ВІСНИК МОРФОЛОГІЇ – 2016. – Т. 22. – № 2
(ВЕРЕСЕНЬ)
REPORTS OF MORPHOPOGY 2016. – VOL.22.- №2
(SEPTEMBER)

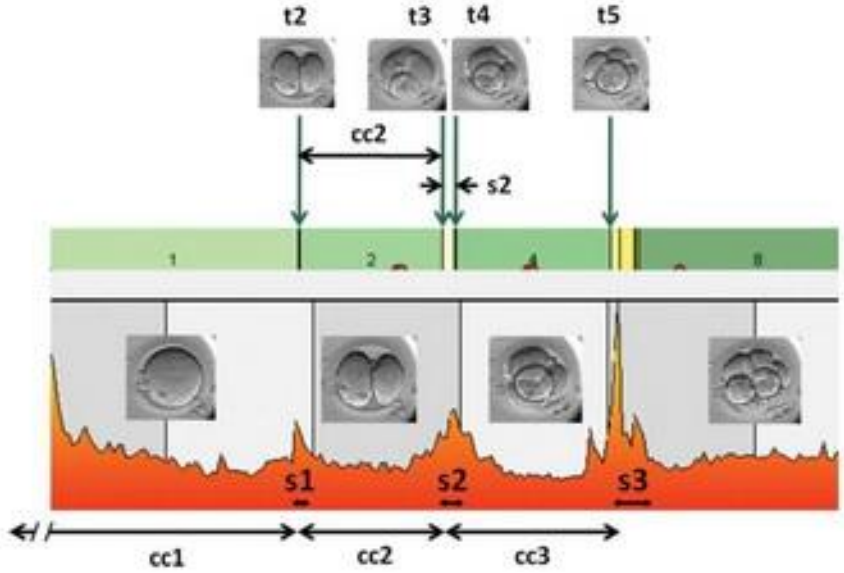
ОРИГІНАЛЬНІ ДОСЛІДЖЕННЯ
ORIGINAL RESEARCH

© Masliy Y.[1], Mazur P.[1], Sudoma I.[1,2], Mykytenko D.[1]
[1]Clinic of Reproductive Medicine "NADIYA" (street. Maxim Krivonos, 19th. Kyiv, Ukraine, 03037); [2]Shupyk National Medical Academy of Postgraduate Education (st. H. Stalinhradu, 16, Kyiv, Ukraine, 04112)

MORPHOKINETIC FEATURES OF EMBRYOS IN PATIENTS WITH MULTIPLE FAILED IVF ATTEMPTS

Introduction. Multiple unsuccessful implantation programs in assisted reproductive technology (ART) - one of the painful problems of Reproduction.
Reasons for failure of implantation may vary, their diagnosis is difficult and many empirical approaches used to overcome them.
One such approach is to improve the selection of embryos for transfer to the uterus. Existing selection methods currently used in practice include: morphological assessment, time-lapse observation and preimplantation genetic research.
The aim of this study was to identify morphokinetic and morphological characteristics that would assess the potential of embryo implantation in women with multiple implantation failures.
Materials and Methods. For the study embryos of 23 infertile couples with repeated implantation failures (at least 4) in assisted reproduction programs were selected. To eliminate the influence of genetic factors on the ability of the embryo implanted, the work included only those patients who underwent preimplantation genetic diagnosis of embryos.
The average age of patients was 38 years. All women had a good ovarian reserve, a normal response to controlled ovarian stimulation (at least 7 oocytes average - 12.5±5,0). In men within study groups the severe forms of male infertility (no less than 1 millionsperm in the ejaculate) were not observed.
In all cases fertilization was performed by Intra Cytoplasmic Sperm Injection (ICSI) or Intracytoplasmic Morphologically Selected Sperm Injection (IMSI).
Embryos were cultured from the zygote stage (the first day after fertilization) to the Day 5 (6 or 7) at 5.3% CO_2 and 5.0% O_2 and temperature 37^oC in the same (single step) media (LifeGlobal® global® total®). Trophectoderm biopsy was performed on day 5-7 of embryos at the blastocyst stage.

Comparative genomic hybridization was performed using 24sure® array (BlueGnome, UK).
Single embryo transfer was performed in all cases; only euploid embryos were utilized.
The morphokinetics and the morphology of embryos selected for preimplantation diagnosis by aCGH were analyzed retrospectively.
Morphokinetic and morphological scores were made using the Embryoscope software. Morphokinetics was performed using the universal algorithm proposed by Meseguer M. and colleagues, which took into account the first cleavage time (t2), the times of appearance of the third blastomere (t3), the fourth blastomere (t4), the fifth blastomere(t5).
Graphical representation of elements of the algorithm:



All the embryos were divided into two groups: those who successfully implanted and those who did not implanted. The sign of a successful implantation was considered as the presence of the developing uterine pregnancy (a heartbeat, detected by ultrasound at 6 weeks of gestation).
The study was conducted from 2012 until 2015.
Results. 49 embryos euploid were transferred. Implantation rate (and pregnancy rate) was 41%. It was interesting that 8 out of 20 (40%) pregnancies were achieved by transfer of Day 6 embryos. Of the 20 embryos that implanted, no one stopped in development, so 20 children were born: 6 girls and 14 boys.
No difference was found in cleavage pattern during the early stages of embryo development among embryos that implanted and embryos that not implanted, respectively, there was no difference in the distribution of morphokinetics scores within the two groups.
Conclusions.
1. Morphokinetics characteristics of early embryo development, proposed by universal algorithm (Meseguer M.), do not allow to choose the embryos that could potentially implant.
2. Morphological signs of early embryos such as the percentage and severity of multinucleation are important indicators of implantation potential of embryos.

3. Time-lapse observation is the informative research method of embryos in patients with multiple implantation failures that can provide additional useful information to improve embryo selection for transfer into the uterus.

Key words: in vitro fertilization, multiple implantation failures, embryoscopy, time-lapse technology, comparative genomic hybridization.

© Nazarchuk O.A., Paliy D.V., Nahajchuk V.I., Osadchuk N.I., Köenig E., Bobyr V.V.

National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

ANALYTIC PROGNOSTICAION OF SENSITIVITY OF *PSEUDOMONAS AERUGINOSA* TO AMINOGLYCOSIDES

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

The aim of the research was to carry out analytic prognosis of sensitivity *of Pseudomonas aeruginosa* clinical strains to aminoglycosides.

Materials and methods. The research was carried out in 2011-2015 years. In the study 380 patients with deep burns, having infectious complications, were examined. All patients, enrolled in the study were treated in Burn Centre of Vinnitsa Regional Clinical Hospital named after N. I. Pirogov according to standard management guidelines. All of them received antibiotics. From patients there were isolated 127 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 antibiotics 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 aminoglycosides 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 (r2). "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 gentamycin, amikacin. The analysis of smoothed data series (2011-2015 years) of *P. aeruginosa* sensitivity have shown its variable sinusoid tendency to tobramycin. *P. aeruginosa* strains were found to be low sensitive to gentamycin (25,92 – 46,15%) with tendency of decreasing their sensitivity. As for tobramycin, we found that it lowest sensitivity in *P. aeruginosa* (16%) in 2015 y., but sinusoid prognostic model seemed about sensitivity revealing to this antibiotic. Mathematical extrapolation of previous normality testified decreasing sensitivity of *P. aeruginosa* in future to amikacin from 53,8%% to 30,76%.

Conclusion. Obtained formulas of analytical prognosis of sensitivity of *P. aeruginosa*, colonizing burn surfaces in patients, proved the decreasing effectiveness

of aminoglycosides in prophylaxis and treatment of infectious complications, caused by this opportunistic pathogen.
Key words: *Pseudomonas aeruginosa*, sensitivity antibiotics, aminoglycosides.

© Tyholaz V.O., Shkol'nikov V.S., Guminsky Yu.Y.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

STRUCTURAL AND MORPHOMETRIC FEATURES MEDULLA IN HUMAN FETUSES WITH SACROCOCCYGEAL TERATOMA

Introduction. In the available scientific literature no morphometric data neural systems in the medulla oblongata fruits of human sacrococcygeal teratoma and their comparative characteristics with similar parameters in fetuses without malformations. Therefore, requiring deeper and detailed study of morphometric parameters of the structures of the medulla oblongata in fetuses with this defect.
The purpose - determine morphometric parameters and structure of the medulla oblongata in human fetuses 17-18 weeks of fetal development sacrococcygeal teratoma and compare the findings with those in fetuses without malformations
Materials and methods. An anatomical and histological study of 15 human fetuses aged 17-18 weeks of fetal development, parietal-coccygeal length was 152,6 ± 4,9 mm, weight - 262,7 ± 11,2 g (congenital malformations of the central nervous system are not available) and anatomical and histological study of the medulla oblongata 2 female human fetuses with sacrococcygeal teratoma 17-18 weeks of fetal development. Thyme-coccygeal length was 165,0 ± 2,3 mm, weight - 385,8 ± 9,4 g.
Material for the study was obtained as a result of late abortions in the Regional Office postmortem s. Vinnytsa, after which it was fixed in 10% neutral formalin solution. With paraffin blocks performed serial horizontal sections of the medulla oblongata thickness of 10 - 15 microns. Preparations stained with hematoxylin-eosin, toluidine blue and the Van-Gisoni.
Obtained drugs evaluated visually using microscopes Unico G380, MBS-9, perform video capture camera Trek. During morphometric study used a software ToupViev. Digital data were processed statistically.
Materials research is not contrary to the fundamental bioethical norms Helsinki Declaration adopted by the 59 General Assembly of the World Medical Association in 2008.
Results. The paper presents results of a study of morphometric parameters and structure of the medulla oblongata in human fetuses 17-18 weeks of fetal development sacrococcygeal teratoma and comparison of them with those in fetuses without malformations. Establish the nucleus of the medulla oblongata, and the form and degree of differentiation of neurons.

When comparing the structure and morphometric parameters medulla in human fetuses 17-18 weeks of fetal development sacrococcygeal teratoma with similar parameters in human fetuses without abnormalities found a number of differences.
Conclusions. In human fetuses with sacrococcygeal teratoma nerve cells that form the nucleus of the hypoglossal nerve uniform in size, the average area of the nucleus neurons than in fetuses without malformations. Dorsal nucleus of the vagus nerve in fetuses with human sacrococcygeal teratoma submitted two subnucleus in human fetuses without malformations three subnucleus. Sensitive cranial nerve nuclei in human fetuses with sacrococcygeal teratoma have clear contours, found most average area of neurons in the spinal trigeminal nucleus in human fetuses with sacrococcygeal teratoma, compared to the same parameters in human fetuses without malformations.
In the future, further developments planned in fetuses with sacrococcygeal teratoma determine the topography of neurons and glia cells of the medulla oblongata expression using immuno-histochemical markers and compare the results with those in fetuses without malformations.
Key words: sacrococcygeal teratoma, morphometric, parameters medulla oblongata, the nucleus of the medulla oblongata.

© Gerych O.K., Grigorenco A.P., Horbatiuk O.H.,, Binkovska A.M., Shatkovska A.S.
National Pirogov Memorial Medical University, Faculty of Postgraduate Education (Hotovytskogo, 6, Khmelnytskyi, 29016, Ukraine)

CHANGES OF ANALGESIC EFFECT OF SODIUM DICLOFENAC UPON CONDITIONS OF OVERLOAD OF THE RATION WITH FAT AND EXPERIMENTAL DIABETES MELLITUS

Introduction. Diabetes mellitus, obesity and metabolic syndrome are the most widespread metabolic disturbances among the population of many countries, including Ukraine, and have already become a serious medical, social and economic problem [1]. These states are associated with severe pathology of the cardiovascular system, namely hypertensive and coronary diseases, cerebrovascular events, liver diseases, with the musculoskeletal system diseases and oncology diseases [2; 3]. The major cause of their occurrence is a common pathogenic factor that is insulin deficiency and (or) insulin resistance [4; 5]. Dysinsulinism or reduction of receptor sensitivity to insulin cause not only metabolism disorder of lipids, hydrocarbons, amino acids, but also cover almost all regulatory and metabolic systems of the body, including biotransformation of xenobiotics.
Metabolic changes in liver, caused by diabetes mellitus and obesity, may influence the processes of xenobiotics biotransformation, because metabolism of foreign substances proceeds in the most active way in this very organ. Diabetes mellitus and the overload of the ration with fat cause significant changes of the activity of enzymatic systems of oxidative and conjugation phases of metabolism of xenobiotics,

their elimination, and therefore may induce changes in pharmacodynamics and, as a result, pharmacological effect on the body.

The goal of the research was the assessment of the influence of experimental diabetes mellitus and high-fat diet on the analgesic effect of diclofenac sodium (substrate of cytochrome P4502C).

Materials and methods. The research was conducted on white outbred male rats, with the weight of 145 – 185 g. The animals of the control group received semisynthetic ration, made up according to the recommendations of the literature [6]. The ration consisted of casein and maize starch in the ratio of 20 and 65% (200 and 650 g correspondingly). The ration also included 10% of fat (100 g), including 5% of pig fat (50 g) and 5% of sun flower oil (50 g). The diet also included 1% of the vitamins blend, cooked on starch (10 g), 3% of the salts blend (30 g) and 1% of cellulose (10 g). The blend of vitamins and salts was also a part of ration. The average caloric content of the above-mentioned ration in equivalent to 1 kg of animal feed made up 4740 kcal, when the protein content made up 1130 kcal (24%); carbohydrates – 2665 kcal/g (56%); lipids – 945 (20%). All the components were thoroughly mixed with 2,5 liters of water and were cooked under slow heating conditions. In all experiments animals' nutrition and water provision was ad libitum.

High-fat diet was developed on the basis of recommendations of literature [7]. Literature data testify that the ration with the content of fat of more than 50% (of dietary calories) causes liver diseases, which are accompanied by an increase in activity of alanine- and aspartate aminotransferase, and other liver diseases symptoms [8]. In the ration of this group of animals the quota of fat was increased to 50% of total calorie content by reducing the proportion of carbohydrates to 26%. The ration included 200 g of casein, 300 g of starch and 250 g of fat (125 g of hog-grease and 125 g of sun flower oil). Cellulose, the blend of vitamins and salts were added to the ration, as it is in the control group. As far as a total weight of such a ration was a bit less than that of the control ration (for 200 g), the volume of water while preparing the diet was increased from 2,5 l to 2,7 l. Thus, the control and laboratory diet were not only isocaloric (4740 kcal), but also contained the same amount of proteins, vitamins and mineral salts. Before the use of a high-fat diet the animals were on the control diet for a week.

Another group of rats that had started receiving complete casein-starch ration a week before the experiments and had been receiving it throughout the experiment, was affected with severe experimental diabetes mellitus [9, 10]. Streptozotocin was injected one-time at a dose of 70 mg/kg intraperitoneally, using its solution in 0,1 M citrate buffer, pH 4,5. In the control group the animals received an equivalent volume of citrate buffer [10]. The animals became a part of the experiment in 2 weeks after the beginning of streptozotocin injection and with glucose level higher than 12 mmol/L [9]. The control group was comprised of intact rats (that did not not suffer from diabetes mellitus and were on a semi-synthetic diet). In additional control experiment nicotinamide at a dose of 230 mg/kg was injected intraperitoneally one-time 15 minutes before the injection of streptozotocin to prevent the effect of streptozotocin at a dose of 45 mg/kg. According to some sources this dose of nicotinamide almost completely negates the effect of streptozotocin [11].

Analgesic effect of diclofenac sodium was determined at the model of electric stimulation of the mucosa of the straight intestine of rats with a severe diabetes mellitus after injection at a dose of 10 mg/kg [12] and after 4 weeks of fat overload of ration.

The statistical analysis of the research results was done using biometry methods, the changes of indices were considered probable under $p<0,05$ [13].

Experiments on animals were carried out in compliance with national biotic standards [14].

Results. Within 4 weeks of being on a high-fat diet the animals of experimental group were gaining weight somewhat faster, the content of blood glucose lowered along with a significant increase of the amount of free fatty acids and ketone bodies.

It has been found out that a high-fat diet consumption influences the pharmacological effect of diclofenac sodium.

Starting with the 4-th hour of the examination after injection of sodium diclofenac, its analgesic effect on animals that consumed a high-fat diet became apparently higher in 33%, than in rats that were on a ration with usual fat content. During the 6^{th} hour of the experiment this difference reached 52,6%, and during the 8^{th} hour – 56,9%, correspondingly.

Blood glucose level of animals who received 70 mg/kg of streptozotocin increased thrice, the increase of the level of ketone bodies sixfold indicated the severity of diabetes mellitus, the level of free fatty acids increased in 2,5 times.

We have found out that diabetes mellitus may cause changes of pharmacological effect of sodium diclofenac (substrate of cytochrome P4502C [15, 16, 17]) for rats. Starting from the 2^{nd} hour of the observation the analgesic effect of diclofenac on rats that suffer from diabetes mellitus was 30% higher than for animals from the control group. In 4 hours the analgesic effect of sodium diclofenac of rats that suffer from diabetes mellitus increased in 67,4%, in 6 hours – in 93,2%, and in 8 hours – in 96,4%.

It is known that diclofenac after entering the organism becomes the object of intense metabolism. With the participation of cytochromes P4502C7, 2C9, 2C11 diclofenac is being hydroxylated, mainly to 4'- Hydroxy Diclofenac, which is further succumbs to conjugation with glucuronic acid and sulfate [16, 18]. Therewith diclofenac metabolites are almost devoid of pharmacological activity, that is why analgetic activity of the product is practically determined by the concentration of its unaltered form, therefore the impact on the speed of biotransformation of sodium diclofenac will significantly influence its therapeutic properties.

We have found out that diabetes mellitus and the overload of the ration with fat cause significant quantitative and qualitative changes of metabolic system of xenobiotics in rats bodies, which manifest themselves at all levels of organization of this system: both at the subcellular level (activity of xenobiotic-metabolizing enzymes of the first and second phases of metabolism in subcellular fractions of liver, kidneys and lungs) and at the level of the whole body (elimination of model xenobiotics and their metabolites with excretion, pharmacological effect and toxicity) [18, 19]. The main pathogenetic factors that occur in the process of overload of the body with fat and the diabetes mellitus development, with which the changes in activity of enzymes of

metabolism of xenobiotics are associated to the fullest extent, are first of all hyperketonemia, the increase of free fatty acid concentration, the degree of hepatic steatosis (accumulation of triglycerids in the liver) and activation of the gluconeogenesis processes (which were judged upon on the basis of the increased glucose-6-phosphatase activity). The changes in the activities of enzymes of xenobiotics biotransformation at these states have systemic character and manifest themselves as violations of the processes of elimination of the last at the level of the whole body and as changes of body reaction on their activities.

Diabetes mellitus causes the increase of pharmacological activity of sodium diclofenac because of the decrease of the activity of substrate of cytochrome P4502C [19], which is the main metabolizer of nonsteroidal anti-inflammatory drugs, including diclofenac [15, 16, 17]. Whereas only the unaltered form of diclofenac has pharmacological activity and the products of its hydroxylation are devoid of analgesic action, then the weakening of cytochromes - P4502C-dependent hydroxylation to inactive metabolites at diabetes mellitus causes the increase of concentration of pharmacologically active form of the medication and its pharmacological action.

We have previously shown that the overload of the ration of rats with fats causes the inhibition of the activity of cytochrome P4502C in liver microsomes [18, 19]. Thus, we may assume that the increase of the pharmacological activity of sodium diclofenac at the final terms of the pharmacodynamic curve is the result of the inhibition of its elimination from the body of the animals that were on a high-fat diet.

The received data allows us to draw a conclusion about the slowdown of elimination of pharmacologically active unaltered form of sodium diclofenac from the rats' bodies that suffer from diabetes mellitus and the overload of the ration with fat apparently because of the reduced activity of cytochrome P4502C, found by us (Indomethacin-O-demethylase and hexobarbital hydroxylase) [18, 19]. This explains the increase of analgesic effect of diclofenac at these pathological conditions.

Conclusions.

1. Diabetes mellitus and the overload with fats strengthen the analgesic effect of sodium diclofenac. Such a significant increase of the pharmacological activity of sodium diclofenac in the final terms of the pharmacodynamic curve is the result of the inhibition of its elimination from the bodies of the animals that suffered from diabetes mellitus and the overload of the ration with fats that occurs because of the reduction of the activity of cytochrome P4502C which catalyses the transformation of sodium diclofenac in pharmacologically inactive hydroxylated metabolites.
2. In case of prescription of sodium diclofenac and other medicinal agents – substrates of cytochrome P4502C to the patients who suffer from diabetes mellitus, obesity, hepatic steatosis, the correction of their dose is necessary.

Key words: sodium diclofenac, diabetes mellitus, high-fat diet, xenobiotics.

State institution Scientific Centre “Institute of cardiology named after M.D.Strazhesko” National Medical academy of Ukraine (Narodonogo opolchennya str., 5, Kyiv, 03151, Ukraine)

INTRAMURAL ARTERIES OF MYOCARDIUM IN CHRONIC ISCHEMIC HEART DISEASE

Introduction. Transport-trophic providing of the heart muscle work is an integral function of the various structural components of the vascular system of the heart and intramural arteries. Meanwhile, it is its link, structurally unites main artery and microhemocirculatory track, is still poorly understood at chronic ischemic heart disease (CIHD).

Aim of this work – analyze the features of morphofunctional restructuring of arteries of the left ventricle of the heart in this pathology.

Materials and methods. The material for the research were the intraoperative cardiac biopsy of 30 individuals aged from 41 to 56 years, suffering from CIHD without arterial hypertension and diabetes in the anamnesis.

Tissue samples fixed with 4% buffered solution of PFA, fixed with 1% OsO4 solution and immersed in the mixture of epon and araldite in a standard prescription. Glycosaminoglycans (GAG) detected by ferezol by the method B. Wetzel. Semi thin sections were made on ultra-microtome LKB 8800 painted with toluidine blue, ultra thin contrasted by heavy metal salts and studied under an electron microscope PEM-125

Results. Established that unlike the main arteries restructuring its intramural vessels has "total" spread. Changes of each layer of the vascular wall have qualitative features, due to their specific characteristics of cell. In chronic ischemic heart disease endothelial cell monolayer thickness increases with eccentric uneven restriction lumen of small blood vessels. Swelling and activation processes are accompanied by plastic filling dense cytoplasm of endotheliocytes, threadlike filaments of the cytoskeleton, which effectively minimizes the possibility of active transport. Modification of contacts among endothelial morphologic substrate is increased permeability of endothelial barrier. In the intima and around the vascular space accumulated GAG. The middle layer of the arterial wall also is subject to significant changes. Morphological response characterized by ambiguity, which is one of the typical features of transformations that are observed in the bloodstream of infarction. Hypertrophic, atrophic and degenerative changes and increased secretory-plastic activity of smooth muscle cells (GMK become widespread). In some cases, accumulate in the cytoplasm GMK include increases of osmiophilic lipid content, the number and size of autophagosomes is a sign an initial phase necrosis. In general thickening of the media is a combined result of hypertrophic, atrophic and degenerative changes in the GMK and progressive vascular sclerosis accumulation of fibrous structures that compress and replace damaged cells, creating conditions for the formation of a eccentric vascular lumen narrowing. In adventitia where localized cells of the fibroblastic series, vascular sclerotic processes acquire maximum severity, spreading and perivascular zone. As a result adventitia transformed into a

dense connective tissue sheath that spreads around in the vascular space, increasing the rigidity of the vascular wall. The situation potentiated the violation of vascular tone. Spastic paretic or expansion of blood vessels, which clearly is on the thin slices in half, as the progression of vascular sclerosis becomes a fixed character. As a result with occlusion of major arteries, a decrease of accommodation possibilities of their peripheral intramural branches with increasing of myocardial blood supply.
These phenomena in their general direction different irregularity, caused by varying degrees of rigidity and thickening of the vascular wall with their high expression in the ischemic infarction area.
Thus is formed a peripheral barrier, further limiting hemoperfusion of tissue in proportion to the depth of pathological restructuring of the vascular wall. In general, it is obligatory manifestation of atherosclerotic peripheral arterial level adjustment vascular system of the heart in chronic ischemic heart disease, gradually forming a morphologic substrate of cardiac syndrome X.
Key words: myocardium, intramural arteries, chronic ischemic heart disease.

© Bereza B.M., Gonchar O.O., Zarytskyi O.M.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

TO THE QUESTION OF PHYSICAL AND CHEMICAL, CHARACTERISTICS OF ANTISEPTICS OF DECAMETHOXINE®, DECASAN®, MIRAMISTIN

Introduction. In the article there were presented the results of the research of microbiological, physical and chemical qualities of antiseptics Decamethoxine®, Decasan®, Miramistin.
Materials and methods. Comparison research of antimicrobial activity of Decamethoxine®, Decasan®, Miramistin was carried out by the serial dilution method on reference and clinical strains of *S.aureus (n=15), E.coli (n=15), P.aeruginosa (n=5), C.albicans (n=8)*.
Results. Such antiseptics as Decamethoxine®, Decasan®, Miramistin were found to have similar high antimicrobial activity in comparison with miramistin. Antimicrobial activity of decamethoxine®, decasan®, miramistin
Decamethoxine® was found to produce bactericidal (fungicidal) activity on different species of microorganisms in minimal cidal concentrations, which ranged 0,24-62,5 mkg/ml. Bactericidal activity against *E.coli* in Decamethoxine® and Decasan® did not differ (15,6 mkg/ml). Fungicidal activity of Decamethoxine® was found against *C.albicans*. Clinical strains of *P.aeruginosa* were sensitive to Decamethoxine®, but they also were resistant to Decasan®, Miramistin.
By mass spectrometric research antimicrobial remedy decasan® was found to be chemical compound with stable molecule. The composition and concentration of Decamethoxine® and features production of Decasan® were substantiated.

Conclusion. Decamethoxine® and decasan® have high antimicrobial activity against Gram-positive, Gram-negative bacteria and *C.albicans*. Decasan®, containing molecule of decamethoxine with high antimicrobial activity and stability.
Key words: antiseptics, Decamethoxine®, Decasan®, Miramistin, mass spectrometry.

© Bobyr V.V., Poniatowsky V.A., Nastenko V.B.
National Medical University named by O. O. Bogomolets, Microbiology, virology and immunology department (prosp. Peremogy, 34, Kiev, Ukraine, 03057)

A COMPARATIVE STUDY OF THE DYNAMICS OF LABORATORY STRAINS INFECTIVITY AND COXSACKIE B VIRAL CLINICAL ISOLATES

Introduction. The problem of enteroviruses survival has the great importance when correct estimate forms about the danger of the viral infections epidemic spread. The particular relevance of this problem associated with biological characteristics of viruses, which are only present in the environment, but do not multiply in it.
The purpose of this study is comparative analysis of conservation of infectivity Coxsackie B clinical isolates and laboratory strains in vitro.
Materials and methods. Museum prototypic strains and clinical isolates of virus Coxsackie B and Coxsackie B6 have been used in studies. Molecular genetic methods, namely PCR, were used to verification of the presence of virus in clinical samples.
Results. The experimental results indicate about high stability comparatively of studied viral populations at 4^oC. The sharp decline of enteroviruses resistance during temperature increases. At 20^0C most of the samples inactivated to 60 days of research. Although it should be noted than clinical isolates demonstrated more stability at 20^0C: its kept infectivity to 60 days of research in titer 1,0 lg^{10}. Dynamics of clinical and prototypical strains of Coxsackie B3 and Coxsackie B6 inactivation was almost the same: already at 36 storage hours viral infectious agents were not detected in prototypes. Higher resistance of Coxsackie B clinical isolates has been noted compared with museum prototypical strains of these microorganisms.
Conclusion. Besides, results of research point the decline of Coxsackie B clinical isolates resistance after prolonged cultivation in cell cuiture. Coxsackie B clinical isolates resistance does not differ from laboratory strains resistance of these microorganisms after six passages.
Key words: enteroviruses, infectivity, cell cultures, resistance.

© Guminsky Y., Skoruk R.

National Pirogov Memorial Medical University, Department of Human Anatomy, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine), e-mail: admission@vsmu.vinnica.ua

MORPHOLOGICAL AND MORPHOMETRIC REACTIONS OF LIVER FABRICS AND SKELETAL MUSCLES ON IMPLANTATION OF SUTURE MATERIAL POLYPROPYLENE, MODIFIED BY SILVER

Introduction. Progress in medical science at this stage is associated with a broad introduction into clinical practice of new technologies treatment of diseases, based on the use of new devices, drugs, surgery using different types of transplantants and suture material that remain for life in the body of patients. When used quite often arise complications associated with the quality of these materials that luds fo repeate surgical interventions and reduce the quality of life of patients. Development of new materials for the manufacture of allografts and new types of suture material remains relevant problem of modern medicine. The aim of the study was morphometric and morphological analysis of tissue reaction on implantation of the surgical suture material polypropylene, modified with silver nanocomposite.

Materials and methods. During the experimental study we adhered to the basic norms of international bioethical and legal documents of Ukraine on Bioethics. Experimental work was performed on 25 rats weighing fron 200 to 250 grams. After sedation with Dimedrol and chlorpromazine, ketamine anesthesia was performed. After medial laparotomy wo sutured liver, muscles of the lumbar region of the abdominal cavity and then sewed postoperative wound.After removal of animals from the experiment after 3, 5, 7, 14, 21, 30 and 180 days after surgery, performed an autopsy of animals and took material for morphological examination. Histological preparations of liver and muscle tissues were coloured with hematoxylin-eosin, by Van Gisone and performed morphometric study of cellular structure in places of suture material implanting. In the statistical analysis of the data us ef an integrated system STATISTICA ® 5.5 (STAT + SOFT ® Snc, USA).

Results. Results of the study showed acute inflammatory process within the first 5 days of observation, polimorfnaya infiltration was determined, which was macrophagal mononuclear cells (monocytes) and lymphocytes mixed with neutrophilic leukocytes and fibroblasts. On the 7 th day morphometric studies have shown that there were changes in the cellular composition tissues a reliable decrease in the number of leukocytes. However, significantly increased the number of multinucleated giant cells of foreign body. On the 14th day of the experiment, the cellular composition in tissues testified to the contrary development of the inflammatory process and further normalization of cellular composition in the tissue around the ligature, the number of leukocytes in the tissues significantly decreased in comparison with the previous period of observation. On the 21 day of the experiment the phenomena of inflammation disappear completely. On the 30th day of the experiment, the inflammatory response was not observed, the cellular composition of the tissues around the ligatures were identical both in intact animals and did not differ significantly from the cellular composition in liver and skeletal muscle of intact

animals. 180 days of the experiment showed that the inflammatory tissue reactions were observed. This was confirmed by the high boardnet and high compatibility with the tissues of the surgical suture material polypropylene, modified with silver nanoparticles.

Conclusions. Implantation of surgical suture material in tissues of liver and muscle of rats in the first three days caused severe inflammatory reaction, which ended up to 7 days of observation. Until the end of observation (30 and 180) days in the field of implantation, the inflammatory process not was found. Around ligatures in the liver and skeletal muscle the capsule was formed. Tissues that are adjacent to the capsule did not differ in their structure from the structure of tissues in intact animals.

Key words: surgical suture material, polypropylene modified by silver, reaction of tissues.

© Dovgan I.M., Melnyk N.O., Oliinyk T.M., Savosko S.I., Chaikovsky Yu.B.
Bogomolets National Medical University, Department of Histology and Embryology (T. Shevchenko boulevard 13, Kyiv, 01601, Ukraine)

STUDY OF SYSTEMIC DEGENERATIVE AND DEMYELINATING CHANGES IN NERVOUS SYSTEM IN CASE OF LOCAL CEREBRAL HEMORRHAGE

Introduction. Motor disorders resulting from injury of pyramidal neurons in cerebral cortex are the most frequent and severest consequences of stroke. The process of lost functions restoration is known to occur owing to synapsis reorganization and involvement of other non-injured areas in the cerebral cortex in the process of functional recovery. However, there are no data on degenerative and recovery processes in the peripheral nerves as the most distal structures of pyramidal system. The aim of study was to investigate the systemic degenerative changes in the nervous system in case of local cerebral hemorrhage.

Materials and methods. 40 rats (an average weight of 210,0±10,0 g) were used for experiments in which local hemorrhagic stroke was simulated. The local intracerebral hemorrhage was simulated in the animals through mechanic destruction of the right internal capsule (capsula interna dextra, L=3,5-4,0; H=6,0; AP=0,6-1,0) and further injection of 0,15 -0.2 ml of autoblood.

The neurodegenerative changes in the brain, spinal cord and sciatic nerve were investigated on day 10 and day 30 after the stroke simulation. Morphometric study included estimation of neuronal density in the sensorimotor cortex (cell/mm^2) and density of nerve fibers in the sciatic nerve (fiber/mm^2). Photomicrographs were obtained with Olympus BX 51 microscope. The morphometric analysis was performed with the software Carl Zeiss (AxioVision SE64 Rel.4.9.1), magnification ×400. The demyelination in motor neocortex, corpus callosum, internal capsule, corticospinal tracts (L3-L5) and sciatic nerve was examined with an electron

microscope (Tescan Mira 3 LMU). The statistical significance of differences was evaluated by Student's t test.

Results. On the day 10 after the stroke in ipsilateral cortex the changes in neurons structure were observed: swelling of the cytoplasm and nucleus, apical dendrites, karyopyknosis, "dark" neurons. In perifocal cortex, the neurons swelling and lysis (necrosis) dominated, in remote areas –neurons hyperchromatism (apoptosis). At the ultrastructural level we observed hydropic dystrophy of neurons, dendrites and synapses destruction, swelling of the nerve fibers and demyelination. In the delayed period, i.e. on the day30, the structural changes progressed, nerve fibers with different levels of lamellar swelling, disorganization of axon skeleton and destruction of dendrites in pyramidal neurons were observed. In contralateral motor neocortex, the structural changes did not significantly differ from the perifocal area, only neuron apoptosis signs dominated over necrosis, and density of non-injured cell was greater ($p<0,05$).

Swelling of the brain caused separation of corpus callosum. A large number of apoptotic glial cells, pericellular and perivascular edema were observed. At the ultrastructural level, axonal injury and delamination of myelin sheath were revealed. On the day 30, these disorders progressed, degeneration ovoids were reported to occur. The similar changes were detected in the injured internal capsule.

Damaged nerve fibers and destruction myelin sheath were found in L3-L5 lateral funiculi. Degeneration ovoids were revealed in the interstitial space.

On day 10 after the simulated hemorrhagic stroke, general morphology of sciatic nerve remained unchanged, but some degenerated nerve fibers were recorded. Morphometric analysis showed decrease of nerve fibers density in the nerve (on average by 20%, $p<0,05$). At the same time, progressive reduction of their number over time between days 10 and 30 (up to 25%, $p<0,05$). Based on these findings it is possible to state that injuries of motor cortex and brain edema at the background of hemorrhage after intracerebral into the internal capsule were not limited only to local disturbances and they caused descending degeneration of the pyramidal tracts.

Key words: hemorrhage, nervous system, demyelination.

© Ivankiv Ya.I., Oleshchuk O.M., Dacko T.V., Fedoniuk L.Ya.
I.Horbachevsky Ternopil State Medical University, Ternopil, Ukraine

PROOXIDANT-ANTIOXIDANT HOMEOSTASIS, CARBOHYDRATE METABOLISM INDICATORS AND MORPHOLOGICAL CHANGES IN THE LIVER AFTER MELATONINE USAGE IN EXPERIMENTAL TYPE 2 DIABETES

Introduction. Application of antioxidant therapy considered as pathogenetic, because the role of oxygen free radicals in the pathogenesis of diabetes mellitus (DM) and its complications is no doubt and it is one of the essential components of a comprehensive treatment of diabetes and its complications. Melatonin is powerful

endogenic antioxidants. Its uses reduced the manifestations of nitro oxidative stress and manifested hepatoprotective properties. Melatonin, besides antioxidant action, plays a significant role in pathogenesis of diabetes and the metabolism of carbohydrates 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: to find out the features of the impact of melatonin on glycaemia, prooxidant-antioxidant homeostasis and structural changes in the liver 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 and histological examination of liver tissue were established at the animals with experimental dexamethasone induced DM.

Results. The formation of diabetes was confirmed by increasing the levels of blood glucose by 1.7 times and HbA1c 1.4 times in DM animals compared to control. The possible development of hepatocellular insufficiency in liver was proved by increasing of ALT and AST by 52.1% and 40.9% activity. The activity of superoxide dismutase (SOD) was increased in the liver and blood of animals by 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 by 31.3% and 5.9%, compared with control values. TBA active products in the serum and liver were increased by 40.1% and 17.7% respectively. Lipid hydroperoxides (HPL) concentrations was increased in the liver by 28.7%. The level of stable metabolite of nitric oxide NO_2^- increased by 41.1%. Thus, it indicates the intensification of lipid peroxidation processes and the appearances of enzymatic and non-enzymatic imbalances of antioxidant protection in animals with modeled pathology.

Morphological changes of hepatocytes manifested by hyaline droplets, hydropic protein and small droplets fatty degeneration. Glycogen content was decreased in the cytoplasm of liver and it was detected only in the cytoplasm of single cells. The dimensions of hepatocytes sharply increased due to severe degenerative changes and toxic damages.

The application of melatonin contributed to a significant decrease of glucose in animals with experimental diabetes by 17.9% and noted the absence of possible changes in the level of glycated hemoglobin. The activity of ALT and AST was decreased by 21.2% and 13.9%; antioxidant enzyme SOD was decreased both in blood and liver by 21.9% and 26.8%. 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. 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%. The amount of stable metabolite of nitric oxide NO_2^- reduced in blood serum by 20.4%, compared to untreated animals. Histological examination of liver, after a correction of melatonin, detected restoration of its structural organization. The cytoplasm of cells had become more homogeneous and with normal tinctirial properties.

Conclusion. In animals with experimental type 2 diabetes a significant increase concentration of glucose and HbA1c in the blood, breach of prooxidant-antioxidant balance, the development of nitro - oxidative stress, impaired metabolism and morpho-functional liver condition have been observed. Introduction of melatonin prevented the development of nitro - oxidative stress, depressed formation of reactive oxygen species and the activity of NO-synthase, reducing the overproduction of NO, improved the enzymes activity of antioxidant system, has expressed favorable effects on rates of carbohydrate metabolism, cytolysis and cholestatic processes in the liver and increased the regenerative activity of hepatocytes.
Key words: experimental diabetes, melatonin, prooxidant-antioxidant system, liver.

© Kulygina V.M., Tepla T.O., Korol A.P.
National Pirogov Memorial Medical University, Dental Therapy Department Vinnytsya (V.Stusa str, 2/19, Vinnytsia, Ukraine, 21018, tomatepla@yandex.ua)

EXPERIMENTAL RATIONALE FOR METHOD OF COMPLEX TREATMENT OF PARODONTAL DISEASE IN CERVICAL INTERVERTEBRAL DISK LESIONS

Introduction. Taking into account high prevalence of parodontal diseases, associated with other somatic pathology in particular, the problems related to their treatment and prevention remain rather urgent. There are scarce literature data concerning the development of parodontal diseases or pathology progression in the teeth-supporting tissues in the presence of cervical intervertebral disk lesions. This stimulates the experimental studies in animals modelling the pathologic process with maximum similarity to such in a man, as well as the evaluation of complex treatment efficacy.
The *objective* of our investigation is to study the effectiveness of developed method of complex treatment of parodontal tissue disease in cervical intervertebral disks lesion on the experimental vertebral osteochondrosis model in rats.
Materials and methods. To achieve the aim, the study on 40 mature white rats was carried out. The animals were divided into 4 groups - 10 rats in every group. Group I consisted of intact animals. The rats of groups II, III and IY underwent modelling ofosteochondrosis by Pozharsky method. The rats of group II were graduallywithdrawn from the study (by 2-3 animals) under profol narcosis – 60 mg/kg on the 30^{th}, the 60^{th}, the 90^{th}, and the 120^{th} experimental days. The animals of group III underwent a monthly course of conventional treatment of parodontal disease (beginning with the 90^{th} experimental day). The rats of group IY underwent complex therapeutic prophylactic measures including topical application of radon-carbonated waters and the preparation “NBF Gingival Gel” as well as general therapy medicines - “Osteogenon”, “Trental”, “Supradin” - which were added to diet after their crushing to powder form. Macroscopic and histologic examination of alveolar processes, vertebral bone tissue and intervertebral disks, gingival and periodontal structures were performed.

Results. The results of morphologic investigation of vertebral bone tissues, paraosseous tissues as well as intervertebral cartilaginous tissues confirmed the development of experimental osteochondrosis in rats. In 30 days of observation, in the process of experimental osteochondrosis development, microscopic changes in parodontal tissue structure were found in some rats suggesting the relationship between spinal intervertebral disk lesions and the tissues of parodontal complex.
On the 60th experimental day, on the background of osteochondrosis progression, 100% of animals were diagnosed with the state of parodontal tissues similar to parodontitis course in man confirmed by parodontal tissue microscopy. On the 90thexperimental daycomorbid conditions and deepening of the lesionwere established indicative of the relationship between progression of pathologic process in parodontal tissuesand destructive - dystrophic lesions of the spinal column.
The comparison of conventional methods of parodontal lesion treatment in animals with experimental osteochondrosis and suggested by us complex therapeutic prophylactic measures revealed better efficacy of the latterwhich was confirmed by disappearance of inflammation in the interproximal gingivain 90% of rats, absence of destructive changes in epithelial layer, in papillary and plexiform layers of gingival mucosa as well as less evident osteoporosis of alveolar process bone tissue.
Conclusion. Positive results obtained in application of the developed method of parodontitistreatment on the background of experimental vertebral osteochondrosisprovide means for its introduction into clinical practice.
Key words: experimental research, experimental rats, osteoporosis, periodontal disease, treatment.

© Pogorila A.V.
Vinnitsya National Medical University named by M.I. Pirogov, assistant of the Department of the Therapeutic Dentistry

EFFECT OF AMANTADINE HYDROCHLORIDE ON THE ACTIVITY NEURODESTRUKTIONS PROCESSES AT INFERIOR ALVEOLAR NERVE DURING HIS EXPERIMENTAL COMPRESSION-TOXIC IATROGENIC LESIONS ON THE BACKGROUND OF ALOKSAN'S DIABETES

Introduction. Searching of drugs with neuroprotektions action, whose effectiveness appears in particular on the background hyperglycemia, will help increase the effectiveness treatment of iatrogenic affection compression-toxic inferior alveolar nerve in conditions diabetes.
Objective: carry out evaluation of the value the neuroprotektions activity of the amantadine hydrochloride an experimental compression-toxic iatrogenic lesions of the inferior alveolar nerve at rabbits on the background of generated aloksan's diabetes by the change in titers of protein S 100 as a marker of damage to the myelin sheath of nerve. Estimate the possibility of using it for a new purpose in terms of the pathological condition.

Materials and methods. Experiments performed on the rabbits breed Chinchilla in conditions of compression and iatrogenic toxicity affection of inferior alveolar nerve. Into trepanation hole, which is located on the lower jaw projected nerve, injected the sealing materials based on resorcin-formaldehyde («Foredent») or epoxy resin («AH-Plus»). Dental pathology modeled on a background of pre-generated aloksan's diabetes. Neuromarkes (neuron-specific activity enolazy (NSE) and protein level S100), verified by ELISA using kits NSE ELISA KIT (DAI, USA) and S 100 ELISAKIT (Fujirebio Diagnostics Inc., Sweden) on the instrument the company "Hipson" (Czech Republic). One hour later modeling a pathology was performed the first injection of the drug, which as active ingredient contains of amantadine hydrochloride - neomidantan ("Amantadine" Olaynfarma, Latvia), a dose of 10 mg/kg intragastric. Treatment continued 30 days.
Results. During treatment keeping rabbits by adamantane derivatives - amantadine hydrochloride (neomidantan) the dose of 10 mg/kg, NSE activity in the blood serum of rabbits was significantly lower relative to the control animal diseases in an average of 1.94 (pasta «Foredent») and 1.87 times («AH-Plus»), which has been accompanied by a parallel reduction titers S100 protein in 1.99 and 2.04 times that indicates the presence of the drug activity and neuroprotektors activity.
Conclusions. The drug, which contains as an active ingredient amantadine hydrochloride (neomidantan) can be used for a new purpose in the compression-toxic iatrogenic lesions of the inferior alveolar nerve on the background of diabetes which is a promising and requires clinical confirmation of its effectiveness.
Key words: iatrogenic lesions compression-toxic inferior alveolar nerve, neuron-specific enolase, protein S100, diabetes, amantadine hydrochloride.

© Polischuk S.S.
National Pirogov Memorial Medical University, Vinnytsya, Department of Surgical Dentistry and Maxillofacial Surgery, Head of department - prof. Shuvalov S.M. (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

COMPARATIVE DESCRIPTION OF INFLUENCE OF KVERTULIN ON HEALING OF TRAUMATIC INJURIES OF MANDIBLE OF RATS AT DYSFUNCTION OF HEPATOBILIARY TRACT IN EXPERIMENT

Introduction. Despite significant advances in the treatment of traumatic injuries maxillofacial area, problem of complications is important. Proof of this is the steady increase of traumatic injuries of maxillofacial area, among them the leading place occupy fractures of the mandible.
Purpose of the study - experimentally study the effect of complex drug kvertulin on the terms of healing of bone defects in modeling of traumatic defects of mandible at dysfunction hepatobiliary tract.
Material and methods. An experiment was conducted on 80 white rats-males of line of Vistar. Animals were on the general diet, had free access to food and water, and on

the standard conditions in cages of vivarium of VNMU named M.I. Pirohov. The age of animals – 5-6 months. Weight rats ranged between 240-270 grams. In the process of study rats were divided into 4 groups: control group - 20 rats - with the injury of mandible; experimental group №1 - 20 rats - with the injury of mandible and crossing of bile duct; experimental group №2 - 20 rats - with the injury of mandible, that in the day of injuring of jaw and the next two weeks, were added to the meal the kvertulin in the dose of 200 mg on the kilogram of mass of rat; experimental group №3 - 20 rats - with the injury of mandible and crossed bile duct, that in the day of injuring of jaw and the next two weeks, were added to the meal the kvertulin in the dose of 200 mg on the kilogram of mass of rat. Kvertulin is a complex drug containing bioflavonoid quercetin, the prebiotic inulin, calcium citrate (resolution of Ministry of Health of Ukraine №05.03.02. - 06/44464 from 17.05.2012). Inulin has an antidysbiotic effect, stimulating the growth of probiotic microflora and eliminating the phenomenon of dysbiosis. Quercetin possessing P-vitamin activity, has antioxidant, membrane- and hepatoprotective effect. Calcium citrate is the most lightest digestive form of calcium, stimulates bone mineralization, eliminating the effects of osteoporosis. The injury of mandible to all rats was inflicted by a perforation and formation of defect. Further observed the clinical signs of healing of area of perforated defect.

Results. Obtained data of amounts of complications at healing of perforated defect of mandible of the control group of rats, significantly testify to positive influence of the use of complex preparation of kvertulin. Most of complications it is discovered in the group of animals with crossed general bile duct and without the use of kvertulin. The use of kvertulin in day's food ration, improves the terms of healing of perforated post-traumatic defect of mandible of rats, diminishing the amount of complications. The amount of complications at the rats of control group - 15%, experimental group №1 - 50%, experimental group №2 - 5%, experimental group№3 - 20%.

Conclusions. 1. At diseases of hepatobiliary tract at the halves of the experienced animals were registered complications, that in 3,3 times more than in healthy ones. 2. When using kvertulin number of complications is reduced by 2,6 times. 3. The clinical manifestations of healing of perforated defect of mandible of rats on a background the use of kverulin get better on 4,1±0,7 days.

Key words: rat, maxillofacial area, perforated d23efect of mandible, Kvertulin.

© Vastyanov R.S., Krepec Yu.S.
Odessa State Medical University, Department of General and Clinical Pathophysiology named V.V. Podvysotskogo (Valihovskyy prov. 2, Odessa, 65082, Ukraine)

RECOMBINANT INTERLEUKIN-1 RECEPTORS ANTAGONIST INTRACEREBRAL ADMINISTRATIONS INFLUENCE ON EXPERIMENTAL CONVULSIVE ACTIVITY

Introduction. It is known that in the first minutes after the initiation of seizure activity from brain tissue are released inflammatory cytokines and growth factors, one of the members of which are interleukin-1 beta (IL-1β). It is shown that IL-1β alters brain reactivity on convulsive effects, modulates the expression and induces convulsive reactions prosudomni influences.

The interest is the study of the effect of the blockade of IL-1 receptors in the case of intracerebral injections recombinant interleukin-1 receptors antagonist.

Purpose - to investigate the intensity of chronic seizure activity in conditions pikrotoksyn - induced kindlinha and because of intracerebral injections of recombinant interleukin-1 receptors antagonist.

Materials and Methods. The experiments were conducted under conditions of chronic experiment on male rats Wistar linyi weighing 180-250 g work with experimental animals were carried out in accordance with the requirements of national and international guidelines on the use of laboratory animals in experimental research (Council of Europe Convention, 1986, the Law of Ukraine "On Protection of Animals from abuse "of 21.02.2006, №3447-IV), and Commission on bioethics ONMedU. To play a chronic seizures using chemical kindlinhu model that reproduced by 24-day administration Pikrotoksynu ("Sigma-Aldrich", Germany) subthreshold dose ranging from 0.9 to 1.1 mg/kg. Kindlinhovym rats (day after the last injection Pikrotoksynu) antagonist administered recombinant interleukin-1. After 30 min after the rats were placed in individual clear plastic chamber (10 cm x 25 cm x 30 cm) Pikrotoksyn administered 2.0 mg/kg and record the severity of convulsive reactions six-point scale. Evaluated the latent period of the first convulsive reactions, counted the number of rats with generalized tonic-kloniko attacks. In each experimental group were 6 rats in control (intracerebral administration of saline 0.9% NaCl kindlinhovym animals) - 18 rats.

The results were calculated statistically. The minimum statistical significance was determined at $p < 0,05$.

Results. The data of experimental trials are given showing the development of anticonvulsive action in case of recombinant antagonist of interleukin-1-beta (RAIL) intracerebral administrations. RAIL intrahippocampal, intranigral and intracerebroventricular stereotactic microinjections resulted in anticonvulsive efficacy expressed mainly by seizure intensity decreasing. The most pronounced antiseizure effects were obtained after RAIL intracerebroventricular microinjection which additionally characterized by the first convulsive reactions latency increase and the number of rats with tonic-clonic seizures decrease.

Relatively less effective was the severity of the RAIL-induced anticonvulsant action due to the intrahippocampal and intranigral interleukin-1 receptors blockade, respectively. The authors state the fundamental possibility of the anticonvulsive efficacy after RAIL intracerebral administrations in conditions of experimental chronic epileptogenesis.

Conclusions. 1. Intracerebral administration RAIL cause the development of anticonvulsant effect under conditions of chronic kindlinh-induced seizure activity. 2. The most significant anticonvulsant effect was achieved with intraventricular administration of recombinant interleukin-1 receptors antagonist. The lowest

efficiency was achieved with the introduction of reticular recombinant interleukin-1 receptors antagonist in a black substance. 3. The award anticonvulsant effect after intracerebral injections of recombinant interleukin-1 receptors antagonist characterized by a decrease in the intensity kindlinhovyh tribunal decrease in the number of animals with generalized tonic-kloniko attacks and increase the latent period of the first convulsive reactions.

Key words: kindling, ventral hippocampus, black substance, cerebral ventricles, recombinant interleukin-1 receptors antagonist, anticonvulsive effect.

АНТРОПОЛОГІЧНІ ДОСЛІДЖЕННЯ
ANTHROPOLOGICAL RESEARCH

© Chaplyk-Chyzho I.O.
Lviv National Medical University named Danylo Galician (Pekerska str., 69, Lviv, 79010, Ukraine)

DIFFERENCES OF COMPONENTS SOMATOTYPE AND INDICATORS COMPONENT COMPOSITION OF BODY WEIGHT BETWEEN HEALTHY AND PATIENTS WITH ACUTE AND CHRONIC PYOGENIC SKIN INFECTIONS MEN AND WOMEN

Aim of this work - to determine differences somatotype components and component indexes composition of body weight between healthy and sick with acute and chronic pyoderma 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 survey of 85 apparently healthy men and 135 women of similar age and region of residence.

Used the following methods: general clinical - to verify the diagnosis of pyoderma; anthropometry by the method of V. Bunak in modification of P. Shaparenko; somatotype components were determined by the method of J. Carter and B. Heath, and performance component composition of body weight - by the method J. Matiegka and the American Institute of Nutrition; statistical analysis of the results carried out in the license statistical package "STATISTICA 6.1" using parametric and nonparametric methods.

Results. Found that endomorphic somatotype component in healthy men was significantly lower compared to male patients with acute course of superficial pyoderma and pyoderma. Endomorphic component somatotype in male patients with acute course of superficial pyoderma and pyoderma significantly greater compared to male patients with chronic pyoderma. This component somatotype in female patients

with acute course of superficial pyoderma and pyoderma has a tendency to higher values compared with patients with chronic pyoderma women.
Mesomorphic somatotype component in healthy men was significantly lower compared to male patients with acute course of pyoderma superficial and deep pyoderma. Mesomorphic somatotype component in male patients with acute course of pyoderma significantly greater compared to male patients with chronic pyoderma. Mesomorphic somatotype component in healthy women was significantly lower compared with patients of the total women with acute course of pyoderma superficial and deep pyoderma. Only in healthy men mesomorphic somatotype component is significantly greater than in women of a similar comparison group.
Ectomorphic somatotype component in healthy men was significantly higher compared to male patients with acute course of pyoderma and has a strong tendency to higher values compared to male patients of the total group. Ectomorphic somatotype component in healthy women was significantly higher compared with patients female general group with acute deep pyoderma and pyoderma course.
Muscular component of body mass in healthy women was significantly lower compared with patients of total group women with acute course of pyoderma superficial and deep pyoderma. This component of body weight in female patients with acute course pyoderma and deep pyoderma significantly greater too in patients with superficial pyoderma women tends to higher values compared with patients with chronic pyoderma women. In healthy and male patients of general group and with all forms pyoderma (except investigated with deep pyoderma) component muscular body weight was significantly higher than in female patients comparing similar groups.
Bone component body weight in male patients with acute course of pyoderma and superficial pyoderma has a tendency to higher values compared to male patients with chronic pyoderma. This component of body mass in healthy women was significantly lower compared with patients female general group with acute course of deep pyoderma and pyoderma. Bone component of body weight in female patients with deep pyoderma significantly greater and in patients with acute course women have a strong tendency to higher values compared with patients with chronic pyoderma women. In healthy and male patients of general group and with all forms pyoderma bone component body weight was significantly higher than in female patients comparing similar groups.
Conclusions. Fat component of body mass in healthy men was significantly lower compared to male patients with acute course of pyoderma and tends to lower values compared to patients with superficial pyoderma men. This component of body weight in patients with acute course men with superficial and deep pyoderma significantly longer compared with patients with chronic pyoderma men. Fat component of body mass in healthy women has a strong tendency to lower values compared with patients on deep pyoderma women.
Key words: men, women, healthy, patients with acute and chronic pyoderma, anthropometric indexes, somatotype components, component indices composition of body weight.

© **Panchuk O.Y., Serheta I.V., Shajuk A.V.**
National Pirogov Memorial Medical University, Vinnytsya (56 Pirogov st., Vinnitsa, 21018, Ukraine)

EMPATHIC ABILITIES OF STUDENTS-DENTISTS ON STAGE EDUCATION IN HIGHER MEDICAL EDUCATIONAL INSTITUTIONS AND PROBLEMS OF THEIR PSYCHOHYGIENIC AND PSYCHOPHYSIOLOGICAL ASSESSMENT IN THE CONTEXT OF DETERMINING ADAPTATION ABILITIES

Introduction. Empathy and therefore empathic abilities are quite conscious the individual empathy current emotional state of another person, without losing the sense of external origin of this experience and, therefore, fully conscious perception of the subjective world of another person so as if he was seeing this is a different person. This property provides mental define empathy not only as a result of the integration of elements of cognitive and emotional processes, but also as a manifestation of the attitude of the other person as the highest value [Maksimenko et al., 2003; Vlasov, 2005; Vary, 2007; Zhuravlev, 2007; Serdyuk et al., 2012; Polka, Serheta, 2012].

The aim of the study is psychohygienic assessment of empathic abilities of students-dentists on stage education in higher medical educational institutions in the context of determining adaptation abilities and morphofunctional state of their organism.

Materials and Methods. Research carried out among students of 1, 3 and 5 courses of the Dental Faculty of Vinnitsya National Medical University named Pirogov. For each of the studied groups were assigned to 60 students (under 30 girls and 30 youths) of different courses. Defining features empathic abilities as a whole according to the size of the total index, and on the rational and emotional empathy intuitive channels, according to the settings that promote empathy, penetrative ability of empathy and identification in empathy, carried out on the basis of personal application questionnaire Boyko [Raigorodskyi, 2008]. Statistical analysis of the results was carried out on the basis of the application package applications of multivariate statistical analysis “Statistica 6.1 for Windows” (owned Vinnitsya National Medical University named Pirogov, license № AXX910A374605FA).

Results. Analyzing the received data it should be noted that the level of expression of indicators of the total value of empathic abilities of first-year girls and youths was 22,96±0,36 points and 20,53±0,83 points, of third-year girls and youths – 19,76±0,49 points ($p(t)_{1-3}<0,001$) and 17,93±0,69 points ($p(t)_{1-3}<0,05$), of fifth-year girls and youths – 18,10±0,65 points ($p(t)_{3-5}<0,05$; $p(t)_{1-5}<0,001$) and 18,60±0,60 points ($p(t)_{3-5}>0,05$; $p(t)_{1-5}>0,05$).

Highest the level of expression of total values empathic abilities were observed in first-year students-girls and students-youths, the lowest – in third-year students-girls and fifth-year students-youths, during the stay in an institution of higher medical education value of empathic abilities among girls gradually, however, a statistically significant extent, decreased, among boys also significantly decreased at first-year of

learning, then increasing slightly, but without reaching the values inherent to the original level.
Statistically-significant differences due to age-registered between girls, who were 1 and 3 courses ($p(t)_{1-3}<0,001$), 1 and 5 courses ($p(t)_{1-5}<0,001$), 3 and 5 courses ($p(t)_{3-5}<0,05$), and between youths, who were 1 and 3 courses ($p(t)_{1-3}<0,05$), significant gender-conditioned differences were observed among first-year students ($p(t)<0,01$) and third-year students ($p(t)<0,05$). Overall, during the period of study at an institution of higher medical education level of expressions of indicators of total values empathic abilities that contribute to empathy, on the basis of sex differences, the higher was the girls, who were 1 and 3 courses, and youth, who were 5 course. Described patterns complement the structural analysis data distribution exponent expression studied characteristics.
Conclusions. Obtained results is determined by the fact that the highest the level of expression of total values empathic abilities were observed in first-year students of girls and youths, the lowest – in third-year students-girls and fifth-year students-youths, during the stay in an institution of higher medical education value of empathic abilities among girls gradually, however, a statistically significant extent, decreased among boys also significantly decreased at first-year, then increasing slightly, but without reaching the values inherent to the original level. Similar in most cases (except channel emotional empathy in girls and efficient channel of empathy in youths) were inherent data for the individual components empathic abilities of students.
Key words: students-dentists, higher medical educational institutions, empathic abilities, adaptation abilities.

© Korzenevska O.R., Kofan I.M., O.M., Severynovska O.V.
Dnipropetrovsk National university O.Gonchara (Gagarina ave., 72, м.Dnipro, 49010, Ukraine)

RHEOENCEPHALOGRAPHIC STUDY OF THE BRAIN BLOOD VESSELS IN WORKERS OF LOCOMOTIVE BRIGADES

Introduction. Due to the increase in the traffic intensity of all kinds of transport and the implementation of the program of increasing the road safety, the problem of reliability of the human factor at transport is becoming increasingly urgent.
The topicality of the work lies in the assessment of the state of vascular system in workers of the locomotive brigade, which is necessary for preventing the development of pathologies of cardio-vascular system and for assessing the readiness of locomotive drivers to act in dangerous situations.
The aim of the study is to assess the state of the brain vessels of workers of locomotive brigades at the end of a work shift with the help of the rheoencephalographic method.

Materials and methods. The study was carried out on the basis of the locomotive depot of the Prydniprovska railway. All the tested, selected randomly, were divided into 2 groups of 30 people. The control group included locomotive drivers-instructors, and the experimental group included locomotive drivers and their assistants. Complex rheograph Pheo-Spectrum-2 (made by "Neurosoft", Russia) was used in the study.

All initial data, obtained in the course of the study, were entered in the data base, which was built with the help of electronic tables Microsoft Excel and program Statistica 6.0. The data with the value level $p \leq 0,05$ were considered reliable.

Results. In this study, non-invasive and informative method of rheoencephalography (REG) was used for assessing the state of the vessels and the blood flow of the brain. According to REG, in FMs, FMd, OMs, OMd leads in locomotive drivers-instructors (control group), the values of rheosystolic and dicrotic indices of the brain blood flow were at the level of normal values. Locomotive drivers and their assistants had a reliable decrease (by 20%) in the rheosystolic index in the basin of arterial carotic vessels in the FMs and OMd leads.

At the same time, locomotive drivers and their assistants demonstrated a reliable increase of the dicrotic index of the right-side arterial vessels in the right carotic artery (by 8%) and in the left occipital artery (by 9%) and in the venous vessels of the left-side occipital area (by 6%).

The decrease in the rheosystolic index testifies to slowing down of the brain blood flow, and the decrease in the dicrotic index testifies to an increase in the resistance of the brain minor artery. The detected specific features of the brain blood circulation are connected with the fact that they have arterial hypertension (AH), which causes the disruption of blood flow in vessels.

At the initial phase of AH, the pathological functional changes in the work of heart prevail and the disease flows by the type of hyperkinetic circulation syndrome. In this case, an increase in the heart throw with an increase in systolic and minute blood volume is observed and so called systolic hypertension develops.

The values of the diastolic index in the people of the control group are also within the normal range, and in locomotive drivers and their assistants, they tended to increase and reliably (by 8,5%) increased in the left occipital artery and increased twice in the venous vessels (FMd) of the right side.

Anacrotic index (AI) is a final parameter which was analysed in our rheoencephalographic studies. As there is no generally accepted norm of this index, the average value of the test group was considered as a norm.

The values of anacrotic index in the majority of arterial vessels tended to increase, and in the venous vessels they reliably decreased in comparison to the control values.

Similar changes point out the hypertonic type of REG in locomotive drivers and their assistants. Here, the tensiom of both large and small arteries is increased: the duration of the ascending part of the wave reaches half the entire duration of all pheography. At the ascending part, additional waves appear, and the incision and dicrotic wave are located in the upper third of a wave, often forming its plato-like top. In this situation, the value of relation of α/T and the peripheral vessel resistance acquire maximum

values. The indicated changes are accompanied by complications of the venous backflow from the skull cavity in the form of the convex descending part of the wave. The state of carotic occipital vessels in locomotive drivers and their assistants showed that the arterial blood flow ensures the demand in nutritive substances and oxygen (only 50% in occipital vessels and by 60-64% in carotic arteries), because of a low level of blood filling of vessels, and veins, in their turn, do not fully perform the passing function).

Carotic arteries in the tested of the experimental group had significant changes, which led to light (26% of cases – on the left, 50% - on the right) and moderate (38% - on the left, 9% - on the right) hypovolemia and left-side asymmetry (27%>5%). Tension of the venous vessels in the basin of the carotic vessels is 20-30% lower than the tension of large and medium arteries. The venous backflow from the left part is disrupted in 27% of the tested.

Occipital vessels are in worse condition and fill the brain with blood only in 40% of the male locomotive drivers, the brain of other 60% of people do not get a necessary amount of blood constantly.

While the left-side asymmetry of blood filling prevailed in carotic arteries, the left side filling prevailed in the occipital vessels (22,7%>4,5%). According to the values of tension in large and medium arteries, we can say that 36,4% of locomotive drivers develop hypovolemia on the right and 31,8% them develop right-side asymmetry of occipital vessels.

Conclusions. 1. By the data of REG, it was established that the locomotive drivers-instructors have a sufficient reserve of adaptation and compensation mechanisms, which is enough to react to stress factors which appear at the work place. 2. Locomotive drivers and their assistants were noticed to have a reliable decrease in the rheosystolic index in the basis of the arterial carotic vessels in the FMs та OMd leads and a reliable increase in the dicrotic index of arterial vessels of the left side – in the right carotic artery, in the left occipital artery and in the venous vessels of the left occipital section. 3. The values of the diastolic index in the locomotive drivers and their assistants increased reliably in the left occipital artery and in the venous vessels (FMd basin) of the right side. 4. The values of the anacrotic index in the experimental group in the majority of the arterial vessels tended to increase, and in the venous vessels they reliably decreased in comparison with the control values, which testified to the hypertonic type of REG in locomotive drivers and their assistants. 5. The locomotive drivers and their assistants who have harmful habits (smoking) and are overweight are more subject to the stress at work, which makes the further safe work for the people of the corresponding categories of locomotive brigades impossible.

Key words: rheoencephalographic method, occipital vessels, locomotive brigade, anacrotic index, arterial vessels and venous vessels.

National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

CLINICAL EFFECTIV OF THERAPEUTIC REGIMENS OF PROGESTERONE IN IVF PROGRAMS IN WOMEN WITH TUBOPERITONEAL OF INFERTILITY

Introduction. Tubal factor infertility accounts for about 20-25% of all cases of infertilityIt includes cases of completely blocked fallopian tubes and also cases with either 1 blocked tube or no blockage but tubal scarring or other damage Tubal factor infertility is often caused by pelvic infection, such as pelvic inflammatory disease (PID), or endometriosis, or scar tissue that forms after pelvic surgery.
As IVF success rates have improved dramatically over the last 20 years, IVF has become the mainstay of treatment for tubal infertility.
Material and Methods. A total of 60 patients diagnosed with tuboperitoneal factors of infertility according to our including criteria constituted our study group. All had been admitted to the gynecology outpatient clinic between March 1, 2012, and December 1, 2015, for infertility treatment.
Our control group consisted of 30 patients recived a progesterone Lutein in the dose of 400gr a day in the day of the trigger of ovulation and a control group 30 patients received the same progesterone in the day of the puncture of follicles. All patients has been examined of the Pap smear control, ultrasound and hormonal examinations. Mid-luteal serum progesterone measurement were performed with both groups. Pipelle endometrial biopsies for immunohistochemistry diagnosed of glycodelin expression were performed by a single pathologist who was blinded to the patients' clinical data. Data are presented as mean±SEM. Data were analyzed by Student *t*-test. A p values of <0.05 or less were considered as statistically significant.
Results. It is proved that in patients with injection of progesterone Luteina in the dose of 400 gr a day intavaginal on the day of triggers of ovulation were no statistically significant differences in rates of pregnancy and implantation compared with patients whom progestogen administered on the day of follicular puncture. However, there was a statistically significant difference in the number of clinical pregnancy, and multiple pregnancy in a subgroup of women who started use progesterone in the term of triggers of ovulation.
Conclusions. In the study of problem of treatment of tubo-peritoneal infertility genesis by exploring therapeutic regimens of progestogen prescription in stimulated IVF cycles were found that using of progesterone in the triggers day of ovulation contributes to a full invasion of trophoblast implantation and quality that defines a successful outcome of pregnancy.
Key words: tuboperitoneal infertility, progesterone, IVF cycles, Trigger of ovulation, follicular puncture.

© Melnik M.P.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

REGRESSION MODELS OF SONOGRAPHIC PARAMETERS OF LIVER, GALLBLADDER AND PANCREAS IN PRACTICALLY HEALTHY WOMEN DEPENDING ON THE CHARACTERISTICS OF THE BODY STRUCTURE

Introduction. *Aim of our work – b*uild and conduct the analysis of regression models individual normative sonographic parameters of liver, gallbladder and pancreas, according to the characteristics of the structure and size of the body in practically healthy women of Podillya of the first adulthood in general and of different age groups.

Materials and methods. On the basis of Scientific and Research Center Vinnitsa National Medical University named after Pirogov as a result of a comprehensive survey of urban women by age from 21 to 35, in the third generation residing in Podilskiy region of Ukraine were selected 126 healthy women.

Ultrasonography of abdominal organs was performed using ultrasound diagnostic system "CAPASEE" SSA-220A (Toshiba, Japan) convex transducer with an operating frequency of 3.75 MHz according to conventional methods. Defined: slanting vertical size of the right lobe of the liver on inhale and exhale, the thickness of the right lobe of the liver on inhale and exhale, cranio-caudal size and thickness of the left lobe of the liver on inhale and exhale, length and thickness of the caudate lobe of the liver; the diameters of portal vein and the left, right and middle hepatic veins; thickness, width and height of the pancreatic head, thickness and height of the body of the pancreas, thickness and height of the tail of the pancreas; length, width and thickness of the gallbladder, an longitudinal and cross-sectional area of gallbladder. Gallbladder volume calculated by a formula that allows define the volume of ellipse: V=0,524× length × width × thickness.

Anthropometric survey was conducted in accordance with the scheme V. Bunak in modification of P.P. Shaparenko. To evaluate the somatotype used mathematical scheme of J. L. Carter and B. H. Heath. Component composition of body weight was determined by methods J. Matiegka and the American Institute of Nutrition.

To develop normative individual sonographic parameters of liver, gallbladder and pancreas, according to the characteristics of the structure and size of the body women of the first mature age in general and different age groups (under and over 25 years) in license package "STATISTICA 6.1" used method of stepwise regression analysis.

Results. In the total group of women of the first mature age from 27 have not built any possible model sonographic parameters of abdominal organs with a coefficient of determination greater than 0.6; in women from 21 to 25 years only 2 models built (the thickness of the right lobe of the liver on the exhale and width of of the caudate lobe of the liver, respectively R^2 = 0,602 and 0.603); in women from 26 to 35 years built 5 models (oblique vertical size and thickness of the right lobe of the liver on the exhale, the width of the caudate lobe of the liver, gallbladder thickness, width tail of the pancreas, R^2 from 0.605 to 0.650).

Conclusion. When analyzing models of constructed with determination coefficient greater then 0.6, the following percentage of groups joining the models of anthropo-somatotypological indicators: women from 21 to 25 years - cephalometric 18.75%, total 12.5%, 6.25% longitudinal, covering 12.5%, 12.5% diameters, WDE 12,5%, TSFF 18,75%, 6,25% somatotypological, composition of body weight 0%; in women from 26 to 35 years - cephalometric 13.9%, total 8.3%, longitudinal 2.8%, covering 36.1%, diameters 13,9%, WDE 2,8%, TSFF 19,4%, somatotypological 0%, composition of body weight of 2.8%.

Key words: regression models, liver, gallbladder, pancreas, ultrasound, women, body size.

© Shaprynskyi V.O., Kryvetskyi V.F., Suleimanova V.G., Mityuk B.O., *Bozhok S.M.

National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine); *Vinnytsia Regional Clinical Hospital by M.I.Pyrohov (Pyrogov Str., 54, Vinnitsya, 21018, Ukraine)

ROLE OF INTEGRAL LEUKOGRAM MARKERS IN PATIENTS WITH NECK PHLEGMONS IN OBJECTIFICATION OF ENDOTOXEMIA DEGREE

Introduction. The aim of the study was to compare the efficacy of using of two different medications (modern sorption nanocomposition «Metroxan» and ointments on hydrophilic basis) in two patient groups. Haematological stress markers of leukogram were evaluated.

Materials and methods. Data of leukogram indices of 57 patients of control group and 84 patients of general group were calculated on 1-2, 3-5, 6-8 and 9-14 postoperative days. The following parameters were studied: leukocyte intoxication index (LII), nuclear index, leukocyte shift index (LSI), leukocyte index (LI), neutrophile to lymphocyte ratio index (NLymRI), neutrophile to monocyte ratio index (NMRI), lymphocyte to eosinophil ratio index (LymERI), lymphocyte-granulocyte index (LGI) and lymphocyte to erythrocyte sedimentation rate ratio index (LymESRRI). Diagnostic significance between investigated groups was identified using Student's t-test.

Results. Differences were observed in the leukogram profiles. During early postoperative treatment all studied indices showed severe endogenous intoxication. But from second week there was a pronounced positive trend of stress levels. It was more intensive in general group compared with control one (an average of 32%).

Conclusions. These statistically significant results of intoxication indices allow to consider investigated sorption composition compared with traditional ointments as more effective healing approach in patients with neck phlegmons.

Key words: neck phlegmon, intoxication indices, leukogram, vulnerosorption.

© Andriichuk V.M., Hodak T.V., Damzin O.S.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

LAWS OF THE ANNUAL CHANGES ANTHROPOMETRIC, SOMATOTYPOLOGICAL PARAMETERS AND ACHIEVEMENT INDICATORS YOUNG MAN WHO ARE STUDYING IN VARIOUS EDUCATIONAL INSTITUTIONS

Introduction. The term "physical development" can be explained as a process of change in morphological and functional properties of human organism during its individual life, or as a set of features that characterize the external indicators of physical condition (anthropometric, physiological parameters) of the body at the stage of ontogeny. Qualitatively, the physical development is characterized, above all, the anatomical and physiological changes at certain times of the age of development.

The aim of our study is to establish anthropometric laws somatotypological parameters and indicators of success in apparently healthy young men - students, pupils and students studying in various educational institutions.

Materials and methods. Research was carried out on the basis of higher professional school of Lviv State University of Civil Protection and Vinnitsa National Medical University named after NI Pirogov.

All students are employees of the State Service of Ukraine for Emergency Situations. Terms and conditions of stay of students differ from the conditions of stay of students less regulated regime of the day and less physical activity. Terms and conditions of stay of students in higher education are different from the conditions of stay of students and students' lack of a regulated regime of the day, less physical exertion.

A longitudinal (in I, II training course) determination of the anthropometric dimensions of the body 87 youth-students, 93 students, 92 students and analyzed the features of parameter changes in the conditions of pedagogical process in the first year of study.

The data obtained were processed statistically using STATISTICA-6,1 software (StatSoft) using the non-parametric and parametric methods of performance evaluation. Determining differences between samples was performed using Student's t-test. To determine the changes in the structure, the level of dependence between the studied factors, as well as to establish the degree of influence of factors of the educational process in the anatomical and anthropometric parameters of youths was used factor analysis.

Results. Transverse and longitudinal parameters did not change during the study. In the cadets ohvatni options are most indicators of upper and lower limbs and trunk, they increase during the training leads to increased contribution factor "somatometric component" in the total variance (30.02%). The students, most indicators are

longitudinal and ohvatnymy size upper and lower extremities and trunk. In the group of students is increasing and some cross ohvatnyh size, but significantly less than the cadets, and increasing the contribution factor "somatometric part of" the overall variance for training was also less important (23.20%). Unlike students and pupils factor "somatometric component" students represented and longitudinal parameters ohvatnymy only the lower extremities and torso, and their change during training leads to reduction of the contribution of the first factor (23.95%), due to the thickness shkirno- body fat layer.

Comparing the change in the second factor "training and educational component" determined that the cadets and students there are concentrated high rates of success in physical education and secondary - with accurate, specific and humanities. Physical education and precise discipline reduce its influence in the second year because of the small number of study hours and did not affect the third as missing in the curriculum.

When comparing the change in the third factor "skin and fat component" identified a number of differences between groups of young men, cadets and students of the third factor consists of the basic variables subcutaneous fat layer on the abdomen, thigh, and reduce the intensity of the subcutaneous fat layer leads to a corresponding reduction in contributions this factor in the total variance (11,23% of the cadets, 10.07% students) during the study.

Consideration factorial structure indexes using somatotype components, a component of body mass index harmonious physical development and success metrics and physical activity for young people shows that the first factor "somatotypological component" consisting of a number of basic variables: endomorfnyy and ektomorfnyy mesomorphic somatotype components, muscle, bone and fat components of body weight. In the cadets of the basic variables are mesomorphic somatotype components and ektomorfnyy, muscle and fat components of body weight. Ektomorfnyy somatotype component and fat component of body weight did not change during the study and is a reflection of the constitutional type of adolescent students. The students, most indicators are mesomorphic, endomorfnym and ektomorfnym somatotype components, muscle, bone and fat components of body weight. Ektomorfnyy and endomorfnyy somatotype components and bone and fat components of body weight did not change during the study and is a reflection of the constitutional type of adolescent students.

Increasing the intensity of muscle tissue in both groups of boys on a background of moderate growth processes leads to a significant increase in the contribution of this factor to the overall variance for training (27.91% - in the cadets, 21.75% - in students).

A longitudinal study through which the regularities of annual changes in anthropometric, somatotypological parameters and performance indicators in healthy young men - cadets, pupils and students that studying in various educational institutions. The application of factor analysis will reveal the structural relationships, establish and confirm the impact of physical and mental stress on the anatomic and anthropometric parameters in adolescence depending on the profile of the institution.

Conclusions. 1. Cadets determined quantitative and qualitative parameters ohvatnyh increase against the background of high achievement in physical education and a

slight decrease in skin-fat component. 2. The students found a moderate increase in the quantitative and qualitative parameters ohvatnyh against the background of high achievement in physical education and a slight decrease in skin-fat component. Compared to the students, this effect is less pronounced. 3. Students set reasonable sizes partial changes that reduced the contribution factor "somatometric component."
Key words: anthropometric parameters, youth age, factor analysis.

© [1]Semenenko A.I., [2]Kondratskiy B.A, [3]Kozlenko G.I., [3]Drabenyuk S.J., [3]Yarova A.V., [3]Dika O.V., [1]Semenenko N.O., [4]Sheremeta A.V.
[1]National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine); [2] Institute of Blood Pathology and Transfusion Medicine of the National Academy of Sciences of Ukraine (ul.Generala Chuprynky, 45, Lviv, Ukraine, 79044); [3]City Clinical Emergency Hospital (Kievskaya, 68, Vinnitsa, 21032, Ukraine); [4]Municipal institution Vinnytsia regional psychoneurological hospital named after academ. O.I. Yuschenka (ul.Pirogova, 109, Vinnitsa, 21005, Ukraine)

INFLUENCE OF INFUSION THERAPY ON BLOOD PARAMETERS IN PATIENTS WITH ISCHEMIC CEREBRAL STROKE

Introduction. The article analyzed the influence of a single course of therapy with different infusion solutions on indicators of analysis of blood. It was interest to investigate the influence of a separate course of therapy with various solutions on key indicators in general and biochemical blood test to ascertain the comprehensive influence of infusion solutions on hemorheological parameters of blood in acute stroke.
The purpose of this work is to study the dynamics of the rheological properties of blood during treatment with only 0.9% NaCl solution and 0.9% solution of NaCl + HES 130/04.
Material and methods. To study included 50 patients with acute cerebrovascular accident ischemic type. The diagnosis of acute ischemic stroke set based on computed tomography. The main criterion for selection of patients was the presence of acute cerebrovascular accidents and ischemic type of consciousness on a scale of Glasgow below 12-13 points.
Investigated izoosmolar 0.9% NaCI solution and colloidal izoosmolar solution of hydroxyethyl starch 130/04 injected intravenously drip in conditionally effective dose of 2.5 ml/kg 2p/d (5 ml/kg per day) (determined experimentally) immediately upon confirmation of diagnosis and then every day every 12 hours for 7 days. Control group of patients received infusion solutions only 0.9% NaCI, the comparison group – 0.9% NaCI + hydroxyethyl starch 130/04.
Results. Use of izoosmolar 0.9% NaCl solution in addition to standard therapy for 7 days provides a constant of electrolyte balance and daily water balance, decrease of hematocrit after 4 days of treatment, the immutability of blood osmolarity,

satisfactory of urinary function in patients with acute cerebrovascular accident with ischemic type.
Treatment of colloidal izoosmolar hydroxyethyl starch 130/04 allows you quickly decrease the hematocrit at constant daily water balance in patients with acute cerebral stroke. However, in patients showed an increasing the concentration of sodium and increasing the concentration of urea which is a sign of increased load on the renal excretory function.
Conclusions. 1. Characteristic features hemorheology patients with ischemic cerebral stroke to the treatment regimen which included only izoosmolyarnyy solution 0,9% NaCl electrolyte and sustainability is a daily water balance, lower hematocrit after 4 days of treatment, blood osmolarity immutability, satisfactory urinary function. 2. Treatment of patients in the acute period of ischemic cerebral stroke colloidal solution izoosmolyarnym hidroksietylkrohmalyu 130 allows you to quickly lower the hematocrit at constant daily water balance. Subcompensated increase of urea is a sign of increased stress on renal excretory function.
Key words: acute stroke, 0.9% solution of NaCl, hydroxyethyl starch130/04, blood.

© Prokopenko S.V., Serebrennikova O.A., Shayuk A.V., Semenchenko V.V.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

FEATURES RELATIONS ANTHROPO-SOMATOMETRIC PARAMETERS IN PRACTICALLY HEALTHY MEN OF PODILLYA MESOMORPHIC SOMATOTYPE WITH INDICATORS OF CEREBRAL CIRCULATION

Aim of our work – identify features connections anthropo-somatometric parameters of almost healthy men of Podillya mesomorphic somatotype with indexes of cerebral circulation.
Materials and methods. The results of anthropometric, somatotypological and REG studies conducted in almost healthy urban male and female of Podillya taken from the bank of the materials Scientific and Research Center Vinnitsa National Medical University named after Pirogov.
Anthropometric research according to the scheme of V. V. Bunak. Somatotypes determined by the method of J. Carter and B. Heath, component composition of body weight - by the method of J. Matiegka and the American Institute of Nutrition (AIN).
REG parameters determined using a computer diagnostic complex that provides simultaneous registration of electrocardiograms, phonocardiograms, basic and differential tetrapolar rheogram and blood pressure. As a result of processing rheogram automatically define specific points on the curve, measured key indicators, shaped and justified conclusion on the state circulatory system of the study area.
Statistical analysis of the results carried out in the license statistical package "STATISTICA 6.0".

Results. Found that in men mesomorph largest number of connections with anthropo-somatometric performance set for the indicators derivatives REG, namely: dicrotic (mostly total with return, longitudinal body size, thickness of skin and fat folds (TSFF) on the limbs and fat weight by Matejko) and diastolic indices (mainly inverse with sizes of the head, with total, longitudinal, covering size, TSFF with endomorphic component of somatotype by Heath-Carter, TSFF on the limbs, with muscle mass by Matejko and the American Institute of Nutrition and fat mass by Matejko and only one direct connection with ectomorphic component of somatotype by Heath-Carter). Dicrotic and diastolic indexes unlike the amplitudes systolic wave and fast blood supply, medium speed fast and slow blood supply have feedback with TSFF on the front of the shoulder and forearm. The rest of the time, and amplitude part of derivative indices (indices tone of all arteries, arteries of large, medium and shallow caliber, ratio of the tone of the arteries) have only a single correlation communications with all groups anthropo-somatometric performance.
Prospects for future research concludes in the study features of connections anthropo-somatometric parameters of almost healthy men of Podillya somatotype other with indicators of cerebral circulation. Establishing qualitative and quantitative differences in values and correlation parameters cerebral circulation studied in different somatotypes can indicate on various structural and functional condition of the vessels and leads to a consideration of the features mentioned settings in the constitutional aspect.
Key words: correlations, practically healthy men, rates of cerebral circulation, anthropo-somatometric parameters, mesomorphic somatotype.

© **Shinkaruk-Dikovitska M.M., Kotsyura O.O., Orlovskiy V.O.**
Vinnitsa National Medical University M.I. Pirogov (st. Pirogov, 56, Vinnytsya, 21018, Ukraine)

REGIONAL AND CRANIOTYPOLOGICAL DIFFERENCES CEPHALOMETRIC PARAMETERS IN PRACTICALLY HEALTHY MEN OF UKRAINE

Introduction. Currently, the number of diseases and anomalies of maxillodental systems in Ukraine progressively increasing. Thus these diseases in different regions is not uniform in frequency. Cephalometric patient data is one of the main ways of diagnosis pathology of maxillodental systems, self-assessment, growth maxillofacial treatment and control.
Aim of our work – establishing differences cephalometric parameters in practically healthy men from different regions of Ukraine and among men of different craniotypes in general and representatives of the central region of Ukraine.
Materials and methods. In previous survey findings (using a screening questionnaire) to more than 3,500 men aged from 19 to 35 years from different regions of Ukraine authors selected 200 of practically healthy men in the third

generation residents of different ethnic territorial regions with susceptible, moderately susceptible and satisfactory for environmental living conditions of the population areas of Ukraine, which carried out cephalometric and computer tomography (using dental cone-beam scanner Veraviewepocs-3D, 0,011-0,048 mSv dose) study.

Cephalometric research consisted of determining the parameters of cerebral and facial parts of the head using a large compass with the sliding scale in full-scale system of Martin and soft measuring tape. Cephalometric study was conducted with regard to accepted guidelines and anatomical points.

Head shape defined by the formula ms_ms * 100 / g_op, where ms_ms - maximum width of the head (occipital diameter); g_op - the maximum length of the head (the distance from glabella to opistocranion). With the value of 75.9 men attributed to dolichocephalic; 76,0-80,9 - to mesocephalic; 81,0-85,4 - to brachycephalic; 85.5 or more - to hyper brachycephalic.

Statistical analysis of the results was performed using the statistical software package licensed "Statistica 6.1" using nonparametric methods. Reliability of difference values between independent quantitative values were determined using the U- criteria of Mann-Whitney.

Results. Preferred meanings cephalometric studies in the general system of anthropological methodology stems from the importance of measuring head and face as features that have population and subpopulation (interregional) differences. Thus, when compared interregional differences of cephalometric indicators revealed that the maximum length of the head, the length, depth and height of the nose, the height of the top of the face, the distance between nasion and between the incisive point, between orbital breadth among men eastern, northern and central regions significantly larger or have the trend towards higher values compared with men, western and southern regions.

By several authors determined the prevalence longitudinal dimensions between craniometrical points of skull in dolichocephalic and cross in brachycephalic.

Conclusion. In our study, both in the total group of men and the representatives of the central region of Ukraine in the direction of hyper brachycephalic < brachycephalic < mesocephalic < dolichocephalic marked increase in the largest circumference of the head, transverse and sagittal curves, longest head height of the forehead, physiological length of the face length, height and depth of the nose, distance between nasion and among incisive point between orbital width. By contrast, in the direction of dolichocephalic < mesocephalic < brachycephalic < hyper brachycephalic marked increase in the largest and smallest width of the head and medium width faces.

It is known that mesoprosopic basically coincide with mesocephalic, euryprosopic - with brachycephalic and leptoprosopic - with dolichocephalic. Last match much weaker due to differences in parameters and performance gnathic department of head. In fact, in our study, most cephalometric indicators gnathic head parts had no significant differences in the trends and studied various craniotypes.

Key words: cephalometry, practically healthy men, craniotype, regional differences.

© Antonets O.V.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

SONOGRAPHIC CORRELATION PARAMETERS OF SPLEEN WITH ANTHROPOMETRIC, SOMATOTYPOLOGICAL INDICATORS AND INDICATORS COMPONENT COMPOSITION OF BODY WEIGHT IN PRACTICALLY HEALTHY MEN OF PODILLYA

Aim of our work – establish features of links between the sonographic parameters of spleen and anthropo-somatotypological indicators of practically healthy men of Podillya first mature age.

Materials and methods. Conduct the research of sonographic parameters of spleen of 90 almost healthy men of Podillya age from 22 to 35 years using ultrasonic diagnostic system CAPASEE model SSA-220A. The examination and ultrasound biometry of spleen performed by the standard technique of left interior skeletal 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, an area of longitudinal and cross section, the rate of acoustic tissue density of spleen, splenic vein diameter. According to formulas by Derhachev calculated spleen volume (volume = 0.52 x length x width x height) and splenic index (splenic index = length x thickness).

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

Evaluation of sonographic correlation parameters of spleen with anthropo-somatometric performance healthy men of Podillya made using the licensed package "STATISTICA 6.1".

Results. In almost healthy men of Podillya set numerous statistically significant, mostly direct medium strength (r from 0.30 to 0.56) relationships between sonographic size of spleen and their derivatives parameters and total, longitudinal (except finger height and swivel anthropometric points) covering dimensions (including head circumference), body diameters (mostly anteroposterior chest size, width of shoulders, between the ridge and the distances between the swivel pelvic) bone and muscular components of body weight. With most of craniometrics parameters, thickness of skin-fat folds and fat weight somatotype components sonographic parameters of spleen have few statistically significant relationships. Sonographic size of the spleen and their derivatives options much better (in quantitative and qualitative terms) correlated with anthropometric indices and somatotypological than densitometric size and diameter of splenic vein.

The obtained results of sonographic parameters of spleen relations with anthropo-somatotypological indicators of healthy men of Podillya will allow in further research to more clearly delineate health and disease of the body.

Key words: correlation, sonography of spleen, anthropo-somatotypological performance, healthy men.

© **Stepanets S.O., Bagriy V.V., Sakovich O.O.**
National Pirogov Memorial Medical University, Department of Internal Medicine of Medical Faculty №2 (Pirogova str., 56, Vinnytsya, 21018, Ukraine)

SEXUAL PROPERTIES OF STRUCTURAL AND FUNCTIONAL CHANGES IN THE HEART IN PATIENTS WITH UNCOMPLICATED ESSENTIAL HYPERTENSION AND INHERITANCE OF POLYMORPHIC GENES PIROKSISOM PROLIFERATOR-ACTIVATING RECEPTOR-GAMMA

Introduction. Hypertension refers to multifactorial diseases with complex genetic mechanism of. According to some researchers, etiopathogenetical basis of hypertension are so-called "susceptibility genes", the effect of which is realized against the backdrop of adverse social factors and environmental conditions. So researchers attention focused on the study of polymorphisms (SNPs) of different genes that may be involved in the regulation of blood pressure (BP). One of these genes is the gene piroksysom proliferator-activating receptor-γ (PPAR-γ), whose activation is implemented in several ways, such as power cells, inflammation, lipid metabolism, regulation of the concentration of biologically active substances that can affect vascular tone (C- natriuretic peptide (SDA) and endothelin-1 (ET-1).

Materials and Methods. The study involved 181 patients with hypertensive individuals: 80 males aged 40-60 years (mean age 48,09 ± 0,54 years) and 101 women of postmenopausal age (mean age 56,90 ± 0,36 years), residents of Vinnytsia region. In the group of men 40 people suffering from hypertension and stage (I group), 40 - the GC II stage (II group). In the group of women in 51 patients diagnosed with stage I hypertension (group I), 50 - hypertension stage II (the second group). . The control group for the study of people male and female included 79 men aged 40-60 years and 80 postmenopausal women under age and without any cardio - vascular diseases in history at the time of the study.

Conclusions. 1. Inheritance Ala allele gene PPAR-γ men aged 40-60 years and women of postmenopausal age, residents of Vinnytsia region associated higher likelihood of developing hypertension in the future. However, gender differences were found in the frequency distribution of genotypes and alleles of the gene PPAR-γ among healthy individuals, and among patients with hypertension and second stages. 2. In patients with hypertension and stage men aged 40-60 years, unlike postmenopausal women age, remodeling the heart in the form of concentric left ventricular remodeling and the presence of left ventricular diastolic dysfunction associated with Ala allele carriers. 3. In patients with stage II hypertension

remodeling of the heart is compensated to some extent, but more pronounced in men - allele carriers Ala, carrier which is associated with the presence of their eccentric left ventricular hypertrophy. 4. In men aged 40-60 years, the presence of hypertension stage II and inheritance allele Ala, unlike postmenopausal women age, is associated with impaired left ventricular diastolic function. 5. The results may indicate greater vulnerability infarction in males - Ala allele carriers of the gene for PPAR-γ damaging overload that occurs in hypertension.

Key words: hypertension, gene polymorphism peroxisome proliferator-activating receptor, left ventricular remodeling.

© Dubinina V.G., Rybin A.I.
Odessa national medical university, Oncology department, 65055, 32 Nezhdanovoy str., Odessa, Ukraine

THE QUALITY OF LIFE OF PATIENTS WITH OVARIAN CANCER AS AN INDICATOR OF FUNCTIONAL ASSESSING THE EFFECTIVENESS OF ADJUVANT PLATINUM-BASED CHEMOTHERAPY

Introduction. Ovarian cancer (OC) is one of the most aggressive types of cancer pathology. Worldwide this disease is diagnosed in 70-75% of cases in the later stages, when the prognosis are not favourable. In these cases, the main expectation assigned to adjuvant chemical therapy after cytoreductive operations. According to some authors, the prognosis of these patients with widespread ovarian cancer is largely determined by the effectiveness of the 1st stage of the combined treatment.

The aim of this study was to evaluate quality of life in platinum-resistant patients with ovarian cancer depending on the pharmacologic resistance and differentiated use of chemotherapy.

Material and methods. It examined 350 patients with ovarian adenocarcinoma of III-IV stage, which have carried by cytoreductive surgery, and which was formed following clinical groups: The first group (control, n = 50) - patients with ovarian cancer who received standard adjuvant first-line chemotherapy (cisplatin - 75-100 mg / m2 intravenously with hydration and diuresis formed every 3 weeks); The second group (n = 100) - patients with probable refractoriness to platinum drugs receiving second line therapy (doxorubicin - 75-100 mg / m2 intravenously every three weeks); The third group (n = 100) - patients with probable resistance to platinum drugs treated with the help of standard first-line therapy and correction of dyzregulatory disorders (donors of nitrogen oxide, detoxicant, antiuricemia drugs); Group IV (n = 100) - patients with estimated sensitivity to platinum drugs (the standard first-line treatment after prior preventive course: 20 mg of dexamethasone at 12 and 6 hours prior to drug administration platinum tsymetidynu 300 mg or 50 mg and 50 mg ranitidine dimedrol 30-60 minutes). A survey was conducted of patients in accordance with the clinical protocol approved by the Ministry of health of Ukraine

of 17.09.2007 № 554. Additionally QOL measured using standard questionnaires EORTC QLQ-C30 and FACT-G. QOL was investigated after 6 and 12 months after treatment.

Results. It is shown that the output value by the subscales of the questionnaires EORTC QLQ-C30 and FACT-G in patients assigned to different clinical groups were comparable. When using a differentiated approach in the treatment of patients with ovarian cancer significantly improved performance on physical scales (PF), role (RF) and emotional functioning (EF). In addition, patients from III and IV groups had decreased intensity of nausea (NV) and general weakness (FA). With differentiated application of chemotherapeutic agents with metabolic support total score by FACT-G questionnaire was in Group III 77,8±0,9 points, and in the IV group - 77,9±0,8 points, which was significantly higher than obtained in the first and group II - 72,2±1,2 and 71,6±0,9 points. Described differences were held during all follow-up observation.

Key words: ovarian cancer, treatment, chemotherapy, platinum resistance, platinum refractoriness, quality of life.

© Isakova N.M., Isakov P.A., Kynina O.S., Zakalata T.R.
Pyrohov Memorial National Medical University, Vinnytsia, Ukraine, Department of Pediatric Dentistry (vul. Pyrohova, 56, Vinnytsia, Ukraine, 21018)

INFLUENCE OF DENTAL BUILD-UP ON STATE OF MICROFLORA IN PERIODONTAL POCKETS IN PATIENTS WITH GENERALIZED PERIODONTITIS

Introduction. Despite the large number of modern techniques and methods of periodontal disease treatment, the problem is still unsolved until today, which fact is confirmed by significant spread and incidence of periodontal inflammation complications [Herbert F. Volf et al, 2008]. It is known that the main role in the development of inflammatory periodontal diseases play periodontium - pathogenic microorganisms, which are mostly anaerobes [Hrudianov A.Y. et al, 2004]. According to clinical and laboratory studies, periodontium - pathogenic bacteria are resistant to most antibiotics and antiseptics, so the issue of medicines, which would neither cause resistance to periodontium - pathogenic microorganisms, nor contain antibiotics is in fact extremely important. Well-known medications suitable for introduction into periodontal pocket - Atridox (USA), Periocline (Japan), and Arestin (USA) - contain antibiotics and are very expensive; and only PerioChip (Israel) dental build-up contains an antiseptic substance. The *purpose* of this study was to identify periodontium - pathogenic microorganisms, determine sensitivity to antiseptics, their clinical efficacy and conduct comparative evaluation of complex treatments of patients with generalized periodontitis. The auxiliary purpose was to

determine the efficacy of PerioChip for treatment of moderate and severe generalized periodontitis.

Materials and methods. The study was conducted in a population of 30 patients with moderate and severe chronic generalized periodontitis, aged 35-50 years. They were divided into two equal groups consisting of 15 patients: main and control ones. All patients passed through clinical and radiographic examination of periodontal tissues [Hrudyanov et al., 2004] with determination of gingival sulcus bleeding index (SBI) according to H.R. Mühlemann, A.S. Mazor [Mühlemann, Son, 1971], and papillary marginal alveolar index (PMA) according to C. Parma [Parma, 1960], and were determined a depth of pathological pocket using periodontal probe (Hu-Friedy). Biofilm and dental plaque were removed with Gracey curette and handyblaster (NSC); curettage was performed using Langer curette (Hu-Friedy).

Patients from the main group after Scaling & Root Planning were injected PerioChip (Israel) into the pocket, from the control group – were subjected to irrigation of pathological pockets with Dekasan 0.02%.

The material was sampled with special sterile disposable loop-like probes at a depth of 2 mm. The material from transport tools was plated on special medium for culturing anaerobes - Lactobacillus MRS Agar and Iron Sulphite Agar. Paper disks soaked with Dekasan 0.02%, Miramistin 0.01%, and Chlorhexidine Bigluconate 0.05% solutions, and in the center of the cup – with PerioChip were placed on plated media. Cups were placed in an incubator at 37°C for 48 hours and then, used Hi-Antibiotic Zone Scale -C for measuring a delay in growth of culture around the discs. The pathogens were identified using bacterial analyzer Vitec ² Compact 15.

After completion of Phase 1 treatment of generalized periodontitis, the clinical efficacy of PerioChip for complex treatment of generalized periodontitis was evaluated based on the data of periodontal tissues survey, microbiological research, and measuring the depth of pathological pocket. This condition was defined in dynamics on Day 11 and in 1 month after completion of the treatment course. Statistical analysis of the results was carried out on an IBM-compatible computer using Microsoft Excel 2000 (9.0.2812) program that is a part of Microsoft Office 2000 package and Statistica 99 Edition (Kernel release 5.5).

Results. Microorganisms, most often isolated from pathological pockets of patients were lactobacilli, which in association with other anaerobic and aerobic microorganisms triggered development of periodontitis. A zone of growth retardation on nutrient media around the discs, saturated with Miramistin 0.01% was 10 mm, with Chlorhexidine Bigluconate 0.05% - 20 mm, with Dekasan 0.02% - 17 mm, and around the ones saturated with PerioChip – 37 mm. On Day 5 of the study, the zone around the discs with Miramistin was 4 mm, with Chlorhexidine Bigluconate - 12 mm, 10 mm – around the disc with Dekasan, and 29 mm – around the disc with PerioChip. At Day 10 of the study, there were no sterile zones around the disks with Miramistin and Dekasan, while the zone around Chlorhexidine Bigluconate 0.05% was 4 mm. PerioChip maintained its high antibacterial activity well on Day 10 with the growth delay zone equal to 19 mm. Therefore, in a 10-day period, PerioChip demonstrated a drop in activity in the lactobacilli-driven hostile lactic acid environment by only 48.7%.

Peptostreptococcus anaerobius from pathological pockets of examined patients were also plated and in 10 days PerioChip reduced its activity against peptostreptokokki by 34.5%.

According to initial examination, PMA in the main study group was 84.34 ± 1.56%, in the control group – 83.98 ± 0.39%, SBI – 2.48 ± 0.52 and 2.51 ± 0.71 respectively, the depth of pathological pockets was 5 mm ± 0.6%, which was typical for severe inflammation phenomena in periodontal tissues, including gums.

Repeated clinical examination carried out after 11 days, presented a slight improvement of these indicators: PMA – 26.06 ± 1.2% and – 30.4 ± 0.7%, SBI – 1.54 ± 0.6 and 1.92 ± 0.4, respectively, the depth of periodontal pockets was almost the same. On Day 11 of treatment, the pathogenic microflora from pathologic pockets with PerioChip was not plated; peptostreptokokki from patients of the control group - 35%, lactobacilli - 27%, bacteroides - 24%, and fusobacterium - 14%. PMA index in the main study group in a month was 5.7 ± 2.06, and in the control group – 15.1 ± 2.1 points ($p < 0.05$), SBI bleeding index – 0.1 ± 0.1 and 0.2 ± 0.6 points respectively ($p > 0.05$), the depth of periodontal pockets decreased by 1.5 mm. The flora taken from pathological pockets of patients from the main group was identified as follows: Prevotella - 23.6%, Peptostreptokokki - 20.1%, and S. Saprophiticus – 18.2%, while patients from the control group presented the following microbiological content from pathological pockets: S. aureus – 20.5%, C. albicans – 16.9%, S. mutans – 5.7%, and E.coli – 2.0%. Some patients with severe generalized periodontitis and pockets over 5 mm-deep, were recommend re-setting of PerioChip on 3 months.

Conclusion. 1. Study of a zone of microorganism growth retardation around periodontium - pathogenic discs impregnated with antiseptics showed that the greatest antibacterial properties had Chlorhexidine Bigluconate, smaller - Dekasan, and Miramistin – the smallest. 2. In the course of comparative clinical trial, we found out that PerioChip had a pronounced anti-inflammatory and antimicrobial properties, stimulated metabolic processes in periodontal tissues, thus leading to a non-surgical decrease of pathological pocket depth by 1.5 mm. 3. A microbiological study showed that the presence of high-concentrated Chlorhexidine Bigluconate in PerioChip promoted more rapid eradication of periodontium - pathogenic microorganisms without creating resistant strains. 4. PerioChip is more biocompatible to the oral mucosa and a human body as a whole and does not alter the color of teeth compared with other medications containing Chlorhexidine.

Key words: PerioChip, periodontium - pathogenic microorganisms, generalized periodontitis.

National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

INDICATORS OF VASOREGULATION AND THROMBOGENIC ENDOTHELIAL FUNCTION IN PATIENTS WITH CORONARY HEART DISEASE

Introduction. In this work we accessed the importance of vasoregulation and thrombogenic endothelial dysfunction as criterias of coronary heart disease severity and predictors of atherosclerotic process destabilization.

Coronary heart disease continues to hold first place among cardiovascular disease in frequency of complications and deaths and is the cornerstone of modern cardiology. Weather for patients with coronary heart disease depends mainly on progression of coronary atherosclerosis. As one of the key stages in the development and progression of atherosclerosis and coronary heart disease is endothelial dysfunction, which may play an equally important role than morphological changes of vessels caused by atherosclerosis.

Objective: to determine the significance of the breach vazorehulyuyuchoyi and thrombogenic endothelial functions as a criterion of gravity and destabilization of coronary artery disease.

Material and methods. The study involved 135 patients with coronary artery disease (94 men and 41 women); cklav average age 57,24 ± 5,12 years. The control group consisted of 30 healthy individuals (22 men and 8 women) aged 55,37 ± 4,82 years.

In the 92 patients had stable coronary artery disease diahnoctovana, including 45 - II angina functional class (FC) and 47 - III FC; 43 - unstable (progressive) angina.

Statistical analysis of the results was performed using the software package statistic 10.0 and Microsoft Excel 2000.

Results. After applying nitroglycerin increase the size of the diameter of the brachial artery was 12,33 ± 1,72%, which was significantly (31.2%, $p < 0.05$) lower than the control group.

The normal type of vascular-motor response to conduct tests with reactive hyperemia was observed in 17 of 73 (23.3%) patients with coronary artery disease, and when administered nitroglycerin - in 21 (28.8%) patients. Pathological vasoconstriction in patients with coronary heart disease often found in determining EZVD than in determining ENVZD (in 15 (20.5%) and in 10 (13.7%) patients, respectively).

Found a significant increase of endothelin-1 and von Willebrand factor in the patients suffering from coronary heart disease. The degree of increase of endothelin-1 in patients with stable coronary heart disease was significantly greater than the degree of increase in activity of the von Willebrand factor (187.28% versus 42.76%, respectively).

The simultaneous determination of different vascular endothelial function in patients with coronary artery disease showed some differences depending on the severity and variations of the disease. Various endothelial function simultaneously excited and not to the same extent.

Conclusion. 1. Severity of abuse endothelium-dependent vasodilation and endothelin-1 levels in the blood are directly dependent on the degree of coronary lesion bed and severity of clinical status of patients with coronary heart disease. 2. Increased activity of von Willebrand factor in the blood indicates an increase in its

release from damaged endothelial cells and gives reason to use it as an indicator of abuse thrombogenic function of the vascular endothelium and destabilization of atherosclerotic process. 3. Violation vazorehulyuyuchoyi endothelial function are more evidence of the severity of the clinical condition of patients, while increasing pro-coagulating function shows the activation and destabilization of atherosclerotic process.

Key words: coronary heart disease, endothelial dysfunction, endothelium-dependent and endothelium-independent vasodilatation, endothelin-1, von Willebrand factor.

© Marchenko A.V.
Ukrainian Academy of Medical Dental (Poltava)

COMPUTED TOMOGRAPHY VESTIBULAR LINGUAL DIMENSIONS CROWNS OF TEETH IN YOUNG MEN AND WOMEN OF VARIOUS CRANIOTYPES WITH PHYSIOLOGICAL OCCLUSION

Introduction. Further and more in-depth study of variability parameters odontology considering cranio typological characteristics studied is necessary when diagnosing and planning for further treatment, and to achieve optimal aesthetic results.

Aim of our work – determine the features of computer-tomographical vestibular lingual size of crowns of teeth in young men and women with physiological bite depending on the shape of the head.

Materials and methods. Primary computed tomographical indices size of teeth and head of young men and women from Podillya with orthognathic bite derived from the data bank Scientific and Research Center Vinnitsa National Medical University named after Pirogov. For the study were selected only scans young men and girls with orthognathic bite, which was determined by 11-points for Bushan and their cephalometric performance.

For this study used dental cone beam CT scan - Veraviewepocs 3D, Morit (Japan). Research conducted by the own developed schemes within these characteristics. Volume three-dimensional image - cylinder 8x8 sm. - thickness of layer 0.2 / 0,125 mm, 0,11-0,48 mSv dose of radiation, voltage and amperage 60-90kV / 2-10 mA. Vestibular-lingual size of the upper and lower incisors, canines, small and first large molar teeth measured between points conditional median projection of the vertical tooth in its vestibular and oral surfaces in the gum area.

Measurement of cephalometric sizes was carried out with a soft measuring tape and a large compass with scale in full size Martina system. The following parameters were measured: the largest circumference of the head through the nose and above the inion; transverse arch, measured tape from trestles right point to the left; sagittal arc, measured by the tape from the occipital point to glabella.

Craniotype determined by the formula ms_ms * 100/g_op, where ms_ms - maximum width of the head (occipital diameter); g_op - the maximum length of the head. With the value to 75.9 researched attributed to dolichocephalic; 76,0-80,9 - to

mesocephals; 81,0-85,4 - to brachycephals. Established the following distribution: mesocephalic boys - 16, boys brachycephalic – 19, girls mesocephalic – 16, girls brachycephalic - 26.
Statistical analysis of the results was performed using the statistical software package licensed "Statistica 6,0" using non-parametric estimation methods.
Results. Established that the only value of vestibular lingual corner large size of the first tooth on the lower jaw in boys mesocephals significantly ($p<0.05$) smaller and has a trend ($p = 0.066$) compared to smaller values with boys and young men of total group.
The value of vestibular lingual size of teeth on the upper jaw in girls mesocephals significantly ($p<0.05$) higher compared with girls brachycephals and girls of total group.
The value of vestibular lingual corner large size of the first tooth on the lower jaw in girls brachycephals significantly ($p<0.01$) lower and has a tendency ($p=0.059$) compared to smaller values with mesocephalic girls and girls of the total group.
In young boys of the total group and in young boys brachycephals value of vestibular lingual sizes crowns of all teeth was significantly ($p <0,05$-$0,001$) larger compared with girls of similar comparison groups; in boys mesocephals value of vestibular lingual sizes crown upper medial and lateral incisors, lower canines significantly ($p <0,05$-$0,01$) larger compared with mesocephalic girls.
Key words: vestibular lingual size of crowns of teeth, boys, girls, physiological bite, craniotype, sexual dimorphism.

© Mylytsya K.M.
State Institution "Zaporizhzhya medical academy of postgraduate education of Ministry Health of Ukraine", (bul.Vintera 20, Zaporizhzhya, 69096, Ukraine)

UKRAINIAN VERSION OF THE SELF-ASSESSMENT WEIGHT QUESTIONNAIRE AND ITS SIGNIFICANCE

Introduction. This article emphasise that patients with excess weight need for self-esteem somatomorfotipa, because it justifies the choice of the method of treating obesity. However, before spending doctor's and patient's time on detailed questionnaires with a lot of issues need to assess the adequacy of the patient's self-esteem. For this purpose there is a special English questionnaire for self-assessment of weight (WSSQ), consisting of only 12 points. Since any questionnaire can not be automatically used among the inhabitants of another country, and requires an examination of its validity, and if necessary, carrying out adaptation work was carried out to assess the possibility of its use as a screening questionnaire for potential bariatric patients.
Materials and methods. On the basis of clinical surgery and proctology ZMAPO State Ministry of Health of Ukraine conducted a survey of 90 patients with different body mass index.

All patients were divided into 3 groups. The first group (control) consisted of 40 patients with a body mass index between 20 and 29 (ie, non-obese patients). The second group is formed of 30 patients with a body mass index of 30 to 40. And in the third group consisted of 20 patients with a BMI of 40 or more, that is obese.
Points of the Ukrainian version of the self-assessment questionnaire on body weight (WSSQ) are presented below.
• I will always return to overweight
• I am is a cause of my weight problem
• I feel a sense of guilt because of my weight problems
• I'm overweight because I weak-willed person
• I would never have been any problems with weight, if I had a strong will
• I can not control myself enough to maintain
"Healthy" weight
• I feel bad because of the opinions of others about me
• People treat me differently because I have a weight problem
• People who do not have a weight problem are difficult to communicate with me.
• Ambient think that I have no self-control, because I have a weight problem
• People consider me guilty in my weight problems
• Ambient hesitate to communicate with me because - because of my weight problem
Each item was assessed by the patient on the 5-point scale from one (completely disagree with the statement) to five (strongly agree with the statement). The more points, the higher the level of awareness of obesity as a specific problem, threatening and violating the quality of life, psychosocial and somatic status of an individual, motivating the patient to the need to take action on the choice of treatment.
Results. The results of the analysis of the Ukrainian version of the self-assessment WSSQ body weight have shown that increased body mass index in obese patients directly correlated with the severity of depression, feelings of guilt and shame for his anthropo-somatic way. Dramatically increasing the number of dissociative symptoms ($P < 0.001$).
Conclusion. Results of the study showed that Ukrainian version of the questionnaire WSSQ, in its psychometric features, meets the objective criteria of screening questionnaires for potential bariatric patients and can be recommended for practical use.
Key words: obesity, self-esteem, depression.

© Kuzminov N.V., Gribenyuk O.V.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

FEATURES OF METABOLIC PARAMETERS, STRUCTURAL AND FUNCTIONAL STATUSES IN PATIENTS WITH STAGE II HYPERTENSION AND DIFFERENT WEIGHT

Introduction. Today, overweight and obesity are considered to be independent predictors of cardiovascular diseases and their progressions. However the influences of overweight and "premorbid" obesity to metabolic status, structural and functional changes of cardiovascular system in hypertensive patients are studied still not enough.

The aim of the study was to evaluate the lipid, carbohydrate and fat metabolisms, nonspecific systemic inflammation activity and vascular wall structural-functional state in patients with stage II hypertension and different body weight.

Materials and Methods. The study involved 61 patients with stage II hypertension, 28 (45.9%) women and 33 (54.1%) men, average age 49,1 ± 0,9 y. Depending on the body mass index all patients were divided into three groups: 1st group consisted of 18 (29.5%) patients with optimal weight, 2nd - 17 (27.9%) patients with overweight, 3rd group included 26 (42.6%) first and second degrees obesity patients. The control group included 20 healthy persons with optimal weight, appropriate age and sex.

Complete anthropometric, clinical-laboratory and instrumental examinations were made to confirm or cancel the stage II hypertension. Vascular endothelial function, carotid artery intima-media thickness and presence of atherosclerotic plaques, arterial wall stiffness index were evaluated. Additionally the indexes of lipid spectrum, concentration of lipoprotein (a), high-sensitivity C-reactive protein, tumor necrosis factor-α, adiponectin, insulin were detected in the blood serum. Statistical analysis of the results was performed by StatSoft "Statistica" v.12.

Results. The weight above optimal values was associated with elevated systolic blood pressure. The presence of premorbid obesity was accompanied by a significant increased pulse blood pressure and systolic blood pressure variability. There were no significant differences of left ventricular myocardium structural and functional states and vascular endothelial function between groups with different body mass index. The frequency of atherosclerotic plaques detection in the right and left common carotid arteries was more increased only in the group with concomitant obesity than in the control group ($p<0.05$). Intima-media thickness didn't exceed 0.9 mm in any groups and didn't differ from the control group ($p>0.05$). Arterial stiffness index was significantly higher in the patients with stage II hypertension than in the control group independently by body mass index ($p<0.05$). The lowest arterial stiffness index was registered in the patients with overweight.

Atherogenic lipid spectrum shift was marked among all patients. The level of lipoprotein (a) was significantly higher in the total group compared with the control group ($p<0.05$). In the group with overweight the lipoprotein (a) level was lowest and approached to the index in the control group.

Nonspecific systemic inflammation activity markers (the average levels of high-sensitivity C-reactive protein and tumor necrosis factor-α) were increased among all hypertensive patients compared with healthy persons ($r<0.05$). The level of adiponectin in patients with stage II hypertension didn't differ from that in the control group and depending on body mass index ($p>0.05$). The serum insulin level in patients with stage II hypertension in the general group was significantly higher than the same in the control group ($p=0.001$). After body mass index analysis the lowest level of insulin was recorded in the patients with overweight. HOMA index didn't

exceed 2.77 units in any groups, but was significantly increased than in the control group ($r<0.05$) and highest in obesity patients.

Conclusions. 1. In patients with stage II hypertension changes of metabolic, structural and functional statuses were manifested with proaterogenic lipid profile, increased levels of lipoprotein (a), C-reactive protein, tumor necrosis factor-α, insulin, HOMA index, disorderes of vascular endothelial function and growth of arterial stiffness index compared with the control group ($p<0.05$). 2. The most distinct metabolic abnormalities and structural-functional changes of the vascular wall were observed in patients with stage II hypertension and concomitant obesity. 3. In middle-aged patients with stage II hypertension and overweight deviation of metabolic and structural changes were less pronounced than in patients with the optimal body weight and early stages of obesity.

These data have indicated the protective value of a small fat content, which is an active paracrine tissue and has a protective role to some certain limit.

Key words: hypertension, overweight, obesity, lipoprotein (a), adiponectin, insulin, arterial stiffness.

© Asatova MM, Khegay OA.
Tashkent institute of postgraduate medical education, Uzbekistan.

ABILITY TO SAVE THE PREGNANCY IN WOMEN WITH AUTOIMMUNE THYROIDITIS

Introduction. *The aim* of this study was to investigate the characteristics of the course of pregnancy in women with autoimmune thyroiditis are subject to availability pregravid correction autoimmune process.

Pregnancy and childbirth in women with thyroid disorders are characterized by a high frequency of complications of early abortion, termination of pregnancy in the early stages of gestation, preeclampsia, chronic intrauterine fetal hypoxia, fetal malnutrition, fetal death, an increased risk of preterm birth. Increasing the concentration of antibodies to a thyroid gland is registered in women with recurrent pregnancy loss.

Discussion of the pathogenetic mechanisms of miscarriage remains the focus of researchers.

The aim of our study was to investigate the characteristics of the course of pregnancy in women with autoimmune thyroiditis (AIT) are subject to availability pregravid correction autoimmune process.

Material and methods. The study involved 84 women who had been diagnosed AIT before pregnancy and held pregravid AIT correction, and 78 pregnant women who AIT was detected during pregnancy.

The control group consisted of 30 patients with physiological pregnancy without thyroid disease. Pregravid correction of autoimmune thyroiditis included 2 protocol: monotherapy with levothyroxine in individually selected dosage (n = 32) and

combination of levothyroxine therapy in individually selected dose with Thiamazolum 5-10 mg / day (n = 52).
Studies of thyroid-stimulating hormone, triiodothyronine and free thyroxine free in I, II and III trimester of pregnancy. Investigation of hormonal profile was performed by ELISA using a standard set of the company "Human" (Germany). Determination of autoantibodies to thyroglobulin (ATG) and ATPO performed using standard "Insep" company sets (Russia). Ultrasound examination was carried out on the unit Mindray DC-3, for the study of the uterus and ovaries used Convex multi-frequency sensor (2,5-5 MHz).
All pregnant women with AIT took potassium iodide drugs in a dose of 200 mg / day and levothyroxine individually selected dose.
Statistical processing of the results was carried out on a PC using standard packages applied statistical analysis software (Statistical Package for Social Science-22, Microsoft Excel). To analyze the results of the study were used nonparametric Wilcoxon test for dependent samples, the correlation of Spearman.
Results. The course of pregnancy in patients with Hashimoto's thyroiditis were accompanied by significant fluctuations in the level of steroid hormones, particularly in patients with spontaneous pregnancies have not received pregravid correction of hormonal disorders. abortion rate is directly dependent on the level of antibodies to thyroid peroxidase.
The average age of menarche in patients with autoimmune thyroiditis (13,1 ± 0,8 years) did not differ from the value obtained in the control (13,2 ± 0,9 years) group. Prior to the onset of pregnancy in patients with autoimmune thyroiditis incidence of menstrual disorders was observed in 102 (63.0%) in the form of oligomenorrhea, amenorrhea, Hypermenorrhea, dysmenorrhea. In the comparison group, menstrual irregularities occurred in 7 (23.3%) of the cases ($p < 0.01$).
Pregnancy preceded infertility in 64.2% of women with autoimmune thyroiditis in women without thyroid disease infertility rate was 3.3% ($p < 0.001$).
In pregnant women with AIT in the period of 4-5 weeks, noted a relative decline in progesterone level 35,8 ± 5,5 ng / ml, compared with 41,3 ± 3,6 ng / ml in the control group ($p < 0.001$).
Conclusion. The results of the research indicate that: 1. Complications of pregnancy in women with autoimmune thyroiditis, exhibit a high frequency of spontaneous abortion in the early stages of gestation, hypertensive disorders, iron deficiency anemia, obesity and allergic diseases. 2. The course of pregnancy in patients with Hashimoto's thyroiditis were accompanied by significant fluctuations in the level of steroid hormones, particularly in patients with spontaneous pregnancies have not received pregravid correction of hormonal disorders. 3. There was a direct correlation abortion on the level of antibodies to thyroid peroxidase.
Key words: miscarriage, autoimmune thyroiditis, thyroid peroxidase antibodies.

Odessa National Medical University, Department of Infectious Diseases (Valihovsky line 2, Odessa, Ukraine, 65000, usichenko2006@mail.ru)

THE CLINICAL SIGNIFICANCE OF DETERMINING GENE POLYMORPHISM SMAD7 IN PATIENTS WITH CHRONIC HEPATITIS C AND CHRONIC HEPATITIS B

Introduction. The aim of this study was to compare the frequency of gene polymorphisms SMAD7 in healthy subjects, patients with chronic hepatitis C (CHC) and chronic hepatitis B (CHB) who live in Odessa region.
In recent studies there was established relationship with different genes phenotype of chronic hepatitis C (CHC) and chronic hepatitis B (CHB), and a number of cytokine genes with severe course, progression and the effects of CHC and CHB.
The main *purpose* is the study of the key ways of intracellular signals involved in the regulation of transcription of various genes controlling the immune and inflammatory response, apoptosis and cell proliferation.
Materials and methods. The study includes 100 patients with CHC and 41 patients with CHB. The control group includes 30 people who did not have diseases of the hepatobiliary system. Traditional diagnostic methods are used by the provided protocol. Molecular genetic studies included determination of gene polymorphic variants in SMAD family member 7 (SMAD7 C> T). DNA isolation was performed using a set of "DNA RAPID blood" (NPF "Liteh", Russia). Polymorphism was studied by means of amplification of the relevant parts of the genome by PCR. The structure of the primers used and the parameters of temperature cycles are described in the literature and genomic database. Studies were conducted in the laboratory FNSC Physico-Chemical Medicine (Moscow).
Results. The study of allelic polymorphism SMAD7 (SMAD7 C> T) revealed a significant prevalence of heterozygous genotype CT in patients with chronic hepatitis B compared with a group of healthy individuals ($p < 0.01$). In the control group of individuals there was observed greater frequency of homozygous genotypes CC and TT, however, significant differences were found.
The study of allelic polymorphism SMAD7 (SMAD7 C> T) in patients with chronic hepatitis C also found a significant prevalence of heterozygous genotype CT group compared with healthy subjects ($p < 0.005$). In the control group of people there was observed a large occurrence of homozygous genotypes CC and TT, however, significant differences were found.
When comparing the frequency of allelic polymorphism SMAD 7 (SMAD7 C> T) in patients with chronic hepatitis B and chronic hepatitis C there was observed only slight predominance of homozygous genotype SS in patients with chronic hepatitis C ($p < 0.05$), but no significant differences were found.
Conclusion. 1. There were identified differences in frequencies of allele gene SMAD7 in ethnically homogeneous group of residents of Odessa region in patients with chronic hepatitis B and chronic hepatitis C in comparison with practically healthy persons ($p<0.05$) 2. There was no significant difference in the analysis of

allelic polymorphism SMAD7 in patients with chronic hepatitis B and chronic hepatitis C ($p>0.05$).
Key words: Chronic hepatitis C, chronic hepatitis B gene polymorphism.

© Belyaeva N., Yavorovenko A., Kurylenko I.
The scientific-research institute of rehabilitation of disabled of Vinnitsa National Medical University named by M. Pyrogov (Pyrogov str., 56, Vinnytsya, 21029, Ukraine)

CURRENT STATE OF MEDICAL AND SOCIAL ASSISTANCE TO DISABLED WITH UROGENITAL DISEASES

Introduction. In modern conditions there are significant changes in social policy regarding disabled persons – persons with disability, including the diseases of the genitourinary system.
The aim of this study was to: identify the needs of disabled disease urinary-genital system in the activities of medical and social rehabilitation.
Material and Methods. We analyzed 7568 individual rehabilitation programs (IRP) of disabled persons with disorders of the genitourinary system (code №100 - №99), which are formed by the doctors of the medical social expert commission in 22 regions of Ukraine for the period 2014, 2015. Among the studied contingent was 43.50% young people, average – 50.22%, old – 6,28%. Disabled group I – 13.82%, the second group – 21.75%, third group – 64.43%. On the base of the data the needs of the disabled people in the activities of medical and social rehabilitation were determined. Methods: analytical, statistical meta-analysis according to IRP.
Results. On the base of the research we have formed structure of the needs of disabled people with disorders of the genitourinary system in the activities of medical and social rehabilitation, the amount of which varies depending on the type of rehabilitation, age and severity of disability. It was established that the priority of the rehabilitation of patients, regardless of age limit is "medical rehabilitation", among which the most popular types were "restorative treatment", "prevention measures", "medical supervision". Measures "professional" and "labour" often needed rehabilitation of young disabled people of working age. Note the underestimation doctors of medical social expert comission during the formation IRP role of services "physical", "professional", "social" rehabilitation, "Rehabilitation equipment", "medical products" to eliminate restrictions of life, social adaptation, improvement of persons with disabilities in need improvement works to improve the quality of data in the IRP diseases.
Conclusions. The framework needs activities of medical and social rehabilitation of disabled people with diseases of urinary-genital system will plan and substantiate optimal amount of rehabilitation this group of patients, and from a practical point of view – to unify formation IRP.

Key words: disability, illness, urinary-genital system, individual rehabilitation program.

© Bulavenko O.V., Muntian O.A.
National Pirogov Memorial Medical University, Vinnytsya, Department of Obstetrics and Gynecology №2 (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine, gynecology2@vnmu.edu.ua)

MOLECULAR GENETIC ANALYSIS OF IMPLANTATION PATHOLOGY IN WOMEN WITH RECURRENT MISCARRIAGE

Introduction. Miscarriage is one of the leading and social problems of obstetrics and gynecology, which adversely affects the health, reproduction and social life of women. Recurrent miscarriage - is the loss of three or more pregnancies, occurs in approximately 1% of couples who are trying to have a baby. In the structure of habitual loss of pregnancy detect genetic, anatomic, endocrine, infectious and immunological factors. 100% of the developing pregnancy combined with chronic endometritis, regardless of the underlying cause of the stop of gestation. Even after extensive surveys identification of the cause of recurrent miscarriage occurs less than in the half of these couples. Recurrent miscarriage of unknown etiology associated with significant adverse clinical and psychological consequences for women and their families.

Implantation processes (placentation) is controlled by a complex interaction of many signaling and effector compounds and depend on the antigenic activity, functional status of the ovum, the state of the decidua of the endometrium and spiral arteries of the uterus. "Beat" of the branches of the uterine vessels are applied, as a rule, by extragenital (hypertension, diabetes, anemia, varicose veins), and infectious and inflammatory diseases of the mother, that is accompanied by endothelial dysfunction, which is long before the gestation determines violations of the formation of the placental bed at a future pregnancy with existing angiopathy spiral arteries. The main part of the "mother issues" implantation is accompanied by a relative or absolute deficiency of progesterone, because it exposes the endometrium essential for pregnancy transformations.

Progesterone is essential for achieving and maintaining a normal pregnancy. Progesterone is involved in secretory changes in the endometrium in the luteal phase (preparation of the endometrium for implantation, decidualization endometrium), relaxation of muscles of the uterus, the protection of the allogeneic fetus from immunological rejection. Progesterone also reduces the release of corticotropin-releasing hormone (CTRH), the release of prostaglandins (directly and by reducing the release CTRH), uterine and cervical muscle relaxation.

However, there is a certain percentage of women with normal levels of progesterone, at which interruption of pregnancy occurs. That's what prompted us to search for new causes of miscarriage.

Also during termination of the pregnancy angiogenesis plays a role, which is associated with the normal development of the vascular network placenta mediating formation uteroplacental circulation. A large number of different cell types and their products, trophoblast cells and natural killer cells are involved in this process. Adequate placental blood flow and vascularity are the main components of a normal placental function and key factors for growth and development of the fetus. According to recent studies, VEGF is one of the key factors in the vascular dysfunction in habitual miscarriage. It is known that inhibition of VEGFA function can lead to infertility due to blockage of the corpus luteum function. The inactivation of a single VEGF allele results in related haplo-failure death of embryos due to vascular malformations about the 9th day of pregnancy.

In the present study our purpose was to determine the polymorphism of progesterone receptors genes and vascular endothelial growth factor in women with recurrent miscarriage as a possible cause of embryo implantation pathology.

Materials and methods. The study was conducted on the basis of the Vinnitsa City Clinical hospital №2 and Center for Reproductive Medicine. 88 women with a diagnosis of "recurrent miscarriage" were involved in the study.

Inclusion criteria were: The woman's age - 18-35 years; miscarriage in history; a threat of the miscarriage.

All women provided written informed consent for molecular genetic studies. Taking a DNA sample was carried out in the morning on an empty stomach with a special plastic applicator (collection of oral (buccal) cells).

Results. The following results were obtained (Fig. 1 Polymorphism of PgR and VEgF in women with recurrent miscarriage):

- 26 women were identified polymorphism of progesterone receptor gene, which amounted to 29.46%;
- 70 women were identified polymorphism of vascular endothelial growth factor - 79, 54%;
- 8 women were identified polymorphisms of both genes - 9.09%.

The findings suggest that there is the greater role of VEGF in the pathogenesis of implant pathology in women with recurrent miscarriage, which in turn leads to disruption of the formation of utero-placental blood flow. The clinical manifestations of this condition may be threatened miscarriage, missed abortion or spontaneous miscarriage. Therefore, you should include carrying out molecular genetic studies in the general scheme of a survey of women with recurrent miscarriage, especially of the unknown etiology. This will allow to determine the leading factor in the development of implant pathology. Formation of risk groups for recurrent miscarriage will reduce the frequency of early reproductive losses by predicting the risk of implantation and placentation pathology, appropriate monitoring process of such pregnancy, and in a timely manner to carry out the correction of violations.

Key words: Recurrent miscarriage, implantation pathology, gene polymorphism, PgR, VEgF.

© Kindrativ E.O.
SHEE "Ivano-Frankivsk National Medical University" Department of Pathology and Forensic Medicine (Halytska street, 2, Ivano-Frankivsk, 76018, Ukraine); Kindrativ@mail.ru

COMMUNICATION HUMAN PAPILLOMAVIRUS INFECTION WITH FEMALE INFERTILITY IN CERVICAL INTRAEPITHELIAL NEOPLASIA

Introduction. Today actively study the role of viral infection in the etiology of chronic inflammatory disease in women and development of infertility. Development important human papillomavirus (HPV). HPV-infection associated with lower fertility, chronic gynecological diseases, male and female infertility and the emergence of irreversible disorders in the reproductive system influences the development and pathology of pregnancy leads to high perinatal loss. However, the role of HPV-infection as a direct cause of infertility remains uncertain. The existing conclusions of the problem based on studies in vitro, and not on large-scale epidemiological studies.

Objective: to establish the prevalence of HPV-infection in women with various forms of infertility with cervical intraepithelial neoplasia.

Materials and methods. In work used clinical data (results of colposcopic studies) inpatient and outpatient charts of 250 patients with CIN, the PLR to detection of viral DNA HPV of high carcinogenic risk (WRC) and morphological (histological, histochemical, immunohistochemical) methods. Depending on the CIN severity all the cases were divided into three study groups: the 1st group – 110 cases with mild CIN (CIN-I); the 2nd group – 86 cases with moderate CIN (CIN-II); the 3rd group – 54 cases with severe CIN (CIN-III). The women's average age was 29,4±1,3 years. 58,4% of women suffered from primary infertility, 41,6% – from secondary infertility. Among the causes of primary infertility prevailed tubal peritoneal factor (46,6%), which was detected in 68 women. Among the examined women tubal peritoneal factor as a primary, was found in 27,2%, hormonal infertility was diagnosed in 37 female patients (14,8%), combined factors occurred in 24 cases (9,6%). In the structure of secondary infertility has dominated the pipe factor (60,6%), peritoneal infertility observed in 24.0% of patients. In secondary infertility we did not observe women with reproductive disorders associated with endometriosis, immune genesis and unspecified forms. In the total number of the women examined secondary tubal infertility constitutes 25,2%, peritoneal – 10,0%, combined occurred in 3,6% of female patients.

Results. Analyzing the colposcopic study showed that CIN in women with infertility polymorphism is characteristic macroscopic changes in the cervix that is characterized by a combination of several colposcopic signs. Patients with statistical significance compared with healthy women are almost white vinegar epithelium, mosaic, punctuation, and dyskeratoz ectopia of cylindrical epithelium, both in the transformation zone and outside zone. Clinical manifestations of infection with human papilloma virus was found in 31.6% of women in other cases have been mediated by signs of HPV.

From 250 patients in 157 women with CIN associated with HPV found the following forms of infertility: most cases - 77 (49.0%) accounted for tubal infertility, including women with CIN-I was 26 (41,9%) of CIN II - 28 (52,8%) and CIN III-20 (47,6%). When CIN associated with HPV-infection identified the following forms of infertility, most cases - 77 (49,0%) accounted for tubal infertility, including women with CIN-I was 26 (41,9%), of CIN II - 28 (52,8%) and CIN-III - 20 (47,6%), in second place - peritoneal infertility, which is set in 39 women (24.8%) of the total. In the group of women with CIN-I was 17 (27.4%), of CIN II - 12 (22,6%), of CIN-III - 8 (19,0%). In hormone infertility accounted for 14 cases (8,9%), of which women with CIN-I - 8 (12,9%), of CIN II - 3 (5,7%), of CIN-III - 7 (16,7%). The smallest number - 2 cases (1.3%) belonged to uterine infertility, which was observed in two women with CIN-I. Combined form reproductive disorders set in 25 patients (15.9%), including women with CIN-I was 9 (14,5%), of CIN II - 10 (18,9%) and CIN-III - 7 (16,7%).

Analyzing the quantitation data of HPV we determined three variants of viral load (copies of Ig HPV/10^5 cells). In 52 women (33,1%) we detected HPV with viral load < 3 copies of Ig HPV/10^5 cells, 3-5 copies of Ig HPV/10^5 cells were determined in 65 female patients (41,4%) and in the 40 of the examined female patients (25,5%) was detected viral load > 5 copies of Ig HPV/10^5 cells. Analysis of the distribution of forms of infertility depending on the viral load of HPV high cancer risk showed that the rate of <3 Ig HPV copies/10^5 cells are often detected at CIN-and-peritoneal infertility, which is 36,4%. Viral load of HPV Ig 3-5 copies/10^5 cells prevails (48,3%) with tubal infertility, in the group of patients with the highest figure of viral load (> 5 copies of HPV Ig/10^5 cells) the largest share (45,5%) are also for tubal infertility.

Comparison of expression levels $p16^{ink4a}$ at CIN-I types of infertility shows that negative type of reaction prevailed in the peritoneal infertility (33,3%). Hormonal and uterine infertility accounted for the same proportion – 22,2%. Characterized by the lowest rate trumpet and combined infertility. These forms also form the same proportion (11,1%). When focal and diffuse expression levels observed prevalence of tubal infertility, which is respectively 44,4% and 52,9%. In CIN II, CIN as in-and the highest rate of negative expression $p16^{ink4a}$ belongs peritoneal infertility. Tubal infertility also prevails in the focal and diffuse expression of the marker, and is respectively 61,8% and 50,0%. Unlike CIN-I, in the group increases the proportion of patients with combined infertility, which is 25.0%. When CIN-III at 100,0% observed positive dysplastic epithelium on $p16^{ink4a}$ expression. Among the types of infertility installed in patients with severe dysplasia dominated tubal infertility.

Conclusion. The presence of pointed condylomas in 13,6% of women can be seen as cervical factor that can impede fertility except set the type of infertility in patients initiating factor in the development and progression of neoplastic transformation of cervical cancer in women with infertility should be considered of HPV high cancer risk, as evidenced by significant advantage (62,8%) infected patients and increased incidence of HPV detection with increasing severity of CIN. Among the causes of infertility in women with CIN associated with HPV-infection in viral load of 3-5 and > 5 copies of HPV Ig/10^5 pipe predominant factor (49,0%). Analysis of distribution of expression levels $p16^{ink4a}$ the types of infertility showed a significant predominance

in all groups tube study in diffuse reaction $p16^{ink4a}$. HPV which can be considered as one of the probable causes significant impaired reproductive function.
Key words: HPV-infection, infertility, cervical intraepithelial neoplasia.

© Tulchinskiy G.V.
Military Medical Clinical Center of the Central region, Vinnytsia (185 Knyaziv Koriatovychiv Street, Vinnytsia, Ukraine 21014)

EFFECT OF CRANIOPLASTY ON THE INDICANTS OF ENDOGENOUS INTOXICATION

Introduction. In recent years, there is an increasing number of surgeries regarding the defects of the skull, which is related to an increase in the number of patients with such defects. One of modern implant materials at present time is bioceramics "Syntekist", the basis of which is a synthetic hydroxyapatite.
Available literature sources contain no information about the effects of different types of implants (particularly Bioceramic material "Syntekist") on the changes of endogenous intoxication in early and late post-surgery period in patients after cranioplasty. This fact prompted us to conduct studies presented.
Study purpose: to study the dynamics of changes in endogenous intoxication in early and late post-surgery period in patients after cranioplasty performed using various implant materials (bioceramics “Syntekist”, protacryl) and conduct their comparative analysis.
Materials and methods. This study involved 81 patients with defects of the skull bones, patients under examination were divided into two groups depending on the option of cranioplasty performed for them. Study group consisted of 39 patients for whom we performed cranioplasty using bioceramics “Syntekist” in order to eliminate the defect of the skull bones. Comparison group consisted of 42 patients for whom we performed cranioplasty using implants made of protacryl.
Before cranioplasty, as well as in early and late post-surgery period on 3, 7 and 10 days, we determined the number of leukocytes in all patients. Besides, to assess the degree of intoxication according to blood count test we determined the leukocyte index of intoxication (LII) according to V.K. Ostrovskyi and co-authors (1983) and hematological toxicity index (HPI) according to V.S. Vasilyev and co-authors (1983). Statistical data processing of study results was carried out on a PC using the software package STATISTICA 6.1.
Results. Baseline of leukocytosis in the patients under examination in both groups was within normal limits. On the third day, this figure was significantly increased in all operated patients, but in patients of the comparison group this increase was more significant ($12,1 \pm 0,6$ g/l) than in the study group ($9,9 \pm 0,5$ g/l) ($p \leq 0,05$). On the 7th and 10th day the level of leukocytosis in both groups decreased, but that reduction was more significant in patients of the experimental group ($p \leq 0,05$), in whom this figure reached almost baseline on the 10^{th} day.

LLI as well as the level of leukocytosis, increased significantly in both groups on the third day and then gradually declined over the next seven days of observation. Relevant figures before surgical intervention in the study group were within normal limits and did not significantly differ (P> 0.05), but on the third and seventh day the LII in the comparison group had significantly higher values (3,75 ± 0,27; 2,86 ± 0,24) with regard to the corresponding results in the study group of patients (2,91 ± 0,31; 2,12 ± 0,32) ($p \leq 0,05$). On the 10th day the LII in both groups approached the baseline and did not significantly differ from both the last and each other.
HPI before surgical intervention in both groups was within normal limits. On the third day we observed its significant increase both in the study (2,81 ± 0,16) and in the comparison groups (3,42 ± 0,23). Its further decrease on the 7th and 10th postoperative day was more significant in the study group.
Conclusions. 1. Implantation using bioceramics "Syntekist" or material protacryl to eliminate defects in the skull bones leads to increased parameters of endogenous intoxication in the post-surgery period. 2. More positive dynamics of changes in the post-surgery period of leukocytosis level, leukocyte index of intoxication and hematological toxicity index in the study group certifies that the use of bioceramics "Syntekist" in cranioplasty causes less evident response in the area of surgical wound and in the tissues around the implant than in cranioplasty using protacryl.
Key words: surgery treatment, bioceramics "Syntekist", cranioplasty.

© Moroz V.M., Khapitska O.P., Sarafinyuk L.A.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine, admission@vnmu.edu.ua)

THE INTERRELATION OF RHEOVAZOGRAFICS PARAMETERS OF THE HIP WITH EXTERNAL INDICATORS OF BODY STRUCTURE IN ATHLETES OF DIFFERENT SPORTS

Introduction. All physiological functions in some way related to body size. The studies found that the physiological parameters of the cardiovascular system have numerous relationships with anthropometric dimensions. However, information regarding relationships hemodynamics parameters of the peripheral body of somatic signs in highly skilled athletes are virtually absent. The relevance of this study is due to the fact that the parameters of regional hemodynamics of lower limbs closely related to individual anatomical variability of hip and shin in representatives of different sex and physique of the body. In addition, it was found that the rest of the athletes with different orientation training process is the difference in diameters of the main arteries of the lower extremities, volumetric flow and speed of regional systolic pressure in them.
The aim of our study was to investigate the relationship of parameters rheovazograms hip and anthropometric indicators somatotypological athletes with different types of muscle activity.

Materials and methods. We carried out a comprehensive survey of athletes and youth period of ontogenesis (from 17 to 21 years inclusive) high level of sportsmanship (from first adult class to master of sports), which were divided into 3 groups: volleyball players (60 people), athletes (88 people) and wrestlers (61). Reovazography parameters of the femur was determined by topologyattribute recorder. Assessment of quantitative parameters conducted by the method Ronkina and Ivanova. We conducted anthropometric research methodology Bunaka, somatotypological - estimated by a modification of Heath-Carter, determining a component of body weight by the method Matejko. Analysis of the obtained results was performed using STATISTICA 5.5 with the use of nonparametric methods to measure indicators.

Resalts. In athletes, we identified the most power and the number of correlations between the parameters of regional circulation of hip and figures external structure of the body. Of the total, girth, cross body size, muscular component somatotype and body weight set feedbacks, with indicators of overall fat deposits - direct connection. The least number of significant connections reovasographic parameters with anthropometric dimensions identified volleyball players. Fighters have numerous significant correlation with antropo-somatotypological characteristics of the body with the slow blood supply, indicators tone of arteries of medium and shallow diameters, the ratio of the tone of the arteries. Tonic interrelated indicators of total, some longitudinal, all girth size, diameter of the chest and pelvis, the masses of the body.

Conclusion. The obtained results concerning relationships rheographic parameters of hip constitutional characteristics of athletes make it possible to apply the method of stepwise regression analysis for the development of athletes in different sports individual of peripheral hemodynamics depending on the characteristics of the body structure.

Key words: correlation, rheovasography hip, anthropometric dimensions, components of somatotype and body weight, wrestlers, athletes, volleyball players.

© Dmitriev M.O.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

CORRELATION CORNER INDICES OF UPPER JAW WITH THE CHARACTERISTICS POSITION OF THE TEETH AND SOFT TISSUE PROFILE OF FACE AMONG THE RESIDENTS FROM UKRAINE OF ADOLESCENT AGE

Aim of our work – establish features connections of angular performance of the upper jaw with characteristics position of teeth and soft tissue facial profile in adolescents residents of Ukraine.

Materials and methods. Using the device Veraviewepocs 3D, Morita (Japan) in 38 boys (age from 17 to 21 years) and 55 girls (aged from 16 to 20 years) with orthognathic bite were obtained and analyzed side teleradiography and scans.
Cephalometric points and measurements were performed according to the recommendations of C. C. Steiner, and anatomical - by Basavaraj Subhashchandra Phulari, S. I. Doroshenko and Ye. A. Kulhynskiy.
Defined: teleradiography angular performance of the upper jaw; teleradiography and computer tomography characteristics position of teeth and soft tissue profile face.
Evaluation of correlations carried out in the license package "Statistica 6,0" using Spearman nonparametric statistics.
Results. Found that in *youths angle F (facial angle)* has reliable direct strong (r = 0,67) connection with an angle Max1_SN; reliable strong inverse (r = -0,60 and r = -0,65) connections with angles SN_OcP and Max1_SpP; direct credible medium strength (r = from 0.32 to 0.43) links with vestibular-oral inclination of 41, 42 and 45 teeth, angle 1l_MeGo, 1u_Avert distance, angles IMPA, Mand1_ML, Mand1_NB, with distance Sn_H line and bases thickness of upper lip; reverse credible medium strength (r = from -0.35 to -0.55) relationships with angles YGOCLPl, POr_OcP, YGRES, with angles II, Mand1_MeIm and depth of nose. *In girls angle F* has a significant direct medium strength (r = 0.31 to 0.40) connections with a slope of the upper canine in the lateral projection, with angles YGNEBAPX and Max1_SN; reverse credible medium strength (r = -0,34 and r = -0,35) connections with angles SN_OcP and Max1_SpP; reliable straight weak (r = 0,28) relationship with mesio-distal slope of 13 tooth; significant weak inverse (r = -0.27 to -0.29 from) relations with mesio-distal inclination of 44 teeth, length of 1u_NA and depth of nose.
In youths angle I (inclination angle) has reliable direct strong (r = 0,60) connection with an angle Max1_SN; direct credible medium strength (r = from 0.32 to 0.49) relations with vestibular-oral slope of 41 tooth, with angles 1l_DOP and 1l_MeGo, 1u_Avert and 1u_APog distance, with angles IMPA, Mand1_ML, Mand1_NB, Max1_NA, with a thickness bases of upper lip; reverse credible medium strength (r = from -0.43 to -0.59) connections with the angle SN_OcP, YGRES, with angles II, Mand1_MeIm. *In girls angle I* has reliable direct medium strength (r = 0,33) connection with an angle YGOCLPl; reliable medium strength back (r = -0,31) relationship with the rotation of the tooth 16; significant weak directly (r = 0,28 both) relations with 12 tooth rotation and distance 1u_NA; reliable reverse weak (r = -0,28) connection with mesio-distal slope of 44 tooth.
In youths angle NL_NSL has reliable back strong (r = -0,64) connection with an angle Max1_SN; directly medium strength (r = from 0.34 to 0.59) connections with the angle SN_OcP, 15 tooth rotation, YGRES, with angles II, Mand1_MeIm; reverse credible medium strength (r = -0.32 to -0.52 from) relations with Yg13_23 angle, with the vestibular-oral slope of 11 and 41 teeth, 1u_NA and 1u_Avert distances, with an angle Max1_NA, thickness of bases of upper lip. *In girls angle NL_NSL* has significant directly medium strength (r = 0,30 and r = 0,32) relations with SN_OcP angle and mesio-distal slope of tooth 44; significant weak directly (r = from 0.27 to 0.29) relations with rotation 16 and 41 teeth, with angles BCH_NCH_L, BCH_NCH_R and Mand1_NB.

In youths angle SNA has reliable straight strong (r = 0,73) connection with an angle Max1_SN; strong inverse (r = -0,63 and r = -0,70) connections with angles SN_OcP and Max1_SpP; directly medium strength (r = from 0.33 to 0.43) relations with vestibular-oral slope of 41, 42 and 45 teeth, a slope of the upper canine in the lateral projection, with 1l_MeGo angle, with distance 1u_Avert, with IMPA angles, Mand1_ML, Mand1_NB, with distance Sn_H line and thickness of bases of upper lip; reverse credible medium strength (r = from -0.35 to -0.58) connections with angles YGOCLPl and POr_OcP, YGRES, with an angle II, Mand1_MeIm, with a depth of nose. *In girls angle SNA* has significant directly medium strength (r = 0.30 to 0.41) connections with a slope in the upper canine in lateral projection and angle YGNEBAPX, with an angle Max1_SN; reverse credible medium strength (r = from -0.31 to -0.42) connections with angles YGOCLPl and SN_OcP, with distance 1u_NA and angle Max1_SpP; significant weak directly (r = 0,27 and r = 0,28) connections with an angle YG33_34, with mesio-distal slope of 13 tooth and 16 tooth rotation; significant weak inverse (r = -0,27 and r = -0,28) connections with an angle POr_OcP, mesio-distal slope of 44 teeth and depth of of nose.

Key words: cephalometry, odontometry, boys, girls, maxilla performance, characteristics position of teeth and soft tissue profile.

МЕТОДИКИ
METHODS

© Savoliuk S.I., *Rybchynskyy H.O.
National Medical Academy of postgraduate education named P.L.Shupyk (Dorogozhitska str., 9, Kiev, 04112, Ukraine); *Lviv State Oncological Regional Medical and Diagnostic Center (Ya.Gasheka str., 2a, Lviv, 79031 Ukraine)

TREATING AND PROPHYLACTIC ALGORITHM FOR PATIENTS WITH DEFECT SCARS ON THE BREASTS

Introduction. In this publication there are shown the reasons and main patogenetic mechanisms of defect scars forming on mammal glands. It is described and demonstrated the way of treatment and prophylactics of the defect scars relapse after previous surgical manipulations.

One of the top unresolved and pressing issues is patients with defective scars on the mammary gland, prompting plastic and cosmetic surgeons to look for possible ways of their correction.

Material and methods. The paper hereof dwells upon an innovative algorithm for preventive measures eliminating defective scars on mammary glands. The objects of the study were 53 persons who after complex (conservative) surgery upon objective

assessment and with the help of the rating scale had their scar's type, texture, colour, sensitivity, and the area of the scar identified, the scars being normotrophic with minimum number of points.

Results. Upon the assessment of scar tissue positive impact of the above preventive algorithm on patients' objective and subjective data has been observed. A number of patients who underwent treatment of defective scars had proneness to them. The reason for this was the process of excessive deposit of collagen, which was detected in the removed scars' tissue samples before and after surgical interference, which is depicted in pict. 1, 2, 3.

Surgical treatment of mammary glands was conducted in the first phase of the menstrual cycle, due to the decrease of proliferative processes in the glandular tissue of the breast, which affect negatively the formation of the scar during this period.

Conclusion. After surgical interference from 12th – 14th day after surgery to 30th day betamethasone dipropionate and disodium phosphate with lidocaine were injected at intervals of 5-7 days into scar bottom area to a depth of 0.5-1.0 sm along with using silicone plaster and compression pad or special compression garment with fixing additional paper plaster above the silicon one. Findings of planimetric, histological studies show reducing the area of hypertrophically modified scar arrays after the application of conservative defective scars' treatment.

Key words: defect, hypertrophic and keloid scars on mammal glands – treatment and prophylactics algorithm in patients with defect scars.

© Kalashnikov A.V.[1], Lutsyshyn V.G.[2], Maiko O.V.[3]

[1]State Institute of Orthopedics and Travmatology National Academy of Medical Sciences of Ukraine (Bulvarno-Kudryavsky, 27, м. Kiev, 01601, Ukraine); [2]вінницька обласна клінічна лікарня імені м.і.пирогова (вул. Пирогова, 46, м.вінниця, 21018, україна); [3]вінницький національний медичний університет імені м.і.пирогова (вул. Пирогова, 56, м. Вінниця, 21018, україна)

EFFECTIVENESS OF NEW TECHNOLOGIES IN ARTHROSCOPY SURGERY OF HIP JOINT

Introduction. Osteoarthritis is one of the most common degenerative-dystrophic diseases of the joints, which in the structure of articular pathology reaches 55% and hits up to 12-16% of the population. Among persons older than 65 years radiographic signs of osteoarthritis are defined in 68% of women and 58% of men.

Deforming arthrosis of the hip joint — coxarthrosis (CA) is 40% of the total number of people who suffer from osteoarthritis and affects 7% to 25% of the adult population. CA in 60% of cases leads to a decrease of work capacity and 11.5 per cent to disability. All this testifies to high medical and social significance of the CA, which not only significantly affects the quality of life of the patient, but also leads to great socio-economic costs. One of the possible factors in the development of the so-called "idiopathic" osteoporosis may be undiagnosed internally articular damage to

the area of the hip joint. Today about 60% internally the articular damage of the hip joint directly (HJ) are misdiagnosed because of the lack of changes in the diffraction patterns in the early (dorotheenblocke) stages. Intra-articular lesions of the soft tissue elements of the HJ variety, in particular: traumatic and degenerative damage acetabulare lips, round ligament, cartilage of the articular surfaces of the femoral head and acetabulum, femoro-acetabular impingement, loose body HJ.

The initial lesions of articular cartilage arthroscopy, the HJ is the "gold standard" of diagnosis, which allows to visually assess not only the structural and functional state of articular structures, but also to identify the relationship and their behavior during movement in the joint.

However, despite the advances of modern orthopedics, development and implementation of arthroscopy in the system diagnostic-therapeutic interventions in osteoarthritis of the hip joint, the number of complications and unsatisfactory results when conducting this surgery remains fairly high. Therefore, to increase the quality of care the authors have developed a new tool that allows for minimally invasive and maximally effective removal of osteophytes of the acetabulum and the femoral head while performing arthroscopy of the HJ, and submitted applications for patents of Ukraine.

Herefore, we consider interesting in the science and practice plan of the clinical trial to determine the effectiveness of the implementation of new technologies in the treatment of early stages of CA when performing arthroscopy of HJ patients.

Materials and methods the research was the analysis of case histories, mri and clinical examination, 80 patients with osteoarthritis of the hip joints of i-ii degree, which was conducted arthroscope surgery on the basis of the traumatological department of the vinnytsia regional hospital im. m. i. pirogov in the period 2006-2015 was prepared worksheets, which took into account the following clinical, anamnestic and radiological signs: name, no medical history, home address, residence, gender, age, duration of surgery, intraoperative blood loss.

all patients were divided into two groups, first (control) group included 40 patients with ca who underwent arthroscope surgical intervention according to standard techniques. the second (main) group consisted of 40 patients with ca i-ii. who underwent hip arthroscopy, using developed by the authors of new technologies.

the effectiveness of operative treatment was evaluated 3months after surgery. to assess used vas analog scale classification and clinical assessment of the hip joint according to the modified harris scale.

Results. Determined that patients in the control group, which was conducted arthroscope surgery by conventional methods often intraoperative blood loss was about 100 ml (66%), 30% – from 50 to 100 ml minimal blood loss (50 ml) in this group of patients was only 4%. These data are statistically significant ($p \leq 0.01$). Patients of the experimental group, where he performed arthroscopy of the hip joint using the developed by the authors of new technologies m statistically significantly ($p \leq 0.01$) was dominated by patients with minimal blood loss of 50 ml (70%).

Analyzing the duration of surgery indicates that the patients of the control group statistically ($p \leq 0,01$) prevailed, in comparison with cases with a minimum duration of surgical intervention (up to 1 hour), the cases from 1 to 2 hours – 36% more than 2

hours – 56%. Unlike the control group patients experimental group where he performed arthroscopy of the hip joint using the developed by the authors of new technologies, statistically significantly ($p \leq 0.01$) was dominated by cases with the duration of the surgical intervention from 1 to 2 hours – 62% of cases with a minimum duration of operations was 24%. The increase in the duration of surgery, their trauma and intraoperative blood loss with subsequent development of postoperative hematomas in the long term bone ossification certainly could not affect the state of the hip patients in the control group. Analyzing it can be noted a significant decrease in comparison with the control group, pain syndrome in patients treated with primarily minimally invasive surgery with the use of the authors of the new toolkit. A similar situation is observed in the evaluation of the function of the hip joint for harris. So the average scores of the research group was 79,29 points, in comparison with indicators of control group – 72,31 points.

Thus, a comprehensive clinical research proves the effectiveness of the proposed new technologies and the need for their further implementation in practice of modern traumatology and orthopedics. This study demonstrates the efficacy of the use of chondroprotectors after carrying out hip arthroscopy and the need for their inclusion in the complex medical treatment of early stages of coxarthrosis.

Key words: arthroscopy, new technologies, the efficacy of treatment.

© Kondratiuk V.M., Pashkovska O.V., Zaitseva T.O., Dyachok Y.R.
National Pirogov Memorial Medical University, Department of Emergency and Military Medicine Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine, kondratuk2007@gmail.com); Military Medical Clinical Center Of Central Region, (Knyaziv Koriatovychiv str, 185, m. Vinnytsya, Ukraine, 21018)

APPLICABILITY OF RATS WOUND SPLINT-MODEL TO STUDY HEALING PROCESS OF ARTIFICIALLY CONTAMINATED WOUNDS

Introduction. The process of healing wounds - one of the key issues of modern medicine, but with the increase in injuries in the practice of Ukrainian military doctors acquires relevance. Research of new drugs or methods to improve wound healing is possible only in animal models Rodents are widely available and easy to care laboratory animals. Unfortunately, unlike human wounds that heal by cell proliferation of connective tissue, epithelialization and angiogenesis, wounds closure in rodents due to muscle contractions of the skin. To overcome this limitation designed splint wounds model in which the edges of the wound fixed by sutures to the artificial splint-disc. In this way the muscles of the skin does not reduce the edges of wounds and wound closure course reflects the process of wound healing in humans. Creating a splint-wound does not require complex surgical manipulations, the wounds easily observed and measured.

Objective: To investigate the advantages and disadvantages of the splint-model of wounds in rats, to study the healing of contaminated wounds. Secondary purpose is to share lessons learned and analyze the errors that arise when working with this model.
Materials and methods. For the experiment permission of Bioethics Commission of Vinnitsa National Pirogov Memorial Medical University (Protocol №3 dated 15.03.2016.) was received. Bioethics Commission found that studies meet the ethical, moral and legal requirements according to the order of Ministry of Health of Ukraine №281 01.11.2000. The studies adhere to the basic rules of Good Laboratory Practice, the law of Ukraine № 3447-IV "On protection of animals from cruelty" of 21 February 2006. In our research, we have attracted 18 young laboratory rats weighing 285-350 grams. Animals were anesthetized by intraperitoneal administration of drugs. The animals were divided into three groups, two of which were contaminated by a bacterial inoculation mixture. As splints silicone discs 1 mm thick with a diameter of 15 mm were used. With Dermo Punch needle diameter 5 mm symmetrical full thickness wounds on the skin on the edges of the midline were created. Sterile silicone disc were fixed by cyanocrylate glue to the wound and sutured with Prolene5-0 (Ethicon). Inoculation of 0,1 ml of saline or bacterial inoculums in the wounds was made daily. Silicone disks were covered with semi-transparent film Tegaderm dressing. Wounds status was recorded by 13 megapixel camera. The animals were taken out of the experiment with anesthetic overdose. Before sacrificing specimens biopsy for histological and laboratory analyses was performed.
Results. In animal experiments with artificial contamination by microorganisms there are a number of specific conditions, failure of which could affect the results. Splint - model makes it possible to install two implants for each animal and each wound regarded as a separate unit of observation and reduce the number of animals in experiments. During manipulation related to the general care of animals cross-contamination between groups of animals should be considered. We recommend that you start research initially only with control group of animals without bringing into the laboratory any microbial cultures. After this conduct experiments with microbial cultures, and complete study with usage of atimicribial drugs or formulations. Silicone discs and Tegaderm dressing better fixed to dry, free of fur skin. At the time of sticking splint-disc reasercher should gently stretch the skin. After the formation of the wound, its edges further apart, so the hole in the disc should exceed the diameter of the wound punched on the skin. Cyanocrylate glue in gel consistency is better dosing when applied to surfaces that stick together. At 6-7 day due to fur growth and rejection of ligatures sectoral peel off of silicon-discs from animal skins was observed. To avoid silicon-discs peel off it is possible to plan finishing of study before day seven or on day 5-6 to schedule a reinforce fixation or replacement of splint-discs.
Conclusions. Skin-wound splint is an interesting model that accurately reproduce wound healing and the use of rats as laboratory animals makes it attractive. To prevent loss of observation units should plan for the appropriate number of animals, taking into account the possible failures that we have highlighted.
Key words: contaminated wound, splint-model.

НАУКОВІ ОГЛЯДИ
SCIENTIFIC REVIEW

© Saldan Y.R., Maievskyi O.E., Saldan Yu.Y., Artemov A.V, Korol A.P.
National Pirogov Memorial Medical University (Pirogov str., 56, Vinnytsya, 21018, Ukraine); *The Filatov's Institute of Eye Diseases and Tissue Therapy (French boulvard, 49/51, Odessa, 65058, Ukraine)

THE SIXTH LAYER OF THE CORNEA: IS IT FICTION OR REAL FACT?

The aim of our work is to show real place of the posterior part of corneal stroma in eye pathology and physiology. This will come close to developing the concept of a single collagen-elastic eye capsule comprising the membrane Dua, lamina cribrosa and the Bruch membrane. Violation of this membrane homeostasis may lead to various diseases: keratoconus, glaucoma, macular degeneration.

Centennial path of corneal transplant surgery is characterized by improving the methods of operations relating not only to the eye of the patient, but also the actual cornea donor. Of course, corneal transplantation of an entire thickness - penetrating keratoplasty - remains the gold standard in corneal transplant surgery. However, such radical surgery is fraught with several disadvantages, namely the long duration of recovery, increased risk of rupture in the area of surgery, development of astigmatism and complications of transplant engraftment. At present, we have the opportunity to perform corneal layer replacement of posterior segment of cornea in some pathological changes. Thus, the replacing of posterior epithelium (endothelium), which called DSEK (Descemet Stripping Endothelial Keratoplasty), is supplanted by penetrating keratoplasty in many cases.

Due to the fact that the cornea is a part of the outer layer of the eye, it is exposed to adverse environmental factors. Cornea is easily involved in the pathological process and slowly comes out of it as it has no blood vessels, and all metabolic processes are slow. According to the statistics, of all the patients who come to outpatient care every fourth has a disease of the cornea. The social significance of corneal pathology is due not only to high-speed development of the disease, but also the duration of treatment, frequent relapses and reduced visual acuity. Also, corneal diseases are a major cause of blindness and occupy 25-30% of all eye diseases.

Numerous innovations in eye surgery technology and tools, especially in the last decade, made it possible to improve the methods of corneal transplantation which helped to solve some of the problems listed above. For any damage to the corneal epithelium its replacement can be performed during the procedure called DSEK – Descemet Stripping Endothelial Keratoplasty or DMEK – Descemet Membrane

Endothelium Keratoplasty. Endothelial transplantation allows to restore vision quickly, it don't weaken eyesight, astigmatism is a neutral, and the frequency of graft rejection has reduced. Today Deep Anterior Lamelar Keratoplasty - DALK is the optimal lamellar keratoplasty, it's performed by method "air bubbles" or BB - big bubble. During this operation an attention was drawn to the small (up to 15μm), but rather dense structure placed between the posterior membrane and the rest of cornea stroma.

As a result of observations of DALK, three years ago, a professor of ophthalmology and optics of the University of Nottingham together with colleagues announced the discovery of a new - sixth layer of the cornea called Dua`s layer. For the opening of this layer the technique of BB, offered by Mohamed Anwar, contributed. H. Dua and his colleagues found this layer in the process of DALK with "BB" in the experiment on enucleated human eyes. Histological study conducted by Dua and his colleagues using light and electron microscopy showed that the back wall of BB is formed by a thin layer of collagen fibers (Dua`s layer), the posterior (Descemet) membrane and endothelium of the anterior chamber of the eye (Descemet's endothelium). Collagen fibers of adjacent stroma of the cornea penetrate the layer of Dua. The average thickness of Dua`s layer - 10.15±3.6 μm (range 6.3 to 15.83) that is comparable in average thickness to the posterior membrane - 10,97±2,36 μm (range 7.8 to 13 98). Dua's layer is formed of 5-8 bundles of collagen fibers, tightly packed in a thin plate. The posterior membrane of cornea has the same structure in the area of BB as well as in control zones of unfilled air. Collagen fibers are oriented in the longitudinal and transverse directions and parts of them in an oblique direction. The posterior membrane of cornea showed long collagen fibers that connects to Dua`s layer.

Sometimes, damaged bundles of collagen fibers was found on the front surface of Dua's layer as accumulations of the collagen's substance peeled off from its own cornea. For comparison, according to the width of the stroma of the cornea in front of the Dua's layer there was showed only 3-5 bundles of collagen fibers in control areas of unfilled air. The diameter of the collagen fibers in the Dua's layer ranges 21,70±2,43 nm, and corneal stroma adjacent to the layer Dua within 24,20±2,68 nm. Dua and his colleagues showed that this difference is statistically significant. They also found that the distance between the fibers in the Dua's layer compouds 9,64±7,74 nm, and the corneal stroma 10,09±7,91 nm. However, if the distance between the fibers is measured in the centers of adjacent fibers, the space between the fibers thinner in Dua's layer than in the stroma of the cornea. According Dua and his collaborators, it causes of greater filling of proteoglycans and may contribute a gel-like structure, that may explain why it is impervious to air that promotes the formation of BB.

By the method of scanning electron microscopy there is found that the front surface of Dua's layer is arranged by parallel bundles of collagen fibers, while the posterior surface is formed by coarse bundles of collagen fibers and differs from the main stroma of the cornea and the posterior membrane of cornea. Bundles of collagen fibers connect space between the Dua's layer and the stroma of the cornea as it is evidenced by the data of scanning and transmission electron microscopy. Unlike

stroma of cornea, Dua's layer, which forms the back stratum of BB, does not contain keratocytes.

Microscopic studies of the cross cut of the edge of the cornea in place of its transition to a limb establishes that Dua's layer, which is a thin plate of collagen fibers in front of the posterior stratum of cornea, passes on the periphery and outside of Descemet's membrane, firstly in the form of the thick strips, which then expands in form of triangle, and further the distance between collagen fibers become increased with approach to the sclera, ciliary body and root of the iris. There were revealed with scanning electron microscopy researches that the bundles of collagen fibers passed radially out from the front surface of the peripheral edge of the dentate line named Schwalbe's zone, and wrapped around the periphery of posterior membrane. However, when the posterior membrane is peeled off from its own corneal substance the Dua's layer is visualized as a smooth sheet, which at the periphery of the cornea is oriented radially and stratified into broad bundles of collagen fibers, which in turn are divided into thin bundles of collagen fibers. These fibers are connected and intertwined with similar arranged adjacent beams moving in the direction of the iris and ciliary body, and create trabecular meshwork (TM). These observations are confirmed by using of transmission electron microscopy (TEM).

TEM of the peripheral part of the cornea confirms that Dua's layer goes outside the posterior membrane. Compact lamellated location of Dua's layer begins to open about 350 microns closer to the center of the posterior membrane. Collagen fibers defined in the periphery of the cornea in Dua's layer are an average of 322 microns (ranging from 260 to 390 μm) near the center of the end of the posterior membrane. Here they are related with basement membrane fibers that separate Dua's layer. Attaching of the collagen fibers to the basement membrane and between them there are in the periphery of Dua's layer. The morphology of cells arranged in Dua's layer is different from keratocytes which located ahead of the posterior membrane and in the stroma of the cornea. The core and trabecular cells of keratocytes are stained by using DAPI staining (nuclear stain). However trabecular cells are negative for CD34 (keratocytes marker) which stains all keratocytes in the stroma of the cornea. The presence of cells in the trabecular layer corresponds Dua's opinion according to which most of the trabecular beams that form the trabecular meshwork behind the scleral venous sinus are formed from collagen fibers that go from Dua's layer. Front collagen fibers, along with some collagen fibers of the corneal limbus, form anterior wall of the scleral venous sinus. Bundles of collagen fibers described in Dua's layer are widely distributed in the trabecular meshwork. Elastic fibers are arranged in a grid of the trabecular meshwork, but they are not found within Dua's layer. It should be note that on the free surface endothelium has villi and cilia, which brings him to the trabecular cells and said their community.

According Dua and his co-authors opinion the division of bundles of collagen fibers of Dua's layer on the broad and narrow beams in the periphery of the cornea and their relationship with bundles of collagen fibers of trabecular meshwork, which is determined during the scanning electron microscopy and transmission electron microscopy establishes that the trabecular meshwork is continuation of Dua's layer. Scanning electron microscopy of Dua's layer after detachment of the posterior

membrane shows that collagen fibers arranged in Dua's layer are continuing broad beams of apical trabecular meshwork. The cells within the peripheral part of the cornea in Dua's layer are surrounded by a basal membrane with which they form contacts within Dua's layer. The rays of the trabecular meshwork is known to be covered the basement membrane which is attached to the endothelial cells. The presence of these cells together with basal membrane in the periphery of Dua's layer suggests that the forming of the trabecular meshwork beams starts in Dua's layer about 500 microns closer to the center of the ending of Descemet's membrane. Staining for laminin, which is part of the basement membrane, is strongly positive in the trabecular meshwork and in the periphery of Dua's layer that confirms the above observation. Ray bundles of the collagen fibers of trabecular meshwork are deprived the cells. This is consistent with the conclusion that there are no keratocytes in Dua's layer. This indicates that the formation of the trabecular meshwork begins in the peripheral part of the cornea, before the ending of Descemet's membrane and not aside of Descemet's membrane. As Dua's layer is thinner toward the periphery, the distance between the last keratocytes and posterior membrane is reduced compared to the central part of Dua's layer.

Thus, while the bulk of the corneal stroma is merged at the periphery with other scleral stroma, bundles of collagen fibers of Dua's layer continue in trabecular meshwork. The significance of these observations and the importance of the structure of the trabecular meshwork in the development of glaucoma and blindness, according to opinion of Dua and his co-authors, should define researches of the attitudes between the structure of cornea and trabecular meshwork. It is found that in patients with keratoconus Dua's layer is stretched with posterior membrane, and acute hidropsiya develops not only through the gap of Descemet's membrane, but through gap of Dua's layer. Rupture of the posterior membrane and Dua's layer, leading to keratoconus, there is obvious cause of sudden stromal hydration than just the break of the posterior membrane. Also it is found that descemetocele, which are believed to be the resistance to perforation, supported by strength of Dua's layer. When the Dua's layer damaged or destroyed by proteolytic enzymes, Descemet's membrane quickly get perforation. Some facts demonstrate the presence Dua's layer that covers the posterior membrane in descemetocele.

Macular dystrophy that manifests as clouding of the whole corneal stroma also has an impact on the structure of Dua's layer. In the course of performance of DALK by BB in macular degeneration of cornea, it is found residual opacity in the saved Dua's layer. Some surgeons as usual leave them and complete the operation, but the others carefully cut through Dua's layer (BB converts from Type 1 into Type 2), to remove all areas of turbidity. Thus, when macular degeneration, BB type 2 may be more appropriate, although at present the advantage of removing of Dua's layer in these patients isn't demonstrated. By our data and wide experience of DALK surgery (Dr. Tarek Katamish, Cairo), when we remove diseased corneal stroma by using the techniques of big bubbles, in the majority of patients with postinfectious scarring of the cornea it is found a clear Dua's layer. This interesting observation can be explained by the lack of keratocytes in this layer, which in the case of infection and inflammation differentiate in myofibroblasts and fibroblasts and form a scar.

Thus, according to opinion of H. Dua and his collaborators, information on Dua's layer is important for understanding the pathology of the cornea. The understanding of the biomechanical properties of Dua's layer in terms of its strength, flexibility and elasticity encourages surgeons to perform the innovative surgical procedures. So, after removal of the corneal stroma by the method of "big bubble" in cases of corneal scarring surgeon Dr. Ahmad Atef from Cairo has successfully completed the procedure of phacoemulsification with implant lens in two patients. This procedure is called DALK-triple procedure, and clinical application is direct understanding of the biomechanical properties of strength of Dua's layer. It remains to be determined as this layer affects the biomechanical properties of the cornea. Unlike Dua's layer, trabecular meshwork also has a network of elastic fibers that are connected with the tendon attached to the ciliary muscle and bundles of collagen fibers in the corneal stroma. It is believed that the tone of the ciliary muscle may directly affect the bundles of fibers of trabecular network and regulate aqueous humor. Biomechanical properties of the cornea and sclera is known to be influence the pathogenesis of glaucoma. The cornea is the subject of constant stress associated with movements caused by blinking, rubbing and pulsation of eyes. It is likely that these factors influence the structure of Dua's layer and trabecular meshwork. Recent researches have shown that risk of increase of intraocular pressure and the secondary glaucoma is higher at patients who have penetrating keratoplasty in comparison with DALK.

According to opinion of Dua and his co-authors, mentioned clinical monitoring caused enough doubt in the concept of "Descemet stripping" in DALK procedure. These led to the assumption that there is a separate layer in the stroma of the cornea adjoining to Descemet's membrane which is located between the front surface of the posterior membrane and deep own corneal stroma. This layer provide plane of cleavage between it and the deep corneal stroma in procedure of DALK. This hypothesis was proposed and initial clinical and histological evidence of existence of Dua's layer were presented at the Annual Congress of the Royal College of Ophthalmologists UK in May, 2007. Further evidence has been presented at the Societa Italiana Cellule Staminali e Superficie Oculare (VI Congress S.I.C.S.S.O. Lecce, 14-16 June, 2007).

Despite a recognition of opinion of Dua and colleagues, a part of scientists calls into question presence of new layer in cornea. So, Peter McDonnell the employee of Johns Hopkins University and Medical Editor of Ophthalmology Times noted that time is necessary to make sure that other researchers confirm the existence of this "new layer" and to determine its potential significance. He added that his personal vision of the news about the opening of a new layer is that results are not describing a new layer in the sense that investing in the concept of "layers of the cornea".

Roger Staynert from the University of California described the new layer as "a false discovery" and criticized the choice of the name for this layer, noting that current prevailing trend when scientists avoid naming anatomical structure and physiological processes by name of author, instead try to reflect the title of the essence of a subject or phenomenon. He also emphasized that described Dua phenomena were known before and not seen as signs of an additional layer, only just as individual structural features of the stroma of the cornea.

In February, 2014 MacKay and colleagues said they met this recent news about the opening of a new layer of the cornea with skepticism and distrust. As Roger Steiner they stressed that the existence of pre-Descemet stromal tissue that remains after pneumo dissection is well known. Their further investigation of this stroma confirmed that it is only part of stroma, but not a new layer. And also he has expressed critical opinion that the investigator allegedly called the opened layer by own name and emphasized that it is contrary to the present trend in medicine to avoid eponyms. Thus we can conclude that Dua and his colleagues have drawn attention of ophthalmologists, surgeons and scientists to extremely important issues that undoubtedly will lead to progress in the treatment of pathological processes in the cornea. However, according to some authors, it is not enough the presented proofs for a recognition of a new layer of a cornea.

Vladimir Filatov and August Wagenmann were the first who described in the late 19th century vitreous membrane and the layer-fiber tissue, reminiscent of the corneal stroma formed during pathological processes, not related to damage of the eyeball (such as iridocyclitis). These observations have been questioned for a long time since it was believed that the formation of fibrous tissue in the anterior chamber must be a result of violation of the integrity of the corneoscleral zone to create conditions for the penetration of the stromal cells of the sclera and cornea in the eye cavity. Participation of the Descemet's epithelium in the formation of stromal tissue contrary to existing notions relative the histogenetic potency of this structure.

In the 60-70th of the last century by the works of Voyno-Yasenetsky V., Zimmerman L., Wolff S. it was proved that Descemet's epithelium is a real source of connective tissue (retrocorneal membrane) produced during inflammatory processes and burn without compromising the integrity of the eyeball. In these experimental researches it has proved the possibility of ectopic proliferation of the cells of posterior epithelium with formation of the films like the posterior membrane. However, in these works, the focus was concentrated on the role of Descemet's epithelium in the formation of these films. In this discussion it is stayed by the fact. At the same time it remained out of the question the fact that these films can include not only the elements of Descemet's membrane, but also adjacent corneal stroma. So, it should be noted that during this process all these elements, including the epithelium of Descemet's membrane, the posterior membrane and posterior stromal layers are created with such structural precision that in some cases these films are preserving transparency without disrupting of eye vision. According to our histologic observations of these films the detectable stromal component usually does not exceed of 20-30 microns in its thickness. In other words, the thickness of stromal layer, that is reproduced by cells of the Descemet epithelium in pathological conditions, fits to the thickness of the layer, which describe H. Dua in the normal cornea.

It is also important to note that the given histomorphologic observation coincides with earlier embryological studies indicating on a two-stage formation of corneal stroma. Here we refer to the classical studies of eye's embryogenesis, which were held in the first half of the last century and has not yet been questioned [4]. Among these embryological studies should emphasize the transformation of the epidermal tissue in the corneal epithelium is carried out in the presence and close contact with

the lens and the retina at the special role of cell-free substrate allocated from the optic cup. The presence of this substance is needed for induce epidermal epithelium aside corneal epithelium. Simultaneously, cells of mesenchyma, being introduced into the substrate, start to form collagen fibers and Bowman's membrane. Thus, the specific effect of the optic cup is the formation of a cell-free subepithelial layer, where the greater part of the cornea stroma is established.

Descemet epithelium begins to be formed later and has no inductive effects of noted above elements of the optic cup. Thus, during the formation of the corneal stroma, two distinct phases can be distinguished. On the one hand, this entrance of mesenchyma cells under subepithelial acellular layer and formation of collagen fibers under the epithelial lining. The second point is related to the Descemet's epithelium, which appears later in the form of a thin layer of the mesenchymal cells, that starts to form the germ of the corneal stroma near the periphery. The final formation of the corneal stroma (stromal fibers) requires the simultaneous presence of the anterior and Descemet's epithelium. Independent participation and influence of the two factors is also confirmed by the fact that the development of stromal tissue comes intense near Descemet's epithelium and endothelium, whereas in the center this process is slowed down.

Conclusions. 1. So, is there any reason to announce the opening of a new layer of the cornea? We believe that the issue of the sixth layer of the cornea appeared at the dawn of modern ophthalmology, and recent studies have, in fact, do not open, and summarize the discussion started over a hundred years ago. 2. Thus, long before the DALK problems there were facts pointing to the special status of the corneal stroma adjacent to Descemet's membrane. Morphological study of the process of regeneration and experimental embryology data show that the posterior section of the corneal stroma laying in the back of Descemet's membrane is a special layer having embryogenetic and histogenetic nuances and relationships that distinguish it from the rest corneal stromal tissue.

Key words: corneal stroma, Descemet's membrane.

© Tchaikovsky Y.B., Lutsyk A.D.*, Gerashchenko S.B. **, Deltsova O.I. **
National Medical University named after Bogomolets (pr. Peremogy, 34, Kiev, 03058, Ukraine); * Lviv National Medical University named after Danilo Galitsky (Pekarska str. 69, Lviv, 79010, Ukraine); ** SHEE "Ivano-Frankivsk National Medical University" (Galician str. 2, Ivano-Frankivsk, 76018, Ukraine)

CYTOLOGICAL TERMS IN THE LIGHT OF NEW LIST OF HISTOLOGICAL TERMINOLOGY

Cytology - the Science about the structure and function of cells and their derivatives in different conditions of existence of cells. Histology gives a definition of cell: *cell* - is an elementary living system, which consists of plasmolemma, cytoplasm and

nucleus and is the basis for the construction, development, operation and restoration of the whole body.

The aim is a summary list of cytological terms for their maximum convenience of use when considering the structure of organs and tissues.

First of all, you should decide at what stage of development the cells being studied. *Stem cell* is part of the cell population, the ability to maintain their own identity combine with the formation of progeny cells of one or more cell lines. Carry out many research on *stem cells of the fetus*, *newborn stem cells* and *adult stem cells*. To indicate the stem cells in the literature use the term "*mother cells*", "*cambial cells*" or "cells cambium". This is the least differentiated cells that provide regenerative processes in tissues.

A cell as an elementary living system consists of a shell (*plasmolemma, cell membranes*) nucleus and cytoplasm. ***** Domestic cytologist and histology consider appropriate about the structures that described as membrane (membrana) use specific Ukrainian translation terminology *membrane*.

The core has a shell, nucleoplasm, chromatin and nucleolus. In the *nuclear membrane* identified *internal and external nuclear membrane* (membrane) *around the nuclear space, nuclear pore* and *nuclear pores complex*.

Mitochondria has a *shell* consisting of *outer and inner mitochondrial membranes (membrane).* The latter forms the *mitochondrial crests (*crests*).*

Endoplasmic reticulum forms a single intra cytoplasmic circulating system. In the *ribosome* are two *subunits* - large and small.

Now widely studied *apoptosis* - programmed cell death, which occurs without primary damage of cellular metabolism. *Mitosis (M phase, mitotic period*) has 4 phases.

Sex cells of most organisms have one set of chromosomes (n), somatic - two sets, diploid (2n), three sets - triploid (3n), four - tetraploid (4n) and so on. *Meiosis* - typical for the formation of sex cells, including two successive mitotic divisions, between which there is no interphase.

Conclusions. Knowledge and use of correct terms from the updated list of histological nomenclature provide an opportunity to specialists working in the field of morphology, of modern position be applied in scientific and practical activity the latest data about structural features of the cell components.

Key words: cytology, histological terminology.

© Usenko O.Yu, Sidyuk A.V., Klimas A.S., Sidyuk O.Ye.
National Institute of Surgery and Transplantation of O.O. Shalimov Sciences of Ukraine (st. Heroev of Sevastopol, 30, Kiev, 03061, Ukraine)

TECHNIQUE OF EXECUTION LIVING DONOR LOBAR LUNG TRANSPLANTATION

The article presents the overall indication of the congruence of recipient for the lung transplantation, is indicated the list of diseases for which transplantation is shown, highlight the conditions and exceptions stated technique of surgery.

Purpose - cover method lobarnoyi perform lung transplantation from a living donor.

World's first lung transplant from a living donor was performed by American surgeon Stern and his colleagues in 1992. This method was proposed lung transplantation for patients due to the severity of his condition could not wait for cadaveric lung transplantation. When performing the first transplant surgery had a lower share of only one lung, ADE further surgery showed satisfactory results, so Stern proposed to perform bilateral transplants from two living donors. The development of bilateral lobarnoyi transplant from a living donor also contributed to inconsistencies donor lung size and the size of the pleural cavity of the recipient in the case of transplants from dead. According to Stern et al transplantation from living donors is a place where children in need.

Recently, the largest number of reports of lung transplantation from a living donor comes from Japan, because that is where the average length of waiting for a transplant from a dead body is 2 years. The ratio of transplants from a living donor and transplant from dead in Japan is 40% and 60% respectively. This five-year survival is almost the same and 45%. In addition, recently started to appear on the execution of lung transplantation from living donors from Britain, Brazil, China, the results of which are relevant to the performance of classical transplantation from a dead body.

Because today in Ukraine there is no law to regulate and allow execution of organ transplants from dead, perform lung transplantation from a living donor is the only way for life to patients in need. According to the Ministry of Health in Ukraine lung transplantation require about 10,000 patients. We therefore propose to review the selection criteria for donors and recipients and technical aspects of the implementation lobarnoyi lung transplantation from a living donor.

Conclusions. 1. As in Ukraine to date there is no law to regulate and allow execution of organ transplants from dead, lobarna lung transplant from a living donor is the method of choice of surgical intervention for patients with lung pathology in need. 2. Based on the experience of developed countries could be argued that lobarna lung transplant from a living donor is not less effective surgery than the classic lung transplant from a dead body.

Key words: lung transplantation, living donor, procedure.

© Babych L.V.

National Pirogov Memorial Medical University (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

CLINICAL AND DIAGNOSTIC VALUE OF MORPHOMETRIC FEATURES MIDDLE CRANIAL FOSSA, HIND LEGS INTERNAL CAPSULE AND

THALAMUS IN VARIOUS DISEASES OF CENTRAL NERVOUS SYSTEM (LITERATURE REVIEW)

Aim of our work – show the need to study the size of the middle cranial fossa, rear legs internal capsule and thalamus in healthy population based on age, gender and constitutional characteristics of the organism to diagnose various diseases of the central nervous system.
Based on analysis of published data shown diagnostic value of studying the size of the middle cranial fossa, rear legs internal capsule and thalamus to diagnose various diseases of the central nervous system.
For correct diagnosis shown the need to consider ethnic, age, sex and constitutional characteristics of the organism.
Getting new knowledge on morphometric characteristics of the middle cranial fossa, thalamus and internal capsule in practically healthy people of different cranio- and somatotypes allow to use them as objective criteria for comparison of normal and pathologically altered structure of these structures.
Key words: morphometry, middle cranial fossa, thalamus, internal capsule posterior leg, diagnosis of diseases of the central nervous system.

© Ostrovska S.S.
SE «Dnipropetrovsk Medical Academy of HM of Ukraine», department of biology, pharmacognosy and botany (Sevastopolska str., №19, Dnipro, Ukraine, 49005; ostr_2011@mail.ru)

REMODELING OF THE RESPIRATORY SYSTEM IN TOBACCO-SMOKING (REVIEW OF FOREIGN LITERATURE)

Chronic obstructive pulmonary disease is a global challenge for the world, mainly caused by cigarette smoking, ranking fourth among prevalent causes of disability and mortality in the developed world and its incidence is increasing.
Obstructive processes associated with smoking, cause remodeling of the airways, accompanied by luminal narrowing and increase of bronchial wall thickness, and pulmonary vascular remodeling underlies pulmonary hypertension with abnormal proliferation of smooth muscle cells of pulmonary arteries being part of it. There is also the destruction of the parenchyma. The paper presents data on the morphological changes in the lungs of smokers with chronic obstructive pulmonary disease and without it, which testify that smoking affects all structures of the lungs, causing inflammation, impaired microcirculation, mucosal fibrosis of the large and small bronchi. Herewith, a number of changes in the bronchi is irreversible even after smoking cessation. The above mentioned processes are accompanied by accumulation in the airways of the mucosal mast cells actively expressing interleukins (IL-17A), which trigger the production of various cytokines. This stimulates the appearance of a complex of inflammatory reactions in the respiratory

system. The appeared reactions are enhanced under the influence of the cigarette smoke, inducing further damage to the lungs. Smoking is also associated with goblet cell hyperplasia in the airways and increase of the level of carcino-embryonic antigen in the serum, this increases the risk of cancer in smokers. Pulmonary histiocytosis of the Langerhans cells is revealed, which is a rare histiocytic disorder, affecting exclusively lungs of smokers.

Conclusion. Morphological studies using bronchial biopsy specimens are of great importance for timely diagnosis and choice of treatment tactics for chronic lung diseases.

Key words: tobacco-smoking, morphology of the lungs of the smokers.

© Korol T.M., Gavrilyuk A.A., Shabala Yu.A.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN, CERVICAL DISPLASIA) PATHOGENESIS, PATHOLOGY, MODERN METHOTS OF DIAGNOSIS AND TREATMENT

Cervical intraepithelial neoplasia is a cervix disease, which is characterized by precancerous lesions and is associated with persistent and integration of human papilloma virus with high oncogenic risk. Certain morphological changes in the cervix tissues are characterized by intense, abnormal multiplication of cells with signs of atypia. Atypia is a loss of cell differentiation and normal structure as a result of human papilloma virus. Cervical intraepithelial neoplasia can be occured in women of different age, but it is prevalent at the age of 25-30.

Cervical Dysplasia has no marked clinical manifestations and can not be detected during a medical examination. The diagnosis can be made only on the basis of histological and cytological studies.

Depending on the degree of disorder stratified squamous epithelium and severity of atypia cells there are weak (mild), moderate and pronounced (severe) dysplasia. Following the recommended classification cervical intraepithelial neoplasia has three stages:

1. CIN 1 (low degree) is characterized by unexpressed changes in the structure of epithelial proliferation cell with moderate basal layer. It is also characterized by morphological characters of papilloma virus infection – koilocytosis and dyskeratosis. These changes do not cover more than one third of the epithelial layer, beginning with the basement membrane. It creates difficult conditions for the diagnosis, as the diversion of material for cytology during screening studies can not be large in volume and depth in all cases. 2. CIN 2 (medium degree) is characterized by more pronounced morphological changes. Beginning with the basement membrane the half of the epithelial layer is affected.

3. CIN 3 (severe dysplasia) is characterized by the influence of more than two-thirds of the epithelial layer. Morphological changes are pronounced. These changes occur in the middle and basal epithelial layers covering the cervix. Later, these modified cellular elements are the foundation of the future (possible) tumors of the cervix. The main characteristic feature is that the surface layer and the stroma are unchanged. The polarity location of the cells is absent. The cellular and nuclear atypia are pronounced in comparison with moderate dysplasia. There are mitosis, including pathological. Despite of substantial cellular and nuclear atipizm, surface layers of cells retain their normal structure, sometimes expose keratinization. Thus, cervical intraepithelial neoplasia is a common infectious disease in women of different age that can progress to oncogynecology disease. Cytological changes of squamous epithelium depend on the degree of CIN.

Key words: cervical intraepithelial neoplasia, human papilloma virus.

© Maieskyi A.Ye., Korol A.P., Samborska I.A., Shcherbych Yu.V.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

MODERN VIEWS ON THE ETIOPATHOGENESIS, PATHOLOGIC FEATURES OF GASTRIC EROSIONS AND DUODENAL EROSION, DIAGNOSTIC METHODS

Among a large number of diseases of the gastrointestinal tract (GIT) erosion of the stomach are among the most common and least studied. Erosive changes of the mucosa remain the second most frequent cause of gastrointestinal bleeding after duodenal ulcers [Loginov A.S., Aruin L.I., Ilchenko A.A., 1993]. Erosion of the mucous membrane of the stomach and duodenum was first described by the Italian anatomist Morgagni in 1761 in his work, "On the location and the causes of diseases identified by the anatomist", based on the extensive study of sectional material. In a subsequent study of the process erosion of the mucosa of gastroduodenal zone, mainly as before the ulcer status was reflected in the works of K. Rostanski (1842). However, this pathology remains one of the most neglected diseases of gastroduodenal zone. Not resolved, many aspects of etiology and pathogenesis of gastric erosions, making it difficult not only approaches to adequate therapy, but also the systematization of the available scientific data. So, erosion of the stomach are not included in the International classification of chronic gastritis (the Sydney system, 1990), only in its endoscopic section is mentioned about the visual differences between acute and chronic erosions. Erosion of the stomach and duodenum are not included in the ICD 10th revision (1997), which again confirms the lack of clear understanding about the place and significance of gastric erosions and duodenal ulcer in the structure of gastroduodenal pathology.

The purpose of the study: on the basis of modern data of domestic and foreign literature sources to assess the role of ethological factors and pathogenesis the occurrence of gastric erosions.

Key words: erosion, HP-infection, acid factor, duodenogastral reflex, COX prostaglandins E, NSAID-gastropathy.

© Rekun T. O., Vernygorodskyi S.V.
National Pirogov Memorial Medical University, Vinnytsya (Pyrogov Str., 56, Vinnitsya, 21018, Ukraine)

PECULIARITIES OF THE EPITHELIAL DIFFERON HISTOGENESIS OF GASTROESOPHAGEAL JUNCTION IN EARLY PERIOD OF ONTOGENESIS

Problem of the appearance and development of epithelial lining of the gastroesophageal junction, as same as anterior gut, in contemporary embryology and histology remains poorly studied and contradictory, despite a large number of studies dedicated to embryonal histogenesis of the epithelium of anterior part of the gastrointestinal tract (GT). That's why the purpose of our study was to investigate peculiarities of histogenesis of epithelial differon of the gastroesophageal junction in the early period of ontogenesis.

Hitherto there is no final thought about the source of development of the esophageal epithelium considering compound histological processes which occur in cranial parts of the gut and its morphogenetic potential. Different authors indicate it endodermal, ectodermal nature or point as it source special establishment - prechordal plate.

Question about origin of the epithelium has been discussed until nowadays. Epithelium of the mucosa is changing many times during prenatal ontogenesis. Epithelium of the esophagus is simple columnar during the first weeks of development. Epithelium becomes stratified (two layered) during the fourth week of development. Physiological atresia (lumen coalescence) of the esophagus appears as a result of intense proliferation of the esophageal cells after that.

Ciliated cells appear in the middle third and spread rostral and caudal. One layer of columnar cells occupies both ends of the esophagus near the tenth week. Lumen of the esophagus becomes passable as a result of massive death of the epitheliocytes until the end of the second month. Epithelium of the esophagus becomes simple pseudostratified ciliated during the third month of embryogenesis and stratified squamous non keratinized during the sixth month. Stratified squamous epithelium first appears in the middle third of the esophagus in the 5 month and spreads to rostral and caudal ends changing ciliated cells.

Reasons of transformation of one type of epithelium into another one in the prenatal morphogenesis of the esophagus have not been finally clarified yet.

Generally, transformation of the one cellular or tissue phenotype into another one is considered as metaplasia which can occur as by means of stem cells transformation so by straight conversion of already differentiated cells.
Recent researches indicate at active participation of intermediate filaments (cytokeratins) and transcription factors in cells specialization, morphogenesis and organogenesis.
Conclusions. An analysis of literature related to the embryogenesis of gastroesophageal junction allows revealing series of regular stages that are observed in the morphogenesis: 1) stage of establishment; 2) stage of physiologic atresia; 3) stage of recanalization; 4) stage of the beginning of histogenesis; 5) stage of completion of histogenesis. Stage of physiologic atresia (5-6 week of embryogenesis), which can be considered as critical period in gastroesophageal junction morphogenesis, is worth noting as the most dangerous one under the influence of unfavorable factors of the external environment on the body during pregnancy.
Participation of transcription factors and cytokeratins in the epithelial lining formation remains not fully clarified today therefore investigation and development of criteria for morphological diagnostic using molecular and biological markers is very topical for future estimation of the gastroesophageal junction formation and conducting of therapeutic and preventive measures at gastroesophageal junction pathology.
Accumulated knowledge allow to understand the patterns of the gastroesophageal junction formation in the human, evaluate role of all compounds of the differon (stem cell including) during embryogenesis and subsequently can be the basis for development of the genetic, cellular and tissue technology of the regenerative biology and medicine.
Key words: gastroesophageal junction, histogenesis.

ХРОНІКА
CHRONICLE

FOR THE 50TH ANNIVERSARY DOCTOR OF BIOLOGICAL SCIENCES, PROFESSOR LARISA ANATOLIYIVNA SARAFYNYUK

© Gunko P.M., Gunko I.M., Gaidukov V.O., Martinova Z.S.
GENIUS OF SPEECH AND BRUSHES (N.I. PIROGOV AND OTHER FAMOUS PERSONALITIES IN THE LIFE OF T.G. SHEVCHENKO)

IN MEMORY OF SERGIY YURIYOVICH MASLOVSKIY