. After the comprehensive rehabilitation and re-examination of patients 6-8 weeks set normalization of hormonal homeostasis in 97.56% of women, in the comparison group at 76.12%, improving angiogenesis according doplerometrychnyh indicators in group I and group II 46.34% and 31.15% respectively.

Conclusions. Application comprehensive rehabilitation in women with chronic salpinhoofrytamy is an effective method of rehabilitation, as evidenced by normalization of hormonal homeostasis in 97.56% of women. The proposed method improves angiogenesis in 46.34% of women with chronic salpingoophoritis. The technique makes it possible to reduce the number of relapses, prevent the development of complications and restore reproductive health of women of childbearing age.

Key words: chronic adnexitis, rehabilitation, distreptaza.

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PATIENTS PSYCHOVEGETATIVE STATUS IN THE PREOPERATIVE PERIOD: INFLUENCE THE CHOICE OF SEDATION

Introduction. Preoperative emotional stress affects almost all bodily functions, increases the operational and anesthetic risk, and the risk of perioperative complications. *Purpose:* The purpose of our work was to improve the quality of preoperative preparation of gynecological patients with psycho-emotional and vegetative disorders through preoperative administration of buspirone as a premedication before a planned surgery.

Materials and methods. Before a planned gynecological intervention we examined 83 gynecological patients aged 18 to 65 years (mean – 45.88 ± 14.63 years, M ± StD). Patients were divided into 2 groups. In I (control) group (n = 48) we used as a sedation a standard dose of narcotic analgesic 30-45 minutes before the surgery, in II (basic) group (n = 35) - buspirone 5 mg per os in the evening before the surgery and 60 minutes before the surgery, and a dose of narcotic analgesic 30-45 minutes before the surgery. Patients in both groups received total intravenous or inhalation anesthesia with muscle relaxation and mechanical ventilation. Before surgery, patients were assessed for anxiety and depression under the Hospital Anxiety and Depression Scale (HADS). For diagnosing an autonomic dysfunction we used Wayne questionnaire. We calculated Kerdo vegetative index and Hildebrandt index. Intraoperative monitoring consisted of noninvasive control of blood pressure (BP), heart rate (HR), respiratory rate, and SpO2. The data was analyzed using the SPSS 20 program.

Results. In the preoperative period, the vast majority of patients in both groups had subclinical levels of anxiety and depressive disorders. Patients with a predominance of tone of the sympathetic division of the autonomic nervous system demonstrated significantly higher levels of anxiety ($p < 0.001$), whereas patients with a predominance of tone of the parasympathetic division of the autonomic nervous system demonstrated significantly higher levels of depressive disorders ($p = 0.012$). All patients from the control group in a preoperative period had various degrees of

significant increase in the severity of vegetative symptoms ($p < 0.001$), anxiety and emotional stress ($p < 0.001$). Patients from the main group in the preoperative period demonstrated a significant reduction in the severity of anxiety and depressive disorders to normal values - respectively from 8.43 ± 3.54 to 6.24 ± 3.82 points ($p = 0.015$) and from 7.11 ± 3.23 to 5.49 ± 3.39 points ($p = 0.044$). Overall intraoperational period in both groups was characterized by persistent hemodynamic parameters at the stages of surgery.

Conclusion. Inclusion of buspirone in a premedication contributes to reduction of anxiety symptoms, improvement of mood in patients with subclinical levels of depressive disorders, curb growing the activity of the sympathetic division of the autonomic nervous system before surgery, and stability of hemodynamic parameters at all stages of surgery.

Key words: premedication, anxiety, buspirone.

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ANALYSE OF THE POPULATION LEVEL OF HOLLOW MICROFLORA OF THICK INTESTINE BY UNINFECTED AND INFECTED BILE PERITONITIS

Introduction. Aerobic, anaerobic microflora of the large intestine and Candida fungi can play a substantial role in pathogenesis of uninfected and infected bile peritonitis. At the same time, the population level of aerobic, anaerobic microflora of the large intestine and Candida fungi in case of uninfected and infected bile peritonitis has not been analyzed sufficiently. *Objective* of the study was to conduct pathophysiological analysis of the population level of aerobic, anaerobic microflora of the large intestine and Candida fungi under conditions of uninfected and infected bile peritonitis.

Materials and methods. 55 patients with acute calculous cholecystitis complicated by bile peritonitis have been examined including 21 men and 34 women aged from 28 to 74. 14 patients among them were afflicted with uninfected bile peritonitis, and 41 – with infected bile peritonitis. The control group included 12 practically healthy individuals. The population level of aerobic (S.aureus, E.fecalis, E.coli, P.vulgaris, K.pneumoniae), anaerobic (B.Bifidum, B.lactis) and Candida fungi was studied in lg KYO/g. The results were analyzed statistically by means of the computer programs “Statgrafics” and “Exel 7.0”.

Results. The results of the study were indicative of the fact that only E.coli level increased in the cavity of the large intestine in patients with uninfected bile peritonitis. Increased levels of E.coli as well as P.vulgaris, K.pneumoniae, E.fecalis, S.aureus in the cavity of the large intestine were detected in patients with infected bile peritonitis, which were reliably higher not only of that of control but considering uninfected bile peritonitis as well. B.Bifidum, B.lactis decreased in case of uninfected bile peritonitis and experienced further inhibition in case of infected pathological process considering both the control and uninfected bile peritonitis. Candida fungi did not change considerably.

Conclusions. The analysis of the population level of microflora of the large intestine in patients with infected bile peritonitis showed increasing content of E.coli, S.aureus, P.vulgaris, K.pneumoniae, E.fecalis and decreasing content of B.Bifidum, B.lactis concerning the control and uninfected pathological process. Candida fungi are not clinically important in pathogenesis of infected and uninfected bile peritonitis. The perspective of further studies concerning the population level of the microflora of the small intestine under conditions of infected and uninfected bile peritonitis is reasonable.

Key words: microflora of the large intestine, uninfected and infected bile peritonitis, pathogenesis.

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ASPECTS OF BREAST-FEEDING IN PROPHYLACTIC TRANSIENT HYPOTHYROIDISM

Introduction. Breast milk is necessary to ensure the full development and growth of the child. Its biological composition fully meets the needs of the child, and contains certain substances necessary for the development and formation of the nervous system. The composition of milk varies constantly depending on the age of the baby, time of day, mother's diet, emotional state. It is known that, apart from nutritional value, milk of the mother plays an extremely important regulatory function in the child's body due to the content of a number of protective and growth factors, neurotransmitters, hormones, including thyroid hormones. However, the impact of lactogenic thyroid hormones on the growth and development of the baby has not been studied. To prove the necessity of breast-feeding for preterm infants, we studied the content of thyroid hormones in breast milk.

Materials and methods. In the laboratory of of Vinnytsia Regional Clinical Endocrinology Dispensary it was performed determination of the content of thyroid hormones in breast milk in women with miscarriage pregnancy. Radioimmunological method with standard kits of reagents was applied.

The control group included milk from women delivering at term of gestation 38-42 weeks with the results of a laboratory study: colostrum: T3 - traces, T4 - traces, thyroid-stimulating hormone - 2,42 ± 0,21 mmol/l, TSH - 5,55 ± 0,74 mmol/l; mature milk: T3 - 10,1 ± 2,03 nmol/l, T4-392,9 ± 25,8 nmol/l, TSH -1,40 ± 0,24 mOD/ml.

Results. No significant difference in the concentration of thyroid hormones in colostrum of women delivering full-term and preterm infants have been identified. The content of T3 and T4 in this period was below the limit of detection using standard kits.

Thyroid profile of milk from women with preterm pregnancy differs from that in the control group. The triiodothyronine level was 7,7 ± 1,04 nmol/l, thyroxine - 309 ± 23,1 nmol/l, thyroid-stimulating hormone and 1,28 ± 018 mOD/ml. In matured milk of mothers who gave birth prematurely the level of T3 in 1,31 times, T4 in 1,27 times, TSH in 1,1 times less in comparison with the control group.

Conclusion. The content of thyroid hormones in mother's milk is not constant, but varies depending on gestational age, as well as the period of breast-feeding. Early transition of premature infants on mixed and especially artificial feeding invariable lends to the emergence or strengthening of deficit of thyroid hormones. Breast milk can be considered as an extremely important source of thyroid hormones for a kid's body in a critical period of its development, when thyroid hormones absolutely necessary for the formation of brain structures. It is necessary to feed premature infants with mother's milk, and to support breast-feeding in the case of premature birth.

Key words: breast-feeding, breast milk, ppremature infants, thyroxin, triiodothyronin.

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JUSTIFICATION EFFECTIVENESS OF A NEW METHOD FOR THE TREATMENT OF SEVERE COMMUNITY ACQUIRED PNEUMONIA

Introduction. The problem of the treatment of severe community acquired pneumonia is the actual problem. We have created a method for the treatment of severe community acquired pneumonia (patent of Ukraine №100824), which includes inhalation airways with cationic surface active antiseptic, holding enterosorption and administration of Glutoxim.

The *aim* of the study - to perform a comparative assessment of the effectiveness of the developed method for the treatment of severe community acquired pneumonia.

Materials and methods. Studying the effectiveness of the proposed method was conducted in 67 patients with severe community acquired pneumonia. Patients were divided into two representative groups. The main group (30 patients), were treated by the developed method. The comparison group (37 patients), whose treatment was held by usual methods. The estimative effectiveness of community acquired pneumonia treatment in both groups of these patients was performed by general clinical indicators, standard laboratory tests and determination parameters of endogenous intoxication.

Results. Comparative evaluation showed that the developed method of treatment of severe community acquired pneumonia is more effective than method of treatment in the comparison group in normalization of basic hematological parameters. Along with improvement of clinical, laboratory, biochemical parameters and indices of endogenous intoxication at an earlier data and improved physical examination. In comparison group 8 (21,6%) patients had complications, including 2 deaths (5,4%). While the main group complications arose in only 3 (10%) patients one of whom died (3,3%).

Using the developed method reduced the length of being the patients in hospital from18,0 ± 2,1 day to 14,5 ± 1,2 bed - days, which was 3.5 bed - days less than in the group of comparison.

Conclusions. Developed method treatment patients with severe community acquired pneumonia reduces endogenous intoxication, performes prevention of broncho - obstructive syndrome, reduces complications and reduces the length of being patients in hospital. The results of the data are necessary to carry out further research into the efficacy of the developed method for treatment of severe community acquired pneumonia in patients with immunosuppression.

Key words: severe community acquired pneumonia, inhalation of airways, enterosorption, Glutoxim.

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THE USAGE OF VACUUM THERAPY IN THE TREATMENT OF PURULENT NECROTIC WOUNDS IN PATIENTS WITH DIABETES AND CHRONIC LOWER LIMB ISCHEMIA OF STAGE IV

Introduction. The treatment of purulent necrotic wounds in diabetic patients remains the important medical and social problem. *Purpose* - to improve the immediate results of the surgical treatment of diabetic patients with diabetic foot syndrome and chronic limb ischemia of stage IV, complicated by purulent necrotic process through comprehensive treatment of wounds using negative pressure therapy.

Materials and methods. On the clinical base of surgical department №2 of Vinnitsa National Pirogov Memorial Medical University 14 patients with diabetic foot syndrome complicated by infected necrotic wounds, cellulitis and development of chronic arterial ischemia of stage IV were managed. Four patients were diagnosed with stage II, seven – with stage III, three - with stage IV of diabetic foot syndrome by F.W. Wagner. According to the Fontaine-Pocrovsky classification of the degree of chronic circulation disorders in the lower limbs all patients had stage IV of the disease. In six patients the combination of diabetic microangiopathies with atherosclerotic macroangiopathies of the lower extremities was found. There was 2 times more women then men. From this group 92% of patients were older than 60 years and, in addition to diabetes, the condition was burdened by two or three related conditions: 57% suffered from stenocardia and atherosclerosis, 50% - from hypertension, 42% - from obesity.

All patients admitted in the later period of purulent process. On the admission day the rate of blood glucose ranged from 10.2 to 21.5 mmol / l, in 85% acetone was found in urine.

The general clinical, laboratory studies and ultrasonography of lower extremities were performed. Microbial composition of wound excretions was defined by sowing of the pathological material on liquid and a dense culture mediums. Sensitivity to antibacterial drugs was defined by discs method. Staphylococcus, Streptococcus, E. Colli, P. Aeruginosa and Proteus were allocated from the pus.

Correction of hyperglycemia, ketoacidosis, fluid and electrolyte balance, function of the cardiovascular, respiratory systems, liver and kidneys was performed. Correction of blood glucose level was done using insulin. Obligatory we administered low molecular weight heparin and conducted prevention of acute digestive tract ulcers. Complex treatment included surgical treatment of purulent necrotic areas and application of vacuum therapy of wounds.

The type of surgery was determined personally (surgical treatment of infected wounds with necrectomy, opening of cellulitis, transmetatarsal anterior foot resection by Sharp). Surgical treatment of purulent focus includes it's broad disclosure with excision of all suppurative necrotic tissues, removal of sequestration in combination with the usage of vacuum therapy. For vacuum therapy we used Heaco REF NP32P device with negative pressure ranging from

-125 to - 145 mm.Hg.

In the postoperative period we conducted antibacterial therapy according to the microbiological research data.

The main criteria for evaluation of progress wounds process was its clinical characteristics with the definition of intoxication Kalf - Kaliph index, which was added by cytological and bacteriological studies. The rate of wound healing by secondary tension was evaluated by the dynamical change of the area of wound surface.

Results. The negative pressure of the vacuum wound bandage from the first day improved the wound clearance with the formation of leukocyte shaft. On the day

4 we have noticed the development of granulation tissue in the form of individual cells with the formation of capillaries. Complete wound epithelization lasted from 3 to 14 weeks (average - 4 ± 2.5 weeks).

In case of combination of diabetic microangiopathy with atherosclerotic macroangiopathy patients were further directed to address the issue of possible bypass surgery or stenting of arteries of the lower extremities.

Vacuum therapy course improved all stages of the wounds process: reduced local edema, wound space and microbial contamination, improved the local blood circulation, wound exudation, maintained the humidity of the wound environment with a pH of 6.5 to 8.0.

Conclusions. Diabetic patients with purulent complications need an active approach to treatment. The timely usage of surgical treatment and vacuum treatment of infected wounds is an effective method in the treatment and prevention of infectious complications in diabetic patients with purulent necrotic wounds and ischemia of the lower limbs. Radical treatment of purulent focus helps to quickly localize acute inflammation and in combination with intensive fluid therapy to normalize metabolic processes, promotes healing of wounds. The use of complex treatment allowed to achieve healing in 92% of patients and to avoid amputations. Further scientific development and wide practical implementation of the vacuum therapy will be used to improve the conditions of wound processes stimulation, prevention of disability of patients, reducing the periods of hospital stay.

Key words: Diabetes, wounds infection, wound treatment.

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FEATURES OF CLINICAL COURSE OF THE COMMUNITY-ACQUIRED PNEUMONIA IN PATIENTS WITH CHRONIC RESPIRATORY DISEASES

Introduction. Community acquired pneumonia (CAP) is one of the most common infectious diseases that require hospitalization in the developed countries. Chronic respiratory diseases - asthma and chronic obstructive pulmonary disease (COPD), are considered risk factors for CAP. As a result of CAP the patients lost control of the chronic diseases. Their exacerbation, in many cases, has bright clinical presentation with development of severe respiratory failure and severe bronchial obstruction hiding CAP clinical signs and causes difficulty in its diagnosis.

The aim of this study was to reveal features of the community-acquired pneumonia (CAP) on the ground of chronic respiratory diseases, its early and late outcomes.

Materials and methods. It was observational "case-control" study. Main group included 143 CAP patients with pathology of the respiratory organs and control group included 129 CAP patients without chronic respiratory diseases coincided with main group by gender, age and chronic concomitant pathology of the others systems.

Results. It was established CAP of the main group more frequently was presented with productive cough (62,9% vs 50,4%, p=0,025) and dyspnea (69,9% vs 45,5%? p=0,0001), but patient from the control group suffered due to pleural pain (19,4% vs 9,8%? p=0,043). Objective signs of the bronchial obstruction which occulted signs of the CAP observed at the main group. Leukocytosis (28,7% vs 16,3%, p=0,021), bilateral injury of the lungs (25,5% vs 15,5%, p=0,036) was more frequently developed in the main group. It was connected with more severe inflammatory process.

Severe different types disorders of the lung function was established in the main group accompanied with low blood oxygenation and development of the moderate severe or severe respiratory failure in the main group (86,0% vs 55,1%,

p=0,0001). Differences of death risk assessment with CRB-65 and PSI scores, duration of hospitalization, dynamics of recovering, early and late outcomes of CAP were not revealed.

Conclusions. Chronic respiratory diseases in the patients with CAP modify the clinical presentation, reducing signs of the lung consolidation syndrome, manifesting signs of the bronchial obstruction and pulmonary failure.

The presence of asthma and COPD did not significantly affect the dynamics of the CAP course during treatment; worsen the early and late outcome of the disease.

To improve management of the patients with chronic respiratory diseases should conduct additional research of the influence base therapy of these diseases on the course and effectiveness of CAP treatment.

Key words: community-acquired pneumonia, chronic respiratory diseases, symptoms, signs.

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FEATURES OF HEART RATE VARIABILITY IN PERIMENOPAUSAL WOMEN

Introduction. Purpose: to evaluate the features of heart rate variability in women with hypertension and obesity in perimenopause.

Materials and methods. 50 women (age 53 ± 3,5 years) with arterial hypertension stage II disease1-2 degrees and obesity I-II. Which were divided into 3 groups, depending on menopausal status. 15 women without hypertension and obesity as control subjects. Evaluation of the temporal and spectral parameters of heart rate variability (HRV) spectral analysis was performed by using an electrocardiograph "Kardiolab" HAI-MEDICA.

Results. The heart rate variability differed in all groups of patients. So women in perimenopause, the data showed an increase in all parameters reflecting the activation of the sympathetic nervous system, especially in women suffering from hypertension and obesity, increasing wave power very low frequency (VLF%).

Conclusion. In women during perimenopause with hypertension and obesity, reduced all the parameters of general heart rate variability due to the imbalance of the components of the autonomic nervous system associated with hormonal changes.

Key words: heart rate variability, sympathetic nervous system, perimenopause.

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STRUCTURAL AND FUNCTIONAL CHANGES OF THE LEFT VENTRICLE AND VESSELS IN THE PATIENTS WITH ESSENTIAL HYPERTENSION OF THE 2ND STAGE DEPENDING ON THE TYPE OF THE DAILY PROFILE OF ARTERIAL PRESSURE

Introduction. The research *objective* – to assess peculiarities of the structural and functional changes of the left ventricle and vessels in the patients with essential hypertension of the 2nd stage depending on the arterial pressure (AP) daily profile.

Materials and methods. The research involved 110 patients (70 women and 40 men) with essential hypertension of the 2nd stage, hypertensive heart and chronic heart failure of the 0-l st. degree. The patients underwent echocardiography and arterial pressure daily monitoring. The thickness of the intima-media complex was measured, endothelium-dependent (EDVD) and endothelium-independent (EIVD) vasodilatation was determined. 2 types of the left ventricular remodeling were

established: concentric and eccentric hypertrophy, and 2 types of the AP daily profile: "dipper" and "non-dipper". It was established that patients with the "non-dipper" daily profile as compared to the patients with the "dipper" one had higher AP and greater pressure load on the target organs (average daily SAP 160,16±1,68 mm Hg, average daily DAP 98,57±1,61 mm Hg, daily blood pressure load of SAP 82,24±2,17 %, daily blood pressure load of DAP 69,03±2,05 %, and 148,17±2,09 mm Hg, 92,29±1,83 mm Hg, 68,07±2,36 %, 49,14±2,15 %, respectively, ($p<0,05$)) that led to more evident structural-geometrical and functional changes of left ventricular (LV myocardium mass index 114,52±1,82 g/m^2, E/A 0,79±0,03 m/s and 110,05±2,73 g/m, 0,97±0,20 m/s, respectively). The patients with insufficient night decrease of AP also had more severe structural and functional vessel dysfunctions (EDVD 8,14±0,18 %, EIVD 16,97±0,17 %) as compared to the patients with the "dipper" profile (10,52±0,17%, 18,62±0,14 %, respectively $p<0,01$)).

Conclusion. The patients with the "non-dipper" profile as compared to the patients with the "dipper" profile have higher AP that causes greater pressure load on the target organs and contributes to development of more evident structural and functional changes of LV and vessels.

Key words: daily monitoring of arterial pressure, left ventricle remodeling, diastolic dysfunction, endothelial dysfunction.

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CLINICAL AND DIAGNOSTIC VALUE OF BRAIN-DERIVED NEUROTROPHIC FACTOR AND INTERLEUKIN-1β IN PATIENTS WITH RHEUMATOID ARTHRITIS: RELATION TO FIBROMYALGIA

Introduction. Fibromyalgia in patients with rheumatoid arthritis is a common comorbid condition, which significantly modifies the clinical manifestation of the underlying disease. However, FM diagnosis, particularly in conditions of clinical comorbidity remains difficult task because there are no laboratory markers of FM and the diagnosis based only on clinical symptoms.

Objective – to estimate diagnostic and prognostic value of brain-derived neurotrophic factor (BDNF) and interleukin-1β (IL-1β) in patients with RA in case of comorbidity with fibromyalgia (FM).

Materials and methods. A total of 125 RA patients (100% women) aged 49.6 ± 12.8 years, with moderate to severe disease activity (DAS28> 3.2). Diagnosis of FM vas established by the ACR1990 criteria and mACR2010. We determine the tender points and the fibromyalgianess scale. RA activity was assessed by DAS28 and CDAI. The BDNF and IL-1β in serum was determined by ELISA.

Results. In RA patients the levels of BDNF and IL-1β in serum were above 2.26 and 1.95 times higher than in healthy individuals ($p < 0.001$). Increased BDNF associated with FM markers – number of tender points, pain revalence, psychological disturbances ($p < 0.01$), and was not related to the activity of the inflammatory process. High serum levels of BDNF (> 30 ng / mL) is a marker of central sensitization in patients with RA with a sensitivity of 71.7% and a specificity of 88.6%. High level of IL-1β in the serum is an independent predictor of increased activity at the comorbidity RA with FM.

Conclusion. High level of BDNF in the serum is an independent predictor of FM in patients with RA, whereas the level of IL-1β in serum reflects the activity of the inflammatory process and is not associated with symptoms of FM.

Key words: rheumatoid arthritis, fibromyalgia, central sensitization, brain-derived neurotrophic factor, interleukin-1β.

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PECULIARITIES OF INTERNAL ASPECT OF DISEASE IN PATIENTS WITH OCCUPATIONAL PATHOLOGY OF RESPIRATORY SYSTEM AND PERIPHERAL NERVOUS SYSTEM

Introduction. Occupational pathology is an important medical and social problem: in Ukraine there are more than 180 thousands registered patients with occupational diseases, and, despite the reduction in the number of employees, the disease continues to increase. In recent years, increasing scientific and practical interest to the peculiarities of internal aspect of disease in various forms of somatic pathology led to a significant intensification of research in this direction, however, peculiarities of internal aspect of disease and reactions to the disease in various forms of occupational pathology remain unstudied, making it difficult to develop psychocorrective measures.

The *aim* of the study was to establish the peculiarities of internal aspect of disease in patients with occupational pathology of respiratory system and peripheral nervous system.

Materials and methods. We examined 85 patients with pathology of respiratory system (pulmonary tuberculosis, pulmonary emphysema, chronic obstructive pulmonary disease, pneumoconiosis, bronchial asthma) and 84 patients with occupational pathology of peripheral nervous system (mono- and polyneuropathy, radiculopathy, the impact of vibrations), which had established diagnosis of occupational disease. This examination was conducted by the method for psychological diagnosis of attitude to the disease A. Lychko and others. Statistical and mathematical processing was performed using Fisher's exact test and Pearson chi-square criterion.

Results. "Clean" type of attitude to the disease was found in 49.4% of patients with respiratory pathology and in 40.5% of patients with pathology of peripheral

nervous system, mixed - respectively in 43.5% and 51.2% of patients, diffuse – respectively in 7.1% and 8.3% of patients. Among "clean" types of attitude to the disease patients with pathology of respiratory have dominating balanced (28.5%), anxious (19.0%) and sensitive (14.3%) types, patients with pathology of peripheral nervous system have dominating hypochondriac (26.7%), neurasthenic (23.5%) and balanced (23.5%) types. Among mixed types of attitude to the disease anxious, hypochondriac and neurasthenic types (respectively 29.5%, 18.2% and 13.6%) dominate in patients with pathology of respiratory, and hypochondriac (19, 0%), neurasthenic (19.0%) and anxious (14.3%) types dominate in patients with pathology of peripheral nervous system. In the structure of the diffuse variant of ratio of attitude types to the disease anxious and neurasthenic types (20.8% each) dominate in patients with pathology of respiratory system, and neurasthenic (21.4%), hypochondriac and melancholic (17.9% each) types dominate in patients with pathology of peripheral nervous system.

Conclusion. The patients with occupational pathology generally showed high prevalence of hypochondriacal type of attitude to the disease, while patients with pathology of respiratory system have greater prevalence of anxious and sensitive types, and patients with pathology of peripheral nervous system have greater prevalence of the neurotic type that reflects the clinical and psychopathological peculiarities of responses to the disease development.

Key words: occupational pathology, internal aspect of disease.

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GASTRO-INTESTINAL DYSFUNCTION COMPENSATED IN PATIENTS WITH POLYTRAUMA

Introduction. An important role in the structure of modern takes polytrauma injuries combined with the trauma of bones skeleton (PTcTKS). The flow in victims of post-traumatic period of PTcTKS almost always complicated, it is caused by the development of multiple organ dysfunction syndrome, with mortality in 70 - 100%. Now insufficiency gastrointestinal tract, one of the leading pathogenesis SPOD. The current vision is based on determining SHID leading role in the progression and occurrence of intoxication endohenniyi general response against inflammation (SIRS) in patients with PTcTKS, due to the fact that the main source of endogenous intoxication in this category of patients is intestine.

Development of shock with severe PTcTKS are prerequisites violation splanhnichnoho blood flow and function of the gastrointestinal tract (GIT), recovery of which is the last. Long stay patients in a coma for PA, of respiratory therapy, the use of sedatives and muscle relaxants, pressor support contribute to the development and progression of SHID. Despite the constant improvement of the quality of diagnosis of gastro-intestinal syndrome dysfunction (SHID) and its intensive therapy in patients with polytrauma mortality in this disease remains high. The main reason for the disappointing results of treatment with PTcTKS is the development of endogenous intoxication (EI) and septic complications, whose frequency varies 19,3-86,0% and leads to high mortality in 25,0-35,0%.

Material and methods. The study involved 62 patients with PTpTKS who had multiorgan dysfunction with symptoms of gastrointestinal dysfunction in compensation stage (SHIDK) (1 - 2 points). Scoring gastrointestinal dysfunction was carried out on the basis of modification techniques Saenko V.F. et al., 2002 and cradles IV et al., 2002., J.M. Podgorny, 2009, Nikonov V.V. and co., 2011. Patients were divided into two groups that differed among themselves on such indicators as age, sex, severity of condition and severity of manifestations SHID and multiple

organ dysfunction. Patients of the first group received the therapy, which includes surgical focus sanitation, active volemichnu, inotropic support and vascular, respiratory, antibiotic - and antytsytokinovu therapy. Patients of the second group in addition to the foregoing therapy used early enteral nutrition (PEX). For PEX used: enteral mixture Nutricomp.

PEX Methods: A nasogastric tube after aspiration of stomach contents remaining, injected Nutricomp, provided yascho were large residual amounts of stomach, intestinal mixture introduced through nazointestynalnyy probe. Preference was attached to constant continuous introduction of bolus. The speed of early enteral EX mixture was 0.5 mL / kg / h and at good endurance gradually increased to the proper volume and velocity decreased intolerance in some cases until the complete cessation EX. All patients carry out general clinical and biochemical blood tests. Aiming diagnostic signs of SIRS defined parameters that characterize the presence and dynamics of the overall response of the organism to inflammation. Integral assessment of the severity of the patients was assessed by APACHE scale 11, the severity of multiple organ dysfunction - a scale SOFA.

Given that the initiators of SIRS is a molecular mediators of inflammation with inflammatory cytokines tumor necrosis factor determined (TNF) and interleukin - 8 (IL-8). Both cytokines were determined using a solid phase chemiluminescent enzyme immunoassay tests using IMMULITE / IMMULITE1000 TNF-α and IMMULITE / IMMULITE1000 IL-8.

With the purpose of control and correction central hemodynamics except indicators such as blood pressure, SBP, HR, CVP, using ultrasonography (Aloka SSD-device 500 / SL-450 "Siemens" - Germany) - measured cardiac index (CI). Investigation of blood gas composition apparatus carried ABL-520 company "Radiometer Copenhagen" (Denmark). The magnitude of the SI and the data obtained blood gas composition calculation method (L.V.Usenko, H.A.Shyfryn, 1995, 2007; Koryachkyn VA Strashnov VI, Chufarov VN, 2001) measured values supply and consumption of oxygen (DO2 - VO2), the ratio PaO2 / FiO2. The energy balance of the cells was determined by glucose, ATP, lactate (determined on biochemical

analyzer "Doctor Muller" Germany), and pyruvate (analyzer "Accutrend" USA). The level of endotoxemia was evaluated in terms of average molecular weight (MSM), sorption capacity of red blood cells (SZE) and insight erythrocyte membranes. Destructive changes in cell membranes characterize the level of lipid peroxidation (LPO). LPO activity was evaluated in terms of their primary products - diene conjugates (DC), and secondary - malondialdehyde (MDA). Antioxidant activity of the body determined by the level of blood catalase.

Results. The cause of the overall response of the body to inflammation and SPOD occurrence is the emergence of uncontrolled number of molecular mediators of inflammation, including inflammatory cytokines. Output value of proinflammatory cytokines and indicators SIRS, patients first and second groups of patients were identical. At the time of admission of patients in the intensive care unit (ICU) levels of proinflammatory cytokines in the serum of patients in both groups was significantly higher than the norm and accordingly made: TNFα - 455,5 ± 12,5 pg / ml in patients of the first group and 445,9 ± 11,1 pg / ml in patients of the second group ($p < 0.05$), and IL-8 - 3770,101 ± 12 78 pg / ml and 3820,111 ± 13,73 pg / ml, respectively ($p < 0.05$). Significant reduction of TNFα occurred in patients of the second group on the fifth day of intensive care (415,9 ± 9,1 pg / ml, $p < 0.05$) in patients in the control group only 10 days of intensive care (405.5 ± 7,5 pg / ml, $p < 0.05$). Identical changes occur in the study of IL-8, patients in the second group, it was significantly reduced by N5 - stage study (3420,111 ± 14,53 pg / ml, $p < 0.05$), while the control group only N10 phase of the study (3470,86 ± 11,78, $p < 0.05$).

Conclusions. In the control group of patients with compensated SHID mortality was 16.6%. Of the 30 patients, 5 patients died. In the study group of patients with 32 patients 4 patients died, so mortality was 12.5%. That early enteral nutrition not only promotes rapid regression of symptoms SHID, but also reduces mortality. In patients with compensated SHID major pathogenetic factor in the development of this pathological process is the lack of nutritional support as enterocytes and the entire microorganism. Therefore, when compensated gastrointestinal dysfunction, with the aim of ensuring energy enterocytes and plastic material, the main focus of therapeutic

interventions should be directed at providing nutritional support to the patient in the form of early enteral nutrition. Early enteral nutrition leads to more rapid regression of symptoms and SHID SPOD, reducing the severity of patients, the duration of their stay in critical condition and mortality.

Endotoxemia lead to destructive processes of cell membranes, the severity of which was assessed by the activity of peroxide processes and antioxidant protection. Evaluating the LP-AOA system in patients with compensated SHID revealed that the output values of MDA, DC and catalase, patients in both groups hardly differed among themselves. All patients were detected increased activity of inhibiting lipid peroxidation and antioxidant activity. The level of MDA in both groups of patients was higher than normal and were respectively 165 ± 5 mmol / mL and 169 ± 6 mmol / ml ($p < 0.05$). During treatment, patients of the second group, the figure is much faster approaching normal (tab. 5). Already 5 night MDA level of disease in this group of patients was at the upper limit of normal (125 ± 6 mmol / ml, $p < 0.05$) in patients of the first group it still exceeded the norm (140 ± 5 mmol / ml, $p < 0, 05$) and approaching the standards until the end of 7 days of stay of the patient in the department Arita (120 ± 5 mmol / ml, $p < 0.05$). If ICU admission to the department level of diene conjugates in patients in both groups also exceeded the norm and accordingly was 2,8 ± 0,2 cu and 2,9 ± 0,3 cu ($p < 0.05$). But on the third day IT algorithm which included PEX level decreased to normal control (2,0 ± 0,2 cu $p < 0.05$) in patients of the first group it still exceeded it (2, 5 ± 0,2 cu $p < 0.05$). In these patients, the rate decreased to normal control only on day 7 (2,0 ± 0,1 cu $p < 0.05$). Continuous improvement of primary lipid peroxidation products indicates the severity of the destructive processes of cell membranes. The inclusion of PEX in complex IT led to increase in antioxidant serum of patients with compensated SHID. Catalase level in both groups of patients at the time of disease onset was lower than normal. But on the third day of the disease in patients of the second group increased catalase levels ($p < 0.05$) and was 0,102 ± 0,01 m / ml / h. Between the dynamics indicator of MDA and catalase was a direct correlation - $r = 0,58$ at $p < 0.05$. Patients of the first group

increased catalase levels to normal value only on the seventh day of intensive care (0,101 ± 0, 015 mm / ml / year, p <0.05).

Key words: polytrauma, trauma bones, gastro-intestinal dysfunction compensated.

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THE PATHOPHYSIOLOGICAL EFFECTS OF LAPAROSCOPIC SURGERY DEPENDING ON THE METHOD OF CREATING THE WORKSPACE

Introduction. By the present time more than a dozen of lifting systems are proposed, but none of them fully meets the requirements of surgeons. While continuing efforts of the insufflation pressure reduction to the lowest possible numbers convenient for the necessary surgical maneuvers, there is a need to maintain sufficient access to the area of intervention during surgery, without reducing capacity, efficiency and safety of surgical procedures.

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

ducts and their external drainage. Group II (n = 45) consisted of patients for whom the workspace during laparoscopic surgery was provided by the method of dosed lift-assisted carboxyperitoneum (DLCP) with the level of intra-abdominal pressure of 4-6 mm. Hg. with the usage of the proposed laparolifting device. I - just before the creation of the TCP (12 mm Hg) or DLCP (4-6 mm Hg) after the anesthesia, II - 30 minutes before the surgery and III - 30 minutes after completion and desuflation of carbon dioxyde we registrated the criteria of surgical stress and traumatic exposure, determined by the levels of plasma cortisol, TNF- α, IL-6, C-reactive protein (CRP). In the early postoperative period (after 24 and 48 hours) pain indicators were assessed by examining the three pain intensity rating scales: verbal rating scale (VRS), numeric rating scale (NRS), visual analogue scale (VAS). Statistical analysis was performed using STATISTICA 6.0 (StatSoft Inc®, USA). Parametric and nonparametric criteria were used (Student, Mann-Whitney, Wilcoxon tests). The differences were considered significant at $p<0,05$ and $p<0,001$.

Results. During the surgery and after the elimination of carboxyperitoneum cortisol levels in the comparison group in both cases exceeded the average main group level ($p<0,001$). During analyzing the levels of IL-6 - TCP group data with high accuracy was higher than the results obtained in the study group ($p<0,001$). The dynamics of TNF-α marker in the two groups coincided. Intraoperative and postoperative level was significantly higher in the group in which standard carboxyperitoneum was used ($p<0,001$). When comparing the levels of CRP in both groups a slight increase in intraoperative level was noted, but the data did not have statistical significance ($p>0,05$). Postoperative level in both groups was significantly higher than output level ($p<0,05$), statistical differences between the groups were not found. A comparative analysis of pain syndrome by the verbal rating scale, numeric rating scale and visual analogue scale in the early postoperative period (after 24 and 48 hours postoperatively) found higher averages in the TCP group for 3 rating scales, however, the difference was statistically significant at 24 and 48 hours after surgery according to the NRS and at 24 hours according to the VRS.

Conclusions. The results show that the levels of cortisol, IL-6 and TNF-α in the comparison group were significantly higher than those obtained in the study group, which indicates a low degree of stress response in the group in which DLCP was used. This study indicates a lower degree of pain syndrom in the early postoperative period when using the proposed method of creating the working space for surgery.

Key words: tensed carboxyperitoneum, intraabdominal pressure, laparolifting, pain syndrom.

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STAGE OF IMMUNE-DISTRESS SYNDROME IN CHOOSING SURGICAL TREATMENT OF GENERAL PURULENT PERITONITIS

Introduction. The aim of our study was to determine the stages of immune distress syndrome in patients with generalized purulent peritonitis(GPP), by assessing the dynamics of cytokine profile and determine their impact on the choice of method of relaparotomy

Materials and methods. We investigated the results of treatment of 102 patients with acute surgical diseases what was complicated by the development of GPP.

Results. In 41 patients with GPP was made relaparotomy. Repeated operations were carried out in two modes: "on demand" – in case of the progression GPP, and "programmed" mode - 48-72 hours after perform the initial surgery. In the first case was performed 28 relaparotomy in programmed mode - 13 relaparotomy. We studied the cytokine profile before and after the second surgery. The analysis of the study showed that before surgery in patients with toxic stage of peritonitis observed CARS

stage (observed increase in IL-1, and reduced IL-2, IL-4, IL-6), and MARS stage (increased IL-1, IL-2, IL-6 and IL-4 decrease). In the study of laboratory and immunological parameters after relaparotomy studied in patients with toxic stage of peritonitis detected increasing immunodeficiency state. Patients were observed: the relative and absolute lymphocytopeny, reducing the number of T-lymphocytes observed increase in IL-1, and reduced IL-2, IL-4, IL-6. These changes were associated with surgery duration and severity of operational injury. In patients with terminal-stage peritonitis preoperatively diagnosed only CARS stage (observed increase in IL-1, and reduced IL-2, IL-4, IL-6). Patients in this group had high level of endogenous intoxication and immune deficiency before treatment and worsened with the progression of the disease and increase the number operations, regardless of the mode of surgical intervention.

Conclusion: Determining the stage of immune-distress syndrome is important in determining treatment strategy for patients with GPP.

Key words: general purulent peritonitis, immune-distress syndrome, relaparotomy.

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APOPTOSIS-DEPENDENT DAMAGES IN CHILDREN WITH DIABETIC NEPHROPATHY

Introduction. Diabetic nephropathy is the leading cause of death in patients with diabetes mellitus type I (T1D). Formation of diabetic nephropathy depends on the quality of blood glucose level control an indicator of which is a level of glycosylated hemoglobin (HbA1c). Adequate control of blood glucose in patients with diabetes is a critical aspect of therapy. The level of glycosylated hemoglobin

formation depends on the concentration of glucose in the environment. People with high blood glucose levels will have higher levels of glycated hemoglobin. Non-enzymatic glycation that occurs as a result of spontaneous interaction between glucose and amino groups of proteins, leading to the formation of products of advanced glycation (AGA). The *aim* of the study was to investigate the level of metabolic-hypoxic disorders and the condition of apoptosis controlling system in diabetic nephropathy children.

Materials and methods. The study involved 34 children with type I diabetes and diabetic nephropathy (aged 6 to 17 years). The affinity of hemoglobin to oxygen determined by spectrophotometric method. The levels of the marker of cellular hypoxia HIF-1alfa, levels of the apoptotic factor caspase-3 have been studied by Western Blotting.

Results. In all children the levels of hemoglobin affinity to oxygen were studied based on Sore peak analysis. Children from control show this index at the level 3,05 ± 0,23 a.u. In the group of children with newly diagnosed diabetes hemoglobin/ogygen dissociation was enhanced in comparison to control group – 3,61 ± 0,25 a.u. ($p<0,05$). In the group of children diabetic nephropathy the level of index was documented at level 1,76 ± 0,27 a.u. ($p <0,01$, compared control group).

We have detected an increased level of marker of cellular hypoxia (HIF-1 α) in blood serum of all patients with T1D and DN as compared to control group. The levels of HIF-1α in group with T1D exceeded control group by 18,5 ± 1,76% ($p<0,01$ compared to control group) and by 30,03 ± 3,75% ($p<0,01$ compared to control group) in patients with DN).

We studied the levels of apoptotic effector caspase-3. Increased levels of caspase-3 have been documented in all patients. In patients with DN expression of caspase-3 exceeded level of control group by 34,19 ± 4,36% ($p<0,001$). This marker in T1D group was documented at level exceeded control group by 14,82 ± 2,35% ($p<0,01$). Control group marker was assumed as 100%.

Conclusions. We conclude that of the DN is children is associated with the disturbances in the Hb/oxygen dissociation resulted in high cellular hypoxia levels;

high levels of the caspase-3 – an effector of the mitochondrial apoptotic pathway, have been detected in DN patients meaning the increase in apoptosis as a hallmark on diabetic kidney damage. Chronic hypoxia as a result of general methabolic disorders and pro-inflammatory changes in patients with DN could have a dominant pathogenic role in diabetic nephropathy, not only in promoting progression but also during initiation of the condition. Early loss of tubular and peritubular cells reduces production of 1,25-dihydroxyvitamin D3, which diminishes the local trophic effects of the hormones. Thus, future study focused on finding links between general methabolic disorders and 1,25-dihydroxyvitamin D3 disturbances in patients with DN will be an important issue in the field of modern nephrology.

Key words: diabetes mellitus, diabetic nephropathy, metabolic, cellular hypoxia, apoptosis.

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THE ANALYSIS OF ULTRASOUND CHARACTERISTICS IN ACUTE AND CHRONIC SUBMANDIBULAR LYMPHADENITIS IN CHILDREN

Introduction. According to the literature the number of patients for different nosologic forms of lymphadenitis is steadily increasing, and the frequency of lymph node maxillofacial area increased several times due to the effects of adverse environmental factors and lymphotropic infections. This is due to a variety of clinical entities, as well as lack of unified approaches to the selection of diagnostic methods, techniques and methods of their application, and systematics of the diagnostic criteria for the various forms of lymphadenitis.

Materials and methods. The paper is presented the analysis of ultrasound characteristics of acute and chronic submandibular lymphadenitis in children. A

ultrasound examination of 80 patients with submandibular lymphadenitis in age from 7 to 12 years (boys - 35, girls - 45).

Results. Analysis of results of ultrasound enabled to establish changes in the indices of the period of time for which patients seek medical attention.

Analysis of aggregate indicators showed that the tendency to increase as the cross and anteroposterior dimensions depend on the time of access to health care and the etiological factors that cause inflammation.

Comparison of the data sonographic architectonic was found that all patients with acute suppurative submandibular lymphadenitis with non odontogenic character , image of gate was missing. The cortical layer is visualized. A degree of echogenicity was of the following nature: in acute purulent lymphadenitis non odontogenic handling the first day izoehogenic zones revealed 65%, 35% anehogenic, 2-3 day changes were more pronounced 60% izoehogenic and 40; anehogenic. In odontogenic forms izoehogennic areas were identified only 60% of patients with acute purulent non odontogenic submandibular lymphadenitis, and only the remaining cases, the image of the lymph nodes were anehogenic. Such pattern corresponds to acute lymphadenitis purulent fusion of lymph node parenchyma.

Cortical and gates in chronic lymphadenitis visualized in all cases. The degree of echogenicity was mixed, but rather in the form of a ratio izoehogenic non odontogenic to hyperechoic was 80% at 20%, with odontogenic 60% to 40%.

Comparing ultrasound and post-mortem data it can be argued that the presence of hyperechoic center line of the core (site gates) is responsible of the dense grid lymph sinuses.

Conclusions. The maximum dimensions of the lymph nodes were observed in odontogenic etiological factor. The degree of echogenicity in the initial stage of inflammation was mixed, with the exception of odontogenic lymphadenitis - a tooth in the acute stage, we anechoic structure was detected, indicating a more aggressive course of the inflammatory process. Doppler scan showed an increase of peripheral resistance and blood flow more pronounced in the form of odontogenic lymphadenitis. When chronic lymphadenitis odontogenic set lower echogenicity

differentiation lymph node structure than non dontogenic shape and increase peripheral resistance, which leads to deterioration in haemocirculation. When ultrasound study should take into account the percentage of izoehogenic to anehogenic areas that can serve as an objective criterion for the definition of further tactics of medical measures - the choice of conservative or surgical treatment.

Key words : children, ultrasound, submandibular lymphadenitis.

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ISCHEMIC HEART DISEASE AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE: PREVALENCE AMONG HOSPITALIZED PATIENTS

Introduction. Combination of diseases which take first places among the reasons of disability and mortality in Ukraine and the world specifically ischemic heart disease (IHD) and chronic obstructive pulmonary disease (COPD) is a major challenge in patients' treatment. Great prevalence of combination of these two diseases is related to a number of common risk factors: smoking, low physical activity, old age, overweight, diabetes mellitus, atherogenic dyslipidemia, systemic inflammation, endothelial dysfunction. Masked and similar symptoms, difficulties in performing exercise tests in patients with comorbid pathology often lead to delay in diagnostics and administration of treatment. Thus, the aim of the work was to determine the prevalence of COPD in patients with IHD admitted to cardiology department, to study sex and age peculiarities, risk factors and concomitant pathology.

Materials and methods. 2046 case histories of patients treated at cardiology department of city hospital in 2014 were retrospectively analyzed. The structure, age parameters, concomitant pathology in patients with IHD associated with COPD were studied.

Results. It was found that 188 patients with IHD associated with COPD (mean age 64,9±0,8 years) were treated at cardiology department in 2014. The majority of them were men – 139 (73,9%), average age 62,8±0.9 years. There were 49 women (26,1%), mean age 70,8±1,2 years. The majority of patients in this group were elderly persons – 71 (37,7%), 66 (35,1%) were patients of mature age, 47 (25%) were patients of old age and 4 (2,2%) were persons of middle age. In all age groups most of the patients were men: 4 (100%) – persons of middle age, 62 (93,9%) – persons of mature age, 49 (69,0%) – elderly persons and 24 (51,1%) – old persons; but the number of women increased in older age groups. Among all patients with IHD associated with COPD there were 36 persons (19,1%) with acute myocardial infarction (AMI), 79 persons (42,1%) with instable angina pectoris and 73 persons (38,8%) with stable IHD. By the severity of COPD all patients were divided into: group B – 157 persons (83,5%), group A – 3 persons (1,6%), group C – 26 persons (13,8%) and group D – 2 persons (1,1%). Only 15 patients (7,9%) were found to receive basic treatment of COPD. Prevalence of the most common comorbidities having the influence on life quality of patients was established: 150 patients (79,8%) with IHD and COPD had arterial hypertension, 45 (23,9%) – atrial fibrillation, 37 (19,7%) – duodenal and gastric diseases in past medical history, 36(19,1%) – diabetes mellitus, 11 (5,8%) – atherosclerosis obliterans of various localization and 9 (4,8%) – a history of stroke. No significant difference in the prevalence of concomitant pathology was observed between men and women. 49 of 188 patients (26,1%) reported of such risk factor as smoking , the smoking index being 30,3±1,8 packs a year. The average weight index was 29,3±0,48 kg/m^2; only 24,5% of patients had normal weight, 32,5% had excessive weight and 42,5% has obesity, mostly of the 3rd degree in women ($p<0.01$).

Conclusions. Among in-patients with IHD 11,4% had concomitant COPD, average age of patients was 64,9±0,8 years, men being significantly younger than women. The majority of patients were treated for acute forms of IHD: acute myocardial infarction and instable angina – 57,9%, stable chronic forms of IHD – 42,1%. The major risk factors were overweight or obesity, observed in 75% of patients, and smoking – in 26,1%. Great prevalence of other concomitant diseases was also observed in patients with IHD and COPD. It should be considered that only persons with overt manifestations of COPD during hospitalization or those with previously diagnosed COPD comprised a group of patients with IHD and COPD. Besides, not all cardiologic patients underwent spirography to confirm the diagnosis of COPD because of their bad condition, and the disease itself may have slowly progressive and oligosymptomatic course. Therefore, we think that the real number of patients with combination of IHD and COPD is much higher and requires further study.

Key words: chronic obstructive pulmonary disease, ischemic heart disease, prevalence, comorbidity.

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SURGICAL TREATMENT OF GALLSTONE DISEASE AND ITS COMPLICATIONS USING MINI-INVASIVE TECHNOLOGY

Introduction. Design of tactics and assessment of the direct results of the application of laparoscopic and endoscopic methods of treatment of gallstone disease.

Materials and methods. 1143 patients with calculous cholecystitis and 196 patients with choledocholithiasis got surgical treatment and therapy of complications

in the surgery department of SE "Institute of Gastroenterology NAMS of Ukraine" for the period 2010 – 2014.

Results. We have implemented instrumental methods of pre- and intraoperative control of the status of hepatopancreatobiliary zone, one-step and two-step laparoscopy, trans papillary and endobiliary intervene at choledocholithiasis. The share of sfinkter-saving operation for patients with choledocholithiasis was 10,4 %. 15 (1,1 %) patients had the complications in a postoperation period: bleeding into the abdominal cavity – in 5 (0,36 %) patients, bile leakage – in 5 (0,36 %) patients, iatrogenic damage of hepaticocholedochus– in 1 (0,07 %) patient. No dethes were reported.

Conclusions. Instrumental methods of pre- and intraoperative control of bile ducts, one- or two-step laparoscopic, and sphincter-saving operation of choledocholithiasis are widely used last years. In spite of the widespread adoption of laparoscopic cholecystectomy in the surgical practice there are different complications.

Key words: gallstone disease, choledocholithiasis, laparoscopic operations, complications.

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CHARACTERISTIC PARAMETERS OF IMMUNOLOGICAL STATUS OF PATIENTS COMMUNITY-ACQURED PNEUMONIA: THE SPECIFIC FEATURES OF CYTOMEGALOVIRUS INFECTION PERSISTENCE

Introduction. The pathogenesis of cytomegalovirus infection (CMVI) is closely linked to the immune system. It is known that the virus can make negative

influence to the function of immune cells. There is evidence that the most pronounced changes relate to T-helper cells, the level of which is reduced. At the same time, the level of suppressor/killer cells is increased, and the activity of natural killer cells decreases. At the same time humoral regulation can also be disturbed of the due to system of interleukins changes. Thus the virus can cause clone elimination maturing T - and b-lymphocytes, which disrupts the development of immune response to the virus. In turn, the changes of the immunological barrier of the body will serve as the basis for accession secondary infections, among them community-acquired pneumonia (CAP) of polyethilogical genesis. The article provides information about the features of immunological status in patients with CAP and among healthy individuals. We analyzed the frequency and types of disorders in the immune picture in both comparison groups, also the compliance with the degree of severity of CAP (according to PORT-scale), showed the results of the analysis of the impact of persistent cytomegalovirus infection and degree of severity on the parameters of immunological status in patients with CAP and healthy individuals.

Materials and methods. 43 patients with CAP (21 (48,8%) men and 22 (51,2%) women), who were treated in the pulmonary department of the Vinnytsia clinical hospital № 1 during 2015 year were examined. For control the 32 (14 (43,8%) male and 18 (56,2%) women) of practically healthy persons were examined. The average age of patients in group CAP was (40,1+1,7) years in the control group the average age of patients was (36,0+1,7) years. The diagnosis of CAP was determined according to the requirements of the Order MHO of Ukraine № 128 (19.03.2007) and National Clinical Protocol "Community-Acquired and Hospital (Nosocomial) Pneumonia in Adults: etiology, pathogenesis, classification, diagnostics, antibacterial therapy [Feshchenko Y. and etc., 2014]. The presence of CMVI in the study and control groups was made by determining specific antibodies of immunoglobulin G (CMV IgG) in serum using enzyme-linked immunosorbent method [National Committee for Clinical Laboratory Standards]. The study of humoral immunity included the definition of non-specific immunoglobulin A (Ig A), M (Ig M), G (Ig G) [P. Tijssen, 1985], the level of which was assessed quantitatively

in grams per liter. To study cellular immunity we studied by absolute and percentage of leukocytes, lymphocytes, CD3 cells, CD4, CD8, CD22, ratio CD4/CD8 (or immune-regulatory index (IRI)) by the method of indirect fluorescence [A. H. Coons, M. H. Kaplan, 1942]. Interpretation of results was performed according the digital shift indicators. Statistical processing of the obtained results is performed on a personal computer using the statistical program package SPSS 12.0 for Windows (Grand Pack, Serial Number 9593869).

Results. We have identified statistically significant (p=0,013) the presence of CMVI-persistence of CAP in 34 patients (79,1%) and 16 healthy persons (50,0%). Among the respondents of the main group mild degree of persistence was observed in 23 patients with CAP (53,5%), moderate in 8 of the respondents (18,6%), the highest level in 5 patients (11.6 per cent), with p=0.002. The respondents of the control group were characterized by the presence of mild persistence in 8 patients (25,0%), and moderate in 8 patients (25,0%) (p=0.002). There was found statistically significant probability that patients with CAP were observed the decrease in IRI (1,58±1,13) g/l vs. (1,88±0,09) g/l in the control group (p=0,059), decrease in the absolute number of lymphocytes – (1,68±0,08) g/l vs. (2,13±0,12) g/l (p=0.003) and in percentage, respectively (33,86±1,98) against (39,50±1,86) %, p=0,041, reducing the absolute number of CD3 – (0,77±0,04) g/l vs. (0,97±0,05) g/l (p=0.004) and level of non-specific immunoglobulins A, G, respectively (1,37±0,07) g/l vs. (1,67±0,09) g/l in the control group, p=0,011 and (9,23±0,43) g/l vs. (11,17±0,38 g/l at p=0.001. On the contrary, in patients with CAP compared to healthy were observed increased level of CD8 and amounted to (24,35±0,97) % vs. (20,38±0,73) %, respectively, with p=0.002. We also identify reducing content in the serum of CD3 cells (p=0.002), CD 4 (p<0.001), CD8 (p=0,040) in patients with CAP, respectively, to the increase in the degree of persistence (with the titer of Ig G CMV)

Conclusions. CAP patients differed significantly from the healthy group on indicators for immunological condition; the presence of disorders in cellular and humoral links of the immunity both. The decreased content of Ig A, Ig G, as a protective humoral factors in patients with CAP indicates the presence of long-

existing factors, in particular of viral origin, which leads to the depletion of the immune system. Reduction in the average immunological condition in parallel with the growth of CMV Ig G among patients with CAP, which may indicate a profound inhibition of the immune system, and result in failure of cellular immunity, is a poor prognostic factor for the flow of CAP in the background of CMVI-persistence. Identification reduced content in the serum of CD3 cells ($p=0.002$), CD 4 ($p<0.001$), CD8 ($p=0,040$) in patients with CAP, respectively, to the increase in the degree of persistence (with the titer of Ig G CMV) can be regarded as compliance with the increased immunosuppression by reducing the production of the above-mentioned indicators of cellular immunity to increase the severity of CMVI, which probably confirms the relationship between viral persistence in the immune disruption in these patients.

Key words: citomegaloviral infection, persistence, community-acquired pneumonia, immunological status, lymphopenia.

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DRUG-INDUCED LONG QT SYNDROME, CLINICAL CASE

Introduction. Elongated interval syndrome QT (long QT syndrome - LQTS) is closely connected with the potentially fatal form of cardiac arrhythmias – polymorphic ventricular tachycardia torsades de pointes (TdP) and is a predictor of sudden cardiac death. LQTS can be congenital or acquired. The last one occurs more frequently and organic heart diseases, electrolyte imbalance, lack of proteins, drugs or toxins usage are provoked it. In most cases, several of possible factors are fixed, among which medicines are deserved special at tention. The list of drugs that can

affect the QT interval or cause episodes of TdP, is presented at the the relevant electronic resources. The aim of our work was to analyze the clinical case of LQTS while taking bicalutamide.

Results. Patient with LQTS and frequent episodes of TdP was transferred from neurosurgery clinic after open craniocerebral injury into cardiology department of Vinnytsya regional center of cardiovascular pathology. In anamnesis - a patient suffered from prostate cancer and used during they ear non-steroidal antagonist of the androgen bicalutamide 150 mg/day. The patient had multiple risk factors - advanced age, coronary artery disease, bradycardia, open craniocerebral trauma, cancer pathology. Stubborn duration of arrhythmia at normalization of CNS state is pointed to the drug nature of the arrhythmia. Bicalutamide causes cardiovascular system side effects very rare (<10.1 thousand cases) and is well tolerated even at high doses. However, the many factors provoked serious QT prolongation and TdP. Considering the peculiarities of the pharmacokinetics of bicalutamide (high degree of protein binding - 96% longer half-life - till 7 days) for reducing the free fraction of the drug was administered albumin. TdP attacks are ceased. For the prevention of recurrent episodes of arrhythmia was implanted initially temporary and then a permanent pacemaker of the heart.

Conclusions. Thus, if we use cardiac drugs or medicines of other groups, it must be remembered of the possibility of potentially fatal arrhythmias and monitor the duration of the interval QT. Asymptomatic QT prolongation above 500 ms predictive of the risk of TdP. In the presence of additional risk factors (older age, female gender, myocardial ischemia or myocardial infarction, heart failure, electrolyte imbalance, bradycardia), even potentially safer drugs can provoke dangerous arrhythmias. Patients with malignant tumors have QT prolongation more frequently. 16-36% of these patients have a variety of ECG changes and, in addition, comorbid diseases, including structural changes in the myocardium, renal or hepatic dysfunction. Often specific anticancer medications use with many other drugs, and drug-drug interactions must be estimated.

Key words: interval QT, polymorphic ventricular tachycardia, bicalutamide, protein binding.

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DYNAMICS OF COMPLIANCE IN PATIENTS WITH PARANOID SCHIZOPHRENIA BY MEANS OF ATYPICAL NEUROLEPTICS AND PSYCHOTHERAPY

Introduction. The presence of trusting relationships and good contact between a doctor and a patient, stakeholder participation are one of the most important factors in the process of therapy. These circumstances cause so-called therapeutic alliance – compliance, which is an important indicator of doctor's professionalism and successful treatment, which, in its turn, can increase the likelihood of adherence to therapeutic treatment of patients with paranoid schizophrenia, reduce the terms of the stationary phase, reduce the frequency rehospitality and, thus, increase the quality of patients' lives. The question of acute low compliance overcoming becomes very actual now. The most frequent causes of its failure are patients' non-adherence and lack critical attitude to the disease, poor tolerance to neuroleptics, manifestations of fear of side effects of drugs, refusal of treatment guided by personal or delusional motivations, lack of efficacy and trust, mutual understanding with a doctor.

Analysis of the impact of psychopharmacological drugs and their comprehensive application of psychoreabilitative measures is one of the urgent problems of modern psychiatry. It improves the quality of search requires treatment

of the schizophrenic spectrum, the dynamic selection of social reabilitative comprehensive measures and their use in the patients' treatment.

The main tasks, set by psychopharmatherapy, are the reduction of productive and deficitar psychopathological symptoms, absence of side effects of antipsychotics and improve of compliance therapy indicators.

In the article our *purpose* was to evaluate the efficacy of atypical antipsychotics and psychotherapy with transactional analysis in patients with paranoid schizophrenia when analyzing the dynamics of compliance on purpose to optimize methods of medical and psychological rehabilitation of the patients.

Materials and methods. The study used a randomized unblinded prospective design. The patients, hospitalized for treatment to the 2nd and the 7th departments of Yushchenko Vinnytsia region psychoneurological hospital, were included in the study. Four groups of patients depending on their antipsychotic treatment and psychotherapy were formed. The research group №1 consisted of the patients treated with atypical antipsychotics; the research group №2 consisted of the patients treated with atypical antipsychotics and psychotherapy using transactional analysis; the control group №1 included patients who received typical antipsychotics; the control group №2 included patients who received typical antipsychotics psychotherapy using transactional analysis. The number of examined patients was 41 patient in each group.

The study used medical history, clinical-psychopathological, psychological experimental method using drug compliance ROMI scale and methods of statistical and mathematical processing of digital research results.

Data were organized in panel array, compliance measured at four points in time: the 30 th, 90 th, 180 th, and 360 th days of hospitalization. Group of patients dropped out of the observation at various stages. Thus, within the panel array we examined two cohorts: patients who remained in the study for the entire observation period (cohort 1) and patients who left the study at different stages before the end of the study (cohort 2).

Results. Dropout dynamics was more intense among the patients assigned to typical neuroleptics – only 0.463 (48/82) remained in the study by the end of observation compared to 0.855 (70/82) of the patients treated with atypical neuroleptics.

Evaluation of treatment effect was based on estimates of individual curves dynamics of compliance of patients, modeling by the effects of initial states and their dynamics in the context of different prescribed treatments and premature abandonment of the study cohorts. Evaluation of the effect of psychotherapy was based on estimates of individual curves dynamics of complianceof the patients, modeling by the effects of initial states and their dynamics in the context of cohorts intended psychotherapy and the fact of early dropout from the study.

Reliability difference of compliance increases Slope [2] and Slope [1] (designated IR [1] in the programm) claims more efficient treatment of atypical neuroleptics. Accordingly, the reliability difference of compliance increases Slope [3] and Slope [1] (designated IR [2] in the programm) states efficiency increase in case of combination of typical neuroleptic treatment with psychotherapy. Reliability difference of compliance increases Slope [4] and Slope [2] (designated IR [3] in the programm) states increase of compliance efficiency in the treatment of atypical neuroleptics complement psychotherapy. Reliability difference of compliance increases Slope [4] and Slope [3] (designated IR [4]in the programm) states greater compliance efficiency in case of combination of psyhoterapy with atypical neuroleptics.

Conclusions. Atypical antipsychotics increase compliance and thereby increase the susceptibility of patients to treatment, which, in its turn, contributes to remission. The combination of atypical neuroleptics and psychotherapy provides 6.3 points of compliance intensive growth. Effect of combination treatment with atypical neuroleptics and psychotherapy compared with combination of conventional neuroleptics and psychotherapy provides 3.332 points of compliance intensive growth.

Key words: compliance, paranoid schizophrenia, atypical antipsychotics, psychotherapy.

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ANTIBIOTIC PROPHYLAXIS IN SURGICAL UROLOGY

Introduction. The preventive prescription of antibiotics in case the surgery performed is justified both for clean and contaminated surgical procedures. Our study presents the method of perioperative prevention of postoperative infectious complications. Patients were divided into 3 groups. The first group included the patients with BPH manifested by acute urinary retention (AUR) and signs of chronic cystopyelonephritis who underwent TURP. The second group consisted of patients that underwent relatively clean surgeries like ureterolithotomy or pyelolithotomy accompanied by calculous pyelonephritis in remission. The third group included patients that underwent clean surgeries, i.e. nephropexy. Each group was subsequently divided into two sub-groups: the main one, where Fosforal (Fosfomycin) was prescribed to patients preoperatively and postoperatively, and control group that received antibacterial therapy.

Results. The criteria for results analysis were the following: presence versus absence of purulent wound complications, infection exacerbation or septicemia progression. The results in main sub-groups demonstrated nearly total absence of postoperative complications.

Conclusion. The analysis demonstrated the high efficiency of Fosforal for perioperative prevention of purulent complications.

Key words: Antibiotic prophylaxis, Fosfomycin, preoperative prophylaxis, surgical procedures, postoperative complications.

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TUMOR NECROSIS FACTOR (TNF-A) AS A MARKER OF EARLY DIAGNOSIS OF INFECTIOUS COMPLICATIONS IN HIV-INFECTED PATIENTS WITH POLYTRAUMA

Introduction. Getting immune response when injuries begin in the first 6 hours. The development of a local inflammatory response in the initial phase associated with the secretion of tissue macrophages a major proinflammatory cytokines - TNF-α.

In the early stages of studying TNF- α believed that it performs in the body only one function - providing anti-tumor protection. However, gradually began to accumulate evidence that TNF-α is the other very diverse effects on the immune system. Later it was found that the TNF-α has a wide range of biological activities, including can be seen as a marker for early diagnosis of infectious complications in patients with polytrauma.

Materials and methods. For solving research related to the study of the immunological component diagnostics of infectious complications in HIV-infected patients with polytrauma, formed the prospective group, which consisted of 116 HIV-infected people, which was diagnosed politrauma. All HIV-infected victims were divided according to criteria Conciliation conference ASSR / SSSM 1992 of one of

the categories: SIRS (n = 28), a local infection (n = 42), sepsis (n = 31), severe sepsis (n = 9), septic shock (n = 6). The control group consisted of 14 healthy people aged 20-48 years. Research TNF-ά determined by solid phase ELISA using ELISA analyzer "Star Fax 2100" (USA) at 1, 5 and 15 days of treatment.

Result. The inflammatory response and immune response mediated by TNF-α acts relating to protective systems, aimed at the elimination of aggressive agent. It was based on this theory attempt to quantify the content of TNF- α in various pathological conditions, especially coupled with an infection. In recent years, found that the TNF- α hyperproduction causes the body development of severe pathological reactions. The most dangerous of them - shock syndrome, which often develops in the field of microbial impression of injured patients. This occurs through the activation of the biosynthesis of TNF- α under endotoxin of gram-negative and gram-positive bacteria exotoxin. In experiments on animals have shown that the experimental generalized infection increased levels of TNF then when the full clinical picture has not been identified. Determination of TNF-α is a valuable diagnostic study in HIV-infected patients with polytrauma, and can be used for early diagnosis of infectious complications. The level of TNF-α in blood of patients with polytrauma points to the possible development of infectious complications in the early hospital period, to predict the occurrence of traumatic illness The level of TNF-α blood prognosis correlates with the state of the victim of polytrauma that manifested itself among the victims of sepsis, severe sepsis and septic shock.

Conclusion. Determination of TNF-α can not be used as a single marker of infectious complications in HIV-infected patients with polytrauma, indicating the need to set up other clinically significant diagnostic criteria for early diagnosis of infectious complications in both HIV-infected and affected in affected without immunosuppression;

Key words: cytokines, polytrauma, affected, tumor necrosis factor.

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COMORBID STATES IN PATIENTS WITH INFECTIOUS EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Introduction. Chronic obstructive pulmonary disease (COPD) is often associated with concomitant diseases being the key factor in prognosis of COPD sequelae. The object of our study was to determine the prevalence of comorbid states in patients with infectious exacerbation of chronic obstructive pulmonary disease and to establish the relationship between severity of the disease and the level of comorbidity.

Materials and methods. The study included 154 in-patients with COPD of various degree of severity taking a course of treatment for infectious exacerbation of COPD at pulmonary department of Vinnytsia city clinical hospital No1 in 2012. Average age of patients was 62.5 ± 1.01 years. There were 91 males (59.1%) and 63 females (40.9%). Patients with exacerbation of COPD were included if they met the following criteria: admission to the in-patients department with infectious exacerbation of COPD; age >40 years; increase of FEV1 less than 12% (<200 ml) compared to basal value after inhalation of short-acting β2-agonist. The diagnosis of COPD was verified by the stages of the disease according to the Decree of Ukrainian Ministry of Health №128 dated March 19, 2007 “On Approval the Clinical Protocols of Medical Aid Delivery in Speciality “Pulmonology” and regulations of the document GOLD [2011].

The diagnosis of concomitant pathology was verified at previous stages of treatment and observation. All patients underwent general clinical and laboratory-instrumental examination including general blood analysis, ECG, echocardiography, BMI index determination, study of external respiration function, pulse oximetry, glomerular filtration rate calculated by MDRD formula. Frequency of the most significant clinical states associated with the increase of fatal outcome risk in patients with COPD (the so-called COTE index), according to recent investigation data, was

analyzed. Computer program “Statistica 16.0 for Microsoft” was used to establish statistical significance (p) of changes as compared to baseline and correlation between the indices.

Results. The majority of patients were found to have a severe course of COPD (64.29% - COPD stage III).). Increase of disease severity was accompanied by the increased number of males reaching 80% in COPD stage IV. The patients were characterized by significant comorbidity: 92.9% of them had at least one concomitant disease. Males dominated among the patients with high comorbidity rate. The frequency of comorbidities increased with the progression of COPD. Cardiovascular diseases (angina – 22.3%, atrial fibrillation – 33.3%, hypertension stage II – 55.5%, heart failure II-III FC – 60.0%) and diabetes mellitus (26.7%) predominated in very severe COPD. Inverse relationship between FEV1 indices and levels of creatinine, transaminases, C-reactive protein as well as direct correlation between the level of FEV1 and glomerular filtration rate were established. The most significant clinical conditions associated with increased risk of death in COPD patients with severe ventilation insufficiency(FEV1<50%), by COTE index values, were coronary heart disease (40.0%), pulmonary fibrosis (28.0%) and congestive heart failure (17.0%).

Conclusions. Patients with infectious exacerbation of COPD are characterized by significant comorbidity, 50% of them having at least three concomitant diseases. The most prevalent comorbid states in patients with infectious exacerbation of COPD are arterial hypertension, heart failure, anemia, kidney dysfunction and diabetes mellitus. Increase of COPD severity is associated with the increase of comorbid state rates. In 76% of patients with COPD and FEV1<50% as compared with baseline values there is a combination of at least two comorbid states which are included in COTE index and are associated with increased lethality.

Key words: chronic obstructive pulmonary disease, comorbidity, mortality risk.

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DIAGNOSIS OF RISK FACTORS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE ACCORDING TO THE SURVEY OF PERSONS ORGANIZED TEAM

Introduction. According to the data of World Health Organization (WHO) about 210 million people in the world suffer from chronic obstructive pulmonary disease at present time.

Work *objective*: To establish the prevalence of risk factors among employees of organized collective body, to analyze sex-age structures.

Materials and methods. The study was conducted on the basis of developed original questionnaire for early diagnosis of COPD. The basis of this questionnaire included questionnaires of GOLD (2002, 2005) and Decree of the Ministry of Health of Ukraine N 555 as of 27.06.2013. Questions allow in number equivalent to allocate patients depending on the severity of clinical manifestations of respiratory symptoms and risk factors of COPD.

We have questioned 525 persons, average age is (46,7 ± 6,3) years, among them there were 291 men (55.4%), average age is (46,7 ± 6,3) years, women - 234 (44.6%), average age is (56,7 ± 4,7) years, which did not have chronic nonspecific obstructive respiratory diseases in their anamnesis. Patients were divided into two groups, 1 group consisted of persons which scored 18 and more points and was assessed by us as a high risk of COPD, and 2 group consisted of persons that scored less than 18 points and was assessed by us as a low risk of COPD. All questioned persons worked in the organized collective body and they regularly, 2 times a year, underwent occupational health examinations.

Among 246 surveyed persons (47%) there were younger than 40 years, there was no significant difference between men and women; 133 persons (25.5%) aged

40-49 years were divided almost equally between men and women, namely 77 (26.5%) men and 56 (23.6%) women; 105 patients (19.9%) aged 50-59 years were 58 men (19.9%) and 47 women (20.1%); 26 surveyed (5.1%) aged 60-69 years, including 14 men (4.9%), and 12 (5.1%) women; 15 surveyed (3%) were older than 70 years, among them there were 12 (5.1%) women, and 3 (1%) men.

Statistical processing of obtained results was performed on a personal computer using the methods of variation statistics with programs MicroSoft Exel 2003 i StatSoft "Statistica" v. 6.1 (License version N BXXR901E246022FA that belongs to medical-diagnostic center of Pyrogov Memorial National Medical University, Vinnytsia), according to the recommendations (O.Y. Rebrov, 2006). Results of comparisons with error probability value of $p < 0.05$ were considered probable.

Results. Major risk factors the prevailance of which was studied by us according to the questionnaire were smoking, respiratory infections, burdened allergic anamnesis, burdened family history.

We have established that among persons with a high probability of COPD development there were 88 respondents who smoke (40.7%) among them - 17 women (19.3%) and 71 men (80.7%). The patients were divided by age and thus smoking experience: at the age up to 40 years there were 22 men (62.8%) and 13 women (35.1%) who smoke; among persons aged 40 to 49 years there were 27 men (90.0%); aged 50 to 59 years – 17 men (65.4%) and 2 women (6.4%); aged 60 to 69 years -4 men (57.1%) and 1 woman (10.0%); older than 70 years – 2 men (66.7%).

It should be noted the growth of number of women-smokers with regard to male smokers in the age group up to 40 years.

All surveyed persons had respiratory diseases during the last year.

The frequency of respiratory diseases during the last year among surveyed persons, scored 18 and more points was distributed as follows: 96 (44.4%) persons in total complained for respiratory diseases once a year, among them 57 (59.4%) men and 39 (60.6%) women; 2 times a year - 74 (34.3%) persons in total, among them 32 (43.2%) men and 42 (56.8%) women; 3 times a year - 32 (14.8%) persons in total,

among them 8 (25.0%) men and 24 (75.0%) women; 4 times a year - 13 (6.0%) persons in total, among them 4 (30.8%) men and 9 (69.2%) women; and one woman (0.5%) complained 5 times a year.

Taking into account the analyzed data we can conclude that women suffer from respiratory diseases more often.

It was established that 174 persons (80.6%) in total complain for the burdened allergic anamnesis, among them 97 (55.7%) women and 77 (44.3%) men

The intensity of runny nose, itching after using drugs, insect bites was distributed in the following way: very rare - 60 (34.5%) (among them 28 (46.7%) women and 32 (53.3%) men); sometimes - 86 (49.4%) (among them 50 (58.1%) women and 36 (41.9%) men); often - 20 (11.5%) (among them 13 (65.0%) women and 7 (35.0%) men); very often - 8 (4.6%) (among them 6 (75.0%) women and 2 (25.0%) men).

According to the data obtained in the survey it was established that family anamnesis is burdened in 124 respondents (57.4%), 45 (20.8%) persons have ill relatives with COPD on the part of the mother or the father in their family, 18 respondents (8.3%) have an ill brother or sister, 25 respondents (11.6%) have an ill mother or father, 4 persons (1.9%) have ill mother and father.

According to our study the most common risk factors for COPD is smoking and frequent respiratory infections. Our data indicate that there is no significant difference between men and women complaining of respiratory disease. It is noted that the number of respiratory diseases increases with age. There are significantly more male smokers than women smokers among the surveyed, which may be due to the peculiarities of sex-age group

Conclusions. Taking into consideration that COPD occupies leading positions in the world in prevalence, mortality, disability and has an adverse impact on the quality of life, identification of risk factors that lead to the development of this disease is essential and will enable in the future to draw doctors' attention to the problem of early diagnosis of COPD. We have established that among people who regularly undergo medical examinations, 216 persons (41.1%) according to the

survey results have a high probability for COPD. Almost the same high probability of COPD is found among men and women (p = 0.05). Frequent respiratory infections are most often found in this group of respondents. We have established that among the examined with a high probability of COPD there were 88 people who smoke (40.7%), it is significantly more often found among men than among women. We have studied the peculiarities of allergic anamnesis in patients who had a high probability of COPD according to the survey results to verify the atopic nature of the disease, probably asthma, it is established that the allergic reaction, including the occurrence of runny nose, itching after using drugs, insect bites was noted by 174 persons (80.6%) in total, among them 97 (55.7%) women and 77 (44.3%) men.

Key words: Chronic obstructive pulmonary disease, risk factors for COPD, questionnaires, Smoking.

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MODERN FEATURES DIAGNOSTIC OF «MINOR» FORMS OF MYOCARDITIS IN LYME BORRELIOSIS

Introduction. Problem of Lyme borreliosis is very important for Ukraine, because the disease is characterized by polysystemic damage and ability to lead to chronic conditions and to cause patient disability 2-15 years after the disease. Polyorganic damage at Lyme borreliosis extends beyond infectious diseases and has interdiscipline character. Heart disease at Lyme borreliosis usually manifests in 10-25% at the second and third stages of the disease and is characterized by conduction disturbances, often in the form of A-V blocks of different degrees. However, heart

disease at Lyme borreliosis has favorable course in case of adequate and timely treatment with antibiotics in the early stages of the disease.

Materials and methods. Clinical and functional examination of 19 patients with Lyme borreliosis in stage I-II of the disease was performed according to the following plan: electrocardiogram (ECG) in the standard leads, evaluation of activity of creatine kinase-MB (CK-MB).

Results. Heart involvement at Lyme borreliosis in the form of "minor" (with scarce clinical manifestations) forms that have no clinical symptoms and are determined according to ECG changes and CK-MB increase in serum, unlike typical for this pathology A-V blockades, accompanied syncope conditions is described. Identifying the mentioned laboratory and instrumental markers of myocarditis allowed to review the antibiotic therapy which was conducted by cephalosporins of 3rd Generation during 21 days.

Conclusions. Diagnosis of early forms of heart involvement at Lyme borreliosis will optimize antibiotic therapy for prevention of disability and chronic conditions in patients.

Key words: Lyme borreliosis, myocarditis, diagnosis, creatine phosphokinase - MB, treatment.

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THE INFLUENCE OF SALBUTAMOL ON PULMONARY MECHANIC IN PRETERM NEONATE UNDERWENT MECHANICAL VENTILATION IN COMPLEX TREATMENT

Introduction. The use of modern methods of intensive care helps to improve the care of premature infants who tender to a huge number of features of immaturity

body. One of the important indicators of immaturity in premature babies is lack of surfactant, which leads in a most cases to respiratory distress syndrome (RDS). The introduction of exogenous surfactant and artificial (mechanical) ventilation in premature babies with respiratory disorders has greatly increased the survival rate of this category of children and to reduce the proportion of possible adverse effects of hypoxia. However, mechanical ventilation is a risk factor for iatrogenic impression, especially the respiratory system, leading to a number of specific pathological conditions such as bronchopulmonary dysplasia (BPD) and others. Existing methods of pharmacological prevention and correction (bronchodilators, steroid anti-inflammatory drugs) have contradictory evidence in reducing the frequency and severity of adverse effects of mechanical ventilation in preterm newborns therefore require further monitoring and improvement. However, data treatment methods can also be used in children with concomitant bronchial obstruction. Children underwent respiratory support with automatic monitoring of lung biomechanics, reflecting the functional state of the respiratory system of newborns. This performance dynamic lung compliance and pulmonary resistance. For infants with RDS syndrome characterized by low rates of dynamic lung compliance against the background of normal or slightly reduced performance drag airways. While for babies with very low birth weight have high rates of resistance and low compliance. The *aim* of the study was to investigate the features of lung biomechanics parameters in preterm children in treatment received mechanical ventilation and to evaluate the effect of salbutamol on these indicators.

Materials and methods. The study group included 42 premature baby with gestational age 30,12 ± 0,65 weeks, body weight who were treated at the department of anesthesiology and intensive care in Vinnytsa Regional Children's Hospital with RDS. Patients were transferred for treatment at the clinic during the first 3 days of life. All children in treatment received respiratory support with mechanical ventilation. Exclusion criteria were congenital malformations, central nervous system (intraventricular hemorrhage, periventricular leukomalacia), children who had tachycardia (heart rate> 180 / min). Along with traditional medical treatment of RDS

we have added to the treatment regimen a salbutamol inhalations according to numerous recommendations. In parallel with the mechanical ventilation for 4 days, there were 4 times per day inhalations of salbutamol ("Ventolin", Glaxo Wellcom, Germany) in a dose 0.15 mg per kg of body weight per inhalation diluted in 2 ml normal saline. For this aim in ventilator's circuit we connected a nebulizer. To assess the effectiveness and impact of salbutamol on pulmonary biomechanical parameters we used controls in lung compliance (Sdyn) and pulmonary resistance (Rrs), receiving with a sensor, built-in a ventilator breathing circuit. Also we checked a fixed oxygen concentration of the gas mixture (FiO2) during mechanical ventilation. Evaluation of the use of salbutamol was performed at 24, 48 72, 96 and 120 hours after the start of treatment. Comparative group consisted of 20 preterm infants with gestational age and birth weight who were on mechanical ventilation and treated with basic therapy.

Results. We noted the positive dynamics of the studied parameters and fractional oxygen concentration in lung biomechanics all children included in the study, but the dynamics of these parameters was significantly faster in patients treated with salbutamol in treatment. The overall dynamics of FiO2 showed a gradual decrease from 0.63 to 0.34 children in the main group after 120 hours, representing 46.1% decrease in the comparison group of 0.62 to 0.4 for 120 hours was 35.5%. Children who received inhaled salbutamol after 120 hours of observation experienced a decrease in airway resistance (15%) and growth rate of 22.5% compliance.

Conclusion. It is reasonable to further more extensive observation of lung biomechanics premature infants to help in deciding routine use of salbutamol in treatment of children who receive mechanical ventilation.

Key words: mechanical ventilation, premature infants, salbutamol, pulmonary mechanic.

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THE ROLE OF ULTRASOUND DUPLEX ANGIOSCANNING IN THE DIAGNOSIS OF VARICOSE VEINS OF THE LOWER EXTREMITIES

Introduction. Currently duplex ultrasound vessels scanning is a "gold standard" of diagnostics of varicose disease. At the same time the other methods of diagnostics lose their importance gradually. Unlike Doppler's examination duplex ultrasound vessels scanning gives unique opportunity to make a visualization of vessel part of high interest and to perform its selective Doppler's examination. In this case it is possible to receive information about architectonic of vessel, structure of vessel wall as well as about hemodynamic parameters in low extremities veins in "real time" regimen.

The aim of study is to estimate informative value of duplex ultrasound vessels scanning in diagnostics of low extremities veins varicose disease.

Materials and methods. The analysis of results of work performed by Chair of Surgery N.1 of VNMU n.a. M.I. Pirogov and by Department of Vascular Surgery of Vinnytsia Regional Clinical Hospital n.a. M.I. Pirogov in 2013-2015 was put on the basis of this investigation. This work was devoted to the treatment of patients with low extremities veins varicose disease by endovascular surgeries. During 2013-2015 years 1112 patients were treated using endovascular methods. From that quantity 185 patients with varicose disease C 2-4 (CEAP classification) were enrolled into study, including 148 patients that underwent to radiofrequency ablation and 37 patients with intravenous laser low extremities veins obliteration.

Duplex ultrasound vessels scanning of low extremities veins was performed to all enrolled patients on Philips EnVisor HD device (USA) equipped by linear sensor 7-10 MHz and convex sensors 3.5-5 MHz in accordance to standard method.

Results. The 29 (15.67%) of hospitalized patients have no pathological retrograde blood flow on main and perforating veins of the legs among all examined patients. Reflux on deep venous system was a reason of low extremities veins disease

development and pathological downthrows on perforating veins and on large and small saphenous veins in general in 4 (2.16%) cases. In other 152 (82.16%) patients valve apparatus of deep venous system of low extremities was capable, but impairment of surface venous system and perforating veins system was detected.

It means that in the two thirds of the patients operated by us the causes of varicose disease were pathological vertical or horizontal downthrows or their combination.

According to data of duplex ultrasound vessels scanning there was a pathological retrograde blood flow with duration more than 0.5 s in 156 (84.32%) patients on the moment of hospitalization. The duration of reflux over 1.5 s was detected in 63 (34.05%) patients from the whole quantity of 156. Decompensated venous-venous blood flow over 3.0 s was revealed in 51 (27.4%) patients from total cohort of 156 patients. Compensated retrograde flow was detected in only 42 (22.7%) patients.

Pathological downthrow was revealed in 29 (15.67%) on above described vessels. It is typical for reticular and intradermal forms of varicose disease.

In accordance to our data the frequency of reflux is 84.32%, it was detected in 156 patients from total cohort. The length of reverse blood flow was not longer than 1/3 of hip or shin in 30 (19.23%) patients. It was 2/3 of hip or shin in 54 (34.61%) patients. The length of reflux has been expended on the total anatomical region in 45 (28.84%) patients. In 18 (11.53%) and in 9 (5.76%) reverse blood flow was observed almost along or along the whole low extremity.

Compensated valve failure was revealed in 26.92% (42 patients) of all patients with venous-venous reflux. It was combined with segmental reflux in 22 patients (52.38%).

Sub-compensated and decompensated valve function was detected in 63 (40.38%) and in 51 (32.69%) examined patients respectively. Impairment of veins of whole shin or hip, i.e. extended reflux was 45.09%. The frequency of involvement of whole or almost whole leg was 17.0% and 11.76% respectively.

We mentioned that the length of reflux does not match the length of venous transformation. For instance, even in case of total reflux in 2 (25.0%) cases with described changes we revealed sub-total varicose transformation. It is necessary to emphasize that there is a reverse tendency. For example, in case of segmental reflux in 17 (10.89%) hospitalized patients vein transformations extended on the whole anatomical region of leg.

Conclusions. Using of duplex ultrasound vessels scanning is a high specific examination. It allows not only to reveal low extremities veins with varicose transformations, but also to detect and estimate duration and length of venous-venous reflux. It also permits to find out a venous transformation.

The estimation of results of duplex ultrasound vessels scanning is planned in patients with varicose disease after radiofrequency ablation or intravenous laser coagulation performed.

Key words: varicose veins of the lower extremities, duplex ultrasound angioscanning, veno-venous reflux, venous transformation.

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ROLE OF ARGON PLASMA COAGULATION IN TREATMENT OF PARASITIC HEPATIC CYSTS

Introduction. The approaches for treatment of the patients with cystic liver diseases differ significantly depending on etiology, type and clinical course of illness.

The aim of study was to improve treatment of the patients by implementation of argon-plasma coagulation (APC) into curing of focal liver lesions.

Materials and methods. A retrospective and a prospective analysis of the treatment of 216 patients that were undergone surgery in Vinnytsia Regional Clinical Hospital n.a. M.I. Pirogov (Vinnytsia, Ukraine) and National Institute of Surgery and Transplantology n.a. O.O. Shalimov was put into basis of this investigation. The cohort of patients consisted of 68 men (31.50%) and 148 women (68.50%). The average age was 52.0±3.4 years.

The patients were divided into 2 groups. The main group consisted of 116 patients. "open" and laparoscopic surgeries with using of APC were performed to them. The other 100 patients were enrolled to the group of comparison. During the same timeframe they undergone traditional ("open") surgeries. Both groups were comparable on gender, age, pathological forms of focal liver diseases.

The influence of APC was used for processing of residual cavity of the fibrotic capsule after puncture, aspiration of the content and removal of obtected shell. The time of cryogenic influence fluctuates from 3 to 10 minutes.

Results. In most cases (60.5% of all observations) size of parasitic cyst was less than 5.0 sm. The cysts of bigger size (more than 5.0 sm) were registered in 32.1% patients. The polycystosis was revealed in 7.3% patients. It is necessary to emphasize that results of preoperational diagnostics was in full accordance with characteristics of cystic process which was revealed during the surgery performing.

In case of primary form of disease the operations of open echinococcectomia were of high prevalence. This type of surgery was performed almost in a half of cases. It is necessary to mention that more than two thirds of operations were conducted with using of influence of APC on tissues of parasitic cyst and on liver tissues that surrounded cyst. The closing of residual cavity was performed by omentopexy or by capitonazh with external drainage (more than a half of all operations) in most cases. The variant of surgery with APC was performed almost in one third part of all patients.

Complications were registered in 18 (34.0%) patients from 53 in subgroup with traditional ("open" and laparoscopic operations) surgical treatment of echinococcosis and in 7 (12.5%) patients from 56 in subgroup with APC ($p<0.05$).

In groups with APC and traditional treatment some complications during early postoperative period were observed. They are multiple organ failure (3.5% vs 5.0%, $p>0.05$), pleurisy (4.0% vs 11.7%, $p<0.05$), infection of a residual cavity (3.0% vs 5.8%, $p>0.05$), external biliary fistulas with cholangitis exacerbation (2.0% vs 7.5%, $p<0.05$), hemophilia (2.0% vs 1.7%, $p>0.05$).

There were residual cavities (7.0% vs 14.2%, $p<0.05$), hernias (1.0% vs 3.3%, $p>0.05$), adhesive disease (1.0% vs 2.5%, $p>0.05$).

The presented results demonstrate that using of APC leads to reduction of complications frequency in patients that were undergone surgeries due to liver echinococcosis. In case of using APC the frequency of complications was lower in early period as well as in remote period of observation. It was possible to prevent such kind of complications as pleurisy, development of external biliary fistulas and cholangitis exacerbations and forming of residual cavities in remote postoperative period.

We have also demonstrated that complications could be prevented in patients with single parasitic (echinococcal) cysts less than 5.0 sm in case of using APC in comparison with traditional methods of treatment. The reduction of efficiency of using APC is connected with bigger size of parasitic cyst (more than 10.0 sm).

It was also proven that influence of APC on parasitic cyst tissue could decrease a risk of recurrent echinococcosis. It is necessary to emphasize that this effect was detected in case of surgeries due to primary echinococcosis as well as due to recurrent echinococcosis.

Conclusions. The demonstrated results show that influence of APC method on parasitic cyst tissues provides decrease of contamination degree of the abdominal cavity by cyst content. It diminishes frequency of localization of recurrent cysts in abdominal cavity.

Further estimation of APC method using is planned in case of other kinds of local liver pathology.

Key words: focal lesions of the liver, argon plasma coagulation, hepatic cysts.

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COMPARATIVE ANALYSIS OF SURGICAL TREATMENT GASTROESOPHAGEAL REFLUX DISEASE

Introduction. The lack of a unified concept of diagnosis and treatment, a high prevalence among the population, the development of serious complications such as ulceration and stricture of the esophagus, Barrett's esophagus, gastroesophageal reflux disease (GERD) do one of the urgent problems of modern medicine. *Purpose* - to assess the results of surgical treatment of gastroesophageal reflux disease after laparoscopic and open operation.

Materials and methods. Was treatment of 80 patients with GERD. All patients was performed correction locking function of the lower esophageal sphincter. In the study group included 41 patients who had laparoscopic operation and 39 patients who, had open operation.

Results. Duration of surgery in both groups did not differ significantly ($p>0,05$): 256,9 ± 80,3 min. – in the main group and 242,2 ± 45,6 min. – in the control group. Intraoperative blood loss (147,8 ± 44,9 and 241,9 ± 66,2 ml) and survival mechanical ventilation (45,4 ± 61,7 min. and 256,9 ± 80,3 min.) was loss in the laparoscopic group. Saturation of the blood oxygen was significantly higher in the main group. In the group of patients operated by open method the intensity and duration of pain was significantly higher than in patients of the study group. Postoperative patient activation (1,1 ± 0,3 and 2,2 ± 0,7 age) and the normalization of peristalsis (2,00 ± 0,6 and 2,7 ± 0,7 age) were fast in patients operated laparoscopically. Some patients after total fundoplication in both groups had complaints such as dysphagia, bloating, during 6 months. Relapses gastroesophageal

reflux disease were registered in the main and the control groups during 2 years. Laparoscopic antireflux surgery for patients with gastroesophageal reflux disease can get good and satisfactory results in 97% of patients in the observation period of 4 years and more.

Conclusions. On the basis of deep comparative analysis of peculiarities of early post-operational period in two groups of patients, who were operated by the use of laparoscopic and open methods, efficiency and less traumatic of miniinvasive interventions is proved, as evidenced shorter duration of mechanical ventilation of lungs, smaller doses of drugs for anesthesia, earlier normalization of blood pressure, respiratory rate and saturation of blood with oxygen during the first 12 hours after surgery. Patients after laparoscopic operation had lower intensity of pain syndrome according to visual analog scale pain, smaller doses drags for anesthesia and narcotic analgesics, early recovery of bowel peristalsis and activization patients.

Key words: gastroesophageal reflux disease, laparoscopic antireflux operation, fundoplication, krurorafy.

METHODS

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THE ISSUE POST-BURN ESOPHAGEAL STRICTURES: CASE REPORTS

Introduction. Treatment and prevention of esophageal stricture after the burn is quite a complex problem in surgery, which has not lost its relevance today.

The problem of esophageal strictures adopted to solve conservative: implementation bouginage of esophagus, balloon dilatation, stenting, or radical, by performing esophagoplasty using a patient's own tissue. Despite the extensive experience and numerous proposed methods bouginage and balloon dilatation, such manipulations are traumatic and in 30-40% of patients accompanied by stricture recurrence.

Controversy remains also the use of stents in patients with post burning esophageal strictures. Some authors regard the statement of stents in the area of strictures for long-term and noted decrease of dysphagia in 48% of cases. However, not infrequently there are cases of complications after such manipulation, the total part of which amounts to 30%. Thus is necessary to repeated surgical interventions, the frequency of which is, according to different authors, from 8% to 35%. In half the cases there was restenosis complications due epithelial hyperplasia, proliferation of granulation tissue and fibrosis.

It is also worth noting that re-stenosis (granulation stenosis) often occurs on a background of the long-term stent (2 month and more). Stenting of endoprostheses in period of 6 to 16 months can be accompanied by a narrowing of the esophagus to 2-5 mm above and below the stent or its complete obliteration, detachment of internal coating of the stent with partial violation of its lumen, the growth of granulation tissue on the edges of the prosthesis. The above data indicate that the problem of treatment stricture of the esophagus remains controversial and topical issues of surgery.

That is why we suggest to consider clinical case:

Materials and methods. *Patient A.* born in 1966, entered National Institute of Surgery and Transplantation named after Shalimov with complaints of dysphagia, difficulty swallowing of food, regurgitation with food smell and sometimes with food. From history we know that three years ago a patient was performed on esophageal stenting after burn strictures. Then about 1 year ago began to appear the above complaints that gradually grew.

In the clinic the patient was examined:

Complete blood count: Leukocytes 5.8 g/l; erythrocytes 4,33 t/l; Hb 131 g/l; HT 40.3; thrombocytes 372 g/l., erythrocyte sedimentation rate 20 mm/h.

Blood biochemistry: Protein 79.2 g/l; bilirubin 10.5 mmol/l; direct 1.9 mmol/l; ALT 14 f/l; AST 14 f/l; urea 7.0 mmol/L; creatinine 90.2 mg/dl; glucose 6.2 mmol/l.

Coagulogram: Prothrombin time 12.5 s; prothrombin index 83%; INR 1.2; fibrinogen 6.6 g/l; ethanol test negative.

Ro examination: esophageal stent (11 cm, width 1.7 cm.), cicatricial stenosis above the stent to 0.8 cm after the burn scar deformity of the stomach. The radiograph shows barium difficult passage in the lower third of the stent.

FEHDS: at a distance of 22 cm from the beginning of the esophagus scar steady narrowing of the esophagus, then the device cannot pass.

Based on survey data of the patient was diagnosed, after burn stricture of the esophagus, esophageal condition after stenting. *Restenosis.*

Results. After that it was decided try to eliminate the stent using endoscopy. However, the performance FEHDS was pronounced inability to eliminate the stent, due to germination of soft tissue into the lumen of the stent.

It was decided to perform radical surgery. The patient was executed operation: laparoscopically assisted thoraco-abdominal gastroesophagealplastic with gastroesophageal anastomosis in the neck.

Course of the operation: the abdominal cavity entered 5 trocar, revision of the abdominal cavity, stomach increased in size, contains a small amount of gastric contents, liver changed, another pathology not revealed. Completed mobilization of the stomach on a large and lesser curvature using Ultrasizion 5 mm. Separately crossed left gastric artery and vein. Completed mobilization of abdominal part of esophagus. Anterolateral rightsided thoracotomy in 5 intercostal space. Allocated the lower third of the esophagus with major technical difficulties. When revisions middle and upper third of the esophagus: the wall of last thickened with perifocal inflammation, adhesive fixed to the surrounding tissues and trachea to the upper aperture of the thorax. It was decided to hold extirpation of the cervical part of esophagus with plastic gastric tube. Conversion, stomach is cut off from the

esophagus using UKL 40, formed gastric transplant using 3 linear staplers Etikon 80 mm. With technical difficulties made mobilization of the esophagus to its cervical part. Esophagus crosses at the level of annular cartilage. Gastric transplant held through the chest cavity to the cervical part of the esophagus through the upper aperture of the thorax. Formed two inline invagination gastric esophageal anastomosis. Abdominal and thoracic cavity drained. The wounds stitched layer by layer. Imposed aseptic dressings.

Immediately after surgery preparation examined macroscopically, we have established the constrictive narrowing over the stent.

Postoperatively at day 9 were executed control X-ray of chest organs. The postoperative period proceeded in accordance with the volume of surgical intervention. On 9 day after surgery the patient was discharged in satisfactory condition.

Conclusions. Delete after burn strictures of the esophagus with one-stage gastric tube grafting is a safe and effective treatment for this group of patients. In our view, it is advisable to focus on expressing the factors that determine the prognostic unfavorable course after burn esophagus strictures and new approaches to overcome treatment of postoperative complications.

Key words: post-burn esophageal stricture, stenting, restenosis.

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CYTOREDUCTIVE OPERATION AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY (HIPEC) - INNOVATIVE THERAPIES OF PERITONEAL CARCINOSIS

Introduction. Peritoneal carcinosis remains to be a difficult oncological problem, despite the diversity of modern methods of treatment of malignant diseases [Blair, 2001; Eltabbakh, 1998; P.H. Sugarbaker, Y. Yonemura 2000; Логинова, 2015]. The combination of high temperatures and the simultaneous deposit of cytotoxic drugs in the intraperitoneal space provide a deeper penetration chemodrugs into the tissue affected by tumor. Application of cytoreductive surgical interventions directed on maximum removal of malignant tissue in combination with hyperthermic intraperitoneal chemotherapy provides a high level of clinical performance compared to classical surgical methods of treatment of oncologic diseases of the abdomen and pelvic organs, which gives the patient a chance to extend life.

Purpose of work - according to the literature analyze possibility of using a combination of methods hyperthermic chemotherapy and cyto reductive surgery in patients with cancer pathology complicated by carcinosis of the peritoneum, the advantages of the method compared to classical surgical methods of treatment of oncologic diseases abdominal organs and pelvis.

Materials and methods. Analyzed published data on applications hyperthermic chemotherapy and cytoreductive surgery in patients with oncopathology complicated by carcinosis peritoneum.

Results. An analysis of the literature demonstrated efficacy of cytoreductive surgery and hyperthermic intraperitoneal chemotherapy in numerous clinical trials. To date, the proposed set of methods is the "treatment of choice" in the treatment of patients with ovarian cancer, of the peritoneum carcinosis complicated. It was established that the size and distribution of peritoneal carcinosis, resectability of the primary tumor is the major prognostic criteria affecting the selection of patients for a possible comprehensive treatment. Described rate - the so-called «Peritoneal cancer index» (PCI), which determines the degree of metastasis in the abdominal cavity. Reproduced clinical case demonstrates the possibility of complex use of methods cytoreductive surgery and hyperthermic intraperitoneal chemotherapy in the treatment of patients with ovarian cancer, complicated by carcinosis of the peritoneum.

Conclusions. Peritoneal carcinosis is a peritoneal cavity malignant disease which is a complex oncological problem. Systemic chemotherapy and surgery on removal only the primary tumor is ineffective in treating this disease. The use of combined methods of cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC) provides a high level of clinical effectiveness and gives the patient a chance to extend life.

Key words: peritoneal carcinosis, hyperthermic intraperitoneal chemotherapy (HIPEC), cytoreductive surgery.

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MICROSURGICAL DENNERVATION IN TREATMENT OF FOCAL CERVICAL MUSCULAR DYSTONIA: ANALYSIS OF TREATMENT OF 26 PATIENTS WITH LATEROCOLLIS

Introduction. Accumulated vast experience treating patients with various forms of spasmodic torticollis (ST), the list of complications significantly narrowed. However, the results are still far from ideal: there is a high risk the preservation of residual effects and even relapse. *Purpos*e – to improve the results of microsurgical denervation surgery in patients with spasmodic torticollis.

Materials and methods. 26 patients with laterocollis were enrolled into the study. All enrolled patients underwent 60 microsurgical denervations of dystonic muscles, including 26 (43,33%) selective dennervations of ipsilateral sternocleidomastoid muscle, 24 (40%) selective posterior ramisectomy of C1-C6 rootlets (Bertrand’s procedure), 10 (16,67%) denervations and myotomias of dystonic muscles of omo-trapezoid triangle (DMOTT). The outcome evaluation was

conducted via neurological examination and Toronto Western Spasmodic Torticollis Rating Scale questionnaire.

Results. The outcomes showed 3-times decrease of severe laterocollis (up to 0%), the average severity of spastic torticollis with laterocollis prevailed among all patients (62,5%), in 37.5% we observed spastic torticollis with mild. Indicators of severe disability decreased from 15,38% to 0%, light level increased from 11,54% to 46,71%.

Conclusions. Implementation of denervation and muscle myotomes shoulder-blade triangle allowed to significantly affect the performance of spastic torticollis severity of laterocollis.

Key words: focal muscular cervical dystonia, spasmodic torticollis, laterocollis, microsurgical dennervations.

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MODERN TEACHING METHODS WHICH AFFECT DEEPENING CLINICAL THINKING IN MEDICAL STUDENTS

Introduction. Today the problem of education objectively comes to the fore among many other problems of mankind. In line with modern scientific trends continuous education reform poses a high school and its teachers dynamically new tasks to prepare young professionals-specialists should be based on the achievements of Ukrainian psycho-pedagogical school.

Objective - to analyze modern directions of pedagogical methods that influence the deepening of clinical thinking in medical students.

Discussion. At the University the educational process based on: educational sessions, independent work, practical training, module control. In higher educational

institutions the main classes are: lectures, laboratory and practical work, seminars, individual sessions. The main target of education as a social institution is to provide psychological and pedagogical conditions that enable to transform public consciousness in the individual. Among the various patterns that intensify and deepen the learning process one of the most frequently used are: a method of situational analysis, including the analysis of specific situations (case studies, situational exercises), the method of situational training - a method of Case method learning discussion, the method of playing roles, game design.

One of the essential and compulsory means of deepening and improvement of clinical thinking is the improvement of the maintenance of lecture halls and classrooms for workshops which is essential for the learning process.

One of the conditions for success in educational activity is activity of students based on the substantial motivation and directed to participate in teaching and learning activities.

Advanced technology of development and deepening of clinical thinking is a method of training the discussion.

The development of clinical thinking promote active technology including the leaders of analyze situations one of the most effective and popular methods of active learning of students.

Conclusions. Teaching methods of teaching students in medical colleges should focus on continued development of clinical thinking. During the training should focus on psychological and pedagogical foundations of learning, form the learning activities of students, systematic comprehensive approaches to personal development. The priority in training students of higher educational medical institutions should be the ability to find pedagogical approach to improve the presentation of the material that in the future deepen theoretical and practical knowledge of the student. A significant effect is achieved using not multidirectional methods and those that complement each other and for a total is holistic educational system.

Key words: clinical thinking, student, pedagogical method.

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INDRODUCTION OF THE METHOD OF SELF-CONTROL SKILLS DEVELOPMENT OF THE STUDENTS DURING THEIR STUDIES OF THE ORTHODONTICS COURSE

In the article the approaches to the problem of forming and development of self-control in the aspect of preparation of future orthodontist for the practical experience are reviewed. The *aim* of the work has become the illustration of the questions about the improvement of the quality of learning the academic material with the help of introduction of self – control methods into the studying process. The concept of "self – control" is uncovered as the component of conscious actions of the person, which is bound with the evaluation of these actions on the different stages of it. The specificity of previous, final self- control and self-control during the execution of the work, where each one is connected with psychological features of different stages of actions is enlightened. The specificity of self-control on each of the stages mentioned previously is linked with the fact, that at the first stage, action is under control, is imagined and considered, at the second stage, self- control gets connected with the action and at the third there are tangible results of the actions, that undergoes the review. It is shown, that the difficulties with the previous self- control of students are the result of insufficient development of the abstract thinking, which points at the substantial potential in the previous development of self- control of the students.

The imperfections of the self- control during the work planning of some students were linked with their excess haste, of others – with the hesitation, the

shortage of independence. The difficulties at the stage of final self- control are usually linked with the fact, that students don't see the necessity in it, although very often successfully demonstrate the checking techniques after the teacher's designation. Self – control during the execution of work is connected with the ability to correct your own actions, which was inherent to the majority of our students. The weakness of the current self- control was the result of the weak distribution of the attention of the students. The practice shows, that self –control is specifically important for the right solutions of the tasks from such a difficult subject as orthodontics. Because, before writing down the final diagnosis, it is necessary to think through all possible options, make the treatment plan, consider the whole logical way of solving the problem from the beginning to the end and keep in mind the entire process of achieving the desired outcome. In the development of conscious skills of checking of solving the set tasks at the orthodontics studies, teachers have used the number of didactic techniques: forming the habit to self – checking, the mutual checking of work, the possibility to correct the mistakes in the work themselves, training in the previous control, the ability to use the manuals, the ability to correlate the mark, given by the teacher to the actions of the student with his self-esteem.

The conclusions and perspectives of the future workings:

Conclusion. So, in the increase of the quality of studying process the major role is given to the teacher, who helps the students to form the habit of self- control on all the stages of learning the material. Also, he must know the main directions and didactic techniques of the self- control development.

We believe, that continuous training in application of different methods of self-checking of students leads to fixing the skills to use them and is the important instrument to increase the quality of studying process.

Key words: analysis, skills, assessment, self-control.

SOCIAL MEDICINE, HEALTH CARE ORGANIZATION

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BRONCHIAL ASTHMA AMONG CHILDREN AND TEENAGERS IN VINNITSA REGION: INCIDENCE AND CLINICAL FEATURES

Introduction. According to the WHO [2011], bronchial asthma (BA) affects up to 235 million people worldwide. This epidemiological data leaves no doubt for the fact that official statistics, based on the appeal for medical help in hospitals, makes not true incidence and prevalence of allergic diseases generally and asthma particulary. According to official statistics in our country about 0.5% of the population are sick by asthma. It is at least 10 times less than we can prognose based on worldwide epidemiological data.

Therefore, the study of prevalence, clinical features of asthma among children and youth in Vinnitsa region is the actual problem of modern medicine, especially because its prevention, early detection and in-time treatment is possible only on the basis of epidemiological studies which provide accurate data that differ from official statistics. The *aim* of our study was to study prevalence and clinical features of asthma among children and youth in Vinnytsia region.

Materials and methods. During the first phase of clinical and epidemiological research, survey was conducted on 7784 people aged 3 to 27 years (4532 children and 3252 young representatives) using a specially designed questionnaire modified to identify allergy symptoms of respiratory tract and skin. Children aged 3-6 years included in the 1st age group, children aged 7-18 years included in the 2nd age group, young people aged 19-27 years - to the 3rd age group.

During the 2nd stage of the study verification of clinical diagnosis was carried out. It were 1,462 individuals with a history of clinical symptoms of allergy, which conducted an in-depth examination of allergy, the procedure of execution which

included collecting medical history, physical examination, conducting skin tests (prick test) with a set of standard household, pollen, epidermal allergens (AG), selectively - functional examination (spirography). The diagnosis "asthma" and its extent was verified by us on the basis of complaints, medical history, clinical picture, determination of lung function. The basis of the diagnosis of asthma in children was Order №868 of the Ministry of Health of Ukraine «Bronhial asthma in children» (10.08.2013), for adults - Order of the Ministry of Health of Ukraine 08.10.2013 №868 "Unified clinical protocols of primary, secondary (specialized) medical care. Asthma."

Statistical analysis of the obtained material was done using package IBM SPSS Statistics v.21.0. For comparison of quantitative traits we used Student test samples, qualitative features - building 95% confidence interval frequency distribution samples by Wald method, Fisher's test for comparison of two rows of sample values of the frequency characteristics with less statistical significance. To identify causal relationships between the studied parameters multivariate regression step analysis was performed.

Results. As a result of in-depth clinical examination allergic asthma diagnosis was confirmed in 343 people, accounting for 4.41% (95% CI: 0.03; 0.04) of the total surveyed. By analyzing the prevalence of asthma in individuals with a history of clinical signs of allergy based on their sexual affiliation we note that significantly more frequently (35.20% of cases) revealed asthma among children 3-6 years (95% CI: 0.30 ; 0.40) compared with children 7-18 years old (φemp = 3.997, significant difference, p <0,05) and youth (19-27 years) (φemp = 3.979, significant difference, p <0,05), in which asthma was detected less frequently and almost equally - 22.69% (95% CI: 0.19; 0.26) and 22.29% of cases (95% CI: 0.18, 0.26), respectively (φemp = 1.90, the difference insignificant). Asthma more common among boys 3-6 years old compared to girls 3-6 years old (21.6% vs. 13.6%, p <0.01). Among the older categories surveyed, at the age groups 7-18 years (12.73% vs. 9.96%, p <0.05) and 19-27 years (14.57% vs. 7.73%, p <0, 01) BA was detected significantly more common among females. Analyzing the clinical features of asthma, we found that

overall (among all surveyed with asthma, n = 343 persons) prevailed mild (intermittent and persistent) asthma - 220 people (64.14%; 95% CI: 0.59; 0.69). Most rarely severe asthma - 45 people (13.12%; 95% CI: 0.09, 0.17) was recorded. Among severe asthma patients in the prevailing majority (68.89%) cases occur a combination of three allergic deseases compared the patients who had mild asthma (8.18%) and moderate asthma (37.18% of cases), P1 <0.05, P2 <0.05. Isolated severe asthma was observed only in 5 (11.11%) patients. Among moderate asthma patients prevailed (46.15%) cases of simultaneous combination of two allergic deseases, including asthma and allergic rhinitis in 34.62% of cases and atopic dermatittis in 11,54% of cases and the frequency of the combination of three allergic deseases (37.18% of the patients) met less frequently (p <0.05). Among mild asthma patients significantly more often (55.45% of cases, p <0.05 for both comparisons) observed isolated cases of asthma compared with patients with moderate (16.67% of cases) and severe disease (11.11% of cases). Thus, the combination of allergic rhinitis and atopic dermatitis with asthma significantly complicates the passing of asthma.

Conclusions. The prevalence of asthma among children and youth in Vinnytsia region according to clinical and epidemiological research is 4.41%, significantly higher than official statistics. Among those with a clinical and aenamnestic signs of allergy cases of asthma more often observed in children 3-6 years old (35.20%) than in children 7-18 years old (22.69%) and young people aged 19-27 years (22.29%).

3. In the group of children and young people with asthma predominates (64.14% of cases) mild (intermittent and persistent) desease. The combination with asthma in patients with allergic rhinitis and / or atopic dermatitis in the prevailing majority (68.89%) cases causes severe severity of asthma.

Key words: bronchial asthma, incidence, clininical features.

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MARKETING RESEARCH OF PHARMACEUTICAL MARKET: THEORY AND PRACTICE

Introduction. In this article the theoretical and practical aspects of market investigation were presented. The market investigation includs frequency analysis of international nonproprietary names, generics, country-manufacturers in the pharmaceutical market, study of recommended doses of the drugs (DDD), determine the social and economic accessibility of the drugs, the study of the stability of sales and fluctuations in consumption of the drugs by XYZ-analysis. Results of the study of oral hypoglycohaemic drugs (OHDs) are represented as practical applications of marketing analysis. Type 2 diabetes mellitus (T2DM) is one of the actual medical and social problems in Ukraine. T2DM acquires the character of non-infectious epidemics now that puts the T2DM in problems of state importance. The number of people with type 2 diabetes mellitus (T2DM) is growing. OHDs are used to treat T2DM. Market research of OHDs was conducted. The purpose of this work was present the theoretical aspects of the study of the pharmaceutical market and its applications for a rational choice of drugs.

Materials and methods. Frequency analysis, marketing analysis, DDD-methodology, investigation of fluctuations in demand and of forecast of sales of OHDs by XYZ-analysis.

Results. The frequency analysis showed that monotherapy was used in 25,1 % cases, of which 16,2 % was used metformin, 5 % – glimepiride, 3,9 % – gliclazide. As a result of ATC/DDD-analysis it has been found that the cost of DDD of metformin ranges from 1,55 UAH to 5,46 UAH, for glimepiride – from 1,22 UAH to 3,42 UAH, for gliclazide – from 1,26UAH to 3,97 UAH in the context of minimal and maximal costs of OHD-generics. It has been found that sulfonylureas and biguanides dominated in the pharmaceutical market, 61% of the drugs were of foreign manufacturers, increase of the drug prices were observed in the study period, sulfonylureas were the cheapest drugs, dipeptidyl peptidase-4 inhibitors were the

most expensive. Conducted analysis has determined a social and economic accessibility of OHDs. XYZ-analysis divided OHDs into 3 groups: X (drugs that are less susceptible to fluctuations in demand, their sale are easily predicted, such drugs are characterized by high possibilities of forecast of sales), Y (the drugs with some fluctuations in demand and medium forecast of sales) and Z (the drugs with non regular consumption, their demand/sales cannot be predicted, any trends are absent, low accuracy of forecast of sales). It was found that the group X includes Glucophage, Dianorm-M, Victoza, Diaformin® Pharmak, Siofor, Glucovance, Amaryl, Maninil, Glibomet, Ongliza, Glurenorm, Diabeton MR, Metfogamma, Pioz, Glikomet, Yanumet, Januvia, Diaglizid MR, Diapirid, Amapirid, Dianormet, Dibizid M, Duotrol, Metformin Sandoz, Oltar, Triprayd; the group Y involves Glibenclamide Pharmak, Diaglizid, Pioglar, Glutason, Glimepiride-Lugal, Diabrex; the group Z – only Glirid.

Conclusions. The frequency analysis showed that monotherapy was used in 25,1 % cases. The cheapest group of OHDs were sulfonylureas, most expensive – dipeptidyl peptidase-4 inhibitors. XYZ-analysis showed the group with the highest sustainable demand and the ability to predict sales (X), group with some tendencies to sustainable demand and to forecast of sales (Y), and group with unstable demand and uncontrolled forecast of sales (Z).

Key words: type 2 diabetes mellitus, marketing investigation, social and economic accessibility of the drugs, XYZ-analysis.

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ANALYSIS OF SURGICAL CARE PROVISION IN UKRAINE WITHIN LAST DECADE (2003-2013)

Introduction. Surgical care is very popular among the population. According to British scientists [Meara et al., 2014], 313 million operationsare conducted all over the world, but the worldwide shortage is no less than 143 million operationsper year. Two-thirds of the world population donot have access to safe surgery. In Ukraine surgical care is provided at the secondary and tertiary levels, mainly in hospitals by surgeons (general and specialized profile). This study analyzed surgical care organization in Ukraine for the period from 2003 till 2013.

Materials and methods. The source of information was the official statistics of Ministry of Health of Ukraine on staff resources, hospital beds and surgical care performance.

Results. Within 10 years the total number of surgeons in Ukraine increased by 6.5%, including: cardiovascular surgeons by 63.7%, cancer surgeons by 39.2%,their service density (per 10 thousand people) - respectively increased by 11.7%, 66.7% and 46.2%. Surgeon service density in Ukraine can be considered as high - 6.32 per 10 thousand people while in the US - 3.6; UK - 3.5; Japan - 1.7. Along with decreased total number of surgical beds by 10% (mainly due to general surgical beds) its provision for population decreased only by 5.5%. However, there is 2-fold increased cardiosurgical bed population ratio, and vascular surgerybed population ratio increased by 2.9 times, so restructuring of hospital bed pool occurred caused by significant need and intensive development of cardio and vascular surgery. Analysis of mortality of surgical patients shows that it generally decreased by 11.8%, especially it is noticeable in thoracic and cardiac surgery (respectively 50% and 58%). However, there isgeneral increase of mortality in general and purulent surgery which primary includes urgent patients. The analysis of surgical interventions shows that five "leaders" in 10 years has not changed: obstetric - 13.1%, skin - 14,5%, digestive organs and abdominal cavity - 13.2%, female genitals - 15.2%, and musculoskeletal system - 11.1%, but their total share decreased by reduced proportion of obstetric operations (42.7%). Emergency surgical care, which always is analyzed for individual types of surgery, traditionally shows the highest rate of

hospitalization for acute appendicitis (16.4 per 10 thousand people), the lowest - in perforated gastric ulcer (1.5). There is increased frequency of surgery for acute cholecystitis by 31.4%, while for injuries id decreased by 24%. The frequency of postoperative mortality decreased in most cases. Late hospitalization tends to be increased, mainly it is specific fpr acute cholecystitis (46.2% of hospitalized within 24 hrs.), acute intestine obstruction (43.3%) and acute pancreatitis (38.6%). High levels of mortality in the late postoperative hospitalization are specific for perforated gastric ulcer (12.6%) and acute pancreatitis (12.7%), the lowest - for acute appendicitis (0.1%). There is multidirectional nature of the relationship between parameters of urgent surgical care, indicating the need for better understanding of the causes of postoperative mortality (composition of hospitalized patients, level of resource support of institution, qualification of staff, etc.).

Conclusions. Presence of powerful surgical care resources makes surgical activity in Ukraine much lower (24.1) compared with EU (37.7);on average surgery/surgeon density per year is 55 surgical interventions (even in EU resident must perform at least 200 operations), but in case of effective work organization this value could be much more. Unfavorable ratio of planned and urgent surgery (1: 2) shows the inadequacy of medical care in prehospital phase and requires correction towards increasing the share of planned surgical care. Detailed analysis is required for cases of late repeated hospitalization and postoperative mortality cases.

Key words: surgical care, surgical intervention, lethality in surgical patients.

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LEVEL OF EDUCATIONAL ADAPTATION AND FEATURES OF THE HEALTH OF STUDENTS AND THEIR RELATIONSHIP WITH THE LEVEL OF PHYSICAL ACTIVITY GIRLS AND YOUTHS

Introduction. The conditions of studies in the high school increase requirements to functioning of adaptation mechanisms of organism of students. Most neuro-psychological and psychosomatic disorders that there are in the student youth are the result of violation of the process of adaptation to the conditions of studies, express a disbalance and instability of adaptation resources both in the conditions of action of protracted and in the conditions of influence of brief extreme factors. Therefore development of adaptivity students have an extraordinarily actual research and practice task, on the decision of that the increase of efficiency and success of educational activity, and also maintenance and strengthening of both somatic and psychical health of students, depends largely, thus one of leading places occupies the level of motive activity (PA) in this context of Suharev, 1991, 2006; Sergeta and other, 2002; Bohonkova, 2004; Bacileva, 2007; Serdjuk and others., 2012].

The aim of research is determination of level of the educational adaptation and features of health of the students youth and establish their connection with the level of physical activity of girls and youths.

Materials and methods. The researches were conducted in the Vinnitsa National Medical University by M.I Pirogov, under supervision were 285 students (150 girls and 135 boys) the students of the 3rd year medical faculty, which according to the level of PA, which is defined according to the value of daily energy were divided into 3 groups of comparison. By comparison groups were involved person in accordance with high (group 1 PA 50 girls and 45 youths), medium (2 PA group: 50 girls and 45 youths) and low (Group 3 PA: 50 girls and 45 youths) level PA. As a criterion of indicator PA should identify indicators of daily energy within to 9000 kJ (low PA) from 9000 to 11000 kJ (average PA) and more than 11000 kJ (high PA) - the girls, and indicators of Armenia within up 11000 kJ (low PA), from 11000 to 13500 kJ (average PA) and more than 13500 kJ (high PA) - the boys.

The level of daily energy was determined according to the chronometer-table method. Top features of educational adaptation and adaptive characteristics of the students organism were studied under specially developed questionnaire. Rates of

acute and chronic diseases were defined according to medical records. Statistical analysis of the obtained data were based on the use of the standard application package multivariate statistical analysis "Statistica 6.1 for Windows" (owned by Vinnytsia National University of Pirogov, license №AXX910A374605FA).

Results. Assessing during the studies level adaptation of students to the educational process, it should be noted that most of the students evaluated their own level of adaptation to training in high schools as well - these results were typical for 66,0% of girls Group 1 PA, 54,0% of girls 2 PA group and 56,0% of girls Group 3 PA. Instead, it was determined as unsatisfactory 2,0% of girls who belonged to one of PA, 8,0% of girls who belonged to two groups of PA and 4,0% of girls who belonged to Group 3 PA satisfactory – 32,0 % of women who belonged to Group 1 PA, 30,0% of girls who belonged to two groups of PA and 34,0% of girls belonging to Group 3 PA, and only 8,0% of girls of PA 2 and 6,0% Group 3 PA admitted to adapt to their own level of training as excellent. Among the boys recorded a somewhat different attitude to their own level of adaptation to training in high school. Thus, among the group 1 PA men who considered their level of adaptation satisfactory constituted 51,1% who considered him a good – 42,2% who considered it a great - only 4,4% and 1 youth (2,2%) considered it unsatisfactory, among the 2 groups PA 64,4% of youth considered their level of adaptation good, 26,6% - considered it satisfactory and 8,8% - considered it excellent; among the 3 groups PA – 53,3% of boys consider their own level of adaptation satisfactory, 37,7% - thought he was good, 4,4% - considered it an excellent and finally 4,4% - considered it unsatisfactory.

The state of health depends not only on the actions of biological and social environmental factors, but also of whether the person value her health - this determines the extent to which it is ready to take care of it, follow a healthy lifestyle, how is aware of the factors that determine health. Data analysis determined the fact that quite a small number of young people who participated in the study considered their health condition is very poor (6,0% women and 2,2% of youth) and bad (10,0% of girls and 6,6% of youths). Satisfactory state of their health was considered 36,0% of girls and 33,3% of youth who belonged to one of PA, 30,0% of girls and 22,2% of

boys who belonged to two groups of PA, 36,0% of girls and 22,2% of boys who belonged to Group 3 PA. The share of students who evaluated their health status as good among girls and young men who belonged to one of PA amounted to 58,0% and 51,1% among girls and young men who belonged to two groups of PA - respectively 58,0% and 68,8% among girls and young men who belonged to the group 3 PA - respectively 54,0% and 60,0%. It should draw attention to the fact that among boys Group 1 PA 13,3% of thought that have excellent health among girls and youth of the 2nd PA - respectively 6,0% and 8,8% of girls and under three of PA - respectively 6,0% and 11,1%.

Conclusions. The vast majority of students are surveyed believed their own level of adaptation good and satisfactory, linking the main issues that arose during the study, with a feeling of constant fatigue, personal factors (own laziness, etc.) and, in a someway less extent, the level of teaching in universities.

Chronic disease with frequent exacerbations enough found in 32,0-36,0% of girls and 17,7-31,1% of youth who participated in the study. In the structure of morbidity with temporary disability significantly superior respiratory diseases, mainly due to acute respiratory virus infections and influenza diseases of the digestive and nervous system and sense organs and injury. The preferred duration of individual diseases with temporary disability among 48,0-58,8% of girls and boys 46,6-62,2% should recognize its duration in the range from 3 to 7 days.

The data require further consideration in the development and improvement of modern technology and the creation of healthy preventive educational space in medical universities.

Key words: students, physical activity, academic adaptation, health, relationship

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SOME ASPECTS OF EPIDEMIOLOGY OF COLORECTAL CANCER

Introduction. Colorectal cancer (CRC) refers to the most widespread malignant diseases in developed countries of the world. The risk of CRC development in the European population makes up 4-5%. The highest incidence has been observed among the economically independent population groups. Colon cancer is the second most frequent cause of death from malignant neoplasms in the USA, yielding only to lung cancer. In Ukraine CRC ranked 4th in 1990, now – 3rd and in 2020 it is expected to become the first. *The objective of our study* was to analyze the incidence and mortality from CRC among the population of Vinnitsa region and draw up recommendations for improvement of the epidemiological indices.

Materials and methods. We analyzed and processed statistical reports of Vinnitsa Regional Clinical Oncologic Dispensary for 2009-2013 and clinical records of 120 patients with histologically proven diagnosis of colon cancer that were treated in Vinnitsa Regional Clinical Oncologic Dispensary in 2008 for the 5-year survival analysis.

Results. In 2013 the incidence of CRC in Vinnitsa region was 19,6‰ and ranked 7th in the oncopathology structure. The death rate from colon cancer was 11,9‰ (the 5th place in the structure of mortality from malignant neoplasms), rectal cancer ranked 6th. Having analyzed the dynamics of incidence and mortality from CRC for the last 5 years we established that the peak incidence of colon cancer was in 2010, being 20,7‰, then it started falling. In 2013 it was 19,6‰. The incidence of rectal cancer, on the contrary, was the lowest (18,4‰) in 2010, and in 2012 it equaled to the rate of colon cancer. In 2013 it left colon cancer behind and was 20,2‰ already. Despite the fact that rectal cancer refers to the pathology of external localization and should be detected during preventive examinations, its diagnostics at the early stages deteriorated significantly during the last 5 years. Thus, in 2009,

24,3% of the patients with Stage 1 were detected, in 2010 – 21,8%, and in 2013 – only 15,1% of the patients. The specific weight of the neglected cases (of Stage 4) increased from 9,2% to 12,7%, respectively. The number of detected cases of Stage 1 colon cancer also decreased from 22,3% to 16,6%. The part of morphological verification of rectal cancer diminished (from 89,7% to 85,8%). Probably, such a situation was conditioned by weakening of the general practice doctors' responsible attitude to the diagnostics of the oncologic pathology, that in turn led to reduction of coverage with combined and complex treatment from 56,8% to 50%. The importance of the early diagnostics was evidenced by the 5-year survival analysis. In the patients who started treatment at Stage 1 the survival was 82,3 %, all the patients lived for more than 2 years while 5,7% of the patients who started treatment at Stage 2 died during the first year. Their 5-year survival was 79,2 %. Only a half of the patients with Stage 3 survived 5 years, and 23,6 % of them died during the first year after the treatment. The patients that started treatment at Stage 4 did not live even 2 years, 42,9 % of them died during the first year. The way to improve CRC treatment results is to improve its early diagnostics, that is, to renew preventive examinations of the population and sanitary-educational work, to improve the equipment and work of pre-doctor service rooms, to improve the training level of family doctors in oncology and to increase the role of district oncologists.

Conclusions. Colorectal cancer is one of the most frequent malignant neoplasms in developed countries of the world. It ranks 3rd in Ukraine and 6th in Vinnitsa region. The disease is accompanied by a high death rate that makes up 12,6 cases per 100 thous. residents in Ukraine and 11,9 in Vinnitsa region. The analysis of the dynamics of colorectal cancer detection in Vinnitsa region for the last 5 years showed decrease of the number of cases of newly diagnosed Stage 1 colon cancer (from 22,3 % to 16,6 %) and rectal cancer (from 24,3% to 15,1%), and increase of the number of cases of newly diagnosed rectal cancer of Stage 4 from 9,2% to 12,7%. The rate of verified rectal cancer reduced from 89,7% to 85,8%. Deterioration of the early diagnostics and morphological verification of colorectal cancer led to reduction of coverage with specialized treatment of the patients with rectal cancer from 70,4%

in 2009 to 68,7% in 2013 and to reduction of the part of the combined and complex treatment from 56,8% to 50%, respectively, that conditioned a low level of the 5-year survival.

Key words: colorectal cancer, epidemiology.

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EVALUATION OF QUALITY OF LIFE AND SOCIAL FUNCTIONING IN PATIENTS WITH NEUROTIC DISORDERS IN THE ORGANIZED INDUSTRIAL POPULATION

Introduction. Neurotic, stress-related and somatoform disorders are becoming increasingly important due to the fact that they continue to be a major cause of morbidity in most countries of the world. Numerous studies reveal connection between level of education, socio-economic status, standard of living and the prevalence of neurotic disorders.

Quality of life is now regarded as one of the most important indicators of the effectiveness of health care not only in psychiatry and other fields of medicine. Therefore, studying the peculiarities of social adaptation and quality of life in patients of different categories and, primarily, suffer from neurotic disorders, has become an integral part of scientific research. However, the clinical role of these indicators still requires refinements.

All the above defined the *purpose* of the study: to identify the pathogenetic relationship of neurotic disorders with quality of life and level of social adaptation of workers of industrial enterprises.

Materials and methods. To achieve this goal, we have provided the informed consent of the respondents in conducting examination psychoprofilactic examined the mental condition of 982 employees. In 338 of them were found non-psychotic mental disorders, of which neurotic stress-related and somatoform disorders (F40 – F48) among 178 surveyed (18,1 ± 1,23%). Gender distribution the overwhelming majority of the surveyed has been women – 123 (69,1%) and 55 (30,9%) were men. The comparison group consisted of employees of enterprises, assigned to a group with full of mental adaptation. The sample was consisted of 162 respondents.

Results. The results obtained by evaluating quality of life and social functioning of patients with neurotic disorders sufficiently specific for the disease entity, and reflect the influence of disease on major life areas surveyed, which allows considering quality of life as an independent multivariate indicator of patients condition.

The lowest indicators in areas related to social adaptation, connected mainly with the formation, the clinical picture of anxious symptomatology, while general dissatisfaction with the quality of life by subjective evaluation correlates with manifestations of depressive disorders.

Benchmarks can serve as a basis for the selection of separate groups of patients having similar social problems, features of functioning and self-esteem that will create the basis for the formation of rehabilitation programmed with more targeted social and psychological assistance. Future research will consist in-depth study of quality of life indicators, both at the planning stage, and in the process of psychosocial rehabilitation of patients, as a mandatory and critical component of evaluating the effectiveness of the assistance provided.

Conclusions. Dominant problematic areas of social adaptation in patients with neurotic stress-related and somatoform disorders is low self-esteem, pain and physical discomfort, cognitive impairment and fatigue, too much negative and lack of positive emotions, sexual relations, limited opportunities in the entertainment, leisure and the acquisition of new skills, as well as the inability to obtain quality health and social care.

Key words: quality of life, social functioning, neurotic disorders, industry, social psychiatry, psycho-social rehabilitation.

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SANITARY AND HYGIENIC ASSESSMENT OF INTRAEDUCATIONAL CONDITIONS OF MEDICAL HIGHER EDUCATIONAL INSTITUTIONS AND MODALITIES OF IMPLEMENTATION OF EXTRACURRICULAR ACTIVITIES OF THE STUDENTS MASTERING DENTAL SPECIALTIES

Introduction. One of the initial components of research conducted in the field of preventive medicine in general, and in the field of hygiene ensure optimal course of academic and extracurricular, professional and leisure activities of pupils and students in particular, is a set of scientific research, the center of which there are questions regarding the comprehensive how about objectiv- and subjectively meaningful assessment of sanitation and environment inherent to various educational institutions, including the medical universities, and sanitary conditions of the extracurricular activities of girls and boys enrolled [Serheta, Bardov, 1997; Serheta et al., 2009; Sukharev et al., 2009; Serdyuk et al., 2012; Serheta, 2013].

The aim of the study was a comprehensive evaluation of sanitary environmental conditions of medical institution of higher education and conditions of extracurricular activities students learn dental specialties.

Materials and methods The study was conducted among students of 1, 3 and 5 courses of dental faculty Vinnitsya National Medical University named Pirogov based on the use of generally accepted methods of hygienic practice. Thus, for sanitary assessment of microclimate classrooms and facilities permanent residence

students of dental faculty outside the classroom environment, particularly in terms of student dormitories and in domestic homes, studied features of temperature, humidity and air velocity. Identifying and following sanitary and hygienic evaluation of efficiency of natural ventilation conducted at intervals before the classes in high school and after airing classrooms and dormitories at home or on the estimate carbon dioxide content in the air.

Hygienic evaluation features natural lighting performed using descriptive, geometric (determination coefficient of light, angles of incidence, opening and shading coefficient depression, etc.) and lighting engineering (definition koyefitsiyenta daylight) methods. Hygienic evaluation features artificial lighting was done on the basis of estimated use (determination of specific power and lighting) and lighting engineering (definition light level jobs premises) methods.

The hygienic assessment of major aspects of housing, and medical and social living conditions, peculiarities of educational process in higher education and extracurricular activities, as well as determining features lifestyle girls and boys, who received dental profession, conducted on the basis of questionnaires and interviews.

Results. In the course of the data analysis of objective studies that point out the features of micro-climatic environment intraeducational parameters of medical institution of higher education in classrooms and educational labs that include theoretical and practical vocational training of future-oriented dental professionals, it was necessary to note the overwhelming compliance with hygiene requirements laid.

However drew the attention of some, in most cases quite few, the situation of non performance temperature control classrooms and laboratories referred normative values that occurred mainly during the autumn-winter period of the year and there is if the heating system or worked before the heating season, or worked at microclimate necessary to provide comfort directly to full capacity during the heating season.

Thus, the temperatures of air during the autumn-winter period was 19,12±0,28 °C, fluctuating between 14,30 to 22,40 °C, relative humidity indicators – 54,17±1,36%, ranging from 39,5% to 62,1%, indexes of air velocity – 0,225±0,002 m/s, fluctuating in the range of 0,136 to 0,475 m/s, and therefore microclimatic

conditions classrooms should be considered mainly quite comfortable such that meet established requirements. But for some, mainly short, autumn-winter period of time created certain prerequisites to formation uncomfortable microclimate cooling type and, consequently, the development of certain violations in the state of thermal well-being of girls and boys who have studied.

Instead, during the spring and summer, the average temperature was 22,33±0,29 °C, rising at regular intervals to 25,0-28,0 °C, relative humidity indicators – 50,02±1,34%, increases in regular intervals to 60,0-64,0% air velocity – 0,200±0,003 m/s, fluctuating in the range of 0,189 to 0,765 m/s. Thus, in this case observed certain periods of time, especially in April and May and especially June, for which characteristic was out of temperature and humidity parameters from standard values that, unlike previous cases, stipulating formation enough distinct signs of discomfort microclimate of the heating type, also leading to violations of a state of thermal well-being of students, though the contrary.

The concentration of CO_2 in the autumn-winter period of the year was 0,075±0,004 %, as in the spring and summer of the year – 0,079±0,004 % and consequently did not exceed the limits of maximum permissible quantities. Only during the summer, mainly in long-term stay of students in classrooms periodically recorded growth in CO_2 concentration to 0,15–0,20 %.

Conclusions. The results conclusively determined fact, conditions of learning activities students get dental specialties in modern medical university, characterized by the absence of significant deviations from existing hygiene requirements are the same type and fully comparable, allowing sufficient clearly and clearly identify the main patterns to various hygienic approaches to the creation of a preventive educational environment in medical institutions of higher education engaged in theoretical and practical training of future dental specialists.

Key words: students, dental specialty, higher educational institutions, intraeducational conditions, sanitary and hygienic assessment.

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PSYCHOHYGIENIC ASSESSMENT PROPERTIES OF TEMPERAMENT STUDENT AND FEATURES OF ITS CHANGES IN THE DYNAMIC OF LEARNING IN MEDICAL HIGHER EDUCATIONAL INSTITUTION

Introduction. One of the key places in the structure of personality rights occupy properties of temperament which determine the nature of its adaptation to the action as environmental factors, and, to an even greater extent to the factors of social living conditions, determining the dynamic characteristics of the intensity and speed of response in response to their impact, the level of excitability and emotional balance, etc. Given this, special attention in the context of development and scientific substantiation psychohygienic bases of creation of healthy environments to draw attention to the processes of formation leading personality characteristics of students who are in modern institutions that define high level of operational readiness to assimilate extremely important, based on the position formation of high professional training, theoretical skills and practical skills, and demonstrate establish the optimal relationship of personality and habitat in the course of activities inherent to students and fully meets its current needs. That is why the process takes on special significance psychohygienic comprehensive evaluation criterion of the formation of the characteristics of personality of students of medical universities, as indicators of temperament. The study is to assess the implementation psychohygienic properties student temperament and characteristics of their changes in the dynamics of education in medical higher education

Materials and methods. Research conducted at the Vinnitsa National Medical University MI, Pirogov, where under the supervision of 307 students were boys and 157 girls) who studied at the 1st, 3rd and 6th courses of medical faculty. For

definitions and further evaluation psychohygienic used personality questionnaire Rusalova temperament structure that provided an opportunity to identify its components such as erhistic and social erhistic, flexibility and social flexibility, tempo and pace of social, emotional and social emotional [Raigorodskii, 2000]

Statistical analysis of the results provided using descriptive statistics procedures based on the use of standard application package multivariate statistical analysis "Statistica 6.1 for Windows" (owned Vinnytsia National University of Pirogov, license №AXX910A374605FA).

Results. During the determination of erhistic according to a scale that reflects the degree of human activity and, above all, the level of expression of the need for mastering the material world, the presence or lack of desire to perform hard physical labor and mental, and the degree of involvement, the students 1- st year amounted to 5,24 ± 0,32 points in boys and 5,35 ±0,34 points in the girls among the students of 3rd year - in accordance 6,28 ±0,38 points (p (t) 1-3> 0,05), and 6,52 ± 0,37 points (19.8% (p (t) 1-3> 0,05), the students of 6th course - according 6,28 ± 0,37 points (p (t) 3-6> 0,05; p (t) 3-6> 0,05) and 5,78 ±0,35 points (p (t) 3-6> 0,05; p (t) 1-6 <0.05). Interestingly should recognize the fact that statistically significant differences were registered when comparing the erhistic that were characteristic for freshman students, and for students, graduates p (t) 1-6 <0,05), any statistically significant sex-differences caused not recorded (p (t) u-d> 0,05).

In general, it should be noted that the highest rates were registered in young men who studied at the 3rd and 6th courses and girls who studied in the 3rd year, during this period of study for advanced medical students were inherent high need for learning knowledge and skills, objective world in general medical direction, forming active efforts to implement vocational training activities aimed others.

However, the lowest rates were observed among boys, freshmen and girls freshman, ie the initial stage of training and, therefore, it is the time for medical students were characterized by low educational and meaningful activation and desire to be involved in professional-directed learning activities, and one of the most important causes of these phenomena, in our opinion, should consider changing

stereotypes of knowledge management with the so-called "school" to "university" as well as a significant increase in autonomy of first-year students on the background of the reduction, in some cases, a complete loss of control over the construction of the harsh regime of training activities by parents and teaching staff.

Data obtained during the assessment scale control results confirmed a high level of sincerity students and therefore the reliability of data obtained while using the personal questionnaire Rusalova, answers students that have taken place and fully answered average level set values.

Conclusions. When making psychohygienic evaluation of properties of temperament students and establish the characteristics of their changes in the dynamics of education in medical higher education found that among boys observed sufficiently colored picture - the highest according to the level of expression of indicators of social erhistic, social plasticity, social pace, emotional and social emotion were characteristic of the first-year students, the highest performance erhistic, plasticity, and the rate of reactions - for students third-least high according to the level of expression of indicators of social erhistic, social plasticity, social pace, and social emotion was characterized for students third-least erhistic strong performance, plasticity, pace and emotional reactions - for graduate students. However, the girls observed a more stable situation - in the determination of social erhistic, plasticity, social plasticity, pace and Social tempo, emotional and social emotional the highest rates were typical for students who have studied in the 3rd year, the least high - for students who studied 6th courses, and only if erhistic determination of the highest indicators specific to wake students who studied in the 3rd year, the least high - for students who were studying in 1st year.

The features in the future should be taken into account in the development of modern technologies and the creation of healthy, on their basis, preventive medical educational space in higher education.

Key words: students, properties of temperament, medical higher educational institution, psychohygienic assessment.

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EXERCISE, HEART AND HEALTH

Regular physical activity provides a variety of health benefits, including improvement in cardiopulmonary or metabolic status, reduction of the risk of coronary artery disease or stroke, prevention of cancer, and decrease in total mortality. The importance of exercise for maintenance of a healthy life is well appreciated. Regular physical activity offers a variety of health benefits not only in the general, healthy population, but also in subjects with cardiac diseases. This idea is supported by solid scientific evidence compiled over the past 50 years.

Prevention of stroke

Studies on stroke prevention and meta-analysis of the studies indicated that moderate- to high-intensity exercise was associated with a reduced stroke risk. This protective effect is not only coffined to ischemic stroke, but also extends to reduction of hemorrhagic and, therefore, the total stroke risk.

Prevention of cancers

There have been numerous epidemiologic studies on physical activity and cancer prevention. The available data indicate that physical activity has a different association with different types of cancers. Most studies focused on commonly occurring cancers (e.g., prostate, lung, colorectal for men, breast, lung, colorectal for women). The effect on the risk of colon cancer varied from 80% reduction to 60% increase. Overall, exercise was associated with a lower risk of colon cancer

among both men and women. In addition, a dose-response relationship in cancer prevention was observed across levels of physical activity.

Reduction of mortality

A significant relationship between physical activity and reduction in mortality has been reported, with a mortality reduction reaching up to 20-40%

Exercise Recommendation

The updated recommendation specified that "All healthy adults aged 18-65 need moderate-intensity aerobic physical activity for a minimum of 30 minutes on five

days each week or vigorous-intensity aerobic activity for a minimum of 20 minutes on three days each week. Exercise may be compressed into fewer days of the week (e.g., exercise once or twice a week or on weekends only), with each activity session prolonged sufficiently enough to fall within current guidelines.

Exercise and sudden cardiac death (SCD)

Regular physical activity substantially reduces the incidence of CAD and may improve survival. However, it has also been known that vigorous physical activity can precipitate acute myocardial infarction (AMI) or sudden cardiac death. About 90% of all SCD were exercise-related in athletes, while only 9% of all SCD were related with exercise in the non-athletes group. It is generally accepted that sports, per se, is not a cause of increased mortality; rather, it acts as a trigger for cardiac arrest in the presence of underlying cardiovascular diseases predisposing to life-

threatening ventricular arrhythmias. The relative risk of SCD during vigorous exertion (marathon running) was significantly elevated at 16.9, compared with other situations.

Preparticipation screening

Due to the risk of exercise-related sudden death or other cardiac events, pre-participation screening for the susceptible subjects has emerged as an important issue in exercise recommendation. Brief guidelines for preparticipation are as follows.

Conclusion. Regular physical activity provides a variety of health benefits, including improvement in the cardiopulmonary or metabolic status, reduction of the risk of CAD or stroke, prevention of cancer, and decrease in total mortality. These benefits

offset the small but significant increase in the risk of SCD during vigorous exercise. There is a subgroup of patients, however, particularly at higher risk of sudden death during exercise. Proper identification of patients with hidden CADs, as well as screening of young subjects with structural or genetic ion channel diseases, may prove important for the prevention of exercise-related sudden death.

Key words: exercise, health, sudden cardiac death, coronary arteries.

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THE ROLE OF INTRA-ABDOMINAL HYPERTENSION IN ACUTE PANCREATITIS (REVIEW)

Acute pancreatitis (AP) remains a clinical challenge, despite an exponential increase in our knowledge of its complex pathophysiological changes. Intra-abdominal hypertension (IAH) is an entity that was described in the 19th century but which importance has been recognized in the last two decades. IAH is caused by persistent elevation in intra-abdominal pressure (IAP) that is associated with multiple physiological derangements in almost all systems. In the setting of intensive care, this condition is considered as an organ failure that negatively impacts the prognosis and requires specific treatment. The most severe form of IAH is called abdominal compartment syndrome (ACS) and is a high mortality entity. Severe acute pancreatitis (SAP) is almost always accompanied by certain degree of IAH with an incidence of approximately 70%. Underlying conditions such as ileus, retroperitoneal edema, presence of fluid collections and fluid overload explain this phenomenon.

IAH increases morbidity and mortality in acute pancreatitis and has become an issue of concern.

The abdomen is a closed compartment. The interaction between solid organs, hollow viscera, gas, fluids and the cavity generates a pressure known as intra-abdominal pressure. Normal levels of IAP range from subatmospheric to 5-7 mm Hg. Sustained elevation of IAP is associated with multiple physiologic alterations (IAH) and may be life threatening when exceeds certain levels (ACS).

According to the consensus document by the World Society of the Abdominal Compartment Syndrome (WSACS), IAH is defined by a persistent or repeated elevation of IAP over 12 mm Hg. IAH can be graded as follows:

Grade I: IAP 12-15 mm Hg

Grade II: IAP 16-20 mm Hg

Grade III: IAP 21-25 mm Hg

Grade IV: IAP > 25 mm Hg

A sustained increase of IAP over 20 mm Hg associated with a new organ failure is recognized as the ACS.

Factors that increase IAP in AP: retroperitoneal inflammation, peripancreatic inflammation and edema, ascites formation, retroperitoneal hemorrhage, ileus, fluid collections, edema of abdominal wall.

Medical treatment of IAH/ACS involves: therapies to improve abdominal wall compliance (sedation and analgesia, neuromuscular blockade, consider supine position < 20º, avoid prone position, remove constrictive dressings and abdominal eschars), therapies to evacuate intraluminal contents (nasogastric/colonic decompression, promotility agents, enemas, colonoscopic decompression), evacuation of abdominal collections (percutaneous drainage, paracentesis), management of fluids (restriction of fluids/ permissive hypotension, negative fluid balance, use of diuretics/albumin, hemodialysis/ultrafiltration), maintain APP > 60 mmHg (fluids/vasoactive drugs).

If conservative management fails surgical decompression of abdomen may be needed. Multiple organ dysfunction syndrome and increased IAP predispose patients

with SAP to secondary infections. Extrapancreatic infections predominate during the first week of the disease, whereas infection of pancreatic necrosis usually develops later. Early enteral nutrition reduces the risk of infections whereas advantage of prophylactic antibiotics is lacking evidence. Surgery for infected pancreatic necrosis is associated with high mortality when performed within the first two weeks of the disease. Therefore surgery should be postponed as late as possible, preferably later than four weeks after disease onset.

Due to the severe morbidity associated with all forms of surgical decompression, the indications, timing and technique used should be carefully evaluated. There is no uniform consensus on the indications for surgical decompression in ACS. In addition to IAP values, the cause, time-frame and possible need for further laparotomy should be considered. As a general rule, when nonsurgical interventions fail to turn around the progressive deterioration of organ dysfunctions in the presence of fulminate ACS, surgical decompression is justified.

Conclusions. Intra-abdominal hypertension is one of the main parts of pathogenesis of acute pancreatitis. The appearance of abdominal compartment syndrome on the background of acute pancreatitis worsens the patient's condition and is prognostically unfavorable factor in the development of acute pancreatitis. With the development of intra-abdominal hypertension on the background of acute pancreatitis preference should be given to complex conservative treatment. Decompressive laparotomy should be done only at the level of intra-abdominal pressure over 25 mm Hg and the presence of multiple organ failure.

Key words: acute pancreatitis, intra-abdominal hypertension, abdominal compartment syndrome, decompressive laparotomy.

© Bulyk R.E., Prokopenko S.V., Semenchenko V.V.

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IMPORTANCE OF EVALUATION CONNECTION BETWEEN CONSTITUTIONAL PARAMETERS OF THE BODY AND HEMODYNAMIC IN NORMAL AND IN VARIOUS PATHOLOGICAL CONDITIONS

Summary. The article analyzes the results of both domestic and foreign surveys on the subject of relations between functional and morphological features of the organism, and hemodynamic parameters in normal and in various pathological conditions. The paper presents results of research on groups of people of different age, sex, nationality and type of occupation. Special attention is given to works that study the relationship of constitutional and hemodynamic parameters, and further practical implementation of these results into practical medical industry.

Key words: hemodynamics, constitutional indicators, disease.

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MOTOR AND COGNITIVE ASPECTS OF HUMAN WALKING

In the article, on the basis of data of scientific literature, modern looks to the problem of walking are lighted up, including the question of co-operation of cognitive and motor components of complicate process of walking taking into account the age-associated features of walking and its importance for neurological practice. It is shown evolution of views to the indicated problem from understanding of walking as automatic motor function which is independent of any cognitive tasks, and cognitive and motor control of walking as two absolutely autonomous processes [Fraizer, Mitra, 2008; Yogev-Seligmann et al., 2008; Gatouillat et al., 2015], to the

acceptance of idea, that the cognitive loading influences on walking [Allali et al., 2013].

The volume of scientific literature in which connection between walking and cognitive function is discussed grows today [Horak, 2006]. Gait investigation in the condition of dual task cost (DTC) is studied widely, that allows to find out a conflict between competitional tasks (motor and cognitive requirements) [Plummer-D'Amatoa et al., 2008; Rao et al., 2013]. For today scientists are attain a consensus in relation to that walking claims attention and is not only a motor function. It is known that even the healthy adults of young age demonstrate the decline of cognitive efficiency during walking, when a cognitive task is difficult enough, and old people in comparison to young ones are more inclined to influence of the cognitive loading on walking. There are thoughts, that age associated changes deepen during walking, when other task is simultaneously executed [Srygley et al., 2009; Eladio, Bajcsy, 2011; Ijmker, Lamoth, 2012]. In opinion of O. Bogomaz [2014], diminishing of walking velocity with drawing into of the auditory sensory system requires for the realization both subcortical nerve centers, that provide stepping at the level of spinal automatism, and the highest centers, that provide cognitive control and adaptation to the external conditions.

In the wide understanding walking can be examined as a complicated cognitive function [Yogev et al., 2008]. In a number of works specified on that patients with the «neurologically» anomalous walking have the increased risk of decline of cognitive function, and N. B. Alexander, J. M. Hausdorff [2008] specify on that the changes of walking can come forward as biomarkers for future total decline of cognitive functions. At the same time, by A. Dennis et al. [2009] it is set that the cognitive-motor loading does not influence on walking of healthy persons. However in the group of post-stroke persons, regardless of rate of movement (desirable or speed-up), at the simultaneous cognitive loading speeds of walking diminished, and during the spatially-visual task processing the greater amount of errors was fixed during the rapid walking. And it means that people spontaneously give preference to one type of activity above other. Data by P. Patel et al. [2014] tell, that mark that part

of motor and cognitive constituents of walking in the conditions of double task depends on the type of walking and perception of difficulty of executable cognitive task. There is information [Hall et al., 2011], that a capacity for walking and performance of elementary cognitive task is explained exceptionally by characteristics of participants and motor factors, at that time as walking and difficult cognitive task processing is explained by cognitive factors in addition to personality and motor factors. Some researchers [Beauchet et al., 2005; Plummer-D'Amato et al., 2008; Hall et al., 2011] marks that the increase of complication of cognitive task results in the increase of deceleration of walking: deceleration of walking in the conditions of DTC is insignificant for the simplest conditions and significant - for difficult conditions.

Conclusions. In the situations of dual task (for example, to «walk, thinking») there are rejections of gait parameters, that are age-associated. People with neuro-degenerative disorders and elder adults are more inclined to influence of the cognitive loading on walking. Relative influence of personality descriptions, motor and cognitive factors on walking in the conditions of dual tasks remains unclear.

Key words:

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ENDOTHELIAL DYSFUNCTION AND VIOLATIONS OF LIVER FUNCTION IN NONALCOHOLIC FATTY LIVER DISEASE

The endothelium is an active metabolic system that supports vascular homeostasis through a number of important functions: modulation of vascular tone, regulating transport of solutes in cells of the vascular wall, the growth of these cells;

formation of extracellular matrix; protect vessels from possible adverse effects of circulating cells and substances; regulation of chemotactic, inflammatory and reparative processes in response to local injury.

Endothelial cells play an important role in the stages of development of acute and chronic inflammation as initial vasodilation; increased vascular permeability, adhesion, leukocyte activation and transmigration; fibroplasia and angiogenesis.

The structure and endothelial function in various organs are not equivalent. The liver uses increased synthesis of nitric oxide to protect the internal environment from microorganisms, toxic substances entering the body through the mucous membranes and skin. The synthesis of nitric oxide by the liver grows in the presence of internal environment virulent bacteria, inflammatory cytokines. Of all the factors synthesized by the endothelium, the role of the regulator main functions of the endothelium relaxation factor belongs endothelial or NO.

It is now established fact that insulin resistance (IR) and endothelial dysfunction is closely associated states. It is a reduction of insulin-mediated vasodilation and endothelium lesions. In this connection, we can assume that endothelial dysfunction is an integral aspect of IR syndrome and contributes to its increase, increase reactivity of blood vessels, leading to cardiovascular complications.

The main metabolic that underlies NAFLD is IR. In its development cycle glucose - free fatty acids (Randle cycle) is disturbed. However, the mechanisms of IR, damaged hepatocytes, inflammation, fibrosis formation remain unclear. The conducted researches is not enough to approve the primacy of secondariness of or endothelial dysfunction in the development of IR.

If the endothelium is intact, it provides anticoagulants that prevent the growth of vascular smooth muscle, and the diameter of blood vessels is normal in in this case. In addition, the endothelium of blood plasma absorbs many anticoagulants that promotes adequate blood circulation, especially microcirculation in the vessels. Damage to the endothelium and outcrops subendotelial layer runs to reaction of aggregation, coagulation that prevent blood loss causes blood vessels spasm, stops

the formation of antiplatelet agents. In the short-term actions damaging agents endothelium continues to perform a protective function, preventing blood loss. But prolonged injury, according to many researchers, endothelium begins to play a key role in the pathogenesis of a number of systemic pathologies. In the short-term action of harmful agents endothelium continues to perform a protective function, preventing blood loss. But prolonged injury, according to many researchers, endothelium begins to play a key role in the pathogenesis of a number of systemic pathologies. Recently it became known that platelets can, in some circumstances, bind to endothelial cells, where they can cause adhesion of leukocytes to the vessel wall.Interest in the nitric oxide is extremely high. NO widely distributed in the vascular system, it is formed not only in vascular endothelium, but also in platelets, macrophages, neutrophils, Kupffer cells in liver, etc.

Pathogenetic link between endothelial dysfunction and the development of liver fibrosis in patients NAFLD was discovered. The basis of of this relationship has multiple mechanisms. Thus, the separation of the liver and systemic blood flow is accompanied by a parallel stimulation sympathoadrenal system and changes in the ratio of humoral factors and metabolic activation of the renin-angiotensin-aldosterone system, whose role in the process of fibrogenesis is proven. With the formation of liver fibrosis morphological alteration deposition of extracellular matrix components occurs mostly in Diss subendotelial space and peryvenulyar area acini, which leads to the formation of a disabled subendotelial basal membrane, creating a barrier between hepatocytes and hepatic sinusoid. The synthesis of extracellular matrix components significantly prevails over the processes of its destruction, which is a cause of liver fibrosis and cirrhosis in NAFLD.

Pathogenesis of NAFLD. is complex and includes mechanisms associated with obesity and inflammation, insulin resistance, leading to oxidative stress, endothelial dysfunction, chronic inflammation, adipocytokines changes secretion. Expression of changes of endothelial dysfunction and markers of endothelial damage depends on the severity of liver disease.There is damage to the endothelial cells of hepatic sinusoid, increased production of cytokines, free radicals and collagen, resulting in a

change of sinusoidal perforatum, collagenization of Disse space and increase intrahepatic vascular resistance at NAFLD. This leads to significant violations of hepatic blood flow, ie the development of ischemia and possibly liver tissue necrosis with subsequent fibrosis of these areas in the liver.

Researchers examined role of endothelial and induced forms of nitric oxide synthase in the liver damage during ischemia and found that nitric oxide plays a vital role in protecting liver cells from the damaging action. Increased synthesis of nitric oxide may be important in protecting liver cells from the damaging effect of toxic substances. The combination of on anticoagulants and vasodilators endothelium under physiological conditions is the basis for adequate blood flow, especially in the vessels of microcirculation. In addition, an excess of NO impairs endothelial function, inhibit endothelial NO production and inhibits the contractile function of the myocardium. Damage to the endothelium and exposure of the sub endothelial layer reaction runs aggregation, coagulation that prevent blood loss. Nitric oxide is a key connection in the system of regulation of microcirculation and other vital processes such as blood coagulation. Primary inflammatory mediators (cytokines) form inflammation and initiate synthesis of hepatocytes complex of secondary inflammatory mediators.

Conclusions. Recent data indicate that NAFLD - a new risk factor for cardiovascular disease, can be considered as part of the pathogenesis of cardiovascular disease. Accumulated evidence that by modulating endothelial dysfunction and inflammatory penetration in the vessel walls fatty liver can stimulate inflammation, which in turn mediating the atherosclerotic process.

Search Promising early diagnosis and treatment NAFLD new direction with the development of endothelial dysfunction.

Key words: Nonalcoholic fatty liver disease, obesity, the endothelium.

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ANATOMICAL AND PHYSIOLOGYCAL FEATURES OF HYPOPHARYNX IN MALE AFTER LARYNGECTOMY

Cancer of the larynx in male is one of the most common cancers in otolaryngology, which is diagnosed in more than 50% of patients in stage III-IV, in which indicated complete removal of the larynx.

Normally, men of different age groups - 35-60 years and 61-74 years based on multidetector CT in measuring the diameter of the lumen laryngeal part of the pharynx is not revealed significant difference in performance [Дикан та ін., 2013].

It was analyzed the complication after 135 laryngectomies. Primary surgical treatment was delivered in 60 patients. Seventy-five patients underwent surgical salvage following radiotherapy. Different factors were evaluated as potentially predisposing to fistula formation. Stenosis is rare: 5.1% in the present series. A pharyngocutaneous fistula developed in 48.8% of patients. After a multivariate analysis, the site of the tumour was defined as a significant risk factor for pharyngocutaneous fistula formation. Despite progress made with reconstruction, morbidity is still elevated after major resection of the pharyngolarynx. Stenosis, a frequent complication when partial pharyngectomy is needed, is rare: 5.1% in the present series. Fistulas are relatively frequent but the majority resolved either with local irrigation or with subsequent flaps **[**Dequanter et al., 2008].

Deglutition disorders (dysphagia) are common following total laryngectomy.

Dysphagia may result from many factors, including the type of laryngectomy surgery employed and the use of adjuvant treatments (e.g. radiotherapy and chemotherapy). An aim to study was to document the effect of dysphagia on the respondents' social activities and participation. A questionnaire battery, with a prepaid envelope for return, was sent to all laryngectomy members (n=197) of the

Laryngectomee Association of NSW. One hundred twenty questionnaires (61%) were completed and returned. Dysphagia was self-reported by 71.8% of the cohort. In this cohort with dysphagia, the most commonly reported features included an increased time required to swallow, a need for fluids to wash down a bolus, and avoidance of certain food consistencies. Severe distress was reportedly associated with dysphagia for 39.7% of these respondents and prevented 57% of them from participating in social activities, such as eating at friends' houses and/or at restaurants [Maclean et al., 2011].

Laryngectomees with dysphagia, however, had significantly impaired functioning and markedly reduced social participation as measured by the UW-QoL. Signifi-cantly higher levels of depression and anxiety were also documented in those laryngectomees who had dysphagia. Dysphagia may not necessarily determine QoL following a total laryngectomy. However, it may have a negative impact on functioning and on psychological well-being.

Conclusions. Spiral computed tomography is one of the most common and informative methods for in vivo studies of hypopharynx in males after laryngectomy. The most frequent changes of hypopharynx anatomy in male after laryngectomy is narrowing that functionally manifested dysphagia. Following laryngectomy surgery, pharyngeal propulsive contractile forces are impaired, and there is increased resistance to bolus flow across the pharyngoesophageal segment. These adverse biomechanical effects can be influenced by surgical techniques, providing surgeons with evidence for optimum pharyngeal closure following a laryngectomy to improve swallowing outcomes. Anatomical and physiologycal features of hypopharynx in male after laryngectomy are important factors affecting the quality of life and social integration.

Key words: hypopharynx, laryngectomy, dysphagia, social integration.