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ORIGINAL ARTICLES

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SI “Institute of gastroenterology of NAMS of Ukraine” (Dnipropetrovsk)

LEVEL OF CITOKINES FOR PATIENTS ON CHRONIC PANCREATITIS

Introduction. Among a variety of damage mechanisms pancreas the most important pathogenetic factor in pancreatitis is inflammation. Starting point in the progression of the inflammatory process is the release of moderate amounts of cytokines, a number of cytokines involved in the processes fibrogenic. In our time are not fully understood immunological mechanisms of development of pancreatic fibrosis in chronic pancreatitis.

Materials and methods. The results of treatment 53 patients with chronic pancreatitis (CP) have been analyzed. All cases have been divided into four groups by the morphological study of the biopsy material, depending on the degree of fibrosis in the pancreas according to the classification of M. Stolte (1987): I (n = 5), II (n = 7), III (n = 12) and IV (n = 29) group. IL-6, IL-10, TNF-α and TGF-β1 levels in blood serum.

Results. In patients with I degree of fibrosis IL-6 increased 4 times ($p<0,05$) and TNF-α – and 9-fold, ($p<0.05$).

All patients with II degree of fibrosis are high levels of IL-6 and TNF-α ($p>0,05$).

In CP patients with III degree of fibrosis, the levels of IL-6 increased in 1,4 times ($p<0,05$), IL-10 decreased in 1,4 times ($p<0,05$), TNF-α increased in 14,2 times

(p<0,05), TGF - 2,8 times (p<0,05) relative to control group and this parameter in patients with I degree of fibrosis.

In CP patients with IV degree of fibrosis are high levels of TGFβ1 (p<0,01), increased TNF-α 19.3 fold (p<0,05), increased IL-6 in 7,5 times (p<0,05) in comparison with the control group. The content of IL-6 is significantly increased in 3 times compared to levels in patients with degree III fibrosis. The amount of TGFβ1 relative to these indicators in patients with I, II and III degree of fibrosis of the pancreas, respectively, 5-fold, 2,8-fold and 1,7-fold (p<0,05).

Conclusion. For patients with a chronic pancreatitis is development of fibrozu of pancreas accompanied the increase of level of IL-6, TNF-α and TGF-β1.

Key words: chronic pancreatitis, the degree of fibrosis of the pancreas, citokini.

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Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

ETHNOBOTANY AND PHYTOCHEMICAL STUDY OF LAWSONIA INERMIS L., RAW MATERIALS OF WHICH CONTAIN DYES

Introduction. Today the herbal components were most used in dermatological and cosmetic practice. Due to the content of biologically active substances complex preparations from plant material used for the prevention and treatment of skin of face, body, hair and nails.

Aim of the work was phytochemical research of Lawsonia inermis plant (Lawsonia inermis L.) and establishing antiseptic and antifungal activity of powder derived from the leaves, entitled "henna" to justification for the possibility of establishing on the basis of new herbal drugs.

Materials and methods. Studied the powder that has a name - "henna", derived from the leaves Lawsonia inermis, which were imported from Morocco

(Moroccan natural). In addition, for comparison of experimental use henna from other manufacturers purchased from the network of drugstores in industrial packaging, namely: natural Indian henna coloring and colorless in factory packaging 25g; Iranian natural henna coloring and colorless packaging factory in 25g. The study was performed using sensory, phytochemical (sublimation) and microbiological screening methods. One of the main biologically active substances of henna is hennotannic acid- lawson pigment. Qualitative detection is performed by a chemical method after the separation it - freeze. After identifying in the test material the pigment lawson we conducted microbiological research on varieties of henna on antibacterial activity.

To determine the antimicrobial activity of the varieties of henna, used culture Gram-positive microorganisms Staphylococcus aureus (Staphylococcus aureus) - a museum strain and a strain isolated from a patient's wound surface. As a nutrient medium used agar and blood agar respectively. In addition, investigated the effects of varieties henna on Gram-negative bacteria, such as E. coli (Esherichia coli) on agar and effects on the fungus - pale Candida (Candida albicans) on blood agar. As a standard solution was used (20%) of chlorhexidine bigluconate.

Conclusions. Research morphological characteristics of representative from Lythraceae family (Lythraceae Jaume) Lawsonia inermis - (Lawsonia inermis L.) and set the type and origin of raw materials - "henna". Determined the basic criteria of comparative evaluation of varieties of raw materials - henna between chemical composition and its properties and experimentally, as a result of phytochemical studies revealed the presence of pigment lawson in studied samples of colored henna. As a result of microbiological examination determined that the natural Moroccan henna really has expressed antiseptic action, as evidenced by its influence on culture of the museum strain of Staphylococcus aureus and Esherichia coli, which is not true for coloring and colorless henna designs of industrial production.

Key words: henna, pigment, lawson, sublimate, antiseptic and antifungal effect.

© **Zhebel V.M., Pashkova I.P.**

National Pirogov Memorial Medical University, Department of Internal Medicine of Medical Faculty №2 (Pirogova str., 56, Vinnytsya, Ukraine, 21018, admission@vsmu.vinnica.ua)

STRUCTURAL FEATURES OF THE GENE BRAIN NATRIURETIC PEPTIDE AND LEVEL OF ITS PLASMA CONCENTRATION IN MEN RESIDENTS OF PODILLIA REGION

Introduction. Natriuretic Peptide (NP) system is a group of circulating hormones, which regulate water - electrolyte homeostasis and blood pressure (BP) and in recent years, is under meticulous attention of researchers. Today there are actively studied the common polymorphisms and the haplotype structure of the basic system of genes NP. Defined and studied the most physiologically significant polymorphism of the gene brain natriuretic peptide (BNP) - replacing thymine for cytosine at position 381 (T-381C) is also known as (SNP rs198389), but data about association of gene polymorphism BNP and its plasma concentration with the development of cardiovascular disease is not numerous today, and in the Ukrainian population did not previously studied. The aim of the study was - to examine the association of different variants of the gene BNP (polymorphic locus T-381C) and level of its plasma concentration in healthy men residents of Podillia region.

Materials and methods. During the study were examined 79 healthy middle-aged men (57,06 ± 0,50 years), residents of Podillia region. Genotyping of the gene BNP was performed using polymerase chain reaction. BNP plasma level were determined by ELISA. To read the dermatoglyphics images have used modern fingerprint scanner (Futronic FS-50). Explanation of dermatoglyphics images conducted by the method of T.D. Gladkova.

Results. Established that in healthy men the frequency of genotype T381T of the gene BNP is found in 18,9% (n = 15) genotype T381C is found in 49,37% (n = 39) and genotype C381C in 31,65% (n = 25) surveyed patients ($p_{CC-TT} > 0,05$; $p_{TC-CC} > 0,05$; p_{TC-}

$_{TT}$ ≤0,05). The frequency distribution of alleles in males is - allele T – 43,67%, allele C – 56,33% (p <0,05). During the analysis significant correlation between frequency of occurrence individual images of both hands and structural-functional parameters of myocardium by inheritance at different genotypes of the gene BNP in healthy men, residents of Podillia region was not detected (data correlation analysis with using Spearman coefficient). The plasma concentration of BNP in a group of healthy men is 24,24 ± 0,52 pg / ml. Installed significant difference between the levels of peptide at different carriers genotypes of the gene BNP (p <0,0001), and the highest concentration was found in carriers genotypes T381C and C381C of the gene BNP. It was found that in healthy men morphometric parameters of myocardium and intracardiac hemodynamics are generally recognized in normative values for this age group and not significantly different in patients with different carriers genotypes and alleles of the gene BNP. The study determined that in carriers genotype T381T of the gene BNP is registered the highest average systolic blood pressure.

Conclusion. Among healthy middle-aged men residents of Podillia region genotype T381C of the gene BNP is prevail over than C381C and T381T and carrier of allele C dominates than allele T (p≤0,05). Established that the plasma concentration of BNP in healthy middle-aged men residents of Podillia region is significantly higher in carriers genotypes C381C and T381C of the gene BNP than in carriers genotype T381T (p <0,0001), so allele C of the gene BNP is associated with higher levels of peptide in plasma. In healthy male residents of Podillia region the carriers genotype T381T of the gene BNP is registered the highest average systolic blood pressure. The perspective is to determine the range of concentrations of the peptide in the plasma according to the inheritance of certain genotype of the gene BNP that requires further research.

Key words: gene polymorphism of brain natriuretic peptide, blood pressure.

EFFECT OF PREDNISOLONE IN METABOLISM AND VITAMIN D EXCHANGE

SI "Institute of Traumatology and Orthopaedics, Academy of Medical Sciences of Ukraine, Institute of Biochemistry O.V. Paladina NAS of Ukraine, Vinnitsa Pirogov memorial National Medical University

Introduction. Treatment a number of diseases involves appointment glucocorticoid hormone that with prolonged use causes a number of side effects, dose depending affect the metabolism of the body. But the effect of prednisolone on bone and cartilage in the short courses of treatment with prednisolone insufficiently studied.

The *aim* of the study. To study the effect of prednisolone during short term in its introduction to the mineral and vitamin D- exchange in the experiment.

Materials and methods. Experimental studies conducted on 34 Wistar rats. Animals were divided into two experimental series by 17 rats at each. In the first series of experiments, the animals were injected into the stomach 0,5 ml of water. In the second series into animals administered 0.5 mg prednisolone to determine the effects of prednisolone. After 30 days of the experiment, the animals were weighed, conducted blood samples for biochemical research and took out from experiment by an overdose of ether for anesthesia.

Ash content and mineral components of bone was determined by dry mineralization with further definition of mineral components in ash. Serum calcium levels, the content of inorganic phosphorus, total alkaline phosphatase activity, the activity of alkaline phosphatase isoenzymes and content of the active metabolite of vitamin D3 - 250 HD3 were determined. Statistical analysis of the data was performed using the methods of variation statistics with the definition of averages to determine the authenticity of their differences using t - Student test.

Results. The results of the study found that the administration of prednisone rats resulted in a violation of mineral and D - vitamin metabolism through significant reduction of weight gain in rats, reducing levels of calcium, inorganic phosphorus,

alkaline phosphatase activity of isoenzymes of alkaline phosphatase and levels of 250 N D3 serum blood compared to animals in the control group and indicates the need for medical correction of these changes.

Conclusions. Entering short course of prednisolone is a violation of metabolism, suggesting decreasing weight gain of animals and the reduction of mineral metabolism compared with those of animals in the control group, which did not receive prednisolone. The results of estimation of vitamin D metabolism testified that serum level 250ND3 index in comparing with the control animals series of experiments was significantly ($p < 0,05$) lower and amounted to $7,9 \pm 0,2$ ng mL -1 against $38,1 \pm 1,2$ ng ml -1.

Obtained data indicated that administration of prednisolone leads to violation of mineral metabolism and vitamin D- and required study morphologic changes in cartilage and bone arising when taken prednisolone.

Key words: osteoporosis, prednisolone, metabolism, vitamin D- exchange.

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CORRELATION ANALYSIS OF ORGANOMETRIC PARAMETERS OF THE UPPER JAW, FACE AND CRANIUM AT THE END OF FETAL PERIOD OF ONTOGENESIS

Higher State Educational Establishment of Ukraine “Bukovinian State Medical University”, Department of Anatomy, Topographic Anatomy and Operative Surgery

Introduction. In recent years as it is evidenced by literary sources a number of congenital abnormalities of the maxillofacial human apparatus has increased considerably. Developmental defects of the maxillofacial area occupy the 3rd place among other congenital defects. 70% of them are congenital cleft upper lip and palate, 30% - craniofacial dysostosis. The evidences concerning syntopic correlations of organometric parameters of the upper jaw, face and cranium in the fetal period of

ontogenesis are essential for comprehensive understanding of formation and development of topography of the upper jaw within the norm.

Objective: to conduct correlation analysis of interrelations between organometric parameters of the upper jaw, face and cranium in the third trimester of the intrauterine development.

Materials and methods. The investigation has been conducted on 25 specimens of dead fetuses (7-10 months) from 305,0 mm to 500,0 mm of parietal-calcaneal length of both sexes without external signs of anatomical deviations or abnormalities and without vivid macroscopic aberrations from the normal structure of the cranium. The study is performed within the framework of the scientific-research work of M.G.Turkevych Department of Human Anatomy and the Department of Anatomy, Topographic Anatomy and Operative Surgery of the Higher State Educational Establishment "Bukovinian State Medical University": «Peculiarities of Morphogenesis and Topography of the Organs and Systems in the Prenatal and Postnatal Periods of Ontogenesis» (№ State Register 0115U002769). To fulfill the objective of the study the following measurements were made: cranial height, general facial height, cranial width, facial width, longitudinal cranial length, transverse cranial length, general height of the upper jaw (in the left and right) and width of the upper jaw (in the left and right). These markers characterize the dynamics of intrauterine development of the upper jaw, face and cranium. The study was conducted by applying the methods of macromicropreparation, craniometry and morphometry in the horizontal auricular-ocular plane using stoutly compasses (calipers), sliding compasses, dial caliper and tape measure. The data obtained including correlation and multifactor regression analyses have been statistically processed by means of the licensed computer programs "Statgrafics" and "Statistica".

Results. The width and height of the upper jaw in the right and left of the 7-month fetuses correlate positively between themselves. The width of the upper jaw in the right and left reliably correlates with the height of the cranium, general facial height, height of the upper jaw in the right and left. The height of the upper jaw in the

right and left correlates in direct proportion only to the cranial height and general facial height. The width and height of the upper jaw in the right and left have been found to correlate between themselves positively in 8-10-month fetuses. The height of the upper jaw in the right and left correlates positively with the transverse and longitudinal cranial height, general facial height and facial width.

Most correlation relations between organometric parameters of the upper jaw, face and cranium are found in 7-month fetuses. The correlation relations between the parameters of the upper jaw found in the fetuses of the third trimester of the intrauterine development from both sides are indicative of their integrated and harmonious development.

The parameters of the upper jaw in the right and left of the 7-month fetuses have eight correlation pairs, including four correlation pairs with cranial parameters and four – with facial parameters. In 8-10-month fetuses the parameters of the upper jaw in the right and left correlate in the ration 6:6 including two correlation pairs with cranial parameters and two – with facial parameters. These correlation interrelations are indicative of the dynamics of development of the upper jaw and facial and cranial structures in the third trimester of the intrauterine development as well as similar, proportional and harmonious correlation between the parameters being examined.

In 7-month fetuses all the parameters of the upper jaw are found to correlate positively with cranial height and general facial height. In this period correlation relations between the parameters of the upper jaw and facial width, transverse and longitudinal cranial length are not found, contrary to 8-10-month fetuses where these correlations are detected. All possible direct proportional correlations between the parameters of the upper jaw, cranium and face found in 8-10-month fetuses are indicative of a harmonious development of the upper jaw and the whole skull and formation of the cranial and facial structures before birth.

Conclusions. In 7-10-month fetuses detected direct proportional correlations between the parameters of the upper jaw both in the right and left are indicative of an integral and harmonious development. In 7-month fetuses most correlation pairs are found between the parameters of the upper jaw and the parameters of the cranium and

face which is indicative of similar, harmonious development of the structures being studied. All possible direct proportional correlations between the parameters of the upper jaw, cranium and face found in 8-10-month fetuses are indicative of a harmonious development of the upper jaw and the whole cranium and formation of the cranial and facial structures before birth.

Key words: maxilla, organometry, fetus, correlation analysis.

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Ternopil State Medical University by I.Ya. Gorbachevsky (Ternopil)

VIOLATION OF THE LIVER TISSUE ENERGY SUPPLY AS A WAY OF ALIMENTARY OBESITY

Introduction. It was proved that the cell energy deficiency activate a compensatory neuroendocrine and immune mediators, which eventually leads to the formation of pathological conditions. The results of our previous studies indicate activation of free radical processes in the liver tissue of animals with alimentary obesity, which according to scientists is the cause of abuse of power supply cells. The aim was to investigate the state of the electron transport chain in mitochondria of liver and alimentary obesity establish its relationship with trace elements liver. In the article it was studied nutritional state of the electron transport chain of the liver mitochondria.

Materials and methods. Experimental models of obesity reproduced by applying the inductor food drive - sodium salt of glutamic acid in a ratio of 0,6:100,0 and high-calorie diet. Control of alimentary obesity appearance was performed by measurement nasally-anal length and calculate body mass index.

Results. It was found the tendency to decline in the cells energy supply after 14 days of experiment, whereas after 28 days it was the significant decrease of succinate dehydrogenase activity (17,1%) and cytochrome oxidase activity (25,6%) in the liver tissue ($p<005$). Due to reduced activity of succinate dehydrogenase it can

be the reduction of ATP and the reduced form of ubiquinone, which is in the mitochondria serves as a direct electron acceptor from succinate dehydrogenase complex. Reduction of cytochrome oxidase activity in liver mitochondria at alimentary obesity can be as the result of restriction on the flow of electrons substrate units through the respiratory chain cytochromes b-c, and through the binding of free oxygen radicals from metal atoms, which are composed of the studied enzyme.

The direct positive relationship between the activity of succinate dehydrogenase and zinc content in the liver tissue, as well as the neagtive link between copper and cytochrome oxidase it was found ($p<0,05$).

Conclusions. So, on the basis of these data we can assert with a certain probability that the negative impact on the functioning of the citric acid cycle in the alimentary obesity has copper, because cytochrome oxidase activity decreases with increasing of copper content in the liver tissue ($rxy = (-0,65)$, $p <0,05$). Lower zinc content in the liver does not have a positive influence on the cell energy activation.

Key words: experimental obesity, succinate dehydrogenase, cytochrome oxidase.

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Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

ANALYTIC PROGNOSTICAION OF SENSITIVITY OF *PSEUDOMONAS AERUGINOSA*, ISOLATED FROM BURN PATIENTS, TO BETA-LACTAM ANTIBIOTICS

Introduction. In the research, the new data of *Pseudomonas aeruginosa* clinical strains' sensitivity to beta-lactams are presented.

The aim of the research was to carry out analytic prognosis of sensitivity to beta-lactams of *Pseudomonas aeruginosa*, isolated from patients with burns.

Materials and methods. The research was held during the period of 2011-2015 years, in which 295 patients with purulent-inflammatory complications were examined. Patients with burn trauma were treated in Vinnitsa Regional Clinical Hospital named after N. I. Pirogov according to standard management guidelines. In their treatment, they had antimicrobial administrations (antibiotics, antiseptics). From patients there were isolated 127 clinical strains of *P. aeruginosa* (2011 p. – n=27; 2012 p. – n=26; 2013 p. – n=26; 2014 p. – n=23; 2015 p. – n=25). The sensitivity of *P. aeruginosa* to ampicillin/sulbactam, amoxicillin/clavulanate, cefotaxime, ceftazidime, cefoperazon, cefoperazon/sulbactam, meropenem was studied by means of standard disc-diffusion method on dense medium. The analytical dependence of dynamic prognostic changing criteria of *P. aeruginosa* clinical strains' sensitivity to beta-lactams was found by means of mathematical prognostication. Prognostic mathematical models were conducted. Authenticity of every model and substantiation of the prognosis of antibiotic sensitivity of *P. aeruginosa* were estimated due to determination criteria (r^2). "STATISTICA 7"; "Matlab 7.11" programs were used.

Results. In the result of the statistical analysis of the data, obtained in research, we found decreasing sensitivity of *P. aeruginosa* to ampicillin/sulbactam, ceftazidime, cefoperazon, cefoperazon/sulbactam. The analysis of smoothed data series (2011-2015 years) of *P. aeruginosa* sensitivity have shown its variable sinusoid tendency to amoxicillin/clavulanate. *P. aeruginosa* strains were found to be low sensitive to ampicillin/sulbactam and amoxicillin/clavulanate (no more 30,76 %), ceftazidime (25,92 %), cefoperazon and cefoperazon/sulbactam (20 – 44,4 %), cefepim (30,76 %), during five years of research. Mathematical extrapolation of previous normality testified decreasing sensitivity of *P. aeruginosa* in future even to meropenem and imipenem from 77,77% to 28,0%.

Conclusion. Obtained formulas of analytical prognosis of sensitivity of *P. aeruginosa*, colonizing burn surfaces in patients, proved the decreasing effectiveness of beta-lactams in prophylaxis and treatment of infectious complications, caused by this opportunistic pathogen.

Key words: sensitivity, beta-lactam antibiotics, *Pseudomonas aeruginosa*.

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Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

FEATURES LINEAR SONOGRAPHIC DIMENSIONS AND ACOUSTIC DENSITY OF SPLEEN IN HEALTHY WOMEN WITH VARIOUS SOMATOTYPE FROM PODILLYA

Introduction. *Aim* of our work – set features linear dimensions and acoustic density of spleen in practically healthy women of Podillya of different somatotypes.

Materials and methods. The study of linear morphometric parameters of spleen conducted in 147 practically healthy women aged from 21 to 35 years using the ultrasound diagnostic system CAPASEE model SSA-220A (Toshiba, Japan), convex transducer PVG-366M 3,75 MHz and diagnostic ultrasound system Voluson 730 Pro (Austria), 3.5 MHz convex transducer. Examination and spleen ultrasound biometry performed by the standard technique with left internal rib access in the frontal plane along the longitudinal or oblique axis of spleen in two mutually perpendicular planes of scanning. We determined the length, width, height of spleen, tissue density acoustic indicator of spleen, splenic vein diameter.

Anthropometric survey performed by V. Bunak; the absolute amount of fat, bone and muscle components of body weight calculated by formulas J. Matiegka and muscular additional component - by formulas of the American Institute of Nutrition; somatotype evaluation carried out by mathematical scheme of J. Carter i B. Heath.

Statistical analysis of the results was done using the package "STATISTICA 6.1", which belongs SRC VNMU named after Pirogov (license № BXXR901E246022FA), using parametric and nonparametric methods of assessment.

Results. The features of the linear dimensions and acoustic density of spleen in practically healthy women of Podillya with different somatotypes are set. Found that in women with endomorphic somatotype of spleen length and height was

significantly higher compared to women with mesomorphic, ectomorphic and medium intermediate somatotype. Acoustic density of spleen on longitudinal section statistically significantly lower in women with mesomorphic somatotype than in women with endomorphic, endo-mesomorphic and medium intermediate somatotype and also in women with ecto-mesomorphic somatotype compared to women with endomorphic, ectomorphic, endo-mesomorphic and middle intermediate somatotype. Significant differences in the thickness of the spleen, splenic vein diameter and splenic index between women of different somatotypes not installed.

Conclution. Features of the linear dimensions and acoustic density of spleen in practically healthy women of different somatotypes can be used to assess compliance with the size of spleen in adult in normal or pathological conditions. Results of the research required to develop individual programs for diagnosis, monitoring and treatment of established disease, which caused the deviation from normal spleen size.

Key words: sonography of spleen, anthropo-somatometric performance, healthy women, somatotype.

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MONTHLY RATES OF CELL CYCLE OF RAT ADRENAL CELLS IN ADMINISTRATION OF 0,9% NaCl SOLUTION, LACTOPROTEIN WITH SORBITOL OR HAES-LX-5% DURING THE FIRST 7 DAYS

Bogomolets National Medical University (13, T. Shevchenka blvd., Kyiv, Ukraine, 01601)

Introduction. *Purpose.* The paper is aimed at the analysis of rates of cell cycle and fragmentation of DNA of rat adrenal cells in administration of 0,9 % NaCl solution, lactoprotein with sorbitol or HAES-LX-5%.

Materials and methods. The experimental study has been made on 90 Wistar white male rats, weighted 160-180 g, provided by the vivarium at Institute of Pharmacology and Toxicology of NAMS of Ukraine, and carried out on the basis of

the Research Laboratory of Functional Morphology and Genetics of Research Center at N.I. Pirogov Vinnytsya National Medical University, certified by the MOH of Ukraine (Certificate No № 003/10 issued on 11.01.2010).

Animal housing and experiments on them have been carried out in compliance with the “General Ethic Rules for Conducting Experiments on Animals”, adopted by the I National Congress on Bioethics (Kyiv, 2001) and the requirements of international principles of the “European Convention for the Protection of Vertebral Animals Used for Experimental and Other Scientific Purposes” (Strasbourg, 1985), as well as the principles of “Good laboratory practice for safety tests on chemicals”, rules of humane attitude to the experimental animals, approved by the Committee on Bioethics at Vinnytsya National Medical University (Protocol No 1issued on 14.01.2010); International requirements for humane treatment of animals, guidelines of NPC MOH of Ukraine "Preclinical studies of drugs".

The infusion of 0.9% NaCl solution, lactoprotein with sorbitol or HAES-LX-5% was conducted in the lower hollow vein after its catheterization through the femoral vein, made in aseptic conditions. Catheter was sewed subcutaneously, its lumen was filled with heparin titrating solution (0,1 ml heparin per 10 ml 0.9% NaCl solution) after each administration of agents. Infusions were performed once a day during the first 7 days. Catheterization of great vessels and animals’ decapitation were made under 60 mg/kg intravenous propofol anesthesia.

DNA content in nuclei of rat adrenal cells was determined by flow cytometry. After animals’ decapitation the adrenal glands were removed and capsules were extracted and all its contents were used to make nuclear suspension for flow cytometry. Nuclear suspension from adrenal cells was obtained using the CyStain DNA solution, used for the analysis of the nuclear DNA, produced by the Partec company, Germany.

The analysis of cell cycle was made by means of FloMax (Partec, Germany) software in full digital compliance with mathematical model, where: G0G1 - percentage ratio of G0G1 phase cells to all cells of cell cycle (DNA content = 2s); S - percentage ratio of DNA synthesis phase to all cells of cell cycle (DNA content > 2s

and < 4s.); G2 + M - percentage ratio of G2 + M phase to all cells of cell cycle (DNA = 4s); Determination of DNA fragmentation (apoptosis) was made by SUB-G0G1 area extraction on DNA- histograms RN1 before the G0G1peak, indicating about cell nuclei with DNA content < 2s.

Statistical processing of the results was carried out in the STATISTICA 6.1 license package using the nonparametric methods of the evaluation of the obtained results.

Results. The resulting data as for insignificant synthetic activity and degree of apoptosis of rat adrenal cells (0,9 % NaCl solution group: S-phase – from 0,206±0,078 to 0,250±0,056 %, SUB-G0G1 interval – from 1,832±0,267 to 1,986±0,248 %; lactoprotein with sorbitol group: S-phase – from 0,230±0,083 to 0,258±0,111 %, SUB-G0G1 interval – from 1,706±0,196 to 2,008±0,274 %; HAES-LX 5% group: S-phase – from 0,200±0,029 to 0,266±0,070 %, SUB-G0G1 interval – from 1,706±0,282 to 2,078±0,251 %) are similar to data of other researchers as for cytokinesis in adrenal glands cells, obtained by different approaches, proving by evidence the existence of rather low degree of synthetic processes and apoptosis in the intact adrenal glands. This fact is explained by the high reserve abilities of this stress organ and no need in high dozes of hormones in the body in case of absence of pathological stimulus.

Conclusion. Infusion of 0,9 % NaCl solution, lactoprotein with sorbitol or HAES-LX 5% during 7 days shows insignificant changes in rates of cell cycle (G0G1-phase, S-phase and G2+M-phase) and DNA fragmentation (SUB-G0G1 interval) of adrenal cells of rats without skin burn in 1, 3, 7, 14, 21 and 30 days of observation, indicating about no effect of agents on the rates in intact animals.

The follow-up research will encompass the study of similar rates in rats after skin burn in administration of 0,9 % NaCl solution, lactoprotein with sorbitol or HAES-LX 5%.

Key words: cell cycle, DNA fragmentation, adrenal glands, rats, 0,9 % NaCl solution, lactoprotein with sorbitol, HAES-LX-5%.

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HSEI “I. Horbachevsky Ternopil State Medical University”, Pharmacology and Clinical Pharmacology Department (Maydan Voli, 1, Ternopil, 46001)

ESTABLISHMENT THE EFFICACY OF MELATONIN IN EXPERIMENTAL TYPE 2 DIABETES

Introduction. Melatonin (N-acetyl-5-metoxytryptamine) - epiphyseal hormone, which synthesized by the pineal gland from tryptophan, and an intermediate of its synthesis is serotonin.

The effects of melatonin are realized through specific membrane (MT1 (MTN R1A) and MT2 (MTNR1B)) and nuclear (RZRα, RORα, RORα2 and RZRβ) receptors, which are present in many internal organs, including the liver.

Melatonin is one of the most powerful endogenic antioxidants. This hormone is able to bind free radicals and stimulate the enzyme activity of antioxidant system such as superoxide dismutase, glutathione peroxidase, glutathione reductase, glucose-6-phosphate dehydrogenase. It is known, that melatonin is involve the regulation of the immune system.

Diabetes mellitus (DM) has a leading place in the structure of disease and characterized by the rapid development of related complications, severity of treatment and serious prognosis. Melatonin, besides antioxidant action, plays a significant role in the metabolism of carbohydrates and pathogenesis of diabetes through direct effects on the function of cellular elements of the islets of Langerhans through specific receptors present on the surface of membranes β- and α-pancreatic cells.

The *aim* of investigation: is to establish the peculiarities of melatonin action on blood glucose, prooxidant-antioxidant homeostasis, liver conditions and humoral immunity in animals with experimental type 2 diabetes.

Materials and methods. The dates of liver condition, level of carbohydrate metabolism, state of antioxidant system, the activity of lipid oxidation, levels of

immunoglobulin classes A, M and G (Ig A, M, G) and circulating immune complexes (CIC) were established at the animals with DM.

Results. The formation of experimental dexamethasone diabetes was confirmed by increasing the levels of blood glucose to 74,5 % in animals of second group compared with those of control group. TBA active products in the liver and serum was increased by 17,7 % and 40,1 % respectively. Lipid hydroperoxides (HPL) concentrations was increased in the liver by 28,7 %, which indicates the intensification of lipid peroxidation processes. The activity of superoxide dismutase (SOD) was increased in the liver and blood of animals (39,4 % and 29,4 %, respectively), catalase in the blood (by 44,5 %) and liver catalase activity decreased by 20,3 %. Reduced glutathione (GSH) in the liver decreased as well in the blood (31,3 % and 5,9 %,) compared with control values. Thus, it indicates the appearances of enzymatic and non-enzymatic imbalances of antioxidant protection in animals with modeled pathology The activation of cytolytic process in liver was proved by increasing of ALT and AST by 52,1 % and 40,9 % activity.

Melatonin influences on the regulation of the immune system through specific receptors. Both membrane and nuclear melatonin receptors have been identified on leukocytes. According to the results of research levels of Ig A decreased in 1,3 times, Ig M – 1,15 times, Ig G – 1,21 times and CIC – 1,18 times in animals with modeled dexamethasone diabetes. It demonstrates the inhibition of protective mechanisms and reduce the total immunoreactivity.

In response to input of melatonin the TBA-active products in the liver and blood decreased by 12,5 % and 19,4 %, respectively and HPL concentrations in the liver by 12,7 % compared with group 2 animals with modeled diabetes. The GSH content in the studied materials was increased by 26,3 % and 11,6 %. Liver catalase activity by introducing of melatonin increased by 17,3 %, while the activity of this enzyme in blood, significantly decreased by 7,2 %. The activity of another antioxidant enzyme SOD was decreased both in blood (21,9 %) and liver (26,8 %), compared to untreated animals. One of the mechanisms of antiradical action of melatonin is the ability to inhibit free radical processes by activating glutathione. Application of melatonin

contributed to a significant reduction of glycaemia in animals with experimental diabetes to 17,9 %. At the same time decreased the activity of ALT and AST by 21,2 % and 13,9 % respectively. The concentration of immunoglobulins in the serum was increased Ig A to 16,7 %, Ig M to 8,67%, 7,74% to Ig G and CIC levels to 8,62%. The ability of melatonin influences on the state of humoral immunity can be explained by the direct stimulating effect of this hormone on B-lymphocytes, its ability to regulate cellular immunity, as well as direct and indirect antioxidant actions.

Conclusion. In animals with modeled dexamethasone diabetes a significant increase concentration of glucose in the blood, the development of oxidative stress, impaired metabolism and morpho-functional liver condition, changes of humoral immune system have been observed. Introduction of melatonin lowered the activity of lipid peroxidation processes, enzymatic and non-enzymatic activation of antioxidant defense mechanisms; has expressed favorable effects on rates of carbohydrate metabolism, cytolysis and cholestatic processes in the liver and also melatonin has shown immunomodulatory effects.

Key words: experimental diabetes, melatonin, prooxidant-antioxidant system, liver.

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Pyrohov Vinnytsia National Medical University , Department of Human Anatomy (56, Pyrohov St., Vinnytsia, Ukraine, 21018)

THE HISTOLOGIC AND HISTOMETRY STRUCTURES OF HUMAN FETUSES MEDULLA OBLONGATA IN 14-15 WEEKS OF FETAL DEVELOPMENT

Introduction. Improvement of methods of treatment of neurological diseases is inextricably linked to the discovery of new regularities of morphogenesis of the nervous system. Most modern embryological and molecular genetic studies on the

development of the brain, conducted in mouse and chicken embryos.Only a small number of scientific works performed on embryos and human fetuses.

Materials and methods. Conducted anatomical and histological study of 22 human fetuses. The gestation period is 14 to 15 weeks of fetal development. Parietal-coccygeal length is 119,0±7,4 mm, weight – 103,7±8,7 g.

Material for research was obtained as a result of late abortions in Regional pathoanatomical Bureau in Vinnitsa, and then fixed with 10% neutral formalin solution. Malformations of the Central nervous system was absent. Made from paraffin blocks underwent serial horizontal slices of the medulla oblongata thickness 8 to 10 microns. The preparations were stained with hematoxylin-eosin, toluidine blue and Van Gieson's Stain.

Results. According to morphometry the length of the medulla oblongata is 7,6±0,2 mm, the anterior-posterior size of the medulla oblongata at the middle of the olive – 7,1±0,2 mm transverse size – 7,2±0,2 mm.

The nucleus olivaris principals have the form of a winding gear of the plate. The area of a right of the nucleus olivaris principals human fetus at 14-15 weeks is 2,2±0,08 mm2, of the left - 1,9±0,07 mm2. The neurons of the olive inferior the complex oval or spherical shape. The average value of the square of the nerve cells of the principals, medial and posterior nuclei of the nucleus olivaris equal to 28,4±0,8 μm2, the average size of 5.7±0.1 x 5,8±0,1 μm. The size of the nucleus of a neuron is 21.9±0,6 μm2, and its size is 4.6±0.1 x to 4.4±0.1 μm.

Nucleus ambiguus in fetuses 14-55 weeks has an irregular or oval shape. Nerve cells nucleus ambiguus oval or spherical shape. The average size of a neuron 323,1±9,1 μm2, the size – 23,1±0,7×16,8±0,5 μm.

The nucleus dorsal of the hypoglossal nerve in the fetus 14-55 weeks ellipsoidal shape, is located in the medulla oblongata somewhat lateral to the midline at the bottom of the IV ventricle, and formed of large polygonal nerve cells. The average area of a neuron – 330,2±9,7 μm2, the size – 18,7±0,5×17,3±0,5 μm.

Dorsal nucleus of vagus nerve located at the bottom of the fourth ventricle in the caudal division of the medulla oblongata dorso-lateral to, and in the middle

section of the lateral nucleus of the hypoglossal nerve. The dorsal nucleus of vagus nerve consists of nerve cells that have an irregular polygonal shape, spherical, oval. The average area of a neuron is equal to 72,3±2,2 μm2, the size – 9,8±0,3×7,5±0,2 μm.

The limits of the nucleus solitary tract and the spinal nucleus of the trigeminal nerve is relatively well defined. The average area of a neuron – 29,5±0,7 μm2, the size – 6,1±0,1×5,4±0,1 μm.

Conclusions. On the preparations of the medulla oblongata of human fetuses 14-15 weeks of fetal development the largest dimensions are groups of motor neurons nucleus ambigus and nucleus hypoglossal nerve. The nerve cell nuclei of the olive inferior of the complex and sensitive nuclei of the cranial nerves have the smallest size compared to motor and autonomic neurons. The degree of differentiation of autonomic neurons in the dorsalis nucleus of the vagus nerve occupies an intermediate position between the motor (more differentiated) and sensitive (less differentiated) neurons.

In the future further developments it is planned to establish regularities of development of neural systems (nuclei) of the medulla oblongata older age groups of fetuses the prenatal period of human ontogenesis and to determine the topography of the neurons and cells neurop using the expression of immuno-histochemical markers.

Key words: morphometric parameters, medulla oblongata, nucleus of the medulla oblongata, prenatal ontogenesis.

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Bogomolets National Medical University **(**13, Shevchenko blvd., Kyiv, Ukraine, 01601)

IMPACT OF INFUSION THERAPY ON STRUCTURAL CHANGES IN RAT ADENOHYPOPHYSIS IN EXPERIMENTAL DERMAL BURN INJURY

Introduction. *Purpose*. The research was aimed at clearing up the peculiarities of morphological effects of adenohypophysis response to infusion with composite hyperosmolar solutions (disintoxicative, rheological and antishock effect) and infusion with sodium chloride isotonic solution in dermal burn injury.

Materials and methods. 90 Wistar male rats, weighted 155-160 g, involved into experimental study of morphological changes in adenohypophysis in burn injury (in 1, 3, 7, 14, 21, 30 days), were infused with 0,9% NaCl solution in combination with HAES-LX-5% (the novel domestic blood substitute) and lactoprotein with sorbitol (the brand name is "Lactoprotein-C®") colloidal hyperosmolar agents.

Animal housing and experiments on them have been carried out in compliance with the "General Ethic Rules for Conducting Experiments on Animals", approved by the First National Bioethics Congress (Kyiv, 2001), and the requirements of international principles of the "European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes" (Strasbourg, 1985), as well as the principles of "Good laboratory practice for safety tests on chemicals (GLP)".

The animals were assigned into 7 groups: Group I – intact animals; Group II, III, IV – rats without burn injury, individually infused with 10 ml/kg of 0,9% NaCl solution, HAES-LX-5% and Lactoprotein-C®, respectively; Group V, VI, VII – burned animals, administered with the investigated agents according to the regimen and dose, similar to animals of Group II, III, IV.

Ultrathin sections were prepared in the "LKB" ultramicrotom, analyzed and photographed on PEM-125K electron microscope. Semithin sections were stained with toluidine blue, analyzed and photographed, using Olympus BX51 light microscope.

Results. The paper presents data related to the autophagy and crinophagy in rat adenohypophysis in treatment of burn injury by the infusion of lactoprotein with sorbitol and HAES-LX-5%. It has been established that intravenous infusion of lactoproteinum with sorbitol in rat experimental burn disease leads to structural transformations of histohematic barrier when interaction of vascular wall cells and

endocrine cells enables the formation of "collateralized membrane complex" in the adenohypophysis.

Administration of lactoprotein with sorbitol and HAES-LX-5% inhibits structural manifestations of cell death and ensures the life saving of adenohypophysis endocrine cells by involvement of mechanisms for autophagy and crinophagy. Crinophagy of endocrine cells in the adenohypophysis is adaptive in nature; it ensures elimination and disposal of excess hormones, distorted as a result of catabolic reaction, specific for burn disease. Autophagy is activated in case of urgent (emergency) need to extrude the damaged organelles together with adjacent areas of cytoplasm.

In crinophagy (in contrast to autophagy) no prior isolation of areas of cytoplasm of adenohypophysis endocrine cells with secretory granules by membrane elements occurs; however, incorporation of contents of lysosomes into secretory granules occurs in conditions of actual fusion of these organelles. Direct fusion of secretory granules with lysosomes at all stages of their maturation leads to degradation or modification of secretory material. After fusion with cytolemma the transformed secretory granules extrude its contents (exocytosis) or destruction of membrane of transformed secretory granule occurs in cytoplasm. In the latter case products of hydrolytic transformation of contents of secretory granules diffuse through cytolemma into pericapillary space and release into bloodstream trough the fenestres of blood capillaries endothelium.

Conclusion. The perspectives of further research are encompassed the cytophotometric analysis of the cell cycle and apoptosis indicators in animal adenohypophysis in experimental dermal burn injuries in conditions of infusion of lactoprotein with sorbitol and HAES-LX-5% solutions.

Key words: burn injury, infusion therapy, adenohypophysis, light and electron microscopy.

Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

TREE POLLINATION CHANGE IN VINNITSA DUE TO TEMPERATURE INCREASE

Introduction. Global warming is unequivocal process which became evident for the last decades. Climate change leads to modification of plant pollination as well promoting trees to emit their pollen earlier as well. Tree pollen is an important allergy causal agent impacting human health at the beginning of the pollen season. This season might be affected by the air temperature increase in turn. In order to control and prevention of hay fever symptoms it's important to know the time of intense plant pollination. To predict the peak pollination period is especially important while the hay fever symptoms can be seen in a highest number of population members affected. Correct predicting the trees pollination patterns is important approach of pollen forecast.

Thus, the *aim* of our study was to analyze the impact of climate change patterns on tree pollination in Vinnitsa, Ukraine.

Materials and methods. Pollen counts from 1999 to 2000 were obtained by gravimetric sampling on three monitoring stations in different districts of Vinnitsa. Pollen collection from 2009 to 2014 used volumetric methods employing a Burkard trap placed at a height of 25 meters above the ground on the roof of a Vinnitsa Medical University building. Samples were taken from March 1 until October 31. Statistical analysis of data obtained was made by using the tools of the European Aeroallergen Network. To establish the days of season onset, peak and end the standard seasonal threshold was employed when season begins at 1%, ends at 95% of total sum of pollen collected for individual specie.

Results. The analyzing of the seasonal temperature patterns change showed two folds temperature sum increase for the recent period in comparison for the years 1999-2000.

The most prominent changes of pollination parameters were seen for the alder and for the birch. The alder maximal pollination was recorded at the second ten-day-period of April in the years 1999-2000 in the ambient air of Vinnitsa, Ukraine. However, pollen monitoring reestablished in Vinnitsa in a year 2009 revealed *Alnus* peaks occur at the third ten-day period of March mostly. As it was established, Alnus pollination is determined by the temperature of January and February and heat accumulation before the season start.

While analyzing the birch pollination the biannual rhythm of the *Betula* season was establishedwith more abundant pollination in a every even year.

It's known active temperature promoting the *Betula* flowering is 3.5 ° C. However, neither growing degree day factor nor accumulation of the degree days prior to the seasonal maximum hadn't exact correlation with the birch peak timing in Vinnitsa. The speed of accumulation was the most important: the degree days factor on March was very prominent for the year 2014. The quick active heat accumulation can explain the early flowering and peaking of *Betula* in a year 2014.

Pollination mode similar to *Betula'* one with early peaking was seen for *Carpinus*, *Corylus*, *Fraxinus* and *Ulmus* in a year 2014 as well. Later flowering species like *Pinus, Quercus, Juglans* didn't show clear evidences of temperature increase impact on their seasons' onset, peak and end.

Conclusions. General tendency of alder pollen season shift to early period is seen in Vinnitsa for the last decades. It might be connected with the pre-seasonal accumulative temperature increase on January-March. Season peak values recorded for *Alnus* currently one month earlier than it was in years 1999-2000 can affect sensitive individuals promoting earl hay fever symptoms. Early *Betula* peaking might be connected with the fast degree day sum accumulation within the March preceding the pollen season. *Betula* seasonal maximum is observed at around 20 days early in comparison with the regular peak timing in a case mentioned. Clear bi-annual pollination mode was observed for birch with intensive pollination in every even year while odd years were characterized by relatively weak pollination despite the weather condition. Tendency for early peaking similar to that in *Betula* was observed for

Corylus, Carpinus, Fraxinus and *Ulmus* in a year 2014 as well. Trees with flowering at the end of April – beginning of May including *Quercus, Juglans, Pinus* did not show any significant pollination change for the last decades. Further studies of trees pollination patterns are needed in order to perform the seasonal allergy control.

Key words: tree pollen, season change, degree day.

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SI "The Filatov Institute of Eye Diseases and Tissue Therapy of NAMS of Ukraine", Laboratory of Pharmacology and Tissue therapy (Blvd. Francais, 49/51, Odessa, 65061, 2606sotnikovelena@gmail.com)

EFFECT OF COMBINED APPLICATION OF EYE OINTMENTS OF BIOPELOIDS GENTAMICIN AND SOME INDICATORS OF LOCAL IMMUNITY PLAYING BACTERIAL KERATITIS

Introduction. Bacterial keratitis (BK) constitute of about 30% of the ocular pathology and 66.7% of the total number of patients with inflammatory diseases of the eye. Clinical severity of disease is characterized by a current which leads to a significant loss of vision, as well as the development of complications. The turning into the basic therapy in BK preparations of natural origin, activating non-specific resistance, has a pronounced anti-inflammatory and regenerative properties, is one of the pressing problems of practical ophthalmology. *The purpose* of research - to study the effect of combined use of eye ointments of biopeloids (based peloidodistillata) and gentamicin (conventional therapy) on some indicators of local immunity in the simulation BK.

Materials and methods. The study was performed on 14 adult rabbits Chinchilla, distributed into 2 equal groups. After playing BK against the background of the development of the inflammatory process, the experimental group rabbits daily, 2 times a day, in the conjunctival sac of the operated eye sequentially laid biopeloid first, and after 15 minutes - gentamicin ointment. The control group

received only the gentamicin ointment along the same lines. Local immunity was studied using the method of cytology smears from the surface of conjunctiva of rabbits after playback BK (pretreatment), 7, 14 and 21 days of treatment. These smears were fixed, stained by the method Romanovsky and mikroskopirovali according to conventional methods. We count the number of epithelial cells (EC) and leukocytes (LC) and the calculated percentage subtypes LK lymphocytes (LF), neutrophils (NF). Cytological study included an assessment of the nature of phagocytosis.

Results. Cytology smears from the surface of conjunctiva found that the combined use of gentamicin and biopeloidnoy oculentums under BK has a positive effect on the cellular link local immunity: 10.3% increases the amount of LF over the first day (the model) and a 9 5% relative to the control; 8.7% increase in leukocyte infiltration of the conjunctiva (the control gruppe- 7.5%). Neutrophil phase of the immune response and lymphocyte replaced convalescence lymphocytosis gradually returning to normal. The intensity of phagocytosis in the experimental group on the 14th day of treatment increased by 2.5 times and on day 21 is maintained at a high level (1.7 times) in terms of the phagocytic activity, phagocytic index and phagocytic number, which coincides with the characteristic clinical picture the disease in the same period (mild inflammatory reaction, acceleration of epithelialization).

Conclusions. Thus, the combined use of biopeloidn and gentamicin ophthalmic ointment in a BK has a positive effect on the cellular link of local immunity (data normalization cytograms) a more rapid disappearance of clinical manifestations of inflammation (a complete reorganization of the eye).

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

© Shafran L.M., Tretyakova E.V., Nehoroshkova Y.V., Tretyakov A.M.

GP Ukrainian scientific medicine Researcher Institute of Transport, Ministry of Health (str. Kanatnaya, 92, Odessa, Ukraine, 65039)

BEHAVIORAL RESPONSES AS BIOMARKERS OF NEUROTOXICITY IN HYGIENIC STANDARDIZATION OF POLYMER MATERIALS

Inroduction. The effect of the plasticizer dibutyl phthalate (DBP), a flame retardant hexabromocyclododecane (HBCD) and their combination on behavioral reaction of laboratory animals (white rats) studied in the chronic experiment.

Materials and methods. To assess the functional state of the nervous system the tests “Cruciform labyrinth” and “Open field” are used. Statistically significant differences ($p<0,05$) were found in the motor, emotional and cognitive activity changes in isolated and combined experiments of the investigated components of polymeric materials.

Results. The greatest toxicity at the early stages of the expositions’ (4 weeks) showed DBP. The combined effects of the identified changes were more marked in the later stages of the experiment. The effects observed in the emotional sphere developed by the type of summation, and cognitive - potentiation. This probably reflects the expression of the time-based effects associated with the development of the delayed impact with dominant role belongs to the endocrine disruptor HBCD. It is concluded that the behavioral patterns of toxicity are informative and sensitive biomarkers in new polymers and their chemical components standardization.

Conclusion. The study of behavioral responses of exposed animals in our tests "maze" and "open field" is a sensitive tool for toxicological and epidemiological assessment and extremely promising methodological approach, based on the terms of their use in the future in the course of the regulation of new polymers and their constituent chemical compounds.

Key words: Dibutyl phthalate, hexabromocyclododecane, joint action, polymeric materials neurotoxicity.

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PARAMETERS OF III AND IV VENTRICLES OF BRAIN IN HEALTHY BOYS AND GIRLS OF VARIOUS SOMATOTYPE

Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

Introduction. *Aim* of our work – set features parameters of III and IV ventricles of the brain in healthy young men and women with different somatotypes.

Materials and methods. 82 almost healthy boys (17-21 years) and 86 girls (16-20 years) in the third generation residents of Podilskiy region of Ukraine on spiral X-ray computer tomography ELscint Select SP conducted computed tomography (CT) of the head (11 slices), chest (1 slice) and lumbar ridge (1 median-sagittal slice) within planned prophylactic examinations under voluntary written consent of their parents or investigated. According voltage and current intensity 120kV / 25mA. Measured absorbed dose (data of the Certificates of control of dose forming parameters №352, valid till 22.03.2016) = 15.89 mGy (for 13 slices). Equivalent dose: 15.89 mGy x 1 (radiation weighing factor) = 15.89 mSv. Effective dose: 0.025 x 15.89 mSv (tissue weighing factor) = 0.397 mSv, which have not exceeded the recommended maximum level of medical exposure (1.0 mSv) (Order of the MoH Ukraine of 04.06.2007 № 294 "On approval of the State sanitary rules and regulations", "Hygienic requirements to placement and operation of X-ray rooms and conducting radiological procedures": paragraph 6.9 - "Recommended maximum levels for medical exposure category GD - people who pass all types of preventive screening and persons examined under health programs "and paragraph 6.21 -" Do not be prophylactic radiological research children under 15 and pregnant…»).

Longitudinal size of III ventricle of the brain was measured on the segment line connecting the back edge of beforecommissural membrane and recessus pinealis. The transverse size of III ventricle measured parallel to the frontal plane on the segment line connecting the farthest point of the medial surface of the thalamus. During morphometry below the CT images of the IV ventricle conducted imaginary line parallel to the frontal plane. On the above line have been omitted perpendiculars from

the most distant points horns crescent of mentioned ventricle. The distance between the points of intersection perpendicular with conditional line actually is its maximum width. Ventriculocranial index calculated as the ratio of the width III and IV ventricle to the maximum distance between the inner plates of the skull bones. Anthropometric survey of healthy young men and women were held by the scheme of V. Bunak. To evaluate the somatotype used mathematical scheme of J. Carter i B. Heath. Statistical analysis of the obtained results was done using the package "STATISTICA 6.1", which belongs to SRC VNMU named after Pirogov (license № BXXR901E246022FA), using non-parametric estimation methods.

Results. As a result of studies found that the width of IV ventricle of the brain at the level of T2 in boys with mesomorphic somatotype was significantly higher compared to the ecto-mesomorph boys. Longitudinal size of III ventricle of the brain at the level of T4 in girls endomorphs significantly lower compared to girls with an average intermediate somatotype. Also found that the index of IV ventricle of the brain at the level of T2, longitudinal, transverse dimensions and index of III ventricle of the brain at the level of T4 in boys of different somatotypes had no significant differences or trends to differences figures. In girls of different somatotypes width of IV ventricle of the brain and index of IV ventricle at the level of T2, cross size and index of III ventricle also had no significant differences or trends to performance differences.

Conclusion. Set features parameters of III and IV ventricles of the brain in healthy young men and women of different somatotypes provide additional information to experts of different specialties concerning somatotype relationships and individual anatomical variability structure of the ventricular system that facilitates the process standardization methods of treatment patients considering typical morphological characteristics inherent to different constitutional types

Key words: brain, III ventricle, IV ventricle, computed tomography, boys, girls, somatotype.

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Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

FEATURES SONOGRAPHIC PARAMETERS OF LIVER IN PRACTICALLY HEALTHY WOMEN OF DIFFERENT SOMATOTYPES

Introduction. *Aim* of our work – set sonographic features parameters of the liver in practically healthy women of Podillya with different somatotypes.

Materials and methods. On the basis of Scientific and Research Center of the Vinnitsa National Medical University named after Pirogov city conducted a comprehensive survey of 154 women aged from 21 to 35 years of age under periodization schemes of human ontogenesis. Investigated are in the third generation living in the Podilskiy region of Ukraine and did not have at the moment of inspection health complaints or chronic diseases in history.

Echometric indicators of liver measured by ultrasound diagnostic system «CAPASEE» SSA-220A (Toshiba, Japan) convex transducer with a frequency of working 3.75 MHz under conventional methods (V.V. Mytkov, 1996). Defined: oblique vertical size of the right lobe of the liver on inspiration (OVSin) and expiration (OVSex) and the thickness of the right lobe of the liver on inspiration (TRLin) and expiration (TRLex), cranio-caudal size and thickness of the left lobe of the liver on inspiration (according CCSin and TLLin) and exhale (according CCSex and TLLex), length (LCL) and the thickness of the caudate lobe (TCL) liver. Anthropometric examination was conducted in accordance with the scheme V. Bunaka (1941). To evaluate the somatotype used mathematical scheme JL Carter, B.H. Heath (1990).

The statistics analysis of the results was conducted in the package "STATISTICA 5.5" using nonparametric methods for evaluation of the results.

Results. Established that the oblique vertical size of the right lobe of the liver in inspiration for women ectomorph (134,8 ± 10,5 mm) was significantly smaller and has a significant tendency to lower values than in women endomorph and endo-

mesomorph (respectively, 142,4 ± 10 4 mm ($p < 0.05$) and 139,1 ± 10,4 mm ($p = 0.056$)).

The thickness of the right lobe of the liver inspiration in women ectomorphes tends to lower values compared to women endomorph (respectively, 122,1 ± 10,6 mm and 128,7 ± 11,6 mm ($p = 0.062$)).

The thickness of the left lobe of the liver in inspiration for women mesomorph (56,57 ± 4,57 mm) was significantly higher than in women with ectomorph and middle intermediate somatotype (respectively, 53,7 ± 5,76 mm and 53,9 ± 5,58 mm ($p < 0.05$ in both cases)).

The thickness of the left lobe of the liver in inspiration in women mesomorph (57,3 ± 5,62 mm) was significantly higher than in women with ectomorph and middle intermediate somatotype (respectively, 53,8 ± 6,01 mm ($p < 0.01$) and mm 54,9 ± 6,09 ($p < 0.05$)).

The length of the caudate lobe of the liver in women mesomorph significantly higher than in women with endo-mesomorphic somatotype (respectively, 43,31 ± 5,89 mm and 6,03 mm ± 40.0 ($p < 0.05$)).

The thickness of the caudate liver in women mesomorph (19,94 ± 3,44 mm) was significantly higher than in women with endomorph and endo-mesomorphic somatotype (respectively, 16,10 ± 1,80 mm ($p < 0.001$) and 18.12 ± 3,43 mm ($p < 0.05$)). In addition, in women endomorph (16,10 ± 1,80 mm) the specified amount was significantly less compared with women ectomorph and endo-mesomorph (respectively, 18,61 ± 3,30 mm and 3,43 mm ± 18,12 ($P < 0.05$ in both cases)).

Conclusion. Oblique vertical size of the right lobe of the liver and the thickness of the right lobe of the liver on exhalation, cranio-caudal size on inhalation and exhalation had no significant differences or trends to differences in women of different somatotypes.

Key words: liver, ultrasound, practically healthy women, somatotype.

Vinnytsia National Medical University named after M.I. Pyrogov (56, Pyrogova Str., Vinnytsia, Ukraine, 21018)

CORRELATION OF SONOGRAPHIC PARAMETERS THYROID GLAND WITH ANTHROPOMETRIC AND SOMATOTYPOLOGICAL INDICATORS IN ALMOST HEALTHY MEN AND WOMEN OF FIRST MATURE AGE

Introduction. *Aim* of our work – establish features correlations of sonographic parameters of thyroid with anthropometric and somatotypological indicators of apparently healthy men and women of the first mature age.

Materials and methods. On the basis of Scientific and Research Center of the Vinnitsa National medical university named after Pirogov we examined 119 apparently healthy urban men and 108 women of the first mature age in the third generation residents of Podilsky region of Ukraine. When selecting investigated guided by the following requirements: no complaints and chronic diseases (the previous survey), lack of pathology as a result of hardware tool (rheovasography, spirometry, sonography), clinical and laboratory research.

Ultrasound examination of the thyroid gland was performed using ultrasound diagnostic system "CAPASEE" SSA-220A (Toshiba, Japan) convex transducer with a working frequency of 3.75 MHz under conventional methods. We determined the width, length, thickness and density acoustic of the parenchyma of each particle thyroid gland isthmus thickness, longitudinal-sectional area of the left and right lobes, the total area of the longitudinal section of the thyroid gland, the volume of the left and right parts and the total volume of the thyroid gland.

Anthropometric investigation was conducted by the method of V. Bunak. Component composition of body weight was studied by the method of J. Mateigka and the American Institute of Nutrition. To evaluate the somatotype components used mathematical scheme by J. Carter and B. Heath.

Evaluation of correlations conducted in statistical package license "STATISTICA 6.1" using Pearson's statistics.

Results. In men of the first mature age found the largest number reliable connections of sonographic parameters of thyroid with covering body size, with thickness of skin and fat folds (mostly straight) and the muscular component somatotype by Heath-Carter and the size of the head (direct only).

In first mature age women found the greatest number of reliable relationships of sonographic parameters of thyroid with covering body size (mostly straight) with thickness of skin and fat folds (mostly reversible), with ectomorphic component somatotype by Heath-Carter (only return), with pelvic size and muscle component somatotype by Heath-Carter (direct only).

In women of the first mature age density of the right lobe of the thyroid gland does not have reliable correlations with anthropometric and somatotypological indices.

Conclusion. Installed varying degrees of severity and different relations direction of sonographic parameters of thyroid with somatotypological and anthropometric indicators in men and women of the first mature age in clinical practice will allow objectively and accurately differentiate constitutional rule and early pathological changes of body.

Key words: thyroid gland, sonography, men, women, somatotype, correlation.

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Odessa National Medical University, Department of General and Clinical Pathological Physiology (Valikhovsky lane, 2, Odessa, Ukraine, 65082)

GENERALIZED SEIZURE ACTIVITY IN CONDITIONS OF INTERLEUKIN-1-BETA RECEPTORS BLOCKADE

Introduction. The data revealed the acute generalized seizure activity induced by convulsive agents with different mechanisms of convulsive action realization due to interleukin-1-beta receptors blockade by recombinant antagonist of interleukin-1-beta (RAIL) use.

Materials and methods. The experiments were conducted under conditions of acute experiment on male rats Wistar linyi weighing 180-250 g. For induction generalized convulsions intraperitoneally was administered pikrotoksyn in dose of 2.0 mg / kg, pentylenetetrazol in dose of 40 mg / kg, pilocarpine hydrochloride (powder prepared 20% solution), dissolved in saline NaCl, in dose of 280 mg / kg, strychnine nitrate in dose of 1.0 mg / kg and cain acid («Sigma-Aldrich», Germany) in dose of 15 mg / kg. Animals of the control group was injected under these conditions similar extent of saline 0.9% NaCl. Recombinant interleukin-1 antagonist was administered to rats in doses of 2.5, 5.0, 7.5 and 10.0 mg / kg 30 minutes before the introduction konvulsant.

Results. RAIL dose-dependent efficacy was shown in conditions of both picrotoxin- and pentylenetetrazol-induced seizures characterized by seizure reactions intensity reduction, the numbers of animals with generalized clonic-tonic seizures decreased and the first seizures latency increase. Acute pilocaprine-, strychnine- and kainic-induced seizures latency also prolonged in case of RAIL maximal dose injection. Strychnine-induced seizures intensity significantly decreases in the same conditions.

Conclusion. Authors concluded about immune system involvement into acute generalized seizure activity induced mainly by GABA- and cholinergic neurotransmitter systems activity dysbalance as well as about the principal possibility of antiepileptic effect development due to interleukin-1 receptors blockade.

Key words: interleukin-1-beta, recombinant interleukin-1 antagonist, acute generalized seizures, GABA-ergic system, cholinergic system, immune system, pathogenesis.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

ANALYSIS OF SEXUAL DIFFERENCES IN COMPUTED TOMOGRAPHY SIZES OF LUMBAR SPINE ON THE MEDIAN-SAGITTAL SLICE IN REPRESENTATIVES OF ADOLESCENCE AGE

Introduction. *Aim* of our work – establish age and sex differences somatotypological computed tomography of the lumbar spine sizes on median-sagittal section in the healthy population of youthful period of ontogenesis from Podillya.

Materials and methods. 82 almost healthy boys and 86 girls in the third generation residents of Podilskiy region of Ukraine on spiral X-ray computer tomography ELscint Select SP conducted computed tomography (CT) of the head (11 slices), chest (1 slice) and lumbar ridge (1 median-sagittal slice) within planned prophylactic examinations under voluntary written consent of their parents or investigated. According voltage and current intensity 120kV / 25mA. Measured absorbed dose (data of the Certificates of control of dose forming parameters №352, valid till 22.03.2016) = 15.89 mGy (for 13 slices). Equivalent dose: 15.89 mGy x 1 (radiation weighing factor) = 15.89 mSv. Effective dose: 0.025 x 15.89 mSv (tissue weighing factor) = 0.397 mSv, which have not exceeded the recommended maximum level of medical exposure (1.0 mSv) (Order of the MoH Ukraine of 04.06.2007 № 294 "On approval of the State sanitary rules and regulations", "Hygienic requirements to placement and operation of X-ray rooms and conducting radiological procedures": paragraph 6.9 - "Recommended maximum levels for medical exposure category GD - people who pass all types of preventive screening and persons examined under health programs "and paragraph 6.21 -" Do not be prophylactic radiological research children under 15 and pregnant…»)..

Committee on Bioethics Vinnitsa National Medical University named after Pirogov found that the studies are not contrary to the fundamental bioethical norms of the Helsinki Declaration, the European Convention on Human Rights and Biomedicine (1977), the relevant provisions of the WHO and the laws of Ukraine (Minutes № 8 of 24.09.2015).

Morphometry of the lumbar spine with attraction of precision computer technology and mathematical software tomograph included definition listed below computed tomographic size: anterior, middle, posterior vertebral body height; the average width of the vertebral body, intervertebral disc height; front and back height of the lumbar spine. To evaluate the somatotype we used a mathematical scheme by J. Carter and B. Heath. Statistical analysis of the results was carried out in that license package "STATISTICA 5.5" using nonparametric methods for evaluation of the results.

Results. When comparing the CT size of the lumbar spine between boys and girls of relevant biological age, in most cases, installed larger ($p < 0,05$-$0,001$) value of the height of the vertebral bodies in 21-year-old boys, intervertebral disc height in boys 17-20 years and average width of the vertebral bodies and front and rear height of the lumbar spine in all age groups of boys; and when comparing among boys and girls of appropriate passport age - in most cases greater ($p < 0,05$-$0,001$) height values bodies L1-L3 vertebrae and intervertebral disc height in 18- and 19-year-old boys and the average width of the vertebral bodies and front height of the lumbar spine in boys 17-20 years.

When comparing CT sizes of the lumbar spine at the median-sagittal sections between boys and girls of respectively somatotypes installed the following differences: body height L1 vertebra, the height of the intervertebral discs between the relevant lumbar vertebrae and the average width of the body of corresponding lumbar vertebrae in most cases significantly ($p < 0,05$-$0,001$) greater in boys mesomorphic and medium intermediate somatotypes than in girls of similar somatotypes; body height L1 and L2 vertebra in most cases significantly ($p < 0,05$-$0,01$) greater in boys ectomorph than in girls of ectomorph somatotype; anterior height of the lumbar spine in all cases significantly ($p < 0,05$-$0,01$) greater in boys meso, ecto-, endo-meso and medium intermediate somatotypes than in girls of similar somatotypes.

Conclusion. The obtained data allow complement and expand the understanding of the structure of the musculoskeletal system and factors that contribute to the development of pathological conditions in the lumbar spine.

Key words: sex differences, lumbar spine, computed tomography, somatotype, healthy young men and women.

© Chaplyk-Chyzho I.O.

Lviv National Medical University named Danylo Galician (Lviv)

DIFFERENCES TRANSVERSAL BODY SIZES BETWEEN HEALTHY AND SICK WITH PYOGENIC SKIN INFECTIONS MEN AND WOMEN

Introduction. The ratio of the role of genetic and environmental factors in the pathogenesis of pyoderma belong to the group of diseases etiological factor which is the environment, and the frequency of occurrence and severity of course largely affect heredity, confirming its multifactorial nature and importance of learning at this nosology constitutional characteristics of the organism and thus find their differences in patients and normal subjects.

Aim of our work – establish cross body size differences between patients with pyoderma and healthy men and women.

Materials and methods. Done clinical laboratory and anthropological examination of 45 patients with pyoderma male and 48 female patients from Western Ukraine. The results are compared with data anthropo-somatotypological examination of 85 healthy men and 135 women of similar age and region residence from database Scientific and Research Center Vinnitsa National Medical University named after Pirogov.

Used the following methods: general clinical - to verify the diagnosis of pyoderma; anthropometry by the method of V. Bunak in the modification of P. Shaparenko; somatotype determination by the method of J. Carter and B. Heath; statistical analysis of the obtained results conducted in statistical package license "STATISTICA 6.0" using parametric and nonparametric methods.

Results. It is established that the value of lower-sternum transverse diameter of the chest in patients with pyoderma women was significantly higher ($p < 0,001$) compared to normal subjects of similar sex.

Medium-sagittal size of thoracic diameter of the chest in patients with pyoderma men or women was significantly higher ($p < 0,01$) compared to normal subjects of similar sex.

The value of comb between size of the pelvis in patients with pyoderma men or women was significantly higher ($p < 0,05$-$0,01$) compared to normal subjects of similar sex.

The value of swivel between size of the pelvis in patients with pyoderma women has a significant trend ($p = 0,054$) to larger values compared to healthy women.

The value of external conjugates of the pelvis in patients with pyoderma women tend ($p = 0,065$) to larger values compared to healthy women.

Conclusion. The rest of transverse dimensions of the body (mid-thoracic transverse diameter of the chest, shoulder width, between awn size of the pelvis in both sexes; lower sternum transverse and sagittal mid-sternal diameter of the chest, between swivel size of the pelvis in males) in healthy and patients with pyoderma studied had no significant differences or trends differences.

Key words: men, women, pyoderma, cross body size.

© Vastyanov R.S., Konovalov N.F.

Odessa National Medical University, Department of General and Clinical Pathological Physiology (Valikhovsky lane, 2, Odessa, 65082, Ukraine)

BONE MINERAL DENSITY CHANGE IN CHRONIC EPILEPTIC ACTIVITY DYNAMIC

Introduction. The data are given concerning the bone mineral density and collagen synthesis changes throughout the pharmacological kindling.

Materials and methods. Picrotoxin kindling model was chosen because of its high relevancy according to the increased number of patients suffering from epilepsy who need stomatological help. The experiments were conducted under conditions of acute experiment on male rats Wistar linyi weighing 180-250 g. Reel chronic epileptic activity used two models: kindlinh and postkindlinh. Pharmacological kindlinh modeled daily intraperitoneal injections pikrotoksyn («Sigma-Aldrich», Germany) (0.9 mg/kg - 1.1 mg/kg). Animals of the control group was injected under these conditions similar extent of saline 0.9% NaCl. Overall pikrotoksyn made 24 injections. Model postkindlinh characterized 14-day free from administration konvulsant period since the last entry pikrotoksyn.

Results. It is shown that in the conditions not formed kindled (12-18 entering convulsant) inclusion of radioactive calcium, phosphorus and proline - markers of collagen - in bone coincided with indicators in the control observations. It is noted that in kindled rats, as well as in postkindled inclusion of the above radioactive components in bone tissue were significantly reduced, indicating a reduction in bone mineral density and reduction processes of collagen.

Conclusion. Authors concluded about the bone mineral density decrease during the chronic epileptic activity dynamic that should be taken into consideration while main disease complex pathogetical scheme of pharmacological correction performing out as swell as dental care providing for these patients.

Key words: bone mineral density, collagen, kindling, postkindling, chronic epileptic activity, calcium, phosphorus, proline.

© Marchenko A.V.

Ukrainian Academy of Medical Dental (Poltava)

COMPUTED TOMOGRAPHY MOESIODISTAL DIMENSIONS OF TEETH IN GIRLS WITH PHYSIOLOGICAL BITE DEPENDING ON THE FORM OF HEAD

Inroduction. Currently, great importance received characteristics of the study general shape and size of the skull that are subject like all the bones of the skeleton, within certain limits, fluctuations in individuals of the same sex and same age. Communicating with patients already in primary dental examination should pay attention to its constitutional features such as type of skull and face and estimate area of some head size to the dimensional characteristics of the teeth. Therefore, the objective evaluation of morphometric structures of the teeth-jaw system of patients considering differentiating constitutional symptoms is necessary link in the integrated clinical examination in the performance of health-restoration works.

Aim of our work – determine the features of computer-tomographic moesiodistal size of teeth in girls with physiological bite, depending on the shape of the head.

Materials and methods. The primary indicator of the size of the teeth and head boys of Podillya with orthognathic bite derived from the database of SRC VNMU named after Pirogov. To conduct computer tomographic studies used dental cone-beam tomograph - Veraviewepocs 3D, Morita (Japan). Research conducted under the own developed schemes within the following specifications. Volume three-dimensional image - cylinder 8x8sm, – the layer thickness 0,2/0,125 mm, dose of radiation 11-48 mkSv, voltage and amperage 60-90kV/2-10mA.

Whereas in previous studies by comparing the computed tomographic metric characteristics of similar teeth of right and left sides, significant differences or trends were not found by us in subsequent studies used average values of respective teeth (medial and lateral incisors, canines, first and second small molar teeth, and the first large molar tooth in the upper or lower jaw), that simplifies application of the obtained results in the construction of models of correct form of the dental arch and in practice of dentists in reconstructive and restorative treatment of teeth-jaw system.

Cephalometry size measurement is carried out within the program measurements corresponding list of Martin. Head linear dimensions defined as direct or projection distance between anthropometric points. The measurements were performed a large compass with scale full-scale systems of Martin. To determine

craniotipe defined the parameters largest width of the head and longest length head. Craniotipe determined by the formula: the largest head width * 100 / greatest length head. With the value to the 75.9 researched attributed to dolichocephalic; 76,0-80,9 - to mesocephalic; 81,0-85,4 - to brachycephalic. Established the following distribution: mesocephalic girls - 16, girls brachycephalic - 26.

Statistical analysis of the results was performed using the statistical software package «Statistica 6,0» using nonparametric methods.

Results. Established that only value of moesiodistal size of upper canines in girls mesocephals significantly ($p<0.05$) higher compared to girls mesocephals. The values moesiodistal size the rest of teeth of the upper and lower jaw as among girls of common groups and girls of different craniotipe and between girls meso- and brachycephals had no significant differences or trends indicator to differences.

Conclusion. Most of mesiadistal size of the teeth of the upper and lower jaw had no significant differences or trends indicator to the differences as between girls of general groups and girls of different craniotipes and between girls meso- and brachycephals. Only the value mesiadistal size of upper right canine in girls mesocephals significantly higher compared to girls brachycephals. The obtained results allow making a conclusion that people with different forms of cranial mesiadistal dimensions are virtually identical (except in the upper right canine), which can be used in the orthopedic treatment pathology of hard tissue of teeth, dental defects and setting artificial teeth in complete dentures.

Key words: mesiadistal size of teeth, girls, mesocephalic, brachycephalic, cone-beam computed tomography.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

LAWS ANNUAL CHANGES OF SOMATOMETRIC AND SPIROMETRY INDICATORS YOUNG MEN TO MILITARY SERVICE AND

TRAINING

Introduction. Anatomical and anthropological features of male body are less studied compared with children, teenagers and women. Research conducted anatomical features men tend to niche groups of vocational school students, university students, teenagers. The male population, which is a key to replenishing the armed forces of Ukraine almost left unattended scientists.

Materials and methods. Unlike prior studies, our work is to study patterns of annual change somatometric parameters and indicators of respiratory in age aspect, namely boys - students and soldiers 18-19 years, not only in terms of the statement of changes in the studied parameters, and taking into account their condition in the initial and final stages of the study. This will enable deeper to find out the relationship between the specific conditions of stay and the dynamics of the formation of the body of physical development, constitutional features, identify new patterns of growth and development processes of the age group of men. Everything that makes it relevant to study the anatomical and anthropometric parameters male youth, especially for conscripts associated with risk, special requirements for physical development. Thus, we conducted longitudinal research provides an opportunity to identify patterns of changes in anthropometric and spirometric parameters to establish a positive impact dosed exercise and confirmation of the negative impact of smoking on anatomical and anthropometric parameters and respiratory function for youthful stage of ontogeny.

After previous psychophysiological and psychogigienic survey were selected 180 youths, urban and rural residents, representatives of Ukrainian ethnic group who had no complaints about the state of health at the time of screening and chronic disease in history. The contingent surveyed consisted of two groups: young recruits (80 people), called to military service, young men of military age students of medical college (100 people). Analysis of anthropometric parameters and spirometric indices performed using STATISTICA-6.1 (StatSoft) using parametric and nonparametric methods for assessing performance. To determine the structure changes, the

dependence between the studied factors, as well as to establish the degree of influence of factors of military service in anatomic and anthropometric parameters and respiratory function youths was used factor analysis.

Results. A longitudinal study by which the regularities of the annual dynamics of change somatometric, somatotypological and spirometric indices in healthy young men 18-19 years - Students and conscripts. The application of factor analysis revealed structural relationships, set a positive impact dosed physical load and confirm the negative effect of smoking on the anatomic and anthropometric parameters and respiratory function in adolescence.

Conclusion. Bad habits, physical activity, typological and somatic physiological parameters proved composing the main factors that explain the patterns of changes in anthropometric parameters and students and soldiers.

The dominant factor in the students is "bad habits": the basic variables (intensity of smoking and number of cigarettes smoked) resulted in direct proportion to the increase in the contribution of this factor in the total variance, causing negative changes in muscle and fat components of body mass index and physical development of harmony parameters of external breathing. Regressing factor in students is "physical activity": the basic variables (number and duration of physical training) led to a decrease in the contribution of this factor in the overall dispersion strengthened above negative changes.

The dominant factor in the soldiers is "physical activity": the basic variables (number and duration of physical training) resulted in direct proportion to the increase in the contribution of this factor in the total variance, which caused positive changes in muscle and fat components of body mass index and physical development of harmony parameters of external breathing. Factor in regressing soldiers is "bad habits": the basic variables (intensity of smoking and number of cigarettes smoked) led to a decrease in the contribution of this factor in the overall dispersion strengthened above negative changes.

Key words: somatometric parameters, spirometric indices, young people, factor analysis.

CLINICAL ARTICLES

© Podlubnyi V.L.

Zaporozhye State Medical University, Department of Psychiatry, psychotherapy, general and medical psychology, sexology and narcology (Zaporozhye)

FEATURES NEUROTIC STRESS-RELATED AND SOMATOFORM DISORDERS IN THE ORGANIZED POPULATION OF INDUSTRIAL WORKERS

Introduction. Because of the nature of employment, physical and mental overload, and adverse environmental factors industry workers are a group at high risk of developing various diseases, including neurotic disorders. Mental health workers, in turn, affects the economic performance of enterprises, therefore it can be regarded as an important part of the productive forces of society.

Undeniable progress in creating a scientifically based holistic system of specialized psychiatric care to the employees of various industry productions, and formed of industrial psychiatry at the end of the last century. In conditions of financial distress many businesses forced to close their departmental medical service that requires the search of new forms of medical-psychological and psychiatric assistance in the production.

The *aim* of the study was to identify the clinical-phenomenological neurotic stress-related and somatoform disorders among workers of industrial enterprises, and structured features.

Materials and methods. To achieve this goal, we have provided the informed consent of the respondents a survey was conducted of the mental state of the 982 workers of industrial enterprises according to the Decree of the Cabinet of Ministers of Ukraine No. 1465 dated 27.12.2000 of the year aged 20 to 60 years (mean age of

38.7 ± 7,68 years). The survey was carried out on the basis of outpatient-polyclinic Department of the Zaporozhe regional clinical psychiatric hospital during 2008 to 2011.

Results. The results of the inspections psychoprophylactic 338 cases of established non-psychotic mental disorders in a population of organized industrial workers, carried out with the use of the algorithm based on multi-dimensional axes of the psychiatric diagnostic taxonomies.

In the course of our clinical-phenomenological and psycho-diagnostic studies identified clinical and socio-psychological manifestations of neurotic, stress related and somatoform disorders among workers of industrial enterprises, their structural characteristics.

It was found that most of the disorders among the patients was neurotic disorders in 33,9% of cases of clinical observation, with hypersthene neurasthenia stage amounted to 21,4% of cases, hyposthenia of 12,5%. Somatoform disorders 26,8%, and presents were characterized by psycho-emotional and vegetative-somatic disorders. Fears of different content was 14,6%. Conversion (8,3%) and anxiety (7,3 percent) disorders detected in minor amounts. The least abundant of obsessive-compulsive disorder that were diagnosed in 2,6% of patients.

According to the results of significant studies among those surveyed, were the following syndromes: anxious-phobic, and somatic-vegetative (1st rank), affective tension and depressive disorders (2nd rank), affective lability and anycast disorders (3rd rank) depressive and hypochondriacally disorders (4th rank).

Among the surveyed contingent of persons more than half (54,5%) were observed easily expressed symptoms of neurotic disorders, part of the surveyed (34.8 percent) was attended by moderately expressed neurotic symptoms or difficulty in social functioning. A small number of people with neurotic disorders (7,9%) had transient symptoms and expected reactions to traumatic impact, and a small number of patients (2,8%) it was found clearly expressed symptoms that were in need of specialized medical intervention.

Conclusion. The combination of these clinical-phenomenological and psycho-diagnostic studies of neurotic disorders allowed us to determine the role and importance of the structural components of neurotic disorders in patients and to clarify (in differential diagnostic terms) the degree of severity of disorders and psycho-pathogenetic factors contributing to their occurrence.

Future research will consist in-depth study of the causes of neurotic, stress related and somatoform disorders and the development on this basis of scientifically justified system of integrated preventive and curative health measures on the protection and promotion of mental health of this population.

Key words: clinical and phenomenological features, the employees of industrial enterprises, neurotic stress-related and somatoform disorders, mental health.

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Vinnytsia National M.I. Pirogov Memorial Medical University, Department of Surgery №2 (56, Pyrogov str., Vinnytsia, Ukraine, 21018, olegvlgonchar@mail.ru)

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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National Medical University of O.O. Bohomolets (Shevchenko blvd., 13, Kyiv, Ukraine, 01004)

THE INFLUENCE OF CIRCADIAN RHYTHMS ON DYSPEPTIC MANIFESTATIONS OF CHRONIC CHOLECYSTITIS ASSOCIATED WITH SOMATOFORM DYSFUNCTION OF AUTONOMIC NERVOUS SYSTEM

Introduction. As the result of clinical research, patients diagnosed with chronic cholecystitis in most cases show signs of autonomic dysfunction, emotional stress, anxiety and hypochondria disorders noted various complaints of pain in the right hypochondrium without exacerbation of chronic cholecystitis. This is symptomatic of underlying disease does not always bring the desired effect and more often than not reduces complaints and normalization of the patient.

Aim of our work – to analyze the incidence of comorbidity gastrointestinal tract in patients as an isolated chronic cholecystitis and on associated with somatoform dysfunction of the autonomic nervous system. Identify the degree of influence of circadian rhythm in violation of such symptoms in patients of both groups.

Materials and methods. There was conducted the clinical and laboratory examination of 117 patients. According to the results of examination and questioning of these patients were divided into 4 groups: group №1 - is patients who suffer from chronic cholecystitis only (36 people); group №2 - patients with chronic cholecystitis, accompanied by circadian rhythm disorders (28 persons); group №3 - patients with chronic cholecystitis associated with somatoform dysfunction of the autonomic nervous system (29 people); group №4 - patients suffering from chronic cholecystitis associated with somatoform dysfunction of the autonomic nervous system circadian rhythm disorders (24 persons).

The diagnosis of chronic cholecystitis based on diagnostic criteria according to the protocol Ministry of Health. Detection of somatoform dysfunction of the autonomic nervous system was by questioning patients to detect signs of pathology and the exclusion of instrumental and laboratory diagnostic methods any organic pathology. Also in the study was determined by interviewing patients with concomitant disturbances of circadian rhythm.

Results. As a result of studies, we found that most patients complain of the bitterness in the mouth in the group №1, which affects only patients with chronic cholecystitis (35% surveyed). This is due to the fact that the average age of patients in this group the highest among all the subjects that they have a high probability of the presence of comorbidity as degenerative effects in the liver that affects its detoxification function, pancreas, mouth disease possible, but it all are possible to cause the bitterness in the mouth. In groups №2 and №4, in patients who have except chronic cholecystitis the circadian rhythm disorders and circadian rhythm disorders against the backdrop of somatoform dysfunction of the autonomic nervous system accordingly, the percentage of patients with complaints investigated slightly lower symptom that may indicate that the the normalization of circadian rhythm, for which the patient is usually enough not to break it for a few days, this symptom disappears. Also, reducing the number of patients with bitterness in the mouth in groups №2 and №4 contributes to the fact that the average age of the patients of these groups is relatively lower, that reduces the likelihood that they have comorbidity.

The greatest number of complaints of nausea have the patients in group №3 (38% of all patients of this group). This can be explained by the fact that the pathogenesis of nausea and vomiting act is dependent on the pulse on the waste to the area of nervus vagus nuclei tracti solitarii, these processes are more dependent on the work of the autonomic nervous system dysfunction, the appearance of which, respectively, appear above symptoms. The reasons for the fact that the presence of patients studied groups №2 and №4 violation circadian rhythm greatly reduces the number of complaints of feeling nausea (12% in the 25% №2 and №4 group, compared with 34% in the №1 and 38 % in the №3) remain unexplored. However,

we know, that the health of people with disorders of circadian rhythm largely depend of the adherence of sleep and cheerfulness, we can based on the results of the schedule to say that patients with impaired circadian rhythms to reduce nausea as a symptom of chronic cholecystitis, good sleep sometimes enough.

Key words: circadian rhythms, chronic cholecystitis, somatoform disorders.

© Buglova N.

Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

CLINICAL FEATURES OF DUODENAL ULCER IN CHILDREN

Introduction. Digestive system lesions occupy a leading place in the structure of children's somatic diseases worldwide, in Ukraine they take the second place and make up 106,1 per 1000 of the child population. Development of the duodenal ulcer in children prevails in most cases - 82-87%. The infectious agent Helicobacter pylori (H. pylori) plays an important role in the disease etiology and formation.

The objective of the study is to evaluate the peculiarities of progression of the duodenal ulcer disease depending on age, sex, disease severity and the presence of H. pylori infection.

Materials and methods. A comprehensive examination of 96 children suffering from the duodenal ulcer aged 7 to 18, who were hospitalized in the department of pediatrics No. 2 of Vinnytsia Regional Children's Clinical Hospital, was performed. The urease test (URE-HPtest) was used for the diagnostic of H. pylori infection.

Sick children were divided into age groups: 12% (12,5 ± 3,37%) aged 7-11 years and 12 to 18 years 84% - (87,5 ± 3,37%) respectively. The average age of patients was 13,3 ± 0,2 years.

Results. It was revealed that the majority of sick children suffered from the ulcer disease with H. pylori (+) - 77 (80,2 ± 4,06% of patients), and 19 (19,79% ± 4,06 Hp-, p <0.01).

The evaluation of major clinical syndromes depending on age, sex and the presence of H. pylori was performed. It was determined that most often children with duodenal ulcer suffered from the pain syndrome - 86 patients (89,58%), dyspeptic syndrome was found in 74 children (77,08%) and asthenovegetative syndrome was present in 62 children (64,58%).

It was found that the incidence of pain, dyspeptic (84,42%, 57,89%, p <0,05) and asthenovegetative syndromes (64,93% and 42,10%, p <0,05) was higher in children with H. pylori infection (+), compared to patients with H. pylori (-). The distribution of patients depending on the disease severity and the presence of H. pylori infection showed that the clinical picture of children with duodenal ulcer is characterized by a predominance of the medium disease severity (in 71 children - 73,96%).

Bleeding was the most frequent complication found in the examined children (in 16 children – 16,67%) and as a result - posthemorrhagic anemia (in 8 patients – 8,33%).

Conclusions. Children with duodenal ulcer H. pylori (+) had signs of greater intensity of major clinical syndromes than patients with H. pylori (-). The medium disease severity prevailed (in 71 children – 73,96%). Bleeding dominated in the structure of the duodenal ulcer complications in children aged 7-18 years (16,67%).

Key words: peptic ulcer disease, duodenum, children, H.pylori.

© Moroz L.V., Chichirello-Konstantinovich K. D., Konstantinovich T.V.

Vinnytsia National M.I. Pirogov Memorial Medical University, Chair of Infectious Diseases with Epidemiology Course (Khmelnytsky highway Str. 96, Vinnitsa, 21030, chiarina-cicirello@rambler.ru)

CLINICAL FEATURES OF CYTOMEGALOVIRUS INFECTION ACCORDING OF OWN INVESTIGATION

Introduction. Cytomegalovirus infection (CMV infection) is one of the urgent problems in infectology, also in Ukraine. Latent CMV infection is seldom considered as a risk factor for adherence, and more severe comorbidity. In addition, undiagnosed CMV infection can "mask" the clinical manifestations of other diseases, thus making it difficult to determine the correct tactics of treatment. The asymptomatic carrying of virus replication often occurs in the cells of exocrine glands, lymphocytes and mononuclear cells. The virus can remain in these cells the whole time, as evidenced by the constant excretion. Intracellular parasitism of the pathogen protects it from the effects of antibodies and the viruses that persist inside the lymphocytes become practically closed from the immune system. Therefore, the studies of the combination of CMV infection with diseases of other organ systems are valid to determine the prognosis for such patients, a differentiated approach to their therapy, which determined the purpose of our research to study the peculiarities of the clinical course of CMV infection in a patient of infectious hospital department, to explore clinical aspects of effects on various organs and systems.

Materials and methods. A woman (57 years old), patient of infectious department with complicated gynecological anamnesis and desease case history and clinical and laboratory identified features (CMV IgM – 0,459 U/ml (negative), CMV IgG >500 U/ml (positive), CMV IgG avidity – 85% (high level)) of CMV persistence was examined. She was investigated by objective examination, general and biomechanical blood and urine analyses, liver function tests, electrocardiography, echocardiography, chest x-ray. The hospital treatment was also analyzed.

Results. In the described clinical case we demonstrated how through careful collecting of the anamnesis, laboratory and instrumental examination data in diagnosing CMV infection and associated diseases that accompany it. In this case, the background of the CMV infection has developed in the reproductive sphere (with the weights obstetric history), hepatosplenomegaly and interstitial changes of the lungs,

pathology of the cardiovascular system, caused by late-diagnosed CMV infection. According to complaints, history of present illness and life (anamnesis morbid and anamnesis vitae), objective data, data of laboratory and mechanical examination the diagnosis was:

- Primary: Chronic CMV infection of average degree.
- Complications: Hepatosplenomegaly. CMV-pulmonitis (interstices lung changes), lung failure of 1 degree. Intoxication syndrome. Generalized lymphadenopathy.
- Related: coronary heart disease, diffuse cardiosclerosis, atherosclerosis of the aorta. Hypertension stage II. Hypertension heart. The average risk of cardiovascular events.

The hospital treatment included diet # 15, Neovir 250mg (1 vial) injection of 2 ml 2% Lidocaine solution every 48 hours, a course of 6 injections, Bisoprolol 5 mg, 1 tab. on an empty stomach in the morning, Prestarium 4 mg, 1 tablet in the morning before eating, Atorvastatin 20 mg, 1 times per day under the control of the lipid profile.

Conclusions. CMV infection is a major clinical problem, particularly for the high level of prevalence among persons in all age groups, and as a result system failure. In modern medicine CMV infection is rarely seen as the initial springboard for a complicated course of comorbidity pathological conditions, and therefore is non-adaptive. Any somatic disease on the background of CMV infection has a complicated course. This is due to the changes of the immunological status of the patient due to the lifelong persistence of the virus in the body. Promising is further study of the issues of comorbidity CMV infections with lesions of organs and systems, to optimize the diagnosis, treatment, rehabilitation of the patients.

Key words: cytomegalovirus infection, persistence, clinical case, the presence of comorbidity.

SI “Institute of neurosurgery named after acad. A.P. Romodanov of NAMS of Ukraine”, Restorative neurosurgery department (P. Mayborody Str., 32, Kyiv, Ukraine, 04050)

RESULTS OF SURGICAL TREATMENT OF BRACHIOPLEXOPATHY CAUSED BY ADDITIONAL CERVICAL RIB

Introduction. Brachioplexopathy is a pathological status that involves structures of brachial plexus and is caused by different etiological factors. Tunnel forms of brachioplexopathy are caused by compression of brachial plexus by anatomical structures in the near. Different tunnel forms of brachioplexopathy are often called TOS – thoracic outlet syndrome. TOS is the complex of symptoms, which develops due to severe mechanical compression of brachial plexus trunks caused by occlusion or aneurism of subclavian artery, thrombosis of subclavian vein, hypertrophy of scalene muscles, additional cervical rib.

The *objective* of this study was to improve the results of treatment of tunnel brachioplexopathy in patients with additional cervical rib, to improve the methods of diagnosis and surgical treatment.

Materials and methods. 17 patients with brachioplexopathy caused by additional cervical rib were enrolled into the study. The diagnostic complex included: neurological examination, plain X-ray study of cervical spine, electromyography. 12 patients with brachioplexopathy caused by additional cervical rib underwent surgical decompression of neural and vascular bundle above the clavicle, additional cervical rib was removed. In 5 patients system for chronic electrical stimulation of structures of brachial plexus “Ney-Si-3M” (VEL, Kyiv, Ukraine) was implanted.

Results. According to long-term results obtained during the examination of all patients who underwent surgical decompression of neural and vascular structures above the clavicle, 5 of them (with implanted “Ney-Si-3M”) showed excellent results in context of neurologic deficit regression: neuropathic pain syndrome ceased in 4 patients, 1 patient mentioned decrease in pain severity up to 2 points on VAS and only during shoulder adduction; range of motion and muscle strength in the affected

limb increased in 5 patients with implanted “Ney-Si-3M”: 2 showed progress from M3 to M4 on ASIA Scale, 3 patients showed no motor deficit at all (M5 on ASIA Scale). We affirm, that daily electrical stimulation of the affected nerves of brachial plexus, leads to more complete restoration of lost functions in the affected limb; in all patients, whom system for chronic electrical stimulation was implanted, reported good or appropriate restoration of sensitivity in the affected limb: 3 patients reported ceasing of sensitivity disturbances, in 2 patients sensitivity in the affected limb restored to S4 on ASIA Scale; in all patients, whom system for chronic electrical stimulation was implanted, we observed no dystrophy in the affected limb, especially in intrinsic muscles of the hand. All patients continued to utilize system for chronic electrical stimulation even after an appropriate result has been achieved, we observed no system failure among all patients.

Conclusions. Mixture of decompression of neurovascular bundle and chronic electrical stimulation of structures of brachial plexus allowed us to achieve positive results in 100% of patients: recovery of lost motive and sensory functions, decrease of pain syndrome severity.

Key words: brachioplexopathy, thoracic outlet syndrome, additional rib, chronic electrical stimulation.

© Tretyak I.B., Freidman M.Yu.

[1]SI “Institute of neurosurgery named after acad. A.P. Romodanov of NAMS of Ukraine”, Reconstructive neurosurgery department (P. Mayborody St., 32, Kyiv, Ukraine, 04050), [2] Belotserkovskiy municipal hospital №2, Neurosurgical department (Semashko St., 9, Belaya Tserkov, Kyiv Region, Ukraine, 09100).

MICROSURGICAL DENNERVATION IN TREATMENT OF FOCAL CERVICAL MUSCULAR DYSTONIA: ANALYSIS OF TREATMENT OF 14 PATIENTS WITH RETROCOLLIS

Introduction. Cervical dystonia is the most common form of focal dystonia. It is characterized by involuntary movement of the neck resulting in abnormal neck posture. Fundamentally, cervical dystonia is categorized into several patterns, including torticollis (head rotation), anterocollis (head forward flexion), retrocollis (head backward extension), laterocollis (lateral head bending), and combined pattern.

Dystonic muscles in each pattern are quite unique. For instance, involved muscles in retrocollis include exclusevily the posterior cervical muscles (mainly splenius capitis, semispinalis capitis and semispinalis cervicis) of one or both sides. Conventional treatment of cervical dystonia consists of oral medication, botulinum toxin injection, and physical therapy. For patients who do not respond to such therapies or are refractory cases, surgical treatment is an appropriate option.

The *aim* of this study was to analyze the results of microsurgical denervation in patients with focal muscular dystonia – retrocollis subtype.

Materials and methods. 14 patients with retrocollis subtype of focal muscular cervical dystonia were enrolled into the study. All enrolled patients underwent 19 microsurgical denervations of dystonic muscles, including 14 selective posterior ramisectomy of C1-C6 rootlets (Bertrand's procedure), 5 denervations and myotomias of dystonic muscles of omotrapezoid triangle. The outcome evaluation was conducted via neurological examination and TWSTRS-questionnaire.

Results. All denervation procedures in patients with retrocollis subtype of focal muscular cervical dystonia were accompanied by 3 types of complications: painful dysesthesia in the dermatome of C2 autonomous innervation – 14 cases (77,78%), occipital neuralgia – 3 cases (16,67%) and 1 case of (5,56%) wound infection.

The analysis of the outcomes of microsurgical denervation procedures of retrocollis subtype of focal muscular cervical dystonia showed: the number of patients with severe retrocollis decreased to 0%. We observed the dominance of moderate severity of retrocollis among all patients after microsurgical denervation procedures – 85,71%. Only 14,28% of patients were able to claim that the severity of

retrocollis after all stages of microsurgical denervation procedures decreased to mild one.

Conclusions. Microsurgical denervation procedures showed their efficacy in the context of retrocollis severity decrease – in 100% of patients the initial severity of retrocollis decreased. Denervation of muscles of omotrapezoid triangle allowed us to improve the outcomes of surgical treatment of retrocollis patients, served as the excellent procedure in addition to traditional surgical approaches.

Key words: focal muscular cervical dystonia, spasmodic torticollis, retrocollis, microsurgical denervations.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

FEATURES OF THE COURSE AND RESULTS OF TREATMENT COMMUNITY-ACQUIRED PNEUMONIA IN PATIENTS WITH OPIUM DRUG ADDICTION

Introduction. The problem of treatment community-acquired pneumonia (CAP) is one of the most actual health and social issues.

The *aim* of the study - to define features of flow and effectiveness of community-acquired pneumonia treatment by traditional methods in patients with opium drug addiction.

Materials and methods. The object of the study was 89 patients with severe CAP. Patients were divided into two representative group by age and sex, the main group (42 patients with opium drug addiction and CAP) and comparison group (47 patients with severe CAP). Patients in both groups were treated according to existing standards. The study of changes in the internal organs under the opium drugs influence conducted in 32 died drug addicted patients. The study of changes in the

internal organs in CAP conducted on experimental pneumonia on 35 rats. The animals were taken out of anesthesia after the experiment 2, 3, 5, 9, 15, 20 and 30 days of observation to study the changes in the internal organs in the dynamics of the disease.

Evaluation of treatment results was carried out by the laboratory, biochemical tests and determined the level of endogenous intoxication (EI). Definition of indicators of systemic inflammatory response (SIR) was conducted by enzyme-linked immunosorbent method. Microbiological studies included the definition of CAP pathogens and their antibiotic sensitivity and study their properties and virulence. Morphological study of changes in the internal organs of dead drug users and in derived from experiment animals were performed by conventional methods. Statistical analysis of the results was performed with the definition of authenticity differences in both groups of patients.

Results. The study found that severity of disease is caused by the presence of hidden polyorgan pathology on patients with opium addiction, due to use of homemade drugs, to which also added intoxication syndrome, due to the development of the lungs inflammation, which by itself leads to damage of internal organs. It was established that pneumonia in these patients is caused by highly virulent, antibiotic resistant bacteria and fungi, susceptible to antiseptics. Using of the conventional methods of CAP treatment have low efficiency and is accompanied by the prolonged hospitalization of patients, leads to the development of destructive changes in the lungs and is associated with high mortality.

Conclusions. CAP in patients with opium drug addiction has severe flow and complicated by severe endogenous intoxication with the development of systemic inflammatory response syndrome, as evidence of it were high levels of MMM, CRP, IL-6 and TNF-α, which were significantly ($p < 0.05$) higher than those on patients with CAP in comparison group. CAP in patients with drug addiction is caused by high virulent, antibiotic-resistant: S.aureus - (37,3%), Kl. pneumonia - (13,7%), S.pneumonia - (11,7%), S. epidermidis - (5,9%). and fungi genus Candida - (31,4%). In the monoculture form of bacteria were identified in 48.4% of cases and 51.6% of

cases - microbial associations or associations of microorganisms and fungi. Antiseptics (dekasan, miramistin and etoniy) have high antimicrobial activity against of pathogens identified at patients with CAP. Severity of community-acquired pneumonia in patients with opium addiction is hidden due to the presence of multiple organ pathology: liver disease in 96.9% of cases, the heart and lungs pathology in 84.5%, 89.4% of the kidneys pathology, brain pathology in 9.4%. Use of traditional approaches to the treatment of severe CAP on drug addicted patients requires significantly ($p < 0.05$) longer hospitalization and accompanied by a significantly ($p < 0.05$) frequent development of destructive changes in the lungs (35.7% and 17.0 % in patients of both groups in accordance) and significantly ($p < 0.05$) higher mortality (23.8% vs. 4.3%).

Studies have shown that treatment of severe CAP on patients with opium addiction requires consideration of special approach to treatment of such category of patients.

Key words: community acquired pneumonia, opium addiction, results of community-acquired pneumonia treatment in patients with drug addicts.

© Guriev S.O., Solovyov O.S.

DZ “Ukrainian scientific-practical centre of emergency medical care and disaster medicine” (str. Bratislava, 3, Kyiv)

THE IMPACT OF HIV INFECTION ON THE COURSE OF THE TRAUMATIC PROCESS IN PATIENTS WITH MULTISYSTEM INJURIES

Introduction. Despite the attention of researchers to the problem of injuries, the last remains today an urgent, not only from a purely medical level, the problem has moved into the category of social. Of particular importance, as the experience of recent years, the problem gets injured in socially excluded groups (injecting drugs, people released from penitentiary system institutions, persons without permanent

residence). According to statistical data in these populations highest incidence and prevalence of HIV.

Materials and methods. We studied 116 cases of CAP in HIV-infected victims (core area) and 116 cases of CAP in victims without HIV infection (the control array) treated at the Center polytrauma Ukrainian scientific-practical center of emergency medical care and disaster medicine from 1999 to 2009 . The patients' age main body responsible 19-53 years, control panel - 16-75 years. Males among the victims were the main array, 80 (68.97%) -36 females (31.03%) of the control panel of persons affected males was 89 (76.72%), women - 27 (23 , 28%). A comparative analysis in accordance with the requirements and criteria of evidence-based medicine.

Results. In order to objectively assess the severity of lesions in HIV-infected patients with CAP STS applied NISS. Average score the severity of injuries by this system was basically an array of 17,9 ± 5,7. Moreover survivors among the victims in this array, the figure was 17,9 ± 5,9 and among the victims who died - 18,0 ± 3,7. Average score for the severity of the injury STS NISS in the control array was 26,8 ± 9,66. Among the victims who survived in this array, the figure was 24,4 ± 7,79 and among the victims who died - 40,8 ± 7,40.

For the purpose of an objective assessment of the general state of the HIV-positive victims in the PDP at the time of hospitalization, we have used the STS RTS. Average score severity affected by this system was basically an array of 10,4 ± 0,9. With that among the victims who survived this figure was 10,4 ± 0,9 and among the victims who died - 9,7 ± 1,0. In control array GPA severity affected by a standardized assessment system RTS amounted to 9,9 ± 2,4. With that among the victims who survived this figure was 10,4 ± 2,2 and among the victims who died - 7,2 ± 2,2.

So for patients with HIV infection and lung injury characterized by moderate to severe trauma but even this has a serious impact on the overall condition of the victims.

Conclusions. HIV infection has significant influence on the course of TA in patients with CAP, largely changing the nature and outcome of the course TA. In patients with HIV infection in the general CAP severity lower than this in the absence

of HIV infection due to the peculiarities of the social contingent. When equally severity of injuries suffered from HIV infection have significantly higher risk of death, as in the acute phase of injury, and so during the early reaction. Multisystem failure in patients with HIV infection at a lower komponentnosti runs harder, while special importance is the lack of central nervous system and the digestive system (due to liver).

Key words: multisystem injuries, HIV infection, the risk of fatal traumatic process flow.

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National Medical Academy of Postgraduate Education named after P.L. Shupyk, Department of obstetrics, gynecology and fetal medicine (Dorohozhytska street, 9, Kyiv, Ukraine, 04112, zhuksvitlana@ukr.net), Kyiv Perinatal Center (Predslavynska street, 9, Kyiv, Ukraine, 03150, irina_us@list.ru), Reproduction genetics clinic “Victoria” (Pochainynska street, 70, Kyiv, Ukraine, 04070, iatamanchuk@ukr.net)

CLINICAL AND LABORATORY CHARACTERISTICS OF PREGNANT WOMEN WITH THREAT OF PREMATURE DELIVERYASSOCIATED WITH THROMBOPHILIC STATE

Introduction. The premature delivery remains the leading cause of perinatal morbidity and mortality. The etiology and mechanisms of premature delivery continue to be discussed. Recently the number of domestic and foreign authors connectsidiopathic non-carrying to the term to the disorders in the hemostatic system of women.

Therefore, *the aim of the study* was to study the peculiarities of pregnancy with threat of premature delivery associated with thrombophilicgenesis.

Materials and methods. 80 pregnant women with threat of premature delivery, who applied the Kyiv Perinatal Center were examined. All patients were

divided into two groups. The first (main) group consisted of 30 women, who could have beenpossibly diagnosed withthrombophilic state based on anamnesis and peculiaritiesof the course of this pregnancy, and this possible diagnose was confirmed using clinical and laboratory ways. The second (comparison group) consisted of 50 pregnant women without clinical and laboratory manifestations of hemostasis disorders.

During examination, complaints of the patients, physical, genetical, allergic and reproductive anamnesis were studied, the presence of previous extragenital and gynecological diseases was checked. During anamnesis study, special attention was paid to thrombotic anamnesis: the cases of thrombosis, coronary thrombosis, insultuses during pregnancy and after/before it, as well as thrombotic anamnesisof close relatives under the age of 40 years.

The vascular thrombocytic link of hemostasis system was evaluated through clotting time of capillary blood using the method of the Morawitz , the total number of thrombocyte on the automatic analyzer and the study of thrombocyte aggregation.

The coagulative link was evaluated through prothrombin index (PI), international normalized ratio (INR), activated partial thromboplastin time (APPT), Klaus fibrinogen test, D-dimer, fibrin monomers soluble complex (FMSC).

The circulation of aPL antibodies was established upon detection of lupus anticoagulant (VA), Ig G/M to cardiolipin and β2– glycoprotein.

The hyperhomocisteinemia was identified on the basis of the high content of total L – homocysteine.

The polymorphism of the studied genes was determined through polymerase chain reaction (PCR) in real time using a set of reagents of “DNA Technology” firm.

Ultrasound examination, biophysical profile of fetus (BPF), doppler velocimetry of the fetoplacental complex (FPC) was performed using cardiotocography (CTG) in CTG examination office of Kyiv Perinatal Center at the office of functional diagnostics of Kyiv Perinatal Center.

Results. The majority of examined women were in the middle of the reproductive age. Thus, the age of pregnant women varied from 18 to 42 years and in average it was 22.4±0.4 in the first group, 24.6±0,3 in the second group.

Before pregnancy, the average body weight index of the women of main group was 27,8±0,7, while the average body weight index of women in the comparison group was 22.8±0,8 before pregnancy.

During the analysis of menstrual function, it was determined that the average age of menarche of patients of both groups did not differ. In the main group it was 13.2±0.1 and in the comparison group it was 12.8±0,53 years. The duration of the menstrual function was, respectively, 3-6 days (5,0±1,2) and 3-7 days (5,0±1,8) in the main and the comparison group respectively.

Chronic diseasesof appendages were observed almost twice as often among women of the main group – 4 (13,3%) than among women of the comparison group – 2 (4,0%).

7 women (23%) of the main group had family history of burdened thrombotic anamneses.So for example, theperipheralvenousthrombosisepisodesoccurred in4 closerelatives(13.3%) of patients, myocardial infarction (under40 years)– 2(6.7%) patients, insultus (under40 years)– 2 (6.7%), cases ofthromboembolia– in 1(3.3%)relative of the main groupof women. Inthe comparison grouponly 3(6%)cases of burdenedthrombotichistory were found inclose relativesof examinedwomen:1 (2%) casethrombosisof peripheralveins, 1 (2%) caseof myocardial infarctionand 1 (2%) caseof unsultus(under40).

The cardiovascularsystem disease (arterial hypertension, mitral valve prolapse,varicose of veinsof the lower limbs) was observed in a significantpercentage of casesamongsomatic pathologyof the main group ofwomen – 14 (46.7%).

The monotonoustypeof cardiotocography (decrease ofamplitude of instantoscillations-AIO)was observed significantlymore in the main groupthan thecomparison group(43.3% vs. 12.0%). Affectlesstypeof cardiotocography according to non-stress test (NST) was observed more oftenin pregnant womenof the main group-20.0%, which is twice higher than inthe comparison group- 10,0%.

The total assessment of cardiotocography according to Fisher of patients of the main group (7,55 ± 0,1) was not significantly different from the one of group of pregnant in a comparison 7,4 ± 0,2 ($p < 0.05$).

The pregnant women of main group had more disorders of blood flow (more than 95 percentile) in the arteries of the umbilical cord, the frequency of which was more than in the comparison group (SDS 9 (30.0%) and IR 10 (33.3%)). The patients of comparison group, unlike patients of the main group had least abnormal flow indicators (SDS 3 (6.0%) and IR 5 (10.0%) and corresponded to rapid blood flow disorders and were not systematic.

The pregnant women of main group had the average BPP score significantly lower in contrast to the comparison group ($p < 0.05$). It is this group, wherepatients, who have demonstrated poor state of the fetus, prevailed. It was characteristic for the comparison group the that minimum number of pregnant women had doubtful state of the fetus - 11 (22.0%) and highest average rating BPF - 8,95 ± 0,26.

Conclusions. It was found that among women with the threat of premature delivery against the background of hemostasis disorders 23.0% had the burdened thrombotic anamneses in a family history, reproductive losses are: spontaneous miscarriage within 10 weeks of pregnancy – 40.0%, spontaneous miscarriage in the period of more than 10 weeks –30.0%, mortinatality– 16.7% of early neonatal mortality–23.3%, habitual miscarriage – 23.3%, unsuccessful IVF attempt in history –20.0%. It is established that in the structure of trombophilics of pregnant women with the threat of premature delivery against the background of hemostasis disorders the hemostasis inherited defects were 46.0%, hyperhomocysteinemia –18.0%,aPL antibodies – 12.0%, multigenic forms – 8.0%, other causes –16.0%. The study of cardiotocography of women with premature delivery threat against the background of thrombophilia showed an increase in the frequency affectless non-stress test, reducing in the frequency of instantaneous amplitude oscillations. It is possible that the said is due to compensation of varying state of the fetoplacental complex. The obtained results of doppler velocimetrystudy in the umbilical artery demonstrated that adaptive changes in blood flow in the fetal-placental complex at risk of premature delivery

have somewhat different character depending on the state of hemostasis. The threat of premature delivery on the background of thrombophilic changes is characterized by increasing of doplerovelocimetric indexes characterizing the increase of the strain of adaptive mechanisms of blood flow. Study of BPP allows to make a conclusion on the degree of fetal disorders,which patients with different types of thrombophilia associated with the threat of premature delivery have. Obviously, the presence of hemostasis disorders during pregnancy leads to deeper disturbances of the fetus, which, of course, is advisable to consider during prenatal care of such patients with threat of premature delivery. Thus, it is important to develop the schemes of the correction of the hemostatic system of pregnant women with threat of premature delivery against the background trombophilic disorders, which is necessary not only for the prolongation of pregnancybut also for the prevention of placental dysfunction.

Key words: genetically determined and acquired thrombophilia, trombophilic disorder, the threat of premature delivery, system of hemostasis.

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SI «Institute of pediatrics, obstetrics and gynecology of NAMS of Ukraine»

Vinnytsia National Medical University named after M.I. Pyrogov

VULVOVAGINAL CANDIDIASIS - CLINICAL EVALUATION OF NEW TREATMENT FACILITIES

Introduction. Vulvovaginal candidiasis is a common gynecological disease. There are no certain treatment approaches, criteria curability, recurrence prevention measures. The incidence of vaginal candidiasis in the last 20 years has increased. According to data obtained during clinical examination and treatment in the gynecological clinic, the prevalence of vaginal candidiasis is around 10-20%.

The causative factor of a vulvovaginal candidiasis is a yeast fungi genus Candida, which has more than 180 species, the most common of which is C. albicans, C. krusei, C. tropicalis, C. pseudotropicalis, C. stellatoidea, C. parapsilosis. In recent

years many authors observed a tendency to increase the frequency of the disease, especially chronic and recurrent forms that are caused by other non-albicans Candida species.

Candida are representatives of conditionally pathogenic human flora and under certain conditions and favorable factors for them are able to detect pathogenic properties. Relevant factors can be divided into the following groups: - exogenous (antibiotics, hormonal and cytotoxic drugs); - endogenous (infectious diseases, endocrinopathies, reduced immunological reactivity, pregnancy, vitamin deficiencies. The acute VVC characterized by a profuse grayish-white vaginal discharge, sour odor, itching and burning in the area of the vulva and vagina. There are swelling and redness of the mucous vagina and vulva. Without treatment, symptoms can last for 1.5 - 2 months.

Objective: To evaluate the effectiveness of benzydamine hydrochloride (Tantum Rosa) in women of reproductive age in the presence VVC.

Study Design: Eligible for the study were 3000 women aged 18-39 years which were treated in different medical institutions of Ukraine. All of them had a verified monoinfection of VVC. Confirmation of MMC conducted by bacterioscopic and bacteriological methods.

Patients were divided into 3 groups: Group 1 - women with acute candidiasis initial episode (n = 1000); Group 2 - women with acute exacerbation of chronic recurrent candidiasis (n = 1200); Group 3 - Women with moderately severe clinical symptoms lesions (n = 800). Designated groups surveyed were representational. All patients had been given 0.1% solution of benzydamine hydrochloride in the form of vaginal irrigations 2 times per day for 10 days. The result was evaluated after 3 days of using the drug and on the 30^{th} day after treatment.

Benzydamine hydrochloride (Tantum Rosa) refers to clinical and pharmacological class of NSAIDs for local application with antibacterial action. The drug has anti-inflammatory, anti-edematous and analgesic effect. No effect on physiological flora in a normal environment of the vagina; increases the resistance of the vaginal mucosa against the pathogen pathogens; safe.

Results. Patients of 1 and 2 groups complain of itching, burning in the vagina and external genital organs (95.0% and 75.0% respectively). Dyspareunia occurred at 100.0% of patients of group 1, 54.0% - group 2. Patients of group 3 complained of slight, intermittent itching that occurred before or immediately after menstruation, in 20% of patients were recorded liquid separation, poorly expressed burning.

There was observed bright redness of the mucous vagina and vulva - in 79.0% and 76.0% on physical examination before the treatment of all women in groups 1 and 2. For women of group 3 pathological changes in the mucous of vulva and vagina were less pronounced.

In assessing the effectiveness of the treatment in 3 days after application of benzydamine hydrochloride (Tantum Rosa) we noted that complaints of discharge from the vagina occurred only in 7.0% of women 2 groups. The rest of the patients noted the disappearance of symptoms such as itching, burning, pain. The dispareunia was only in 5% of women 2 groups. The physical examination is not checked in mucosal congestion, edema or white patches. The number of leukocytes were in the normal range.

After one month after the end of treatment, according to bacterioscopic research fungi Candida were found in 11.0% of women in group 1 and 5.0% of women of 2nd groups. The culture method found fungi Candida 6.0% of women in group 1, 9.0% - 2nd group and 20.0% - Group 3 in the credits that do not exceed 104 degrees.

Conclusions. We can conclude high clinical and bacteriological efficacy benzydamine hydrochloride (Tantum Rosa) in the treatment of vulvovaginal candidiasis.

Reduction of terms of treatment and increase the period of remission VVC is provided by the rapid elimination of pathogens directly into lesions, broad spectrum antifungal benzydamine hydrochloride, its minimal impact on useful microflora (Lactobacillus acidophilus), accessibility, simplicity and ease of preparation, lack of significant contraindications and possible complications.

Despite contradictory data on the importance of sexual transmission of infection to the prevention of further relapses VVC is necessary to lead a healthy lifestyle, screening and treatment of sexual partner.

Key words: vulvovaginal candidiasis, reproductive function, benzydaminu hydrochloride.

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Vinnytsia National M.I. Pirogov Memorial Medical University, (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

DEFINITION OF DEGREES OF LEFT VENTRICULAR HYPERTROPHY IN PATIENTS WITH UNSTABLE ANGINA WITH THE HELP OF IMPROVED DIAGNOSTIC CRITERIA

Introduction. Left ventricular hypertrophy the subject of numerous scientific papers. It is proved that left ventricular hypertrophy is an independent risk factor for cardiovascular complications such as myocardial infarction, congestive heart failure, cardiac arrhythmias, sudden cardiac death. Criteria for diagnosis of left ventricular hypertrophy continue to improve.

Materials and methods. We examined 143 patients with unstable angina, average age of 55.3 years. Of these, myocardial infarction in history was determined in 86 (60,1%) patients. The duration of chronic ischemic heart disease was 2.8±0,25 years, systolic blood pressure (BP) – 163,2±1,50 mm Hg., diastolic blood pressure – 101,1±0.67 mm Hg. Examined patients underwent electrocardiography, echocardiography in M and B modes, defined lipid spectrum of blood.

Results. Proposed improved criteria for the diagnosis of the degree of left ventricular hypertrophy in cardiovascular disease in patients with unstable angina. Based on the index of myocardial mass of left ventricle and interventricular septum thickness separately for men and women. In cases when the patient is the index of myocardial mass of left ventricle and interventricular septum thickness were different

in magnitude and varying degrees of left ventricular hypertrophy, it took the mass index of left ventricle myocardium, which established the degree of hypertrophy. If the index of myocardial mass of left ventricle was normal, and the rate of thickness of the interventricular septum consistent with II degree of LVH, exhibited I the degree of LVH. In patients with unstable angina I (initial) extent of LVH was determined in 7 (5,0%) patients, II (moderate) – in 58 (41.1 %), III (significant) - 76 (53.9 %). Identified a moderate and significant degree of LVH in patients with unstable angina demonstrate the development of organic changes in the myocardium that may be encountered myocardial infarction, heart failure, heart arrhythmias.

Conclusions. Proposed new criteria for diagnosis of the degree of left ventricular hypertrophy in unstable angina pectoris by echocardiography can more quickly and objectively determine the degree of its intensity. The selection of three degrees of left ventricular hypertrophy in patients with unstable angina are optimal and echocardiographical important method for assessing the regression of myocardial hypertrophy and the effectiveness of correction of the revealed structural and functional changes of the myocardium that might be used in further studies.

Key words: unstable angina, criteria for diagnosis of the degree of left ventricular hypertrophy.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

THE ASSESSMENT OF ECHOREFLECTIVITY FOR THE DETECTION OF MYOCARDIAL FIBROSIS IN HYPERTENSIVE PATIENTS

Introduction. One of the most common manifestations of essential hypertension is hypertensive heart. It is known that the expression of essential hypertension is associated with an increased risk of cardiovascular events. Recently,

hypertensive heart considered not only as left ventricular hypertrophy, but also a set of changes in the myocardium, which include, apart from hypertrophy of cardiomyocytes, such components as changes in microvasculature, fibroblast proliferation, fibrosis and cellular apoptosis. Taking into account the importance of hypertensive heart problems, the need to find new methods and improvement of existing methods of diagnosis of this condition, especially in the early stages, is beyond all manner of doubt.

The *aim* of the study was to improve the diagnosis of structural and functional states of the heart in patients with hypertension by studying indicators of echoreflectivity.

Matherials and methods. The study included 90 hypertensive male patients aged 45 to 65 years old, which had not irreversible lesions of target organs. The control group included 30 men of the same age without hypertension and lesions of the cardiovascular system. EH patients were divided into 3 groups of 30 people, depending on the degree of hypertension: Group 1 - 140/90 - 159/99 mm Hg, Group 2 - 160/100 - 179/109 mm Hg and Group 3 - 180/110 mm Hg or more. Thus, the main group consisted of 90 men and the control one - from 30, the total number of surveyed patients was 120 persons.

All study participants underwent the office BP measurement and echocardiography using the machine «Imagic Sigma 5000» (Kontron Medical). During the echocardiography the left ventricular myocardial mass indexed to the body surface (LVMI) and the transverse size of the left atrium (LA) were measured. The parameters of transmitral flow (TMF), the maximum speed of the early (E) and late (A) diastolic mitral flow were examined too. The maximum speed in early diastole (E') was recorded performing tissue Doppler mitral annulus. The E/A and E/E' were calculated on the basis of the rate of TMF and mitral annular motion. The ratio E/E≥10 indicated the presence of diastolic dysfunction. The absence of diastolic dysfunction was set in the case of E/E '<8. The analysis of echoreflectivity was carried out according to the method described by Hiremath P. et al. (2014). Echoreflectivity was evaluated by analyzing the distribution of pixels from black-

and-white spectrum image obtained from the parasternal position of the long axis of the left ventricle using the software Image J. Such factors of echoreflectivity as Broad Band (BB) - the width of the range, Kurtosis (K) - the steepness of the ascending slope and Skewness (Sk) - the steepness of the decline slope, mean color scale value (mCS) - the average value of the intensity spectrum were taken into account.

Results. Echocardiography revealed a significant difference in the weight of the left ventricle: 88 (22) g/m^2 in the control group compared to 109 (27) g/m^2 in the experimental group. PTS in the control group was 0.36 (0.04) and 0.45 (0.12) in the experimental group. A significant upward trend (by the Kruskal-Wallis test) was marked in these indicators in the sequence of the control group to the group of hypertensive patients with arterial hypertension of 3 type.

Among the indicators of diastolic disfunction the most sensitive was the indicator of E/E'. It showed not only the difference between the group of hypertensive patients and the control group, but also the consistent growth of this parameter from the control group to the group of hypertensive patients with hypertension of 3 type.

The results of the study showed that according to the increase of arterial hypertension not only the myocardial mass of the left ventricle and the RWT, but also the status of myocardial echoreflectivity changed, as indicated by the narrowing of the range of the spectrum of the reflected signal – BB.

The study of myocardial echoreflectivity parameters showed that only the option BB differed significantly compared with the control group of hypertensive patients, and the consistent reduction of BB was noted in the growth of the degree of hypertension.

It is believed that diastolic dysfunction is one of the consequences of myocardial fibrosis. Consequently, it can be expected that the markers of diastolic dysfunction can simultaneously act as a markers of fibrosis. However, according to the results, the dysfunction of diastolic filling was statistically significant only in patients with hypertension of 3 stage. So, it was a lack of sensitivity of TMF test to myocardial fibrosis. It was also found that the sensitivity of the echoreflectivity

method in the early stages of hypertention was higher than Doppler mitral flow, which allows to recommend the assessment of echoreflectivity as a supplement to the standard echocardiographic examination.

To date, the following serum markers of collagen metabolism are known and can be classified as follows:

- the markers of collagen synthesis (carboxy propeptide of procollagen of type I, carboxy propeptide procollagen of type III);

- the markers of collagen degradation (carboxy telopeptide of collagen of type I);

- the suppression of collagen degradation markers (tissue inhibitor of matrix metalloproteinase of type 1);

- the markers of activity of fibroblasts (transforming growth factor β1 (TGF-β1)).

In addition, there are techniques that allow us to quantify the expression of fibrosis. In particular, the point tracking and technique Strain-Reith can be informative for the fraction of collagen – the main indicator of the amount of fibrous tissue. However, these techniques require expensive equipment and are sufficiently expensive for patients.

Conclusion. Therefore, the proposed method of echoreflectivity is relevant for clinicians and patients because it is low-cost and highly informative.

Key words: hypertensive heart, myocardial fibrosis, echoreflectivity.

© Kalashnov A.V., Yukhymchuk O.A.

SI "Institute of Traumatology and Orthopedics NAMS Ukraine" (st. Vorovskogo, 27, Kyiv, 01601, Ukraine), Kyiv City Clinical Hospital №7 (st. Kotelnikova, 95, Kiev, Ukraine)

THE ALGORITHM OF SURGICAL TREATMENT OF FEMUR FRACTURES WITH IMPLANTS WITH DIFFERENT ELASTIC MODULUS

Introduction. Fractures of the femur belongs to the most serious types of injuries of the musculoskeletal system of man. According to the researchers, their frequency is within the limits from 10.4% to 30.8%. Typically these fractures occur as a result of mechanical action of great strength combined with significant soft tissue injuries. Delayed medical intervention can lead to muscle atrophy, osteoporosis, forming tight joints mobility neighbors and as a result can be observed dysfunction of limbs.

Conservative treatment of hip fracture consuming, often leading to poor anatomical and functional results. Therefore, most fractures treated operatively. Today, in developed countries widely used technology of blocking intramedullary osteosynthesis (BIOS) of the first and second generation nakistkovoho and minimally invasive osteosynthesis extrafocal minimalnoinvazyvnoho with providing axial and rotational stability. These methods of operative treatment of fractures of long bones is used in 60 - 70% of patients.

In recent years great importance in the process of reparative osteogenesis share the use of various kinds of biological materials and osteoinduktyvnymy osteokonduktyvnymy properties. There are many studies that have used auto- and alokistku, ceramic hydroxyapatite and others, but the problem of improving metal metal osteosynthesis implants for bone remains relevant.

In 2008, the Department of the Institute of Biomaterials material sourcing Sendai (Japan) was invented a new metal alloy, such as Ti-29Nb-13Ta-4,6Zr, which in elastic modulus approaching the modulus of elasticity of bone tissue, that is 60-63 GPa. Engineers materialoznavtsyamy Kiev Institute of Metal Physics. GV Kurdyumova NAS of Ukraine invented alloy metals, which in terms modulus (Young's modulus) is close to that of the modulus of elasticity of bone, such as zirconium-titanium alloy (β - Zr-Ti). When modulus of elasticity of bone 15-30 GPa modulus of 47-53 GPa metal alloy. Were conducted experimental X-histomomorfolohichni, physical, biomechanical studies and computer modeling, which convincingly demonstrated advantages in strength and fixation effect on the

bone is domestic alloy compared with alloys that are widely used in modern traumatology (VT-6 and 316 L).

Purpose - to develop an algorithm operative treatment of fractures of the femur with the use of implants with different modulus of elasticity.

Materials and methods. The basis for the development of therapeutic algorithm of surgical treatment were conducted comprehensive experimental study. These studies clearly demonstrated superiority over existing in Ukraine (alloys VT-6 and 316 l) domestic alloy β - (Zr-Ti) for fracture healing and improved structural and functional state of the bone diaphysis femur. That is why we recommend the use of this alloy in patients with the most severe - type C by AO classification diaphysis fractures of the femur (segmental, splinter fractures).

Results. To use the treatment algorithm of surgical treatment of hip fracture need to answer the questions and to the following sequential steps:

Step 1 - klinichniko inspect a patient with X-ray-defined whether femoral diaphyseal fracture or / articular?

If in / articular fractures of the femur recommend using LSP plates, screws manufactured using standard alloy and alloy β - (Zr-Ti).

Step 2 - at the femoral diaphyseal fractures determine the type of fracture with AO classification.

When diaphysis femur fractures type C BIOS recommend using implants manufactured using alloy β - (Zr-Ti).Fracture of the femoral diaphysis type A and BIOS recommend using implants made using standard alloy and alloy β - (Zr-Ti).

Implementation and application of the proposed algorithm and accordingly differentiated approach on manufacturing metalofiksatoriv for metal osteosynthesis of various metal alloys in patients with fractures of the femur will improve the effectiveness of surgical treatment, reduce the rate of postoperative complications of disability and disability.

Conclusion. Based on comprehensive studies of the effect of experimental implant alloys with different elastic modulus of the strength of fixation and the

condition of the bone algorithm operative treatment of fractures of the femur using implants with different modulus of elasticity.

Key words: algorithm, operative treatment, zirconium-titanium alloy, the modulus of elasticity.

© Moroz L.V., Chemych O.M., Kholodilo O.V.

Vinnytsya National Pirogov Memorial Medical University, Department of Infectious Diseases with Epidemiology course (Pirogov, 56 Str., Vinnytsya, Ukraine, 21018, larisa652002@yahoo.com), Sumy State University, Department of Infectious Diseases with Epidemiology (20 rokiv Peremogy, 15 Str., Sumy, Ukraine, 40021, chemych@gmail.com)

MICROBIOTA CHANGES OF THE COLON IN SALMONELLOSIS AND ACUTE INTESTINAL INFECTIONS CAUSED BY CONDITIONALLY PATHOGENIC MICROORGANISMS, VIRUSES

Introduction. In Ukraine rate of an acute intestinal infection (AII) caused by conditionally pathogenic flora (CPM) and salmonella (S) is annually increased. Prolonged disease mainly caused by dysbiotic disorders in the gut.

The functions of normal intestinal microflora are to provide colonization resistance, shaping the immune response, digestion, regulation of motor function of the intestines and detoxification processes. The development of infection is possible at lower colonization resistance and increase the number and range of pathogenic bacteria. Facultative microflora also reveals pathogenic properties at a reduced amount of obligate microflora or regression of its protective features.

Our purpose was to identify changes microbiota colon at different periods of disease in salmonellosis and acute intestinal infections (AII) caused by conditionally pathogenic microorganisms (CPM) and viruses.

Materials and methods. We examined 70 patients with AII caused by CPM and viruses, and 140 patients with S. Patients were hospitalized for 2 days after the onset of illness.

We conducted general clinical examination. Before the treatment and at discharge of patients we studied the quantitative and qualitative composition of microflora of the colon.

Patients with AII caused by CPM (AII all), depending on the pathogen, were divided into three groups (AII I - different CPM, AII II Kl - Klebsiella pneumoniae, AII III Vir - a viral etiology of the disease). 140 patients with salmonellosis were divided into two groups (S. all and S I S. typh. -Salmonella Typhimurium, S II S. ent. - Salmonella enteritidis). 20 healthy blood donors were in the control group.

All data was added to the "electronic map of the study". The results of the clinical observations and the studies were statistically processed using Microsoft Office Excel 2010, Statistica 10 and the online calculator (http://medstatistic.ru/calculators/calchit.html).

Results. It is proved that in the etiological structure of acute intestinal infections (AII) is predominated next microorganisms: Klebsiella pneumoniae (31.4 %), viruses (15.7 %), enteropathogenic collibacillus (11,4 %), Pseudomonas aeruginosae (10,0 %). Salmonellosis is caused by dominant strains of Salmonella enteritidis (69,0 %) and Salmonella typhimurium (31,0 %).

During the microbiota study of the colon in the acute period it was found decreasing the number of bifidobacteria, lactobacilli and Escherichia coli with increasing levels of representatives conditionally pathogenic microorganisms (CPM), hemolytic E. coli and fungi of the genus Candida ($p<0,05$-$0,001$).

In the period of recovery microflora is normalized more faster in AII compared with salmonella ($p <0,05$-$0,001$). In patients with AII the number of bifidobacteria and lactobacilli was higher compared with salmonellosis ($p<0,05$-$0,001$). At discharge from hospital level of CPM decreased only in acute intestinal infections ($p <0,05$-$0,001$).

Conclusion. Further study of the combined impact of probiotics on the clinical course and microbiocenosis colon in salmonellosis and acute intestinal infections caused by conditionally pathogenic microorganisms, viruses have perspective.

Key words: salmonellosis, acute intestinal infections, etiology, microbiota of the colon.

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Vinnytsia National M.I. Pirogov Memorial Medical University, Department of child age dentistry (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

THE RELEVANCE OF STUDYING THE DISTAL OCCLUSION WITH THE MALFUNCTION OF CHEWING AND MIMIC MUSCLES OF PATIENTS WITH DIFFERENT TYPES OF BREATHING

Intriduction. The aim of our research was finding the pathological changes in mimic and chewing muscles of patients with distal occlusion and various types of breathing.

Materials and methods. 110 persons were examined aged from 9 – 12 years: 27 persons(30%) with distal occlusion and physiological type of breathing who made up the clinical group 1; 63 persons (70%) with distal occlusion and pathological type of breathing who made up the clinical group 2; 20 persons – with orthogonal occlusion and physiological type of breathing, who made up the 3(control) group. The treatment has been done over clinical groups 1 and 2. Orthodontic activator is made individually for a patient in specialized dental laboratory. The research was performed before the start of the treatment and after three months of suggested device. Myographic research of chewing and mimic muscles was performed with the help of computerized four – channel complex for electromyography “REPORTER”(manufactured by “ESAOTEBIOMEDIKA”, Italy). Clinical research was performed by using static and dynamic examination of the patients , tele- X –Ray examination of the head in side projection was done to 23 persons with distal occlusion aged from 9

to 11 with the permission of their parents, and when there were no general contraindications on the X-Ray machines “Morita”, Varaviewpocs and 3D Accuitomo XYZ.

Results. Revealed that children aged from 9 – 12 years with distal occlusion and physiological type of breathing have bioelectrical muscle activity, expressed in correlation coefficient of the period of activity(Ta) and the period of rest of the muscle(Tc) makes up: for chewing muscles – 1.19 – 1.21, for circular muscle of the mouth – 1.20, for temporal muscles – 1.33 – 1.36. We note, that the overall deviation of the measured values from normative figures fluctuates in the range of 2.3 … 13.4%, and ratio coefficient of Ta:Tc – in the range of 2.3 … 8.5%. At the same time, the correlation coefficient of Ta and Tc of patients with distal occlusion and pathological type of breathing makes up: for chewing muscles: 1.14 – 1.16, for circular muscle of the mouth – 1.04 and for temporal muscles – 1.40 – 1.42, herewith the total deviation of the measured values from normative figures fluctuates in the range 7% - 35.9%, and correlation coefficient Ta:Tc – in the range 8 – 17%.

Conclusion. Thus, it is determined, that patients with distal occlusion and physiological type of breathing compared to control group that have got the changes of bioelectrical muscle activity are the manifestation of forming of compensating reaction of the muscles and do not influence the appearance of the patient; the changes in bioelectrical muscle activity of children with distal occlusion and pathological type of breathing show the forming of pathological reaction of the muscles, accompanied by the negative changes in the appearance of the patient.

Key words: electromyography, muscle function, biopotential, masseter – reflex, distal occlusion.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

INFORMATION CONTENT OF POLYMERASE CHAIN REACTION FOR DIAGNOSTICS, EVALUATION OF COURSE AND RESULTS OF ONYCHOMYCOSIS TREATMENT

Introduction. At present time onychomycosis is an important problem of health care, as it is not only long-lasting focus of mycotic infection, which promots to its spreading on the patient's skin, but also significantly reduces the quality of life, causing to patients considerable physical and psychological discomfort.

The *aim* of this study was to examine the information content to use polymerase chain reaction, as a method to confirm the diagnosis of onychomycosis in laboratory conditions, and evaluation of course and results of its treatment.

Materials and methods. Under our observation there were 49 (20 men, 29 women) patients with onychomycosis of hands and feet of middle average age 54.81 ± 11.43 years (from 27 to 68 years) and disease duration from several months to 14 years (at average – 5.38 ± 3.27 years). 22 (44.9%) patients had onychomycosis of feet, 13 (26.5%) – hands, 14 (28.6%) - feet and hands.

All patients underwent clinical examination (complaints, medical history/anamnesis, objective examination of skin and nails), general clinical and biochemical laboratory tests, microscopic and molecular (PCR of nail plates) examinations.

Systemic antimycotics was prescribed to the patients according to the scheme of the instruction, a course of treatment took at average 1.5 months for onychomycosis of hands and 3 months for onychomycosis of feet.

Evaluation of treatment efficacy was carried out on the basis of clinical and mycological examinations. Clinical evaluation of this method included evaluation of complaints, dynamics of objective manifestations of the disease and mycological efficacy involved elimination of fungi. We studied the terms of mycological negative reaction of microscopy and PCR results. Control over mycological negative reaction was performed, beginning from 6 week of treatment and further once every 2 weeks.

Statistical data processing was performed in SPSS 20 statistical package (© SPSS Inc. 20)

Results. Using microscopy there were obtained 46.9% of positive results, and PCR positive result were obtained in 61.2% of cases. Analysis of etiological pattern of onychomycosis by PCR test results showed that causative agent of onychomycosis was T. rubrum in the majority (60%) of patients. Among 30 positive samples, obtained by PCR method, microscopy was positive in only 23 (76.7%) patients, and negative - in 7 (23.3%) patients.

Negative reaction of microscopic and PCR examination results were similar in general in patients with onychomycosis of hands, while negative reaction of almost half PCR results occurred in patients with onychomycosis of feet and onychomycosis of feet and hands at an early date, compared with the results of microscopy. On 10-12th month of treatment, negative reaction of PCR results was observed significantly more often than negative reaction of microscopy results (OR 8.0, 95% CI 0,869-73,67, p=0.038). Data of PCR show mycological elimination of the causative agent on 12-14 weeks of treatment in 85.7% of patients with onychomycosis of feet and onychomycosis of feet and hands, which is 2.2 times more than when using microscopy for verification of negative reaction of mycological examination results.

Conclusion. Using polymerase chain reaction increases the probability of onychomycosis verification in comparison with microscopy and allows us to identify the causative agent of the disease. There has been established the possibility of using PCR to evaluate treatment efficacy of onychomycosis.

Key words: onychomycosis, polymerase chain reaction, diagnosis, treatment.

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Vinnytsia National Medical University named after N.I. Pirogov, Department of Obstetrics and Gynecology №2 (56, Pirogova str., Vinnytsia, Ukraine, 21018)

FUNCTIONAL STATE OF THE BRAIN IN WOMEN WITH CHRONIC PELVIC PAIN SYNDROME

Introduction. Long-lived pelvic pain that accompanies chronic diseases, takes sustained and not always stop after the elimination of the primary anatomical focus. The situation is compounded by pulses flow, continuously and periodically, leading to disruption of the interaction between the brain andthe cerebral cortex, and development of neurotic states. If the pain is a complex multifactorial phenomenon that involves also psychological components, then of course, that the perception of pain, tolerance to it, on pain behavior of women forming a material effect have features of her personality and her state of mind, that individual typological properties. Psychophysiological personality characteristics are reflected in the organic and functional condition of the central nervous system, as bioelectric characteristics of brain activity show a steady relationship with the parameters of temperament. The purpose of the study was to evaluate the functional state of the brain by electroencephalography in women with chronic pelvic pain syndrome in the study of the pathophysiological characteristics of the individual at a given pathological condition.

Materials and methods. The study involved 350 women of reproductive (18 - 45) age with chronic pain syndrome in the lower abdomen, which formed the main group main, and 100 healthy women of control group. The study of the functional state of the brain was performed using electroencephalography system that is based on the detection of bioelectric activity through its surface intact brain tissue.

Results. So all women of the main study group with a normal EEG had a mild type of expression violations brain activity, while women with other types of EEG had moderate or high severity of violations. In the group of women with chronic pelvic pain of thalamic EEG type 53 (15.1%) patients had moderate, and 49 (14.0%) women average expression violations bioelectrical activity. In the group of women with a type of stem EEG 23 (6.5%) patient had moderate and 101 (28.9%) average severity of violations. In the group of women with hypothalamic type of EEG all patients had a mean severity of violations of brain activity. In addition, it was found that most women with chronic pelvic pain and different types of EEG were

characterized by a clear reaction to the assimilation of rhythms of fotostymulation.. The greatest severity of reactions was observed in 51 (14.6%) women with hypothalamic type of EEG and in 108 (30.8%) patients with a type of stem EEG, indicating a pronounced increase activating influence of the reticular formation. Thus, the greatest changes in the electroencephalogram manifested in the involvement of stem formations and more dysfunction in the hypothalamic structures. Thus, during EEG studies of patients with chronic pelvic pain have been observed gross and focal changes of bioelectrical activity of the brain, but in the majority noted the changes and reactive types of background EEG, which had diffuse character. Violation of the functional state of the central nervous system in women with chronic pelvic pain characterized by instability of the functional state of the brain, increasing the activating influence of the reticular formation and the imbalance of activation-deactivation processes.

Conclusion. Violation of the functional state of the central nervous system in women with chronic pelvic pain characterized by instability of the functional state of the brain, increasing of activating effects of the reticular formation and the imbalance of activation-deactivation processes.

Key words: chronic pelvic pain syndrome, functional state of the brain, electroencephalography, physiological characteristics.

METHODICAL ARTICLES

© Petrushanko T.A., Ostrovskaya L.Y., Popovich I.Y.

Ukrainian Medical Dental Academy (Shevchenko str., 23, Poltava, 36011, Ukraine)

VALUE OF LABORATORY CLASSES IN FORMATION OF CLINICAL THINKING OF THE FUTURE DENTISTS ON DISCIPLINE «THERAPEUTIC DENTISTRY»

The effectiveness of education largely depends on assimilation and intensive introduction of new teaching methods based on the new ideology, motivation for knowledge, students' active participation in the learning, self-awareness of the role of self-education, learning principles of evidence-based medicine and its use in learning process.

This article emphasizes the need to find new teachers' technologies that facilitate the development of medical students' clinical thinking. The formation of clinical thinking is largely driven by knowledge of Dentistry theory, understanding of the algorithm of diagnostic search, personal experiences.

The materials are informative, important, relevant in the modern educational process.

The article is devoted to the organization of practical classes on laboratory diagnostics for diseases of the oral mucosa and periodontal diseases in therapeutic dentistry students of X semesters of study at the dentistry faculty in terms of credit-modular system. The advantages and disadvantages of this system in the assimilation of knowledge and the development of clinical thinking of students are analyzed.

Separately, the role of interaction between teacher and student in the learning process is highlighted that takes place on a new basis, based on the individual work of teacher and self-learning modules during the development of the discipline. Students self-consciously reach a certain level of preparation.

When teaching laboratory classes much attention is paid to the role of modeling of clinical cases on the conditions of the results of the laboratory examinations, students use mainly reconstructive and creative level of independent work.

Teaching laboratory work at the department is based on the curriculum and the curriculum of the discipline that define the scope of work and monitor its implementation.

There is no doubt in the significance of the work in which the benefits of interactive teaching methods lie in the fact that they do not only give knowledge but

also provide a framework to solve problems, contributing to the formation of the modern professional.

The good point in the process is involvement of students in the learning process and transformation of the student in its active participant.

Carrying out of laboratory works at the Department of therapeutic dentistry allows to develop clinical logical thinking in subordinate students, leads to the analysis, synthesis and comparison of facts, conclusions and specification, raising of specific issues, solving problems.

Conclusion. So, while learning based on problem students encounter situations that occur in real practice with all their manifestations and complexities that require creativity and search for the best solutions of problems from them.

Key worlds: independent work of students, laboratory classes, therapeutic dentistry.

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Vinnitsa National Pirogov Memorial Medical University (56, Pirogov st., Vinnitsa, Ukraine, 21018)

LEVEL OF SUBJECTIVE CONTROL OF MODERN STUDENTS AND ESPECIALLY ITS DYNAMICAL CHANGES IN NATURAL CONDITIONS IN HIGHER EDUCATIONAL INSTITUTIONS

Introduction. The level of subjective control person is a person's ability to control their own behavior, build optimal behavioral strategies based on the need to take or not to take responsibility for the events that take place directly with the investigated person and around it, is an important personality trait, which determines the degree of independence of man, the level of independence and activity in achieving objectives. Indicators RAC enough to adequately reflect the characteristics of personal and meaningful locations locus of control, according internal'nym

(Internal) and externalities (externality) content in relation to events that occur, including in the higher medical education.

That is why the development of modern approaches to creating psychohygienic preventive educational environment in higher education is quite impossible without considering the peculiarities of subjective control individual students and students of education. The aim of the study is psychohygienic evaluation of subjective control of today's students and especially its definition of dynamic changes in natural conditions in higher education.

Materials and methods. Research conducted at the Vinnitsa National Medical University named 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. To determine psychohygienic and further evaluation of subjective control used personality questionnaire Rotter, allowing to determine the level of such major components of subjective control, as some indicators and indicators of subjective control in the achievements and failures, family, educational and interpersonal relationships, as well as in relation to health and disease [Raigorodskii, 2000].

Statistical analysis of the data obtained using the procedures provided for descriptive statistics 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. In the course of the research should pay attention to the fact that the values of indicators that vidobrazhuvaly overall level of subjective Internal control and, therefore, the overall degree of personal control over any significant situations that occur in life, and among boys girls who studied in the 1st year constituted 3,70 ± 0,19 walls and 3,69 ± 0,17 walls, among boys and girls, who studied in the 3rd year - according 4,14 ± 0, 26 walls (p (t) 1-3> 0,05) and 4,29 ± 0,24 walls (p (t) 1-3 <0,05), among boys and girls, who studied at the 6th year - according 3,62 ± 0,23 walls (p (t) 3-6> 0,05; p (t) 1-6> 0,05) and 3,56 ± 0,18 walls (p (t) 3-6 <0,05, p (t) 1-6> 0,05).

The highest values of total level of subjective control Internal demonstrating that the most significant level of personal responsibility for the results of students'

educational activities carried out, among girls and among boys registered students and students of 3rd year, the least high - in of students graduates and students-graduates. Statistically-significant differences indicators were determined, were observed only when comparing the total quantities of Internal peculiar to girls students of 1st and 3rd year students (p (t) 1-3 <0,05) and girls students of 3rd and 6-year students (p (t) 3-6 <0,05). Instead, due to differences of gender and the studied parameters not recorded (p (t) u-d> 0,05), moreover, it was necessary to note that unlike many previous cases, the degree of expression of the values that were determined in boys and girls was quite comparable. After all, it was impossible not to draw attention to the rather low level of expression internal'nym manifestations in the personal sphere and, especially in the field of subjective control over educational and important circumstances both boys and girls.

Conclusions. The results confirm extremely high spread among students that gets the medical profession in terms of training in higher educational institutions, among persons distinguished by the presence of numerous signs of lack of subjective control over any meaningful to them educational and meaningful situations due to confidence that the vast majority of events taking place and actions that are carried out are not the result of their own activities as a direct result of impact or the people around them, or acts of random phenomena. Analyzing gender-conditioned differences, it should be noted that first-year students during the determination of all major correlate of subjective control, in addition to the characteristics of subjective control in the field of higher education relations and therefore more significant with adaptive perspective, more "internal" indicators registered among youth, students in third-determination when all major correlate of subjective control, in addition to the characteristics of subjective control in the field of failure and family relationships - among girls, graduate students in determining all major correlate of subjective control - among boys.

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, higher education institution, the level of subjective control, dynamic changes.

© Shkatula Yu.V., Oblaznitskyy V.M.

Sumy State University (st. Rimsky-Korsakov, 2, Sumy, Ukraine, 40007), Sumy Regional Clinical Hospital (st. Kovpaka, 22, Sumy, 40031, Ukraine)

THE USE OF SONOGRAPHY WHEN PERFORMING DIFFERENTIAL DIAGNOSTICS OF LEGG-CALVÉ-PERTHES DISEASE AND TRANSIENT SYNOVITIS

Introduction. Osteochondropathy femoral head disease (Legg-Calve-Perthes, aseptic necrosis of the nucleus of ossification of the femoral head, subchondral necrosis nucleus ossification of the femoral head, osteochondropathy hip) (M 91.1) - disease of childhood, which often leads to the development of deforming arthrosis and disability . The disease is long and phasic. One of the main conditions for effective treatment osteochondropathy femoral head - the timely diagnosis. If the diagnosis is crucial Classic X-rays. I step in the domestic liter. *Objective* - to examine the possibility informative ultrasonography during the differential diagnosis of disease Legg Calve-Perthes, and transient synovitis.

Materials and methods. In order to explore the possibilities of ultrasonography in the diagnosis of the femoral head osteochondropathy we have examined 41 children aged 4 to 9 years old, seeking first complaining of pain, limitation of movement in the hip joint.

Sonographic study performed by a scanner «Enviser HD» (Philips) using a 5-12 MHz linear transducer and 2.5 MHz convex sensors in standard dimensions (along the projection of the femoral neck parallel pupartoviy bundle, stepping down to 1 cm. Patient was in a supine position, with straighten and divorced in knee and hip joints feet. In order to assess the state of the cartilage covering the front-upper pole of the femoral head scan performed on the inner surface of the upper third of the thigh in

the position Lauenshteyna. Examination of each child performed in the dynamics of 7-14 day intervals for 3 months. In all cases investigated and asymptomatic contralateral joint.ature called "stage dorenthenolohichnyh change."

Results. The initial examination conducted all children with complaints of pain in the hip before treatment. In all cases, the complaint first arose, traumatic injury denied. In the history of 26 patients undergoing eve of infectious diseases, another 7 had chronic source of infection. Clinical examination determined lameness or inability independent movement, forced position limbs, limiting range of motion in the hip joint, the pain that appeared by extraction and internal rotation of the hip. Differential diagnosis conducted between disease Legg-Calve-Perthes, inflammation of the synovial membrane, congenital dysplastic changes of the hip joint, traumatic injuries, rheumatological, neurological diseases, bone tumors. Pre radiography was performed hip, while significant structural changes have been observed in any case.

In sonographic examination in all patients with koksalhiyamy were signs of synovitis of the hip joint, which was determined by scanning along the projection of the femoral neck augmentation sonographic articular space - the distance between the neck loop and inner surface of the joint capsule

Conclusions. In summary, we conclude that the sonographic study of the hip joints can be used during the differential diagnosis between disease Legg-Calve-Perthes dorenthenolohichniy on stage and transient synovitis. We consider it appropriate to conduct studies sonographic hip dynamics, with an interval of 7-14 days in all cases koksalhiyi unspecified reasons. Osteochondropathy likely signs of femoral head can be considered synovitis longer than 4 weeks, expansion and consolidation shadows periarticular soft tissues, increasing intensity and expansion of the shadow joint capsule, intramuscular expansion gaps between medium, small sciatic and lumbar-iliac m 'yazamy due to edema, heterogeneity of the structure and reduction of echogenicity cartilage epiphysis.

Key words: Legg-Calve-Perthes disease, transient synovitis, sonographic research, differential diagnostics.

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Vinnytsia National M.I. Pirogov Memorial Medical University (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

ATOPIC DERMATITIS AMONG CHILDREN AND TEENAGERS IN VINNITSA REGION: INCIDENCE AND CLINICAL FEATURES

Introduction. Studying of the atopic dermatitis (AD) prevalence, clinical features among children and youth in Vinnitsa region is the actual problem of modern medicine and the prevention, early detection and treatment of this disease should be based on the results of clinical and epidemiological studies.

The *aim* of our study was to study prevalence and clinical features of atopic dermatitis among children and youth in Vinnytsia region.

Materials and methods. In the first phase of clinical and epidemiological research we used a specially designed questionnaire modified to identify respiratory and skin symptoms of allergic deseases. This survey was conducted on 7784 people aged 3 to 27 years. During the second phase of the study verification of clinical diagnosis was carried out.

Results. As a result of in-depth clinical examination, AD diagnosis was confirmed in 466 people, accounting for 5.99% of the total surveyed. Atopic dermatitis is almost equally met among men (18.83% of cases, 95% CI: 0.17; 0.21) and female (16.13% of cases, 95% CI: 0.14; 0.18) (φemp = 1.833, the difference insignificant).

Most often manifested eritemosquamous form of the disease with and without lichenification - 199 persons or 42.8% (95% CI: 0.38; 0.47) and 175 cases or 37.5% (95% CI: 0.33; 0.42) observations, respectively. Likhenoid form of AD was diagnosed in 92 (19.7%, 95% CI: 0.16; 0.23) patients. Exudative form of AD was not

diagnosed in any case. Analysis of these data allowed us to establish that likhenoid form of AD significantly more common among women (23.7%, 95% CI: 0.20; 0.26) than men (16.3%, 95% CI: 0.14; 0.17) (φemp = 2.467, significant difference). In other forms of AD significant difference in their frequency depending on the sex have not found (p> 0,05 for all cases). In addition, eritemosquamous form of lichenification almost equally often 38.3% (95% CI: 0.31; 0.45) versus 45.7% (95% CI: 0.38; 0.53) of cases (φemp = 1.403, the difference insignificant) was found in the first and second age groups, but much less frequently among young people - 28 people (16.0%, 95% CI: 0.11; 0.22 observations, φemp1 = 3.221, φemp2 = 3.452, significant difference). Almost half of the surveyed (52.8% (95% CI: 0.46; 0.60) of cases) with eritemosquamous form of AD were children of the first age group and the third part (39.7% (95% CI: 0 33; 0.46) observations) - the children of the second age group (φemp = 2.633, significant difference). Among the 3rd age group in only 7.5% of cases we diagnosed this form of the disease (φemp1 = 10.693, φemp2 = 11.525, a significant difference). At likhenoid form of AD the vast majority (69.5% (95% CI: 0.60; 0.78) of cases) of individuals we found in the 3rd age group. In the second age group this form of AD was found in 27.2% (95% CI: 0.19; 0.37) of persons and of the first age group - only 3.3% (95% CI: 0.01; 0.09) observations (φemp = 9.521, significant difference).

Mild severity was discovered by us in 31.3% (95% CI: 0.25; 0.37) of cases (146 surveyed). Moderate severity of AD was found in 238 persons (51.1% of cases, 95% CI: 0.43; 0.57). Severe AD was found in 82 children (17.6% of cases, 95% CI: 0.14; 0.21).

The first clinical manifestation of AD at four months of age was recorded in 65 cases (13.95%, 95% CI: 0.11, 0.17), and 2/3 (41 patients) of them were children with severe AD. In 214 (45.92%, 95% CI: 0.41; 0.50) persons AD debuted in 5-12 months of age, in 153 (32.83%, 95% CI: 0.29; 0.37) patients it started aged 1 to 2 years, and only 34 (7.3%; 95% CI: 0.05; 0.10) those pathological process in the skin arose over the age of 2 years. With age, the clinical manifestation of AD decreased, but it started to join respiratory form of allergy. Thus in 225 (48.28%, 95% CI: 0.44; 0.53) patients

with AD subsequently formed bronchial asthma (BA) and / or allergic rhinitis (AR). Thus, in 106 (47.11%, 95% CI: 0.40; 0.53) patients on the background of AR developed AD, in 41 (18.22%, 95% CI: 0.14; 0.24) persons developed asthma and in 78 (34.67%, 95% CI: 0.29; 0.41) was observed AD in combination with AR and asthma.

The most common (74.0% (95% CI: 0.69; 0.79) of cases) by anamnesis data in case of AD patients was a food allergy. Among etiologically significant products of the first manifestations of AD parents were named: cow's milk - 51.29% (95% CI: 0.43; 0.60) and infant nutrition - 48.71% (95% CI: 0 40; 0.55) cases. Rarely as potential allergens called cereals - 17.38% (95% CI: 0.13; 0.22), eggs - 8.80% (95% CI: 0.04, 0 12), fish - 9.23% (95% CI: 0.04; 0.13), orange and other citrus - 6.65% (95% CI: 0.01; 0.12), tomatoes -4 94% (95% CI: 0.01; 0.09), chocolate - 12.23% (95% CI: 0.06; 0.18) observations.

The survey showed that in only 79 (16.9% (95% CI: 0.14; 0.20) patients was identified sensitization to one group of allergens, mainly to food - in 10.6% (95% CI: 0.04; 0.14) and the household allergens - 6.3% (95% CI: 0.02; 0.10) persons. Sensitization to two or more groups was found in 387 (83.1% 95% CI: 0.79; 0.86) patients.

The foci of chronic infection of the upper and lower respiratory tract infections (chronic tonsillitis, adenoiditis, otitis, nasopharyngitis, rhinosinusitis, retsydyvuyuschyy laryngotracheitis, bronchitis) were detected in 52.57% (95% CI: 0.48; 0.56) children of the first age group, 45.65% (95% CI: 0.40; 0.49) children of the second age group, and in 22.43% (95% CI: 0.18; 0.26) patients of the third age group. Gastrointestinal comorbidity we found in 31.43% (95% CI: 0.26; 0.35) of 1st age group children, in 34.78% (95% CI: 0.30; 0.38) children of the 2nd age group and in 25.23% (95% CI: 0.21; 0.29) children of the 3rd age group.

Conclusions. Based on the Phase 2 of clinical and epidemiological research atopic dermatitis verified in 5.99% of all persons. Among the clinical forms of atopic dermatitis in children and young people predominate eritemosquamous (42.8%) and eritemosquamous with likhenification (37.5%) form of the disease, significantly

smaller proportion (19.7%) was a form of atopic likhenoid dermatitis. Among the surveyed people with atopic dermatitis, regardless of age, significantly more often (51.07%) recorded moderate, less - mild (31.3%) and moderate (17.6%) AD. In individuals with atopic dermatitis AD prevails (83.1% of cases) polyvalent sensitization to allergens in the spectrum which often turns hypersensitivity to food (62.4%) and domestic (57.2%) allergens. For people with atopic dermatitis it characterized by its combination with allergic rhinitis (47.1% of cases), asthma (18.2% of cases) and two (34.7% of cases) these diseases. In 42.92% of those with atopic dermatitis revealed chronic and recurrent respiratory infections, and in 31.33% of cases - a pathology of the gastrointestinal tract that can affect the course of the underlying disease.

Key words: atopic dermatitis, incidence, clinical features, children and young people.

© **Panchuk O.Y.**

Vinnitsya National Medical University named Pirogov (56, Pirogov st., Vinnitsa, Ukraine, 21018)

PROFESSIONALLY APPLIED PHYSICAL TRAINING AS AN INTEGRAL COMPONENT OF A COMPLEX OF MEASURES AIMED AT INCREASING THE LEVEL OF PROFESSIONAL COMPETENCE STUDENTS OF MEDICAL HIGHER EDUCATIONAL INSTITUTIONS

Introduction. Professional competence as an extremely important medical, pedagogical and psychological category of modern science and practice is a set of health features, important psychophysiological functions and personal features of the human, who quite properly and quite correctly determine the degree of operational readiness of the organism to perform certain professional and resulting actions, implementation of knowledge and skills acquired in the course of special training and necessary to achieve the performance of work, very significant part of professional-

significant position in labor efficiency [Makarenko et al., 1987; Bodrov, 2001, 2006; Kundiev, Nagornaya, 2007; Serdyuk et al., 2012; Polka, Serheta, 2012].

The *aim* of the study was to determine the place and role of professionally applied physical training as an integral component of a complex of measures aimed at increasing the level of professional competence students of medical higher educational institutions who learn dental specialty.

Materials and methods. The study was conducted among students of dental faculty Vinnitsya National Medical University named Pirogov based on the use of conventional analytical, hygienic, psychophysiological and psychodiagnostic methods and methods of multivariate statistical analysis.

The functional features of higher nervous activity (latent variables of visual-motor reaction indices, mobility and balance nerve process), functional features of visual sensory system and the somatosensory analyzer are investigated.

Properties of temperament girls and boys were estimated based on the use of questionnaires Eysenck and Rusalov, anxiety – on the use oquestionnaire Spielberger, the properties of character – on the use of questionnaires Kettell, Mini-mult and Shmishec, level of subjective control – on the use of questionnaire Rotter. Features of mental conditions were determined based on the application of the test methods elections color Luscher, questionnaire Malkova and psychometric Zung scales of self-assessment of depression, the spread of aggression and empathic abilities – on the application questionnaires Bassa-Darki and Boyko. Patterns of formation of psychological defense mechanisms were established based on the use of of questionnaires Plutchik-Kellerman-Conte, the level of social and psychological adaptation of students – on the use of the questionnaire Rogers and Diamond, level expression of emotional burnout – on the use of personal questionnaire Boyko.

Results. As an extremely important area targeted training students should consider strengthening its professional and applied nature, increasing the efficiency of labor education, optimization guidance and professional training. In this regard, a mandatory element of physical education, which enhances the body's adaptive resources are professionally applied physical preparation, which is specialized

pedagogical process, which provides development and improvement of physiological and physical qualities, motor skills and abilities of the body in accordance with the needs of the profession. In fact, professionally applied physical preparation is a specific type of physical training, which has a systems-functional specificity and is the goal of active formation of professional and important functions in the various sectors of the economy, is no exception and the medical profession.

The main elements of the exercises set of professional-applied physical training were: exercises for speed development of visual-motor reactions, exercises for development of attention, exercises for developing motor coordination and exercises for the development of resistance to the works of forced work postures, complex exercises, aimed at improving brain blood circulation and relieve muscle tension, breathing exercises, visual and asymmetric isometric exercises, psychophysical training.

The results certify that the use of professional-applied physical training exercises, during the educational process and, above all, outside the classroom period produces a pronounced positive effect ($p<0,05$-$0,001$) on the formation characteristics of higher nervous activity in particular indicators differentiated rate of visual-motor response improved to 15,0-18,0% (in traditional terms – on 2,0-5,5%), indicators of mobility of nervous processes – by 40,5-45,0% (in traditional terms – on 7,0-8,5%) performance balance of nervous processes – to 35,0-42,0% (in traditional terms – on 5,0-7,0%), attention and performance features mental performance, including increased levels of mental stability to 20,5-25,7% (in traditional terms – decreased by 3,0-5,0%) and the characteristics of the functional state of the visual sensory system and the somatosensory analyzer, including indicators critical fusion frequency of light flashes upgraded to 15,0-20,5% (in traditional terms – worsened to 2,5-3,0%), the value of the integral index improved coordination at 20,5-25,5% (in traditional conditions – on 3,5-4,5%).

Instead, the use of complex professional-applied physical training in the practice of higher educational institution medical profile led to the emergence of improvements ($p<0,05$-$0,001$) by a correlate of mental adaptation as the

characteristics and properties of temperament, situational and personal anxiety, positive effect especially the formation of the prerequisites for the development of character accentuations by disturbing, demonstrative, excitable and dysthymic types, helps to significantly increase the number of individuals with advantage in the structure of the individual internal manifestations of subjective control in interpersonal relationships and relationship to health and disease, causes the appearance pronounced signs of a positive impact on the basic characteristics of mental state, accelerates the formation of preconditions for overcoming the adverse trends of changes in the personal sphere, manifestations of emotional and psychological discomfort too.

Conclusions. Obtained in the course of research results define an extremely important place and undeniable major role professionally applied physical training as an integral part of the complex of measures aimed at increasing the level of professional competence of students of medical universities. The data obtained clearly demonstrate the presence of a pronounced positive impact of the use of basic exercises on the development of the leading professional and important physiological functions and personality characteristics of girls and boys who learn dental specialty. The features in the future should be taken into account in the development of modern educational programs and technologies and the creation of healthy, on their basis, preventive medical educational space in higher education.

Key words: students, medical higher educational institutions, professional competence, professionally applied physical training.

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National Pirogov Memorial Medical University, department of philosophy and social sciences (Pirogov St., 46, Vinnitsa, Ukraine, 21008)

PROBLEMS OF STATE REGULATION OF FOOD PRODUCTS PRODUCTION AND PARAMETERS OF QUALITY OF FOOD PRODUCTS IN UKRAINE AND IMPACT OF IT ON THE HUMAN HEALTH

The *aim* of the article is to analyze the condition food products production in Ukraine, the directions of the state regulation of volumes and parameters of quality of food products are define, the impact of it on human health are describe.

Analysis of statistical data on the current nutritional status of the population of Ukraine during the 1990-2014 indicates the presence of negative trends in the nutritional status of our population. There was a clear reduction in consumption of all food except egg, oil and other vegetable fats, vegetable and melon crops food, bread and cereal. Compared with rational nutrition standards for meat and meat products consumption in 2014 was 65,1%, for milk and dairy products – 58,7%, fish and fish products – 55,50%, fruits, berries and grapes – 57,8%.

The most important fact of low consumption of foodstuffs of Ukraine is first of all low efficiency agriculture, agriculture in particular and low purchasing power.

The low quality of food is observed. Analysis of the research shows that in 2012 the State Inspectorate for Consumer rejected 36% of food received for review. There is no proper control of the product quality in our country today.

Conclusion. For state regulation of food products production and parameters of quality of food products in Ukraine in present time we should:

- develop and implement a program of highly agriculture and processing industries based on the use of science and the best of national and international experience, aimed at increasing quality of food;
- develop and adopt on the governmental and regional level the concept of healthy food;
- develop and implement national and regional levels destination food programs;
- embargo the import from abroad and domestic supplies to the consumer market of counterfeit and dangerous foodstuffs
- revision the state structure of the consumer basket, taking into the normal physiological needs of human reproduction.

Key words: state regulation, production, quality of food products, nutrition, health.

© Serheta I.V., Drezhenkova I.L.

Vinnitsa National Pirogov Memorial Medical University (56, Pirogov st., Vinnitsa, Ukraine, 21018)

COMPLEX HYGIENIC ASSESSMENT OF HABITUAL PHYSICAL ACTIVITY OF MODERN STUDENTS ENROLLED IN MEDICAL HIGHER EDUCATIONAL INSTITUTION

Introduction. PA is an inherent part of the routine- life of a man as usual taken to determine PA. Among its quantitative parameters, such as habitual PA accepted criterion feature motive of human activity that determines the relevance of its value biological needs for the movement, the most important value of energy throughout the day, the number of movements during the day and the duration of the dynamic component in the daily time budget for day and week, and average number of movements. It is not sufficient, low, one that does not meet the biological needs, level of habitual PA significantly reduces the adaptive resources of the organism, causes lack of harmony of the personality, expressed in the degrees reduces the economic potential of the society, etc.

The study is a comprehensive hygienic assessment of the habitual physical activity advanced students studying in terms of medical higher educational institutions.

Materials and methods. The basis of studies conducted and involved the determination of usual daily PA medical students were determining the amounts of daily energy amount locomotions and duration dynamic component in the daily time budget 194 girls and 143 boys who studied for 3 year s in Vinnitsa National Medical University of Pirogov.

The values of daily energy (in kJ) expected time and motion-tabular method,

the number lokomotsiy in the daily cycle (in steps) was helped using stepmessures CMM-6 "Zorya" and AstraZeneca and duration of the motor dynamic component (in minutes), calculated on the basis of time and motion observations of questioning students.

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 by Vinnitsa National University of Pirogov, license №AXX910A374605FA).

Results. When determining quantities and hygienic assessment of students' daily energy should emphasized that the corresponding values of energy on Monday in girls constituted 10577,36 ± 187,45 kJ young guys - 13214,26 ± 287,68 kJ (p (t) E. S <0,001), Tuesday - according 10194,46 ± 166,48 kJ by girls and 12942,49 ± 263,19 kJ by boys (p (t) d th <0,001), on Wednesday - according 10294,88 ± 152,21 kJ girls and 13122,32 ± 278,72 kJ by boys (p (t) d th <0,001), on Thursday - according 10321,61 ± 178,07 kJ by girls and 12879,26 ± 269, 88 kJ by boys (p (t) d th <0,001), on Friday - according 10353,03 ± 165,65 kJ by girls and 12749,02 ± 268,15 kJ by boys (p (t) E. S <0,001), on Saturday - according 10245,00 ± 178,42 kJ by girls and 12859,44 ± 290,51 kJ by boys (p (t) d th <0,001), on Sunday - according 9739,49 ± 167,27 kJ girls and 12553,68 ± 294,75 kJ by boys (p (t) d th <0,001). Considering the features specified sex-differences between the figures obtained, should consistently emphasize their authentic character throughout the daily cycle (p (t) d th <0,001).

Interestingly should acknowledge data describing the oscillations of the studied parameters values in the daily cycle. Both girls and boys among the biggest daily energy figures registered on Monday, the lowest - on Sunday.

Thus, the most significant of the degree distribution among students girls had to consider the value of daily physical activity in the range of 10000 to 11000 kJ (22,3%) in the range of 9000 to 10000 kJ (21,2%) and within from 8000 to 9000 kJ (19,2%) among youth - the value of daily physical activity in the range of 10000 to 11000 kJ (16,2%), ranging from 13000 to 14000 kJ (14,8%) and between 11000 to 12000 kJ (13,4%).

Conclusions. While the definition and implementation of complex hygienic estimation of the daily energy amount locomotions in the daily cycle duration of students found that the average daily energy totaled 10246,55 ± 144,45 kJ girls and 12902,93 ± 246,30 kJ among youths, averages the number locomotions - 16138,34 ± 306,05 steps among girls and 17468,56 ± 329,94 steps among youths.

The data obtained define the fact that the starting element studies that are carried out with in the future, should be generalized analysis features as PA quantities girls and boys, and distribution features of individual indicators in the daily PA budget time.

Key words: students, physical activity, complex hygienic assessment

REVIEW ARTICLES

© **Goray M.A., Gadzhula N.G.**

Vinnytsya National Pyrogov Memorial University, Therapeutic Dentistry Department (Pyrogov Str., 56, Vinnytsya, Ukraine, 21018, marinagoray@gmail.com)

IMMUNOLOGICAL ASPECTS OF CHRONIC MECHANICAL TRAUMA OF THE ORAL MUCOSA

In the article the modern literary data about etiological factors and the role of immunoglobulins, cytokines and lactoferrin in the development of chronic mechanical trauma of the oral mucosa are reviewed.

Purpose of this research: to assess the changes of local immunity at chronic mechanical trauma of the oral mucosa.

The authors convincingly prove that in development of local chronic inflammation the leading role have proinflammatory cytokines, which include IL-1, IFN-γ, TNF-α. They are synthesized predominantly by macrophages in inflammation focus in response to tissue damage. Proinflammatory cytokines activate metabolism

of connective tissue, stimulate the proliferation of fibroblasts and epithelial cells, which is important for damage, healing and restoring of tissue.

The authors also accentuate attention to suppression of the "first line of humoral

defense" within the surface of the mucous layer that is provided by ratio of sIgA /

mIgA and activation of IgG synthesis, which forms the secondary immune response

at the level of proper mucosal layer, at damage of the integrity of the epithelial layer due to chronic mechanical irritation.

Conclusion. In the article the need to research of changes in indicators of mucosal immunity in patients with chronic mechanical trauma of the oral mucosa and their correction during treatment are discussed.

Perspective of further researches is the use of immunomodulatory therapy in the complex treatment of chronic mechanical trauma of the oral mucosa.

Key words: chronic mechanical trauma, cytokines, mucosal immunity, lactoferrin.

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Vinnytsia National M.I. Pirogov Memorial Medical University, Department of Psychiatry, Narcology and Psychotherapy with the Narcology and Psychiatry course of the Faculty of Postgraduate Education of Physicians (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

MODERN FOCUS ON PSYCHOPATHOLOGY OF ADDICTION DISEASES

Introduction. *The aim* of this study was to investigate factors modeling the addiction Addictions started to be considered diseases only in the 19th century. Currently the medical classification of addictions is reflected in various sections of

mental diseases. Despite a significant breakthrough in the medical science aetiopathogenesis of most addictions is still not clarified. Therefore the main groups of mental disorders rely on the symptomatology of the disease syndromes. In case of addictions the symptomatology arises from the properties of psychoactive substances. The cause of the addiction development is the combination of the two components: a person and psychoactive substances.

Narcology (addiction medicine) is part of psychiatry and therefore diseases associated with the use of psychoactive (narcotic) substances are described in ICD 10 in the pathology section "Mental and behavioural disorders due to psychoactive substance use" F10 -F19. Addiction, as other mental disorders, results in "the loss of ability to effectively regulate the internal relations of the organism with the environment, and sometimes to the loss of inner balance or adaptation to the environment". Drug addiction is a chronic disease of the central nervous system that runs on the principle of remissions and relapses, and often leads to disability. Drug addiction syndrome is defined as "a complex of physiological, cognitive, behavioral manifestations, among which the consumption of psychoactive substances dominates over other behavioral manifestations." This definition, in general but fundamental categories, describes the problems caused by the use of psychoactive substances.

Results.

Epidemiological data collected over many years show that 60% of addicted people have other mental disorders, among them there are complexes (groups): depressive, obsessive, psychotic, hyperactivity, mobility and personality disorder. These disorders change their psychopathological image and modify the course of dependence over time.

Conclusions. Etiopathogenesis of the most of mental disorders associated with addiction diseases is not fully elucidated. In this case the symptoms of disease arising from substance properties. The cause of addiction is a combination of two components: human and psychoactive substances.

Key words: drug abuse, addiction, psychoactive substances, psychopathology.

© Maevsky O.Ye., Mironov Ye.V.

Vinnytsia National M.I. Pirogov Memorial Medical University, Department of Preventive Dentistry (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

CHANGES IN THE SKIN AFTER THERMAL BURNS (Literature Review)

Thermal destruction occupies a leading position in the structure of traumatic injuries, taking second place, just behind traffic injuries. According to WHO, each year, thermal injury receives about 50 mln. people. 90% of the burn injuries occur in countries with low and middle-income. In Ukraine for the past 10 years, each year registers about 100 thousand, of which 25% are children, and although the number of patients decreases, but increasing the severity of burns.

Aim of our work – study data of modern scientific literature regarding morphological and functional changes in the skin after thermal burns.

Based on macroscopic and histological studies appearance, burn healing process consists of 3 phases: inflammatory (from 3 hr. to 1 day after the burn), proliferative (from 1 to 7 days) and maturation (from 7 to 14 days). Burn injury causes skin lesions and all the elements located in it. The degree of skin lesions at burn injury also depends on the person's age. The high level of morbidity and mortality from burns may be partly due to immune disorders and wound healing complications.

Conclusion. On the basis of the stated material can be argued that to date the problem of burn injuries of the skin is important and not fully understood question, whose solution is the key to successful and effective treatment of burn disease and its complications.

Key words: burn skin damage, morpho-functional changes.

© Ryznychuk M.O., * Pivtorak V.I.

SEPARATE CONGENITAL ANOMALIES OF LOWER URINARY TRACTS

Department of Pediatrics and Medical Genetics
HSEE of Ukraine «Bukovinian State Medical University», (Chernivtsi)
*Department of operative surgery and topographic anatomy
Vinnytsya National Pirogov Memorial Medical University, (Vinnytsya)

Pathology of the urinary system in children remains a serious problem and has a large social significance. Recent decade of the last century and the beginning of XXI century are characterized by a significant increase in the number of children with diseases of the urinary system, so study of their epidemiological characteristics considered to be topical issue of pediatrics. Congenital malformations take the leading position in the structure of infant mortality in most countries. According to WHO, worldwide prevalence of congenital malformations ranging from 2,7 to 16,3 ‰. Over the past decade in Ukraine, congenital malformation of the urinary system are on the fourth place and make up 30 % of all cases of congenital anomalies of various organs and systems.

This literature review will consider some anomalies of the urinary bladder, such as abnormalities of the urinary ducts (vesico-umbilical fistula, umbilical fistula, diverticulum of the bladder, bladder agenesis), doubling of the urinary bladder, bladder exthrophy, ectopia of the bladder, contracture of the bladder neck, congenital hypertrophy of the muscle-emptier of the urinary bladder. This will also address to anomalies of the urethra, urethral atresia, obliteration of the urethra (segmental and complete obliteration of the urethra), doubling of the urethra.

The cleft of the umbilical (final) part of the urinary duct – umbilical fistula, which allocated mucus and periodically closes, is most often observed in clinic.

Agenesis of the urinary bladder (a congenital lack of it) is an extremely rare anomaly. Agenesis of the urinary bladder usually combined with other disabilities and is incompatible with life.

Doubling of the urinary bladder also happens very rarely. There is a septum between right and left halves of the bladder. The eye of the ureter opens in each half of it and each half of the urinary bladder has a neck. Full doubling of the urinary bladder combines with a doubling of the urethra. Incomplete doubling has a common neck and one urethra. Can also be a full septum of the urinary bladder that divides it in sagittal or frontal directions.

Diverticulum of the urinary bladder is a saccular protrusion of its wall. It can be single and multiple. The cause of congenital diverticulum is an incorrect formation of the bladder wall. Bladder exthrophy – a congenital absence of the front and lower part of anterior abdominal wall. This anomaly occurs with a frequency of 1:10,000 newborns. Boys suffer in 3 times more often than girls.

Urethral valves are the result of incomplete reduction of mesonephral ducts or urinary-genital membranes. Urethral valves – a membrane in the shape of a crescent or a watering can, and on both sides are covered with mucous membrane. Valves are located at the rear of the urethra at the spermatic tubercle or slightly lower or higher from it. This anomaly is often combined with other disabilities – spermatic tubercle hypertrophy, testicular ectopias et al. Congenital obliteration (closure of the lumen) over the entire length of the urethra is very rare and is always combined with other abnormalities that are incompatible with life. Urethral diverticulum is a saccular protrusion of its back wall. It's observed mostly in males. During urination urine gets into the lumen of the diverticulum, which is emptied in between urination.

Key words: bladder, urethra, malformations.

© Rymsha O.V.

Vinnitsa National N.I.Pirogov Memorial Medical University, Vinnitsa, Ukraine

TO CURRENT ESTIMATES OF NOSOCOMIAL INFECTIONS (OVERVIEW OF LITERATURE)

The proposed review of the literature devoted to one of the most urgent problems of modern medicine - Nosocomial infections. Criteria considered nosocomial infection epidemiology, pathogenesis, origin, risk factors. Particular attention is paid to economic losses from the development either on the basis of cost-controlled studies of patients with different localization nosocomial infections. The data on the phenotype and the mechanisms of antimicrobial resistance of these groups of microorganisms. It reflects modern approaches to the prevention and control of nosocomial infections, indicating the advantages and disadvantages of a number of commonly used methods. The data on the structure of the nosocomial infections , their features in a multidisciplinary hospital and special categories of patients. Shown independent risk factors for the development of certain types of nosocomial infections. General principles of antimicrobial therapy nosocomial infections I. Stress the importance of multicenter studies of resistance of pathogens nosocomial infections according to international standards, as the data from well-designed multicenter studies of antimicrobial resistance, are not only of epidemiological value, but also provide the basis for making recommendations on the inclusion / exclusion of antibiotics in the local drug formularies.

Resistance for antiseptics is produced slowly. The comparative characteristic of modern antiseptics in major clinical isolates of microorganisms.

Conclusion. Antiseptics enhance the effect of antibiotics and recommended in the complex treatment of nosocomial infection.

Key words: nosocomial infections, antibiotics, antiseptics, decamethoxin, dekasan, resistance.

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Vinnytsia National M.I. Pirogov Memorial Medical University, Department of surgery № 2 (56, Pyrogov str., Vinnytsia, Ukraine, 21018)

THE FINAL HEMOSTASIS PROBLEM DURING LIVER RESECTION

The reliable hemostasis and biliostasis is unsolved problem in the resective hepatology. The volume of the blood loss depends of the type of operation and consists from 100 till 3000 ml. Inadequate contractile ability of the liver parenchyma, surgical anatomy featuresand big volume of the liver perfusion contribute to the massive bleeding during liver resection. All hemostatic measures are divided into three groups: hemostatic sutures, coagulation and separation methods**.** ***Hemostatic sutures*** – stop bleeding because of the blood vessels and liver parenchyma compression. The risk of the complications after hemostatic sutures consists 50-60 %. The liver parenchyma necrosis accompanied by sutures relaxation and can lead to the development of the bleeding or bile fistula formation. ***High-frequency electrocoagulation*** is wildly used and highly effective method during liver resection. It allows to separate the liver parenchyma and to stop bleeding in the same moment. But high-frequency electrocoagulation can lead to the development of the deep coagulation liver necrosis with next necrotic tissues abruption with secondary bleeding or bile leakage. ***Argon electrocoagulation*** – combining of the high-frequency current and argon flow. This method is very sparing for tissues. But it has a numerous of the shortcomings: a risk of the gas embolism during manipulation near the great vessels, tumor cell spread, the depth of the liver necrosis is 2-5 mm. ***Tissue electric welding method*** - based on the principle of the dosed modulated current supply, automatically generated, depending of the tissue impedance. This method has a numerous of the advantages, one of it is gentle scar formation. It is very perspective method, which need further experimental and clinic study. ***Cryo-resection of the liver parenchyma*** – method, when low temperature lead to the liver parenchyma destruction depth 500 microns. The general reaction of the organism is minimal. But this method can be accompanied by bleeding. ***Plasma-scalpel–***can cut and coagulate liver parenchyma by plasma energy, which formedas a result of high temperature (3000ºC). The risk of the gas embolism, delayed tissue regeneration limit wide use of this method during liver resection. ***Ultrasound dissection*** – method, which based on the tissues destruction and cavitation processes. The main disadvantage of the ultasonic dissection method is an dependence of it's effect from the liver parenchyma

condition (in the case of liver cirrhotic parenchyma the time of resection is not reduced). The ***Pringle maneuver*** might be applied during the liver resection. This method allows to stop liver supply using the hepato-duodenal ligament compression.

Conclusion. Thus, none of the known methods of resection can not be the "gold standard". That's why surgeon-hepatologists prefer resective combined methods: coagulation methods combined with liver parenchyma dissection methods. The tissue electric welding method – method, developed by domestic scientists, is very perspective to use during liver resection and requires further experimental and clinical study.

Key words: liver resection, hemostasis, bleeding, bile leakage.

CHRONICLE

THE 80TH ANNIVERSARY OF DOCTOR OF MEDICAL SCIENCES, PROFESSOR LEONID MOISEEVICH SHAFRAN

THE 50TH ANNIVERSARY OF DOCTOR OF MEDICAL SCIENCES, PROFESSOR IGOR VALERIEVICH GUNAS