

ORIGINAL ARTICLES

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**BIOFILMPRODUCING PROPERTIES OF CLINICAL STRAINS OF
GRAM POSITIVE MICROORGANISMS**

Introduction. In more than 90% of cases the implant osseointegration in the alveolar bone is reported to be successful, but implant placement may also be accompanied by some complications that can occur during the procedure of dental implant placement as well as in the postoperative period. There are two main infectious and inflammatory complications after dental implantation: peri-implant mucositis and peri-implantitis. The important factor in the pathogenicity of the oral microflora representatives is adhesiveness and the ability to form biofilms, which cause a chronic course of inflammatory processes.

The aim of the study was to investigate the biofilm-forming properties of Gram-positive clinical strains of microorganisms, the causative agents of infection-inflammatory complications after dental implantation.

Materials and methods. For this purpose, 145 strains of Gram-positive microorganisms were isolated and identified, such as strains *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus warneri*, *Streptococcus sanguinis* and *Kocuria kristinae*. The detection of the biofilm-forming properties of clinical isolates was determined with the spectrophotometric method by G.D. Christensen (MtP-test "microtiter plate test"). Properties of microorganisms to form a biofilm were evaluated by the absorption of the dye in optical densities (OD) with using a spectrophotometer (570 nm).

Results. It has been established that Gram-positive microorganisms, which colonized the patients' oral mucosa during infectious-inflammatory complications after dental implantation, have variable properties to form biofilms. Among the 49 clinical strains of *S. aureus* and 32 isolates of *S. epidermidis* strains, only 6 had shown (3 in each species) low ability to form biofilms, indicating high biofilm-forming properties of Gram-positive microorganisms. Clinical strains *S. aureus*, *S. epidermidis* and *S. sanguinis* had high biofilm-forming properties, *K. kristinae* – medium and only representatives of *S. warneri* had the lowest biofilm formation. There was found no significant difference in the values of absorption of dye by biofilms, been produced by *S. epidermidis* ($0,280 \pm 0,13$) and *S. aureus* ($0,293 \pm 0,13$; $p > 0,05$).

Conclusion. Gram-positive microorganisms, causing infectious-inflammatory complications after dental implantation have variable properties prior to the formation of biofilms. *S. aureus*, *S. epidermidis*, *S. sanguinis* obtain the highest biofilm-forming properties and *S. warneri* have the lowest ones.

Key words: biofilms, infectious-inflammatory complications, microorganisms.

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INFLUENCE OF THE INTESTINAL MICROBIOTA TO THE REPRODUCTION OF ENTEROVIRUSES IN THE EXPERIMENT

Introduction. Intestinal microflora can influence to the physiology of human body significantly. The symbiotic effect of synanthropic bacteria is pronounced. At the same time role of living in the gastrointestinal tract viruses in homeostasis is not studied completely. The *purpose of research* – to find out the role of microorganisms in preservation of enteroviruses infectivity *in vitro* and *in vivo*.

In the study the experimental research was carried out in nonlinear white mice (n=40 in the main group and n=40 in the comparison group) according to the international bioethics standards and rules. The prototype vaccine strain of poliovirus of the 1st type (Lsc2ab) was used for the research. HEp-2 cell culture during titration of the virus by means of micro-method. The ability to plaque forming under bentonite coating was also used. Ampicillin, metronidazol and gentamycin were administrated intragastrically for 5 days to form dysbiosis in mice.

Results and discussion. There had been shown that the feces of animals with a preserved microflora saved the viruses more better. Also, the results of research indicate the increasing of survival of enteroviruses with preserved bacterial microflora. At the same time, the to presence of alive and inactivated bacteria had been found to have positively influenced on the survival of enterovirus. The most expressed difference in titers has been observed with the simultaneous preservation of viruses and bacteria at the temperature +20°C.

Conclusion. There was suggested as opposed to the known benefit of normal microflora viruses may use intestinal microbiome like trigger for own reproduction. Results of researches give the reason to believe that suppression of normal microflora by antibiotics can have an antiviral effect. Studying of microbioma promotion mechanisms of the development of viral diseases can initiate the working-out of new effective antiviral strategies.

Key words: antibiotics, dysbiosis, enteroviruses, infection, intestinal microflora.

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COMPARATIVE ANALYSIS OF THE MELATONIN'S EFFECT AT DIFFERENT DOSE RANGE AND OF SOME CYTOPROTECTORS ON THE DYNAMIC OF RABBITS' INTRAOCULAR PRESSURE IN NORMAL CONDITIONS AND UNDER CONTUSION OF THE EYE

Introduction. Postcontusion period of the eye affection is accompanied by ophthalmopathy, which is the basis of the disorders of microcirculation and intracellular metabolism, therefore, it is reasonable to compare melatonin, citicoline, corvutin and thiotriazoline in their ability to normalize abnormal levels of intraocular pressure (IOP). *The aim of the study.* To conduct comparative screening evaluation of the effect of melatonin on normal IOP and eye contusion dynamics as a possible mechanism of its neuroretiniprotection action.

Materials and methods. In experiments on rabbits of the Chinchilla breed in conditions of eye contusion caused by the action of carbon dioxide under pressure melatonin was studied in doses of 5, 10 and 15 mg/kg intravenously (iv). Reference drugs: citicoline, corvutin and thiotriazolin were administered in doses of 250, 10 and 100 mg/kg I/V. IOP was measured with ICARE tonometer (Finland).

Results and discussion. Melatonin in a wide dose range (5-15 mg/kg IV) amortizes the lowering of IOP in eye contusion conditions, surpassing the effectiveness of referents drugs: citicoline, corvutin or thiotriazoline. In this case, as the drugs of comparison, melatonin does not affect the average values of IOP in its applying to animals without ophthalmic pathology.

Conclusions. The ability of melatonin to normalize affected IOP parameters in experimental contusion of the eye - is one of the leading mechanisms of neuroretinoprotective action.

Key words: intraocular pressure, contusion of eye, melatonin, citicoline, corvutin, thiotriazoline.

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STRUCTURAL CHANGES OF RATS' AGGREGATED LYMPHOID NODULES OF ILEUM IN AN EXPERIMENTAL SKIN BURN INJURY UNDER THE CONDITIONS OF INFUSION BY GEKOTON

The purpose of the work is to determine the structural differences of damage and compensatory adaptive changes in aggregated lymphoid nodules of ileum at different

periods after the experimental thermal burn injury under conditions of intravenous infusion of Gekoton.

Materials and methods. The investigation on establishing the structural differences of the injury and compensatory adaptive changes in aggregated lymphoid nodules (Peyer's patch) of ileum in rats at different periods after the experimental thermal burn injury (in 1, 3, 7, 14, 21, 30 days after the burn) under conditions of intravenous infusion of Gekoton was performed on 45 white male rats (weight 155-160 g).

The experimental thermal burn (severity level II-III, with 21-23% of total body surface area burned) was performed according to widespread among researchers basic model. The test animals were divided into 3 groups (each group of 15 animals): I - intact animals; II - rats without thermal injury intravenously infused by the Gekoton for the first 7 days at the dose of 10 ml/kg; III - animals with burn injury that were infused according to the same schedule with the separate administration of the investigated substance. Housing of rats, experimental setup and other related procedures were performed according to the existing bioethical principles.

Results. Discussions. With the help of light and electron microscopy it was determined that the general signs of structural changes in aggregated lymphoid nodules of ileum in rats with the experimental thermal skin injury are necrosis and apoptosis of functionally different cells which occur against the background of significant changes of haemo- and lymphatic microvasculature. Dark dendritic cells of aggregated lymphoid nodules of the ileum of rats are vulnerable to the harmful effects of burn injuries of the skin and some of them are subject to apoptotic blebbing. In dendritic cells with increased osmophilia of the cytoplasm and nucleoplasm, the vacuolation of the cytoplasm is clearly visualized, which is associated with a number of accompanying methastructural changes in the cytoskeleton. These cells are characterized by destruction of the internal mitochondrial membrane and mitochondrial ridges, the remnants of which can be clearly distinguished on the background of an enlightened mitochondrial matrix. There is an erroring ordering of the tubules of the rough endoplasmic reticulum, their fragmentation, their focal swelling and the transformation into vacuolic formations. Vacuoles passing from the tubules of the rough endoplasmic reticulum have integral (sometimes wavy) form, often transformed into a cavity with uneven edges, but the individual ribosomes are attached to the surrounding membranes. The transformation of the tubules of the rough endoplasmic reticulum in a vacuole is a transitional stage until the final decay of these organelles and is most often identified in hyperchromic, shriveled dendritic cell. A large number of light vacuoles, compressing the cytoplasm to the level of dense transitions between transparent vacuoles, create a general illuminated cellular background in comparison with a homogenous dark osmiolifilic nucleus framed by a narrow branched space. In the future, long narrow branched processes of apoptotic dendritic cells are fragmented into small and very small apoptotic vesicles containing a densified cytoplasmic matrix, while a separated, deformed, cytoplasmic region transforms into a much larger apoptotic body. The simultaneous combination of signs of hydration (vacuolation) and dehydration (compaction) of the cytoplasm of the dark dendritic cells symbolize the breakdown of compensatory and adaptive processes a manifestation of intercellular disbalance «dehydration / hydration» and also it's a sign of subsequent apoptotic changes. Considering the fact that damages dendritic cells are eliminated only by apoptosis

(we have not detected dendritic cell necrosis), carried out in the burned rats infusion should be recognized limited, by effective.

Conclusions. Established phase changes in the hemo- and lympho- microcirculatory bed of the aggregated lymphoid nodules of the ileum of burned rats, provide the possibility of performing the necessary immune function of the recirculation and transmural migration of the immunocompetent cells. It has been determined that skin burn induces necrosis and/or apoptosis of lymphocytes, as well as cells of follicular-associated epithelium and antigenpresenting cells of aggregated lymphoid nodules. Compensation for marked altered manifestations is not only due to the protection of cells from damage that results in cell death or due to increased proliferation of intact cells (for example, expressive mitosis of lymphocytes in the germinal center of the lymphoid nodule), but also with the involvement in additional mechanisms that have to change the conditions and rate of recirculation of immunocompetent cells. The obtained results indicate an integral reaction of the immune system to burn, which can be optimized and stabilized under conditions of timely infusion therapy using Gekoton.

Key words: skin burn injury, infusion therapy, Gekoton, structural changes, aggregated lymphoid nodules.

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CORRELATION COMPUTED TOMOGRAPHY DENTAL ARCHES CHARACTERISTICS WITH ODONTOMETRIC AND CEPHALOMETRIC INDICES OF YOUTH-MESOCEPHALS ORTHOGNATHIC BITE

Aim of our work – to carry out the analysis of correlations of computer tomography transversal dimensions of the upper and lower jaw and sagittal characteristics of the dental arc with odontometric and cephalometric indices of youth-mesocephals with orthognathic bite.

Materials and methods. Primary indices of teeth and heads of youth from Podillia with orthognathic bite (n=44) were obtained from the data bank of the Research center of the National Pirogov Memorial Medical University, Vinnytsya within the framework of the agreement on creative cooperation between National Pirogov Memorial Medical University, Vinnytsya and HSNIU "Ukrainian Medical Dentistry Academy" (Contract No. 1 dated 05.01.2015).

For this study, a dental cone-ray tomograph was used - Veraviewepocs 3D, Moret (Japan). The studies were carried out in accordance with the self-developed scheme. In the upper and lower incisors, the canines, small and first large angular teeth were measured: the length of the tooth; the length of the root in the vestibule-lingual and mesiodistal projections; mesiodistal crown size of the tooth; vestibule-lingual size; the width of the dentin-enamel border in the mesiodistal direction; the width of the dentin-enamel border in the vestibule-tongue direction. Since in previous studies, when comparing the computer-tomographic metric characteristics of the same tooth

names on the right and left sides, there were no reliable or trend differences, we in subsequent studies used mean values of the corresponding teeth on the upper and lower jaws. Also, the transversal dimensions of the upper and lower jaw and sagittal characteristics of the dental arch and cephalometric dimensions were determined.

The correlation analysis of the results obtained in mesocephalic males ($n = 16$) was performed using the nonparametric Spearman method in the licensed statistical package "Statistica 6.0".

Results. Discussions. The following multiple reliable and moderate forces are unreliable correlations of transversal dimensions of the upper and lower jaw and sagittal characteristics of the dental arch with odontometric and cephalometric indices of youth-mesocephals with orthognathic bite: direct, mostly unreliable, average strength (r ranging from 0.30 to 0.44) and a reliable average force (r from 0.51 to 0.59) and strong (r from 0.60 to 0.87), the distances between the tops of the distal and medial roots of the upper first large angular teeth, between the points of the Pon on the upper first small angular teeth and between the hills of the upper canines and lower jaws with most dental crowns mesiodistal size and width parameters dentin-enamel limit in vestibular-lingual direction (except the distance between the tops of the distal root of the upper first large molar teeth); direct, mostly unreliable, average strength (r from 0.31 to 0.50) and a reliable average power (r from 0.51 to 0.55) connections the distances between the tops of the distal and medial roots of the upper first large angular teeth with the majority vestibule-tongue size of crowns of teeth and most indicators of head and face width; direct, mostly reliable, average forces (r from 0.56 to 0.59) and strong (r from 0.62 to 0.72) connections of distances between the points of the Pon on the upper first large molar teeth and between the vestibular medial bulges of the first large angular teeth with all the vestibule-tongue dimensions of the crowns of the jaws and small angular teeth of the upper jaw and the jaws of the mandible; direct, mostly of average strength, reliable (r from 0,55 to 0,59) and unreliable (r from 0,33 to 0,44) connections of distances between the points of the Pon on the upper first small angular teeth and between the hills of the upper canines and lower jaws with practically all vestibule-tongue sizes crowns of the upper and lower jaws; direct, mostly unreliable, average strength (r from 0.31 to 0.50) ties between the tops of the medial roots of the upper first large angular teeth, between the hills of the upper canines and between the roots of the canines of the upper jaw with the majority of teeth length indices; direct, mostly of average strength, reliable (r ranging from 0.50 to 0.59) and unreliable (r from 0.30 to 0.48) bundles of the distance between the hills of the canines of the upper jaws with practically all indicators of the length of the roots of cutters and canines in vestibule-tongue and mesiodistal projections and more than half of cephalometric indices; the reciprocal mean strength unreliable (r from -0.30 to -0.51) connections the distance between the tops of the distal roots of the lower first large angular teeth with half of the mesiodistal dimensions of the crowns of the teeth, the vestibule-tongue sizes crowns and the width of the dentin-enamel border in vestibule-tongue direction of the incisors of the upper and lower jaw and most indicators of head and face width; the reciprocal mean power unreliable (r from -0.30 to -0.41) connections of distances between the points of the Pon on the upper first large angular teeth and between the vestibular medial bulges of the first large angular teeth with practically all indicators of the length of the roots of the incisors and the canines in the mesiodistal projections; direct, mostly average strength, reliable (r ranges from 0.30 to 0.48) and unreliable

average forces (r from 0.51 to 0.57) and strong (r from 0.60 to 0.84) connections distances between the tops of the distal and medial roots of the upper first large angular teeth, between the points of the Pon on the upper first small and large angular teeth, and between the vestibular medial bulges of the first large angular teeth with most indicators of distances from the auricular point to the corresponding points on the skull; direct, mostly unreliable, average forces (r ranging from 0.30 to 0.50) bundles of premolar and molar sagittal distances of the upper jaw with most mesiodistal sizes of crowns of teeth and distance indices from the auricular point to the corresponding points on the skull; direct, mostly unreliable, average strength (r from 0.30 to 0.48) connections of all parameters of the maxillary dental arc in the sagittal plane with the majority of vestibule-tongue sizes crowns and the width of the dentin-enamel border in vestibule-tongue direction of the incisors of the upper and lower jaw; direct, mostly reliable, average strength (r from 0.51 to 0.57) and strong (r from 0.61 to 0.87) connections in the depth of the palate at the level of the first small angular teeth with the majority of parameters of the length of teeth, width of dentin enamel border in the vestibule-tongue direction and the length of the root of the teeth in the vestibule-tongue and mesiodistal projections; predominantly direct mean strength reliable (r ranges from 0.50 to 0.59) and unreliable ($r=0.30$ to 0.50) connection of all parameters of the maxillary dental arc in the vertical plane with almost half of the cephalometric indices.

Conclusions. 1. In the mesocephalous men among the linear sizes necessary for constructing the correct form of the dental arch, the relative majority of the reliable and average strength of the unreliable correlations with the size of the teeth and the cephalometric indices is established with the parameters of the maxillary dental arc in the vertical plane (39.7% of the total number of bonds between the given indicators), and the smallest - with parameters of the maxillary dental arch in the sagittal plane (28.3%).

2. In the mesothelium males, the relative majority of the reliable and average strength of the false correlations of the transversal dimensions of the upper and lower jaw are established with mesiodistal (44.4% of the total number of links between these indices) and horse-tongue (38.9%) crowns the teeth and with the width of the dentin-enamel border in the sparrow-language direction (43.1%). 3. Most correlations of the parameters of the maxillary dental arch in the sagittal plane in the mesothelium males are established with mesiodistal dimensions of the crowns of teeth (50.0%) and with the width of the dentin-enamel border in the mesiodistal and horse-tongue direction (55.6%); and the parameters of the maxillary dental arch in the vertical plane - with the length of teeth (53.3%), the length of the root in horse-tongue (50.0%) and mesiodistal (44.4%) projections and with cephalometric indices (49.5%).

Key words: youth-mesocephals with orthognatic bite, correlations, transversal volumes of the upper and lower jaw, sagittal characteristics of the dental arch, odontometric indicators, cephalometric indicators.

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HISTOLOGICAL FEATURES OF MORPHOGENESIS OF REGENERATE IN RATS WITH OPEN LOWER JAW FRACTURE ON THE BACKGROUND OF OSTEOPOROSIS AFTER IMPLANTATION OF CRYOPRESERVED TISSUE OF HUMAN PLACENTS

Introduction. Cranio-facial injury is a serious injuries category and make up a major threat to the health and life of a person what has a great social significance. Among the injuries of the facial skeleton, fractures of the mandible are the most common, which, according to domestic and foreign authors, make up from 70 to 85% of all fractures of the maxillo-facial bones.

At present, numerous methods of treatment for stimulation of reparative osteoregeneration after bone fracture have been theoretically substantiated and clinically tested, but there is no consensus among authors on ways to stimulate bone debris consolidation and therapeutic tactics. The question of the use of placental preparations as a method of influencing reparative osteogenesis in the treatment and prevention of complications in trauma and fractures, in particular, with damage to the bones of the facial skull, has not been investigated to date. At the same time, there is evidence of a positive effect of the introduced cryopreserved fragment of the placenta in inflammatory processes, hormonal and immunological failure.

Aim of work - to substantiate the possibility of using cryopreserved fragments of the placenta as a corrector of reparative osteogenesis in the experimental traumatic process in the bone tissue of the lower jaw against the background of osteoporosis.

Materials and methods. The study was carried out on 70 male Wistar rats (body weight 180-200 g). Experimental osteoporosis in rats was induced by administration of 2.5% hydrocortisone acetate solution over a period of 60 days in a dose of 5 mg/kg body weight [3]. Subsequently, the drug was discontinued and traumatic damage to the lower jaw was restored: the rat was fixed on the back of the machine; under light hexanal (0.1 ml of 10% solution per 100 g of body weight) anesthesia in the right submandibular zone was performed damage on the skin parallel to the lower edge of the mandible in the medial direction of 10-12 mm in length; the muscles dissected and skeletoned the lower jaw; separating the external cortical plate with a separating disk, and then a full bone fracture with a bit on the line was applied, connecting the site of the fusion of the body and the branches of the jaw in the retro-molar region with a location 0.9 cm from the medial angle of the mandible. The surgical wound was connected with the oral cavity, the muscles and the skin were sutured with a catgut. All stages of experimental research have been performed in accordance with the International Humane Animal Health Practices Directive in accordance with the rules of the "European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes" (Strasbourg, 1986) and approved by the Committee on Bioethics of the National Pirogov Memorial Medical University, Vinnytsya (Minutes No. 14 of 25.11.2010).

Animals that were in the same conditions of containment were distributed into the following groups: group 1 - control, animals with combined pathology: rats under the background of the simulated osteoporosis were performed traumatic damage to the mandible (fracture of the mandible); group 2 - study of the effect of cryoplacenta on the repair of bone tissue in animals that had a combined pathology: 24 hours after the

manipulation, transplant of the placenta fragments was carried out. The implantation of the drug was performed surgically one day after the fracture of lower jaws. For this purpose, in rats on the back, in the area of the shoulder blade, underneath the local novocaine anesthesia, made a subcutaneous pocket in which a sterile fragment of the placenta weighing 200 mg per animal was fed. The incision was sewn and treated with antiseptics. Human placenta fragments weighing from 1500 to 1800 mg with observance the rules of asepsis and antiseptics were stored in sterile disposable containers of the company "Nunc" for low temperature preservation at a temperature of -196° C. Cryopreservation and storage of containers was carried out according to the technology developed at the Institute for the problem of cryobiology and cryomedicine of the National Academy of Sciences of Ukraine [9]; group 3 - study of the effect of cryoplacenta in combination with calcium (calcium citrate) in animals that had a combined pathology. The drug calcium citrate was administered to animals once a day in a therapeutic dose of 26 mg/kg, taking into account the coefficient of species sensitivity.

The research was carried out at 7, 14, 21, 30 and 45 days after fracture simulation.

For histological examination, fragments of bone tissue from the operation area were isolated, fixed in 10% of formalin solution, dehydrated and enclosed in celloidin, sections were made on a Reichert sane microtome and stained with hematoxylin and eosin. Studies of histological specimens and microphotography were performed using the «AxioStar Plus» microscope.

Results. Discussion. *Group 1.* On the 7th day, extensive areas of necrosis were found, and the sequestration of fragments of bone and teeth with narrow granulation tissue zones intensively infiltrated by leukocytes on the border with soft tissues (Figure 1). In some areas, a pronounced lacunar resorption of bone fragments from the side of the granulation tissue was determined. The vast fields of necrosis, subjected to rarefaction and lacunar resorption, are separated from the bone fragments by the granulation shaft.

On the 14th day, randomly located areas of necrosis, sequestration were determined, which were partially delineated by granulation tissue infiltrated by leukocytes, and alternately alternated with irregularly shaped fields from a fine-grained network of bone bunches. At certain sites, sequesters of lamellar bone tissue were identified, which was located among necrosis fields or on the border of necrosis and granulation tissue infiltrated by leukocytes. Sections of the newly formed bone tissue were observed in the thickness of the granulation tissue separating the necrosis fields, in the inter-beam spaces a well-vascularized cell-fibrous tissue was defined in them, at the border of necrosis and granulation tissue.

On the 21st day, various sizes of sequestration were observed among the large areas of necrosis, narrow fields of the granulation tissue alternated with large zones of pronounced leukocyte infiltration. Lacunar resorption with strata of newly formed bone tissue was determined on individual sites, mainly at the ends of fragments of the lamellar bone, along the periosteal and endosteal surfaces, diffuse and focal leukocyte infiltration of the granulation tissue.

On the 30th day, randomly spaced sections of necrosis were identified, with sequesters of various sizes and granulation tissues, sometimes with intensely marked infiltration. The newly formed bone tissue was located mainly on the periphery. In some areas, pronounced lacunar resorption and zones of osteogenesis in the region of

fragments were detected. Among the granulation tissue were randomly located areas of necrosis, sequestration and a small-loop network of newly formed bone beads, mostly in the form of bezystocitous sequesters, osteocytes were surrounded by lacunae with fuzzy contours. Individual cells were small, contained dense nuclei and were located in dilated lacunae with basophilic margins, which indicated a violation of mineralization and calcification of lacunar walls, which indicates osteoporotic processes.

At day 45, sequestration and necrosis occupied mainly the central areas and were separated by a narrow zone of infiltrated granulation tissue with fistulous passage. The fields of the newly formed bone tissue are found outside the granulation, forming not a continuous secondary bone "box". In some areas, sequestration is partially fused to the bony beams of the newly formed shallow loop, locally restricted by leukocyte infiltrated granulation tissue from the fields of the newly formed bone (Figure 2). Bone trabeculae were found in the central sections with microcracks and also sections of the basophilic matrix, which reflects a violation of mineralization processes, which can be regarded as manifestations of osteoporosis.

Thus, in animals of group 1 against the background of sharply expressed osteoporosis between 21 and 30 days, the regeneration of the injured lower jaw was characterized by pronounced necrosis and sequestration processes with the phenomena of primary and secondary necrosis. Typical for this process was a pronounced tissue infiltration, which consistently increased from 14 to 21 days. Despite a significant amount of necrotic changes, sequestration and infiltration of leukocytes, the granulation tissue formed by 45 days completely delimited the necrosis and sequestration zones, and beyond it a secondary bone "box" was formed from the small and large-pile network of newly formed bone bunches.

Group 2. On the 7th day, extensive areas of necrosis and sequestration were identified, which were located at a considerable distance from the injury line but were delineated by a well-formed granulation tissue with narrow sections of leukocyte infiltration. In some areas (Figure 3) fragments of compact bone tissue were determined, in which along with clearly colored osteocytes, "voids" or chambers with asymmetrically located or partially fragmented osteocytes were found. The surface of bone fragments with a large number of resorption lacunae in many areas was fused to newly formed bone bunches that locally formed the fields or passed into areas of osteogenic granulation tissue in which a significant number of cells with an asymmetrically located nucleus, intensively oxyphilic homogeneous cytoplasm, to preosteoblast. Often between these cells, thin branched areas of the newly formed bone matrix were found.

On the 14th day, the predominance of the fields of granulation and newly formed bone tissue was found in the components of the regenerate, which clearly delimited the necrosis and sequestration sites and only in certain regions was infiltrated by leukocytes in the form of narrow zones. In certain zones, the delineation of necrosis sites was determined by granulation tissue containing a large number of capillaries. Against the background of a large number of newly formed bone bunches, mainly soldered to the surface of the fragments, there were areas of compact bone tissue with separate non-stestocytic zones and places of resorption lacunae.

On the 21st day, necrosis and sequestration sites were detected. They occupied the central regions of the regenerate and were delimited by a well-formed tissue that was

infiltrated by leukocytes in places of contact with the necrosis zones. In close connection with the damaged sections of the fragments, the fields of a small- and large-pile network of bone bobs were determined. In some areas there was a transition of granulation tissue into the field-like fields of newly formed bone bunches, which were reconstructed into compact zones. In other areas, the formation of a cortical structure of thickened bone bones was found, delimited by a fibrous layer from the granulation tissue.

On day 30 maintained regenerate arrangement of components described above: small areas of necrosis and sequesters the center, a relatively narrow band of granulation tissue surrounding these regions and only in some parts of its leukocytic infiltration. The main component of the regenerate was the newly formed bone tissue, into which the remaining fragments of bone tissue were “soldered”. In some places, the osteoclastic resorption of compact bone at the ends of the fragments and the fusion of the newly formed bone tissue with the surface of the same fragments was determined. The fields of the newly formed bone bunches passed into the granulation tissue, which in the layers adjacent to the necrosis site was infiltrated by leukocytes. Due to the fields of bone bunches, the ends of the fragments are fused, but in places they are separated by a granulation tissue with a distinct fibrous base.

At day 45, the pattern described above remains. The location of the main components of the regenerate did not differ significantly. Most of the fields consisted of thickened newly formed bone bunches, which form a coarse-woven network, which was locally rearranged into compact bone tissue. In some areas (Figure 4), the delineation of the fields of newly formed bone bobs from the granulation tissue was clearly detected, which narrowed the area of necrosis by a narrow zone. The preserved fragments of compact bone are welded to the newly formed bone tissue. Lacunar resorption is found in the region of the ends of the fragments.

The data presented clearly reflect the stimulating effect of the injected cryoplacental preparation, expressed to a greater extent in the late stages of regeneration. The predominance of the activity of the osteogenic component in the fusion of fragments of damaged bone through a network of finely bony bone beams, which consists in an increase in the area of the newly formed bone tissue in the lesion zone compared with the control group. In addition, the cryoplacental preparation had a stimulating effect on the formation of provisional tissues in certain regions of the regenerate in the early periods from 14 to 21 days.

Conclusions. 1. In the control group (group 1) granulation tissue was the most active component of the regenerate in all terms of its formation and leukocyte infiltration delimited fields and sequesters, but has not received an osteogenic component predominant development and consequently to the final observation period recovery of the mandible integrity is not occurred, because in the morphogenesis of the regenerate there was no regular change in structure, which slowed down the process of restructuring.

2. At the turn of the introduction of cryopreserved placenta (group 2) was defined considerably smaller than in the group 1, the intensity of necrotic changes, the rapid necrosis delimitation portions and sequesters and more intensive development of granulation tissue. This created the conditions for the fusion of the fragments to the 30th day due to the shallow-loop network of newly formed bone bunches.

Key words: osteoporosis, fracture, cryopreserved placenta, morphology.

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DISCRIMINANT MODELS OF BELONGINGS PRACTICALLY HEALTHY MEN TO CENTRAL, WESTERN OR EASTERN ADMINISTRATIVE-TERRITORIAL REGION OF UKRAINE ON THE BASIS OF INDICATORS FEATURES OF DIGITAL AND PALMAR DERMATOGLYPHICS

Introduction. *Aim of our work* – construct and analyze the discriminatory models of belonging of practically healthy men to the central, western or eastern administrative-territorial regions of Ukraine on the basis of peculiarities of indicators of finger and palmar dermatoglyphics.

Materials and methods. From the database of research center of the National Pirogov Memorial Medical University, Vinnytsya taken primary dermatological indicators of 281 practically healthy men between the ages of 19 and 35 in the third generation of inhabitants of the central (165, Vinnytsia, Cherkasy, Kirovograd, Poltava and Dnipropetrovsk regions), western (71, Volyn, Rivne, Lviv, Chernivtsi, Ternopil, Khmelnytsky, Transcarpathian and Ivano-Frankivsk regions) and eastern (45, Kharkiv, Lugansk and Donetsk regions) regions of Ukraine. The conducted analysis of medical and social factors of living conditions of all surveyed indicates a fairly high homogeneity of these samples.

Imprints of the palmar surfaces and the individual fingers of the right and left hands were obtained using a printing ink on a sheet of paper. The obtained dermatoglyphic material was analyzed by H. Cummins and Ch. Midlo method according to T. D. Gladkova.

The construction of discriminatory models of the possible assignment of men to the central, western or eastern regions of Ukraine, based on the specifics of dermatological indicators, was carried out in the license package "STATISTICA 6.1".

Results. Discussions. The discriminant function, taking into account the indexes of finger and palmar dermatoglyphics, correctly covers 73.7 % of practically healthy men from the central and western regions of Ukraine. Between practically healthy men from the central and western regions of Ukraine discriminant variable are comb count of 5 finger of his right hand, asymmetry type pattern of the 1 finger, asymmetry type pattern of the 5 finger, asymmetry comb count of the 1 finger and asymmetry comb count of line b-c The largest contribution to discrimination has the asymmetry of a 1-finger type pattern. In general, the totality of all variables has negligible (Wilkes Lambda statistics = 0.879; F = 6.304; p <0.001) discrimination between men from the central and western regions of Ukraine.

Discriminant function, taking into account the index of finger and palmar dermatoglyphics, correctly covers 82.9% of practically healthy men from the central and eastern regions of Ukraine. Between practically healthy men from the central and eastern regions of Ukraine discriminant variable are the pattern on the 2 interdigital

pillows of right palm, type the pattern of the 1 finger of his right hand, the frequency of the central axis of the three-radius left palm, type pattern of the 3 finger of the left hand, the asymmetry value angle atb, magnitude of the index of the main palmar lines of the left palm and the frequency of any combination of three-radials on the left palm. The greatest contribution to discrimination is the type of pattern of the 1 finger of the right hand and the frequency of the central axial three-radius of the left palm. In general, the totality of all variables is negligible (Wilkes Lambda statistics = 0.779; $F = 8.152$; $p < 0.001$) discrimination between men from the central and eastern regions of Ukraine.

Discriminant function, taking into account the indexes of finger and palmar dermatoglyphics, correctly covers 78.5% of practically healthy men from the western and eastern regions of Ukraine. Between practically healthy men from the western and eastern regions of Ukraine discriminant variable are the type of pattern of the 3 finger of the left hand, comb count of the 3 finger of the right hand, comb count of the 1 finger of right hand, the type of pattern of the 5 finger of the left hand, asymmetry comb count on the line c-d, magnitude of the right hand angle atd and asymmetry of the comb count of the 5 finger. The largest contribution to discrimination has the comb count of the 3 finger of the right hand. In general, the totality of all variables has almost average (Wilkes Lambda statistics = 0.640; $F = 8.647$; $p < 0.001$) discrimination between men from the western and eastern regions of Ukraine.

In determining the significance of all discriminatory functions using the criterion χ^2 , it is established that a reliable interpretation of the classification indices obtained between practically healthy men in the central and western, central and eastern or western and eastern regions of Ukraine is possible.

Thus, reliable discriminatory models of the belonging of practically healthy men to the central, western or eastern administrative-territorial regions of Ukraine have been constructed, which, depending on the features of the indicators of finger and palmar dermatoglyphics, correctly represent representatives of these regions from 71.1 to 82.9% of cases, in the majority of cases have a low level of discrimination (Wilkes Lambda statistics are from 0.640 to 0.897). The highest level of discrimination was found between men from western and eastern (the Wilks Lambda statistics is 0.640) regions of Ukraine.

Conclusions. 1. Based on the peculiarities of dermatological indicators of reliable discriminatory models of the affiliation of virtually healthy men to the central, western or eastern administrative-territorial regions of Ukraine, the highest level of discrimination is established between the western and eastern regions. 2. The most commonly discriminatory variables between men in the central, western or eastern regions of Ukraine are the type of pattern on the fingers of the left hand.

Key words: dermatoglyphic, administrative-territorial regions of Ukraine, discriminatory analysis, practically healthy men.

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RESULTS OF SCANNING ELECTRON MICROSCOPY OF HUMAN EMBRYOS CHORIONIC VILLI DURING EARLY PREGNANCY MISCARRIAGE

Introduction. Taking into account all of the foregoing, the purpose of this study was to investigate the structural changes in the villi of chorionic human embryos obtained after START and ZNV using scanning electron microscopy and compare the results with normal BX.

Materials and methods. For the study, the villi of chorionic human embryos, obtained after uterine cavity scraping due to sporadic and habitual miscarriage of pregnancy and BH, were obtained after arthritic abortions before the 12th week of fetal development at the will of women. From the material obtained, three corresponding study groups were formed.

Results. Discussions. Chorionic villi (CV) is one of the main components of the hematoplacental barrier in the first trimester of fetal development. In our previous studies, we found a possible connection between violations of the hydrocarbon complexes of the CV structural components and the development of sporadic and recurrent pregnancy miscarriages. In other words, in case of structural and functional disorders of the CV their barrier and transport function is violated, which can lead to fading or slow down the development of the fetus. Many researchers studied the structural features of chorionic villi using scanning electron microscopy in the first trimester in normal cases and during pathology, but we were not able to find data on conducting similar studies on early CV, obtained after the sporadic and recurrent pregnancy miscarriage.

The number of syncytial sprouts and the number of microvilli on the surface of the syncytial layer indicate the activity of proliferative processes, excretion and the fullness of the receptor surface of the histological structures of the chorionic villi. The obtained results confirm our previous studies of inferiority of CV during recurrent and sporadic pregnancy miscarriage, including their surface structures (microvilli), and the reduction of proliferative processes and the violation of the receptor component of their structures.

Conclusions. 1. Structural abnormalities of human embryos and, accordingly, their functional inferiority can lead to sporadic or habitual miscarriage of pregnancy. 2. Reduced proliferative activity of the chorionic villi of human embryos can lead to a violation of their function and, accordingly, to early miscarriage of pregnancy. 3. Violation of the receptor and excretory function of the outer surface of the chorionic villi, which is largely provided by microvilli on the surface of syncytiotrophoblast, can play a key role in early miscarriage. 4. Reduction of proliferative activity and violation of the microvilli of the syncytial layer of chorionic villi were more pronounced in the course of the usual miscarriage of pregnancy. 5. The above observations, to a certain extent, confirmed the results of our previous studies.

Key words: chorionic villi, early pregnancy miscarriage, scanning electron microscopy.

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STRUCTURAL CHANGES IN THE RATS' MYOCARDIUM DURING EARLY PERIOD OF EXPERIMENTAL BURN DISEASE

Introduction. A large burn injury causes significant hemodynamic and cardiomodal disturbances that contribute to sepsis, multiple organ failure and death. Cardiogenic stress is a distinct feature of the acute phase of response, and worse outcomes of burn injury treatment are associated with severe cardiac dysfunction.

The aim is to evaluate the structural changes in the myocardium of rats in the early period of experimental burn disease.

Materials and methods. The study included 48 white laboratory male rats weighing 160-180 grams obtained from the vivarium of the State Institution "Institute of Pharmacology and Toxicology of the National Academy of Medical Sciences of Ukraine".

According to the research objectives, the rats were randomly divided into two groups: the control group consisted of 19 intact animals, experimental group - 29 animals with experimental burn disease and correction of hypovolemic changes by physiological solution.

Thermal injury was modeled under general anesthesia using the Regas method (1992). Infusion of the physiological solution was performed for the purpose of correction of hypovolemic changes through the catheter inserted into the femoral vein.

The animals were withdrawn from the experiment for 1, 3, 7 days by overdose of propofol anesthesia with observance of the basic requirements for euthanasia.

Hearts of rats were sent to a histological and cytofluorometric study.

Results. Discussion. The myocardium, in the control group of animals (without burn injury and the introduction of any substances) in all the prescribed terms had a typical histological structure. Animals with burn injury (experimental group), which were injected with a physiological solution, during all defined terms in the myocardium, were noted marked changes in the circulatory nature of the vessels of the hemomyocirculatory bed (mainly small veins, venules and capillaries). If the venous congestion had a relatively uniform character, then the phenomena of stasis, interstitial edema, slag-phenomenon and diapedeous hemorrhages in the capillaries were observed more often in the subendocardial parts of the myocardium. We also observed limited subendothelial edema of the stomach of the ventricles of the heart.

At the same time, individual cardiomyocytes had signs of myocytolysis - a substantially luminous throughout the homogeneous sarcoplasma.

Conclusions. The results of the study show a fairly stable picture of cell cycle parameters in myocardial cells of animals without burn injury with a predominance, on the one hand, of cells present in the G0G1 phase and the presence of a certain balance between the processes of nuclear DNA synthesis and apoptosis. On the background of burn injury after 1 day in myocardial cysts, the processes of apoptosis prevailed. Along with this, 1 day after burn, there is an increase in the proportion of

cells present in the G0G1 phase and the proliferation unit, as well as a smaller index of proliferation due to a smaller number of cells in the G2 + M phase. With the further development of burn inflammation, after 3 days there was a change in the normalization of cell cycle parameters, which was manifested in the form of a smaller proportion of cells in the G0G1 phase and a larger index of proliferation. On the background of burn injury (after 3 and 7 days), a significant number of cells remain in the state of apoptosis and there is a greater significance of the proliferation block, which may indicate an insufficiency of the compensatory capacity of the body to recover. Comparison of the clinical data of other researchers and our findings suggests that heart damage can occur precisely as the process of apoptosis intensifies.

Key words: burn disease, myocardium, morphology, cell cycle, rats.

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ANATOMIC CHARACTERISTICS OF CERVIX IN THE MATURE, ELDERLY AND SENILE PERIOD OF HUMAN ONTOGENESIS

Introduction. Researchers' interest to the problem of human senescence in age anthropology concerning organs and tissues changes in ontogenesis, which define involution processes development, does not decrease in both, fundamental positions, and application-oriented sense. In morphologic investigations of the problem one may state finalization of the “descriptive” investigations stage, based on qualitative signs analysis, and transition to works, which material is presented in quantitative criteria, with adequate methods of mathematical processing.

Materials and methods. Investigations have been performed in 40 cervix macropreparations with further measuring of cervix length and diameter, and 110 USI results of women in different age periods. Received data validity has been determined with Student's T-test. Values with $P < 0.05$ have been taken for statistically significant ones. Correlation analysis with Pearson correlation coefficient calculation has been performed to investigate interrelations of various indicators. Licensed program RStudio has been used to investigate dynamics of cervix parameters changes. Mathematic models have been tested for goodness of fit based on F-test.

Results. Cervix in the first, second adult, elderly and senile periods is a connective-tissue structure, where vaginal and supravaginal parts are distinguished. There were two individual cervix forms observed: cylindrical and conic ones. According to USI data, cylindrical form of cervix prevailed (66.7%). Reliable cervix length enlargement has been revealed with abortions availability in anamnesis ($P < 0.05$) – the most divergent values in A3 group (abortions only) compared to groups A2 (women without anamnesis of deliveries) and A4 (1 delivery), B1 (second adult, menopause), B2 (elderly), B3 (senile). There was not tendency to cervix length

enlargement revealed ($P > 0.05$) due to sex life start (in group A1 (virgo) and A2 (sexually active women); in group A5 (deliveries > 2) and A3 (abortions only), between B1 (second adult, menopause) and B2 (elderly), group B2 and B3 (senile). Statistical analysis made it possible to reveal linear-regressive relationship between cervix diameter and age period (coefficient of total determination is 49.0%). Sharp contours of cervical canal were identified in women of the first, second adult periods in 71.8%, in elderly and senile periods it was 62.8% and 59.7%. Even cervix contours evidently depend on cervix functional load (in group A1 (virgo) cervix contours were even, whereas in group A2 (without pregnancies) even contours were observed in 66.3%; the least even contours were observed in group A3 (abortions only) – 28.8%). In the second adult period (menopause), elderly and senile periods cervix length decreased uniformly, there was linear-regressive relationship available of cervix length in these age periods (coefficient of total determination was 47.8%).

Conclusions. In spite of numerous works availability, devoted to female genital system in different age periods, quantitative morphological parameters and anatomic peculiarities of cervix have been investigated insufficiently, therefore dynamics of forms and extension formation, individual anatomic variability of the cervix were traced over a period of the human ontogenesis with macroscopic, morphometric methods and USI. Determination of quantitative age characteristics of structure components of internal organs is valuable for correct revealing and interpreting of the term “age norm” in analysis of morphological criteria of pathological processes.

Key words: cervix, ultrasound, ontogeny, human, anatomical features.

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DETERMINATION OF CRANIOMETRIC AND GNATOMETRIC INDICATORS BY A.M. SCHVARTZ METHOD FOR UKRAINIAN BOYS AND GIRLS

Introduction. *Aim of our work* – to establish craniometric and gnatometric indices by the Schwartz method in boys and girls of the Podillia region of Ukraine with orthognathic bite and compare the results with the data obtained A. M. Schwartz.

Materials and methods. With the Veraviewepocs 3D device, Morita (Japan) in 38 boys (aged from 17 to 21) and 55 girls (aged from 16 to 20 years) with orthognathic bite have received and analyzed side teleroentgenograms. Measurements were carried out in accordance with the recommendations of A. M. Schwartz. Cephalometric points were determined according to B. S. Phulari and S. I. Doroshenko and Ye. A. Kulginsky.

The following craniometric indices were determined: angle F (facial angle), formed by Se-N and N-A lines (defines the position of the upper jaw to the anterior cranial basis in the jet plane); *angle H* is formed by the lines Po-Or (Frankfurt-plane (Fp))

and Pn (nose perpendicular, perpendicular line from the point N' to the Se-N line); *angle I* (inclination angle), angle formed by ANS-PNS and Pn (nose perpendicular, perpendicular line from the point N' to the Se-N line), (inclination angle of the upper jaw or palatal plane to the nasal perpendicular); *angle T* (the profile angle T) is formed by the lines Sn-Pog' and Pn (nose perpendicular, perpendicular line from the point N' to the Se-N line); *distance Se_N*, the distance from the point Se to the point N (different authors are called differently - the length of the anterior part of the skull base by A. M. Schwartz; the plane of the anterior part of the skull base; the anterior cranial basis; cranial base plane).

The following gnatometric indices were determined: *angle B* (basal angle), formed by the palatine plane SpP (line ANS-PNS) and mandibular MPS plane by A. M. Schwartz (line Im-Me); *angle G* (gonial angle, mandibular angle) is formed by the lines Mt2 (formed by the points ppCond and MT2) and Mt1 (which is formed by the points T2 - Me) and which are intersected at the point tGoS; *distance MAND* (length of the lower jaw), distance from the constructive point tGoS to the constructive point apMandS; *distance MAX* (length of the upper jaw), distance from the constructive point apMax to the PNS point; *distance R_ASC* (length of branch of mandible), distance from constructive point R.asc to constructive point tGoS; *angle Max1_SpP*, formed by the lines Ap1u-Is1u (inclination of the central axis of the upper medial incisor) and ANS-PNS (palatal plane, SpP); *Mand1_ME* angle is formed by the lines Ap1L-Is1L (inclination of the central axis of the lower medial incisor) and Im-Me (mandibular MPS plane, by A. M. Schwartz); *angle II* (inter-incisive angle) - formed by the lines Ap1u-Is1u (center axis of the upper median cutter) and Ar1L-Is1L (center axis of the lower median cutter); *angle MM* (maxillo-mandibular angle) - formed by lines A-B and ANS-PNS.

The statistical processing of the obtained results was carried out in the licensed package "Statistica 6.0" using nonparametric methods for evaluating the obtained results. The reliability of the difference in values between the independent quantitative values was determined using the Man-Whitney U-criterion.

Results. Discussions. When comparing the craniometric and gnatometric parameters used in the Schwartz analysis between boys and girls with orthognathic bite in boys, the values of the *distances Se_N* (the length of the anterior part of the skull base by A. M. Schwartz), *MAND* (the length of the mandible), *MAX* (length of the upper jaw) and *R_ASC* (length of the branch of the mandible) are significantly higher ($p < 0.001$ in all cases); and in girls - trends ($p = 0,061$ and $p = 0,055$) to larger values of the *inclination* and *basal angles*.

Conclusions. Comparing the craniometric and gnatometric parameters obtained by A. M. Schwartz with the data of these parameters obtained in the boys and girls of Podillia with orthognathic bite, the expressed differences are only established for the *angles H* (formed by the Frankfurt plane and the perpendicular of the nose), *II* (inter-incisive angle) and *MM* (maxillo-mandibular angle). It is impossible to estimate possible divergences with the distances *Se_N*, *MAND*, *MAX* and *R_ASC*, since there are no data obtained by A. M. Schwartz relative to the *distance Se_N*.

Thus, the majority of craniometric and gnatometric parameters obtained in boys and girls of Podillia with orthognathic bite have no differences with the magnitude of these parameters obtained by A.M. Schwartz.

Key words: lateral teleroentgenogram of the head, cephalometry, young men, girls, Schwartz analysis.

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ANTIMICROBIAL PROPERTIES OF ANTIBIOTICS, DECAMETHOXINUM® END FLUOROQUINOLONES

Introduction. The purpose of the study was to determine the sensitivity of clinical staphylococcal strains to antibiotics, to study the antimicrobial antistaphylococcal activity of decametoxin®, decazane® (DSC®), gorseten® (CSO), CSF, OF in unfavorable conditions of the nutrient medium with 5% and 10% load of serum proteins.

Materials and methods. Experiments were performed on 57 clinical strains of staphylococcus isolated from the body of patients with purulent-inflammatory diseases of various localization. Allocated strains of staphylococcus had typical morphological, tinctorial, culture, biochemical properties. Sensitivity of clinical strains of staphylococci to antibiotics was determined by the method of standard paper disks with antibiotics. For study, DMQ®, DOS®, GS®, TSF, OF were used. The preparations were pre-dissolved in 10 ml of sterile distilled water. Minimum bacteriostatic concentration of drugs was determined by the method of serial consecutive dilutions in meat and peptone broth (MPB). The antimicrobial action of the drugs was established on the basis of the minimum bactericidal concentration (MBsK) on meat-peptone agar (MPA), in accordance with the guidelines for the study of the sensitivity of microorganisms to antibacterial drugs.

Results. Discussions. We investigated the staphylococcal sensitivity of 57 clinical strains to antibacterial drugs. As can be seen from Table. 1, fig. 1, among the strains of staphylococcus, sensitive and moderately sensitive bacteria were found to ampicillin (47.3%), azithromycin (50.81%), benzylpenicillin (49%), vancomycin (49.14%), gentamicin (52.64%), doxycycline (19.31%), clindamycin (36.84%), lincomycin (28.09%), erythromycin (26.32%), oleandomycin (22.81%), oxacillin (57.94%), rifampicin (49%), streptomycin (63.21%), cefaperazone (53.21%), cefazolin (56.14%), cephalotin (61.4%), cefaclor (59.65%), ceftaxime (56.14%), cefepime (56.65%) and chloramphenicol (63.21%).

Resistant to staphylococcal strains to doxacycline (80.69%), oleandomycin (77.19%), erythromycin (73.68%), lincomycin (71.91%), clindamycin (63.16%), ampicillin (52.7%) %, benzylpenicillin (51), rifampicin (51%), vancomycin (50.86%). The results of the determination of the antistaphylococcal activity of DMK®, GS®, DC®, IΦ, OΦ showed that the investigated preparations exhibited bacteriostatic, bactericidal action on the clinical staphylococcal strains. Thus, MBTSK DMK®, HS®, DS® in the presence of 5% serum proteins has decreased twice, in OΦ - four times, in IΦ - eight times. It is important to emphasize that in the presence of 10% of serum proteins, there was a further increase in MBCs of DMK® (8 years), DS® (4

times), GS® (8 times). In fluoroquinolones, MbtsK increased: in OΦ (8 times), IIΦ - (16 times). Thus, based on the results of the research, it can be noted that MBCs DMK®, GS®, DS®, OF, TSF increased in the presence of 10% proteins from two to 16 times. It has been shown that an increase in the protein concentration up to 10% was accompanied by an increase in the bactericidal concentration of ciprofloxacin to 7.8 µg/ml, remaining at an active level relative to clinical staphylococcal strains.

Conclusions. Clinical strains of staphylococci have a high level of resistance to doxycycline (80.69%), oleandomycin (77.19), erythromycin (73.68%), lincomycin (71.91%), clindamycin (63.16%), ampicillin (52.7%), benzylpenicillin (51%), vancomycin (50.86%), rifampicin (51%). 2. Antibiotic-resistant staphylococcal strains retain high sensitivity to TSF, OF, DMK®, HS®, DS®. In the presence of 5%, 10% of blood serum proteins 2-8 times the active concentrations of antiseptics DMK®, DC®, GC® in 4-16 times are increased - fluoroquinolones IIΦ, OΦ.

Key words: antibiotics, antiseptics, sensitivity, antimicrobial agents, decamethoxinum[®], decasan[®], ciprofloxacin, unfavorable conditions.

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CORRELATION VARIABILITY OF HEART RHYTHM WITH ANTHROPO-SOMATOTYOLOGICAL PARAMETERS OF THE BODY OF PRACTICAL HEALTHY JUNIORS WITH HYPO- AND EUKINETIC TYPES OF HEMODYNAMICS

Introduction. *Aim of our work* – to establish and carry out the analysis of correlations of indicators of heart rhythm variability (HRV) with the features of anthropo-somatotypological indicators, age and indicators of force of brush squeeze of practically healthy juniors with hypo- and eukinetic types of hemodynamics.

Materials and methods. To determine the type of hemodynamics young men for 15 seconds was performed registration of tetrapolar chest rheogram sync with phonocardiogram and electrocardiogram. Type of circulation set by the value of cardiac index values. Practically healthy men with hypokinetic (62) and eukinetic (64) types of hemodynamics recorded rhythmogram during recording electrocardiography in the second standard lead within 5 minutes followed by computer processing. In synchronization with electrocardiography using nasal thermistor recorded pneumogram. Data analysis of heart rate was performed using a computer program of certified cardiology diagnostic complex. As a result of the processing of the obtained results evaluated indicators of a variational pulsometry (mode - Mo; mode amplitude – AMo; the average value of R-R interval - NNM; minimum R-R interval - Min; maximum R-R interval - Max; variational sweep - VR), statistical (standard deviation length of normal RR intervals - SDNN; square root of the sum of squared difference of the quantities of successive pairs of normal RR intervals - RMSSD; percentage of pairs of successive normal RR intervals that differ more than 50 ms of the total number of consecutive pairs of intervals - PNN50)

and spectral indicators of HRV (total power of recording in all ranges - FO; power in the range of very low frequency - VLF; power in the range of low frequency - LF; power in the range of high frequency - HF; related capacities in the range of low and high frequency - LF / HF) as recommended by the European and North American Heart Association (1996). Using the appropriate formulas calculated indicators of vegetative homeostasis by the method Baevsky, namely: vegetative balance index ($IVR = AMo / VR$); regulatory systems tension index ($IN = AMo / (2 \times VR \times Mo)$); vegetative index rate ($VPR = 1 / (Mo \times VR)$).

Anthropometric examination of boys was conducted in accordance with the scheme V.V. Bunak (1940). Definition of somatotype by method of J. Carter and B. Heath (1990). Definition component composition of body weight carried by the method of J. Matiegka (1921). Force compression of the right and left hand performed using a carpal dynamometer.

The evaluation of the relationships of HRV parameters with anthropo-somatotypological parameters of the body, age and brush compression force in juniors with hypo- and eukinetic types of hemodynamics was performed in the licensed statistical package "STATISTICA 5.5" using nonparametric statistics of Spearman.

Results. Discussions. Conclusions. In analyzing the links between HRV indices with anthropometric and somatotypological parameters in boys with hypokinetic hemodynamic type in most cases numerous reliable direct weak (r from 0.27 to 0.29) and average strength (r from 0.33 to 0.36) connections are established between the total recording power in all ranges and the power in the range of very low frequencies and body weight, girths of the forearm in the upper third and hand, the muscular component of the body weight by Matiegka, as well as between the majority of statistical and spectral HRV indices and width of the distal epiphysis (WDE) of the shin; and among reliable reverse weak ($r = -0.29$) and average strength ($r = -0.31$) connections only attention is drawn to the correlation between most indicators of vegetative homeostasis by the Baevsky method and the WDE of the shin.

In juveniles with eukinetic hemodynamic type, in most cases, numerous reliable direct weak (r ranging from 0.24 to 0.29) and middle strength (r ranging from 0.30 to 0.43) connections are established between the majority of variational pulsometry (except for the minimum value of the R-R interval and the variational scale) and the mass and area of the body surface, WDE of the shoulder, most girths of the lower limbs and the trunk, the mesomorphic component of the somatotype, between most of the spectral values of the HRV (with the exception of the power in the range of very low frequencies and the ratio of power and in low and high frequency ranges) and waist circumference, most of the thickness of skin and fat folds data (TSFF), the endomorphic component of the somatotype, and the fat component of the body weight for Matiegka; between the power indices in the range of very low frequencies and the ratio of capacities in the ranges of low and high frequencies and the height of the digital anthropometric point and the ectomorphic component of the somatotype; and numerous reliable reverse weak (r from -0.23 to -0.29) and average strength (r from -0.30 to -0.37) are established between the majority of the variance pulsometry parameters (with the exception of the minimum value of the R-R interval and the variational scale) and the ectomorphic component of the somatotype, between the majority of the statistical indicators of the HRV and the ectomorphic component of the somatotype, between the majority of the spectral values of the HRV (with the

exception of the power in the range of very low frequencies and the ratio of capacities in the low and high frequencies ranges) and the height of the digital anthropometric point and an ectomorphic component of the somatotype; between the power indices in the range of very low frequencies and the ratio of power in the ranges of low and high frequencies and the WDE of the forearm, the waist and chest girth on exhalation, the majority of indicators of the TSFF, the endomorphic component of the somatotype, the bone and fat components of the body weight by Matiegka.

Key words: practically healthy young men, heart rate variability, hemodynamics types, anthropometry, correlations.

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COMPARATIVE STUDY OF HISTOLOGICAL CHANGES OF BONE TISSUE OF THE MANDIBLE OF RATS IN THE AREA OF TRAUMATIC DEFECT IN PATHOLOGY OF HEPATOBILIARY SYSTEM

Introduction. Along with fractures of the mandible and facial injuries, one of the urgent issues of maxillofacial traumatology remains the problem of the etiopathogenesis of complications. Fractures of the mandible occupy a leading place among facial injuries and in the structure of general injuries. Among the lesions of the maxillofacial area they occur in 75-87% of cases.

Materials and methods. Experiment was conducted on 60 white male rats. Animals were in the general diet, had free access to water and food. In the process of work, the rats were divided into 3 groups: control - 20 rats - study of histological changes of bone tissue of the mandible of healthy rats with trauma of the mandible at the site of defect; experimental number 1 - 20 rats, the study of histological changes of bone tissue of the mandible of rats with trauma of the mandible at the site of defect in obstructive hepatitis, received by ligation and intersection of the total bile duct; experimental number 2 - 20 rats - study of histological changes of the mandibular bone tissue of rats with trauma of the mandible at the site of the defect in toxic hepatitis, obtained by introducing per os four carbon monoxide. All rats injured the lower jaw through perforation and defect formation. In the future, the histological signs of healing of the area of the perforation defect were observed.

Results. In the experimental pathology of the hepatobiliary system regeneration of the defect site of the mandible worsens, which is manifested by a decrease in the rate of recovery of the specific volume (%) of fibrotic reticular tissue in 2.6 times in obstructive hepatitis and toxic hepatitis - 3.4 times. In the experimental liver disease, osteo regeneration of the defect of the mandible is slowed down. In patients with trauma of the mandible, when detecting the pathology of the hepatobiliary system, it is advisable to perform correction of metabolic processes.

Conclusions. 1. In the experimental pathology of the hepatobiliary system regeneration of the defect site of the mandible deteriorates, which is manifested by a

decrease in the rate of recovery of the specific volume (%) of fibrotic reticular tissue in 2.6 times in the case of obstructive hepatitis and toxic hepatitis - 3.4 times. 2. With the experimental liver disease, osteo-regeneration of the defect of the mandible is slowed down. 3. In patients with trauma of the mandible, when detecting the pathology of the hepatobiliary system, it is advisable to perform correction of metabolic processes.

Key words: rat, maxillofacial area, perforation defect of mandible, regeneration, morphometric analysis.

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FEATURES RELATIONS COMPUTED TOMOGRAPHY SIZES OF PREMOLAR TEETH WITH CEPHALOMETRIC INDICATORS OF PRACTICALLY HEALTHY MEN FROM NORTHERN AND SOUTHERN REGIONS OF UKRAINE

Aim of our work – to determine the features of correlations of computer-tomographic sizes of small molar teeth (SMT) and their roots with cephalometric indices of practically healthy men of northern and southern regions of Ukraine.

Materials and methods. On the basis of medical center "Vinintermed LTD" in 65 somatically healthy men aged from 19 to 35 years from the northern region (n=32, residents of Zhytomyr, Kyiv, Chernihiv and Sumy regions); from the southern region (n=33, inhabitants of Odessa, Mykolaiv, Kherson, Zaporizhia regions and the Crimea) was conducted cone-beam computed tomography using dental cone-beam tomography Veraviewepocs-3D (Morita, Japan). Volume of three-dimensional image - cylinder 8x8 cm, thickness 0,2/0,125 mm, 0,011-0,048 mSv dose of radiation, voltage and amperage 60-90kV/2-10mA. Investigation of three-dimensional models of teeth-jaw bone structures complex was carried out in the shell i-Dixel One Volume Viewer program (Ver.1.5.0, J Morita Mfg. Cor.).

In cone beam computer tomograms of SMT of the upper and lower jaws conducted measurements: length of tooth; length of palate and buccal roots small molar teeth of the upper and lower jaw; height of the crown; vestibular-tongue dimensions of crown and neck of the tooth; mesio-distal dimensions of and neck of the tooth crown.

The cephalometric study consisted of determining the parameters of the cerebral and facial sections of the head with the help of a large sliding compass with a scale in the real size of the Martin system and a soft centimeter ribbon. Cephalometric studies were conducted taking into account the generally accepted recommendations and anatomical points. The shape of the head was determined by the following formula: the largest head width / the largest head length × 100. The value of the face sign (Garson morphological index) was obtained according to the corresponding formula: morphological face length / largest face width × 100.

The statistical processing of the obtained results was carried out using the statistical software package "Statistica 6.1" using the nonparametric Spirman method.

Results. Discussions. Conclusions. In the analysis of the reliable and average strength inaccurate correlations of computer-tomographic linear sizes of SMT with cephalometric indices, craniotype and the type of the face of practically healthy men of northern and southern regions of Ukraine, the following multiple relationships are established:

in the northern region - direct reliable ($r=0.35-0.54$) and unreliable mean strength ($r=0.30-0.34$) connections of the largest head girth, the largest head width and the smallest head width with the majority of mesio-distal dimensions of the SMT (with the exception of the first upper) and the height of the crowns of the lower SMT (with the exception of the smallest head width); direct reliable ($r = 0.35 - 0.51$) and unreliable mean strength ($r = 0.30 - 0.34$) connections of the mandible width and length of the body of the mandible on the left with most of the vestibule-lingual dimensions of the SMT (with the exception of other upper ones), as well as similar connections of the foreign eye width with the height of the second lower SMT, their crowns and mesio-distal dimensions; direct, mostly unreliable mean forces ($r = 0,30-0,32$) connections of the facial width with crown height, mesio-distal and vestibule-lingual dimensions of the lower left first SMT; inverse reliable ($r = -0.36 - -0.48$) and unreliable mean strength ($r = -0.30 - -0.33$) connections of the Garson morphological index and face type with height and length of the roots of the upper right first SMT, as well as with the mesio-distal size of the neck of the lower first SMT;

in the southern region - reverse, mostly reliable ($r = -0.36 - -0.52$) and unreliable mean force ($r = -0.30 - -0.33$) connections of the largest girth, sagittal arc and the greatest length of the head with the height of the crowns of the lower SMT (with the exception of the second left) and only the largest girth and sagittal arc of the head with mesio-distal cervical size of the upper second SMT; inverse, mostly reliable, average strength ($r = -0.35 - -0.44$) connections of the largest head width with the height of other upper and lower SMT and their roots (with the exception of the cheek root of the upper teeth); inverse reliable mean strength ($r = -0.36 - -0.39$) connections of the cranial index and head type with the length of the root of the lower first SMT; direct reliable ($r = 0.36$ and 0.37) and unreliable mean strength ($r = 0.33$ and 0.34) connections of the cranial index and head type with crown height of second lower SMT; inverse reliable mean strength ($r = -0,35 - -0,43$) connections of the mandible width with mesio-distal dimensions of the upper second SMT; direct reliable ($r = 0.35 - 0.39$) and unreliable mean strength ($r = 0.31 - 0.34$) connections of length and height of the nose with the height and length of the roots of the lower first SMT; direct, reliable mean power ($r = 0.35$ and 0.38) connections of nasal depth with root length and inverse reliable mean power ($r = -0.42$ and -0.46) connections of nasal depth with lower coronal height of second SMT; inverse, mostly reliable, average strength ($r = -0.35 - -0.52$) connections of the distance between the nasion and the inter-cutter point with mesio-distal (neck only) and vestibule-lingual dimensions of the upper first SMT; inverse, mostly reliable ($r = -0.36 - -0.50$) and unreliable mean strength ($r = -0.30 -0.34$) connections of the inter-orbital width, outer-eye width and mouth width gap with crown height and mesio-distal size of the neck of the lower first SMT (with the exception of inter-orbital and outer-eye width for the left tooth); inverse significant ($r = -0.39$ and -0.42) and unreliable mean strength ($r = -0.32$ and -0.33) connections of the length of the body of the mandible on the right and left with the mesio-distal dimensions of the upper left first SMT.

Key words. correlations, premolar teeth, computer tomography, cephalometry, practically healthy men, regional features.

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THE EFFECT OF DENTAL IMPLANTS ON THE MANDIBLE DEVELOPMENT (EXPERIMENTAL STUDY IN GROWING ANIMALS)

Introduction. Dental implantation is an integral part of modern dentistry in the issue of complete rehabilitation and preservation of the quality of life of dental patients of all ages. Due to the active development of dental implantation among adults and the expansion of indications for its application in the age aspect, the question of the possibility of its use for prosthetic treatment of children and adolescents is discussed, but the main reservations about the establishment of dental implants in growing patients are the possible dental implants impact on jaws growth and development . *The aim of the work is* radiologically and morphometrically examine the possible effect of dental implantation on the growth and formation of the mandible in the growing experimental animals.

Materials and methods. The study was carried out on 5 domestic pigs of miniature Vietnamese species of 5-6 months of age, with an average body weight of 25 - 27 kg. Each animal after an adaptation period under general anesthesia was administered by one dental implant in the dento-alveolar area of the ruminant teeth of the left half of the mandible. The right half of the lower jaw is used as a control. Experimental animals are divided into 2 groups. After the experiment was completed in the group 1 through 90 days and in the group 2 after 180 days, euthanasia of animals was performed. In each animal, the mandible has been removed for X-ray examination by means of a spiral computed tomography.

Results. Radiological and morphometric studies of the mandible showed that all dental implants were well osteointegrated, the bone mineral density in the area of dental implants and on the opposite side of the jaw without dental implantation ranged from 665.0 ± 26.07 HU to 713.0 ± 31.23 HU.

Morphometric comparative analysis of the right and left parts of the mandible has shown that dental implantation in the late period of puberty of the experimental animals does not have a significant effect on the growth and development of the mandible. The obtained data on the measurement of the size of the median sagittal plane in experimental animals of both 1 and 2 groups are practically the same as in the measurement of both occlusive surfaces ($p > 0.5$) and the edge of the body of the mandible ($p > 0.5$). When comparing the dynamics of measured distances to the median sagittal plane with age in experimental animals, it was found that they are practically stable and vary within 0.01 to 0.04 mm.

Condylar-pogonal dimensions of the mandible indicate their identity in animals of both experimental groups, on the right (without dental implant), and on the left (with dental implant), and their averaged length in the 1st group was 13.6 cm and 13.7 cm respectively and in the 2nd group - 13.7 cm and 13.8 cm respectively.

Conclusion. Based on the radiological and morphometrical analysis of the effect of dental implantation on the growth and development of the mandible in the growing experimental animals, we did not find statistical confirmation of significant changes between right (without dental implant) and left (with dental implant) halves of the mandible. The mineral density of the mandible bone tissue of the right and left sides is identical, and the dental implants are well osteointegrated. The conducted experimental researches give grounds to recommend the method of dental implantation in orthopedic rehabilitation of small included defects of dentition in adolescence.

Key words: dental implants, mandible, growing experimental animals, growth and development, radiological morphometry.

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ENDOTHELIAL DYSFUNCTION IN PATHOGENESIS OF COMBINED ACTION OF POLYMERIC MATERIALS COMPONENTS

Introduction. Polymeric materials over the past decades have become obligate components of the human environment and the means of restorative medicine. Levels of migration of components from polymeric materials by the degree of potential negative effects on the body can be attributed to low-intensity factors. *The aim was to experimentally study* the role of endothelial dysfunction and delayed type hypersensitivity in the pathogenesis of experimental toxicopathies caused by exposure to components of polymeric materials. The development of endothelial dysfunction was assessed by cytological and biochemical indices, allergic reaction - by general blood analysis, specific agglomeration of leukocytes and ratios of individual leukocyte populations.

Materials and methods. Studies have been conducted on 64 white male Wistar rats weighing 180-200 g in compliance with the requirements of bioethics, which are in line with the provisions of the European Convention for the Protection of Vertebrates in Experimental Studies. Animals were divided into 4 groups of 16 individuals in each.

Results. Studies have shown that the administration of the combination DBP+CdCl₂ caused an increase in the immunological inflammation compared with the isolated administration, with the greatest effect on the endothelial system state indices - an increase in the number of desquamated endothelial cells, as well as an increase in endothelin-1 and ceruloplasmin in the blood in more than 1,17-1,19 times. The study of pathophysiological mechanisms of the development of endothelial dysfunction under the influence of various components of polymeric materials can give a new insight into the mechanisms of combined action of components of polymeric materials as low-intensity factors.

Conclusion. Comprehensive experimental studies have shown that the components of the polymeric materials and the components that migrate to humans in the threshold doses have a pronounced toxic-allergic action, which in organic components (by the example of dibutylphthalate) proceeds and manifests itself predominantly as a hypersensitivity of the slow-release type, and in severe metals (for example, cadmium) - as immunotoxicity.

The tendency to chronize the allergenic and toxic effects of the investigated components of polymeric materials was manifested in the development of immune-inflammatory reactions accompanied by signs of endothelial dysfunction: the number of endothelial cells circulating in the blood increased 1.5-2.0 times, the change in the ratio of live / dead in favor of living endothelial cells and the number of cells in the state of apoptosis; marked elevated synthesis and release into the peripheral blood of endothelin-1 and ceruloplasmin, as well as the shift of the monocytochrome to the left (predominant increase in the number of promonocytes).

Key words: polymeric materials, toxicity, pathogenetic mechanisms, hypersensitivity delayed type, endothelial dysfunction.

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EFFICIENCY OF THE USE OF COMPOSITION WITH ANTIMICROBIAL PROPERTIES BASED ON NANODISPERSE SILICA IN THE TREATMENT OF INFLAMMATORY PROCESSES IN THE EXPERIMENT

Introduction. The problem of treatment of purulent-inflammatory postoperative complications and purulent-inflammatory processes remains one of the most pressing problems of modern surgery. An important place in the complex treatment of postoperative complications and purulent-inflammatory diseases is taken by medicines for the local treatment of such processes.

The study of the composition effectiveness based on nanodisperse silica with cationic surface-active antiseptic miramistin for the treatment of purulent-inflammatory processes caused by both aerobic and anaerobic microorganisms was conducted in an experiment on rabbits.

Materials and methods. The justification of the expediency of using the developed composition on the basis of hydrophilic and hydrophobic sorbents in a mixture with cationic surface-active antiseptic miramistin was carried out on models of purulent wounds in rabbits in accordance with the recommendations for the clinical study of drugs for local treatment of purulent-inflammatory processes. At the same time, simulated purulent wounds, caused both aerobic and anaerobic bacteria.

Results. The conducted studies showed that the use of a nanoparticulate silica based composition provided a more favorable course of the wound process. The obtained data testify that the composition based on nanodispersed silica with antimicrobial properties is effective in the treatment of experimental early infection caused by both aerobic and anaerobic bacteria. The use of the composition provided for the rapid

purification of experimental purulent wounds from necrotic tissues, microorganisms, reduced endogenous intoxication by preventing the resorption of toxic substances from the wound surface, stimulated the processes of reparative regeneration, which led to faster wound healing than in the animals of the comparison group. The obtained data indicate that the developed composition is effective in the local treatment of an experimental wound infection caused by clostridia and staphylococci. Its use in the treatment of experimental purulent wounds provided rapid cleansing of wounds from microorganisms, necrotic tissues and reduced intoxication, thus contributing to the rapid regeneration of damaged tissues, because according to many researchers, the processes of reparative regeneration depend on the level of intoxication of the body.

Conclusion. The use of a composition based on nanosized silica with antiseptic miramistin is effective in the treatment of an experimental wound infection caused by clostridia and staphylococcus, as it provides rapid wound cleansing of microorganisms, necrotic tissues and reduces intoxication and, thus, promotes the rapid regeneration of damaged tissues.

Key words: purulent wounds, local treatment, composition based on nanodisperse silica.

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FEATURES OF FORENSIC-MEDICINE INVESTIGATION OF GENOMIC DNA EXTRACTED FROM FORMALIN FIXED BIOLOGICAL TISSUES IN THE FORM OF “PARAFFIN BLOCKS”

Introduction. Molecular genetic study of histological preparations in forensic medical practice occupies the sixth place among all investigated biological objects, which is 2.5% of the total number of investigated biological objects. Often, forensic medical-molecular-genetic expert research of such objects is appointed by the decisions on civil cases for the purpose of establishing biological paternity or establishment of family ties, in the absence of biological samples from a particular person, for example, the alleged parent.

Materials and methods. For a molecular-genetic experimental study a group of histological preparations was tested - a biological material of liver slices (n = 12), 2,0x2,0x2,0 cm in size, selected from 12 dead men and women for the forensic medical histological examination within the forensic examination of the corpses of the SME department of the Odessa Regional Bureau of SME. Biological objects were fixed with 10% neutral formalin solution at room temperature (22 ° C) for 6 h and a similar group of biological objects (n = 12) was fixed using 10% neutral formalin solution in a household refrigerator (4 ° C) for 24 hours. After fixation with a 10% solution of formalin, pieces of objects were dehydrated in alcohols in ascending strength, after which they were sealed by paraffin pouring. The paraffin-filled objects were stored in a dry place in packages with labels showing the analysis number. This group of experimental objects is a model that reflects objects of forensic-histological

research, made from biological tissues of corpses. Control group (K) of biological objects - similar bits of the liver, 2.0x2.0x2.0 cm in size, from the same twelve corpses were examined using molecular genetic methods on the day of the selection of the material, 15 minutes after receipt of the material.

Results. The results of the research work on the research of experimental samples of biological material (liver slices) - objects of for-histological examination in the form of "paraffin blocks" were evaluated according to the following criteria: quantitative and qualitative characteristics of the isolated genomic DNA; the suitability of the isolated DNA for PCR analysis (the possibility of obtaining amplified products on the matrix of the isolated DNA and obtaining a complete genetic profile. The quality of the DNA profiles of the experimental objects was established by comparative analysis of the DNA profiles obtained with the DNA profiles of the control group of the relevant objects for identification of the results of genotyping.

Conclusion. In the work an analysis of the methods of deparaffinisation and methods of DNA extraction was carried out and it was determined the most effective method of molecular-genetic investigation of formalin fixed biological tissues in the form of "paraffin blocks". It has been shown that there is a relationship between methods of deparaffinisation and DNA extraction methods. The proposed by us method III of the deparaffinisation and extraction of DNA is optimal for conducting forensic-medicine molecular-genetic investigation of formalin fixed biological tissues in the form of "paraffin blocks".

Key words: PCR, formalin fixed biological tissue in the "paraffin blocks", deparaffinisation, genomic DNA, forensic medicine examination.

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INFLUENCE OF AMANTADINE HYDROCHLORIDE ON THE ACTIVITY OF APOPTOTIC AND PROLIFERATIVE PROCESSES IN THE LOWER ALVEOLAR NERVE OF RABBITS WITH ITS IATROGENIC COMPRESSION-TOXIC LESION WITH DIFFERENTIATED FILLING OF THE MATERIALS "FOREDENT" AND "AH-PLUS"

Introduction. Effective treatment of iatrogenic compression-toxic lesions of the lower alveolar nerve can be accomplished with the simultaneous combination of therapeutic measures aimed at its decompression, with the parallel application of preparations of neuroprotective activity.

To determine the degree of activity of apoptosis and neuroproliferation processes in the Gaucher knot of rabbits with iatrogenic compression-toxic lesions of the lower alveolar nerve with differentiated sealing with Foredent and AH-plus materials, as well as with amantadine hydrochloride.

Materials and methods. By means of flow cytometry, the analysis and evaluation of the Sub-G0G1 period on DNA histograms of nuclear suspensions of cells derived from the Gasseric unit of animals with iatrogenic compression-toxic lesions of the lower alveolar nerve on the background of the foredent paste or "AH-Plus" was performed.

Results. Conclusions. Using the method of flow-cytometric analysis, it was established that the activation of apoptosis and proliferation among the cells of the Gasifier unit during the previous 30-day interaction of "Foredent" or "AH-Plus" pastes with the mandibular nerve was established. Such destructive-degenerative changes were verified by the growth of a cell pool, whose nuclear DNA was in the sub-G0G1 (apoptosis) and synthetic phase S (proliferation) respectively. The most pronounced phenomena were observed when the "Foredent" filler mixture was introduced into the trepanation opening, $p < 0,05$. The absence of neuronal compression and toxic effect of each of the investigated pastes during skeletal-plastic trepanation of the lower jaw nerve, in any way, probably ($p < 0,05$) did not change the ratio of cells in different phases of the cell cycle in the cytometric suspension from the Gasser node. Therapeutic intragastric daily for 30 days of iatrogenic compression-toxic lesions of the lower alveolar nerve rabbits amantadine sulfate dose at a dose of 10 mg/kg has a neurocytoprotective effect on the cells of the trigeminal node.

Key words: amantadine hydrochloride, apoptosis, neuroprotection, iatrogenic compression-toxic lesions of the lower alveolar nerve.

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INDICATORS OF THE CELL CYCLE AND FRAGMENTATION OF DNA OF CELLS OF SMALL INTESTINAL MUCOSA THROUGH 14, 21 AND 30 DAYS AFTER BURN SKIN DAMAGE ON THE BACKGROUND OF INFUSION OF 0.9% NaCl SOLUTION

The aim of the study was to study the dynamics of synthesis and apoptosis (S-phase and interval of SUB-G0G1) and other indicators of the cell cycle of small intestine cells on the background of burn injuries of skin after 14, 23 and 30 days with the previous injection the first 7 days of 0.9% solution of NaCl, using the DNA cytometry method.

Materials and methods. 35 laboratory white male rats weighing 150-160 g were divided into 3 groups, which previously, under propofol anesthesia 60 mg/kg internally, catheterization of the femoral vein and depilation of the lateral surfaces of the trunk were performed. Group 1 - intact rats (only catheterization and shaving of the lateral surfaces of the body are performed). Group 2 - rats without thermal trauma, which once a day for the first 7 days were administered intravenous infusion of 0.9% NaCl solution in a dose of 10 ml per kg. Group 3 - rats treated with 1 time

per day for the first 7 days of infusion of 0.9% NaCl solution at a dose of 10 ml per kg after burning of the skin. The burnout shock was caused by applying to the shaved lateral surfaces of the trunk of the rats of four copper plates (two plates on each side) which were preheated for 6 minutes in water at a constant temperature of 100 °C. The surface area of each plate was 13.86 cm². The total area of lesions was 21-23% of the body surface of rats. Such an area at an exposure of 10 seconds is sufficient for the formation of 2-3 degree burns (according to the classification adopted at the 20 Congress of surgeons in Ukraine, September 2000, Ternopil) and the induction of a state of a moderate degree of shock, which has been confirmed with the team of performers Scientific research center of the National Pirogov Memorial Medical University, Vinnytsya. Shaving of rats, burns, catheterization of major vessels and decapitation (after 14, 21 and 30 days) were carried out under conditions of propofol anesthesia (60 mg/kg weight i/v).

The material was collected for flow cytometric analysis in rats from the small intestine, similar to those selected for histological examination (colon). The removed portion of the small intestine, about 20 mm in length, was cut lengthwise, washed with 0.9% NaCl solution, placed on the glass, and under the control of the binocular microscope, with acute microsurgical spoon, scratches of the mucous membrane were performed in sufficient quantities.

DNA content in the nuclei of the mucous membranes of the small intestine of rats was determined by flow DNA cytometry. The suspensions of the nucleus from the mucosal cells of the small intestine of rats were obtained using a set of CyStain DNA Step 2 from Partec, Germany, according to the manufacturer's protocol. This kit allows for the extraction of nuclei and the labeling of DNA by diaminophenylindole (DAPI). CellTrics 50 µm disposable filters (Partec, Germany) were used for the production of nucleic suspensions.

The flow analysis was carried out at the multifunctional scientific research flow cytometer "Partec PAS" (Partec, Germany), at the research center of the National Pirogov Memorial Medical University, Vinnytsya. UV radiation was used to stimulate DAPI fluorescence. From each sample of the nucleic suspension of the analysis, 10 thousand events were subject to. Cellular analysis of the cells was carried out using FloMax software (Partec, Germany) in full numeric matching according to the mathematical model, which determined: G0G1 - percentage ratio of G0G1 phase cells to all cells of the cell cycle (DNA content = 2c); S - percentage ratio of the phase of DNA synthesis to all cells of the cell cycle (DNA content > 2c and < 4c); G2 + M - percentage ratio of the G2 + M phase to all cells of the cell cycle (DNA = 4c); IP - the index of proliferation, which was determined by the sum of the indices S + G2 + M; BP is a block of proliferation that was evaluated by the ratio S/(G2 + M) (an increase in the number of cells in the G2 + M phase at low values of the S-phase indicates a delay in proliferation in the G2 + M stage). Determination of DNA fragmentation (apoptosis) is accomplished by isolating the SUB-G0G1 site on the DNA histograms - RN2 before the peak G0G1, indicating cell nuclei containing DNA <2c.

Statistical processing of cytofluorometry results of the study was performed in the license package "STATISTICA 5.5" using nonparametric estimation methods.

Results. Discussions. 14 days after the burn skin lesions with 0.9% NaCl application, significantly higher values of the SUB-G0G1 intervals and lower values of S-phase

and proliferation block ($p < 0.05$ in all cases) of the small intestinal mucosa cells were recorded relative to similar indices after 14 days of observation without burning damage to the skin. It has been established that apoptosis indices after 14 days of burning of the skin using 0.9% NaCl solution practically do not change in comparison with DNA synthesis, indicating that there is a violation of the cell cycle that is not compensated.

21 days after the thermal burn of the skin, data which were obtained indicating a significant increase in the S-phase and the SUB-G0G1 interval in the 0.9% NaCl + burn group compared with the 14 observation days and the slight tendency ($p = 0.076$) to increase the index proliferation. Similarly to the previous term, the values of the phases of G0G1 and G2 + M are observed, indicating that the decompensation in the cell function is maintained during this experiment period with the use of 0.9% NaCl solution. Also, the dynamics of the phases G0G1 and G2+M after 21 days was insignificant and compared with the group's parameters using a 0.9% NaCl solution without skin burn, which confirms the assumption of insufficient compensation of this solution for the negative effect of BD on the cells of the small intestine mucosa.

30 days after the thermal shock of the skin, using a 0.9% NaCl solution, there was a decrease ($p < 0.05$) of G0G1 indices compared with the previous observation period and with the indicators of 0.9% NaCl group without burn at this time. The parameters of the G2+M phase and the proliferation index were elevated ($p < 0.05$) and the proliferation unit was lowered ($p < 0.05$) compared with the previous terms and control group indicators in the given period, indicating a gradual upgrade of the cell population by enhancement of synthesis with preserved level of apoptosis. But even after 30 days of normalization of cell cycle rates, using 0.9% NaCl solution during burn injury does not occur.

Key words: skin burn, cell cycle, small intestine, DNA cytometry.

CLINICAL ARTICLES

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PSYCHOLOGICAL REHABILITATION OF CHILDREN IN THE PERIOD OF REMISSION OF ONCOHEMATOLOGICAL DISEASES IN THE CONDITIONS OF SANATORIA FOR CHILDREN AND PARENTS

Introduction. The psycho-traumatic consequences of oncological disease affects negatively the child's psychological status and that of his family as a whole. Therefore, the objective of the present work is to characterize the dynamics of the psychological state of children during the remission of oncohematological diseases in the rehabilitation complex conducted in a sanatorium for children and parents.

Materials and methods. The anxiety level was tested according to C. D. Spielberger - Yu. L. Khanin method of self-esteem diagnosis. Diagnosis of self-evaluation of the

children's personality was carried out by methodology "Research of personality self-esteem" (T. Dembo - S. Rubinstein). Quality of life was assessed with the use a modified questionnaire.

Results. After corrective activities, the number of children with a low level of anxiety increased from 16.7% to 30%, in 36.6% of children the level of anxiety decreased from high to low and medium, high level of anxiety was registered in only 6.66% of children, the number of children with anxiety of the average level increased to 63.3%. A high level of memorization was found in 56.6% of children with a decrease in the low level to 10% and an average level of up to 33.3%. At the end of the rehabilitation, the difficulty in concentrating attention was reduced from 73.3 to 53.3%, the attention span was from 56.6 to 36.6%, difficulties in attention switching were reduced from 50 to 30%. After training, the need for psychological care was satisfactory for 70% of mothers. The number of mothers with mild depression lowered from 26.6% to 16.6%, anxiety and symptoms decreased to 26.6% and 20%, respectively, the number of mothers without anxiety symptoms increased to 50%.

Conclusion. A differentiated approach to the psychological support of oncological patients, when manifestations of anxiety and types of aggression are taking into account, contributes to the improvement of social adaptation, psycho-emotional status, and relationships in the society. Psychological help to mothers of bring up children after the treatment of oncohematological diseases, causes a significant decrease in the manifestations of personal and reactive anxiety.

Key words: children, oncohematological diseases, psychological rehabilitation.

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PREMIUM BACKGROUND OF BRONCHIAL ASTHMA DEVELOPMENT AND FUNCTION OF EXTERNAL SPIRIT IN CHILDREN

Introduction. The article deals with the pathogenetic and etiological features of the development of concomitant allergic and non-allergic pathology in 316 children with bronchial asthma. Among the 253 patients with persistent asthma, there were various allergic manifestations. Predominant allergens dominated among other non-infectious factors and accounted for 40.93% ($p < 0.05$) and prevailed in boys (28.82%; $p < 0.05$) only in the age group of 6 to 7 years. The results of studies of etiological factors that exacerbated intermittent asthma revealed predominance of household allergens in the group of patients 8-12 (16,98%) and 13 to 16 years (20,76%; $p < 0,05$). Spirometric studies of the function of external respiration showed a decrease in the relative values of FEV, OFV, FEV₁, PEF end Tiffen's index and relative to the indices of practically healthy children ($p < 0.05$). Over the past decades, the prevalence of allergic diseases among children has steadily increased. According to the literature, on various forms of allergy it affects 10-60% of the world's population. [GINA-2017]. This pathology and children do not overlook, in particular, the prevalence of sensitization among the children of Ukraine reaches 10%. [Weryszko - Chmielewska]. Allergic diseases (AS)

are a systemic pathology that provokes the frequent combination of premorbidity of some forms of allergic pathology in children. [Zaikov SV, Grishilo P.V.2016].

The purpose is to investigate the premorbid background and the function of external respiration in children with bronchial asthma.

Materials and methods. The basis of the work is a clinical and statistical analysis of the results of treatment and monitoring of 316 children with bronchial asthma who were inpatient treatment at the pediatrics clinic №2 of the Vinnitsa National Medical University named after MI. Pirogov in the period from 2014 to 2017g. The control group consisted of 25 practically healthy children of the corresponding age and sex. The group of patients with asthma included: 63 children (19,94%), with intermittent and 253 (80,06%) - with the persistent course of the disease. The level of control was: the controlled course - 44 children (13.05%), partially controlled - 68 (26.87%) and 141 children (55.73%) with uncontrolled course.

The in-patient examination and treatment of asthma patients was conducted in accordance with the Protocol of the Ministry of Health of Ukraine No. 868 (08.10.2013) and the Global Strategy for the Treatment and Prevention of Bronchial Asthma GINA-2017. The type of external respiration was estimated on the basis of the vital capacity of the lungs (LEL), the forced LIL (FJEL), the volume of forced exhalation for 1 second (OFV1) and the indexTiFnO (IT).

Allergic study helped identify individual risk factors: positive results of skin tests (priquet test, as the most specific).

Statistical processing of the obtained results was carried out with the help of methods of variation statistics using the standard application package of the multivariate variation statistical analysis "STATISTIKA 6.0", which belongs to TsNIIT of Vinnitsa National Medical University named after MI Pirogov, license number AXXR910A374605FA for Windows'XP (license number RKKFD-W8DDF-6PMC4-KX3WW-CR6TI). [6]

Results Talk We have analyzed the premorbid background of the development of asthma in children, both in the persistent and with an intermittent course of the disease in boys and girls.

With a high statistically significant difference ($p < 0.05$), allergic rhinitis and allergy were often found in boys as in persistent asthma (allergic rhinitis: 113 - 24.62% and 76 - 16.55%, respectively, allergy) and with intermittent BA (allergic rhinitis: 31 - 6.75% and 19 - 4.14%, respectively, allergy).

Tables 2 and 3 show specific allergens that exacerbated persistent and intermittent asthma depending on the age of the child.

The analysis of the presented materials shows that there were various allergic manifestations in 253 patients with persistent asthma. Predominant allergens dominated among other noninfectious factors, accounted for 40.93% (149 cases; $p < 0.05$) and prevailed in boys (94 - 28.82%; $p < 0.05$) only in the group 6 - 7 years and in 16.59% of cases (60): 47 (12.91%; $p < 0.05$) - boys and 3.58% (13 cases) - girls. Statistically significant gender differences in other age periods of patients were not found ($p > 0.05$). In the group of 17 - 18 years of exacerbations of asthma, the etiological factor which could be household алергенн, in general was not revealed.

Epidermal (wool, hair, magnifying glass), pollen (pollen of grasses, trees), food plant and animal origin (fruits, vegetables, meat, fish, eggs), medicinal allergens of

exacerbations of persistent asthma with aduca frequency found in all age groups, both in boys and in girls.

Results of studies of etiological factors that exacerbate intermittent asthma (Table 3) revealed a prevalence of household allergens statistically significant in the group of 8-12 patients (9 children -16,98%) and 13 to 16 years (11 children -20,76%; $p < 0.05$). The results of the study of the function of external respiration in children with asthma have shown that the magnitude of ZHEL and FJELL below the established norms in healthy children.

So, the levels of GI in the general group of children with asthma were 17.35%; ($p < 0.001$), and FZHEL - by 22.84% ($p < 0.001$) lower compared to practically healthy children.

The results of spirometric studies in children with intermittent and persistent asthma revealed a statistically significant difference in EHL ($83.23 \pm 1.00\%$ and $71.62 \pm 0.37\%$ respectively, $p < 0.001$), which may be due not only to an increase in pulmonary resistance, but also a decrease in the elasticity of the pulmonary tissue.

In patients with persistent asthma, the average FZHEL values were $70.85 \pm 0.36\%$, were statistically significantly lower than the results of the FJEL study in patients with intermittent course of the disease ($82.03 \pm 0.94\%$; $p < 0.001$) and significantly lower compared to practically healthy children ($95.92 \pm 0.12\%$; $p < 0.001$). In turn, FEV1 with the persistent flow of asthma was only $61.08 \pm 0.47\%$, while the intermittent - $79.28 \pm 0.98\%$, and was statistically significantly lowered compared with those of practically healthy children in 1.51 times ($91, 97 \pm 0.12\%$; $p < 0.001$).

As the results of the studies indicate a proportional decrease in FEV1 and FJEL, both in children with persistent and intermittent asthma, it can be assumed that this is a sign that characterizes resistance to respiratory tract, increasing aerodynamic resistance, especially in the persistent course of the disease. Accordingly, when narrowing the respiratory tract, the exhalation is prolonged and the value of FEV1 decreases.

In patients with a persistent passage of BA, the Tiffen index was higher due to a decrease in FEV1 ($61.08 \pm 0.47\%$) than FHEL ($70.85 \pm 0.36\%$; $p < 0.001$), which is more common in the obstructive syndrome, which predominant in patients during acute exacerbation. For children with an intermittent course of the disease, the rates of forced exhalation in the first second did not have significant differences compared with practically healthy children ($p > 0.05$).

Thus, in the controlled course, the FEV1 index was 1.44 times lower compared to almost healthy children, FZHEL - 1.3 times, the Tiffen index - 1.11, and POSHV - 1.13 times. We noted a decrease in FEV1 and FZHEL in an uncontrolled course of 1.06 times compared with controlled forms.

Conclusions. 1. Allergic rhinitis and allergy are more common in boys, as in persistent asthma (allergic rhinitis: 24.62% and 16.55% respectively, allergy) and in intermittent asthma (allergic rhinitis: 6.75% and 4.14 %, respectively, allergy).

2. Predominant allergens in dominant non-infectious agents were 40.93% ($p < 0.05$) and dominated by boys (28.82%; $p < 0.05$) in the non-infectious agents only in the 6-7 years, instead, for the intermittent course of the disease at this age, food allegory was characteristic (7.55%; $p < 0.05$).

3. In patients with a persistent passage of the BA, the Tiffin index was higher at 9.77% due to the reduction of FEV1 ($61.08 \pm 0.47\%$) than FHEL ($70.85 \pm 0.36\%$; p

<0.001). For children with an intermittent course of the disease, the rates of forced exhalation in the first second did not have significant differences compared with practically healthy children ($p > 0.05$).

4. In the controlled course, the FEV1 index was 1.44 times lower than that of practically healthy children, FZHEL - 1.3 times, Tiffin's index - 1.11, and POSHV - 1.13 times.

Key words: children, bronchial asthma, allergens, function of external respiration.

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REASONABILITY OF CONE-BEAM COMPUTED TOMOGRAPHY USE DURING THE EVALUATION OF MANDIBLE FRACTURES AT THE STAGES OF THE FORENSIC-DENTAL EXAMINATION AND DENTAL TREATMENT

Introduction. The analysis of argumentation data for cone-beam computer tomography use for diagnostics of mandible fractures during forensic-dental examination and dental treatment conducted in this article. The reasonability of cone-beam tomography use also was analyzed from the perspective of Fryback-Thorbury criteria.

Materials and methods. The purpose of the study was realized through retrospective analysis of publications devoted to the question of categorization and adaptive evaluation of mandible fractures using orthopantomography, computed tomography and cone-beam computer tomography. The objectives of this analysis were: 1) comparison of CBCT with other X-ray methods for mandible fractures diagnostics; 2) search of the reasoned approach for tomographic examination usage for specific diagnostic of mandible fractures; 3) analysis of the cone-beam computer tomography effectiveness due to the evaluation criteria proposed by Fryback-Thorbury.

Results. The results of previous studies indicate that the use of multidetector computer tomography improves the accuracy of mandible fracture diagnostics compare to such methods as orthopantomography and plain radiography, especially if the aspect of the diagnosis concerns subcondillar fractures and fractures of mandible body. At the same time, however, some authors point to the ineffectiveness of the use of axial computer tomography in cases of suspected fracture of the mandible angle and fractures with minimal displacement of segments. Previous studies also stated that the validity of the cone-beam computer tomography use for diagnostic of mandible fracture demonstrate no difference from the use of other multilayer computed tomographic methods. In addition, cone-beam computer tomography allows to objectively analyze the condition of the facial skeleton of a person in cases of previous trauma, which provoked limitation of mouth opening or that caused the formation of multiple fractures. At the same time, even with the use of modern computer technologies, there are problems ensuring high-quality rendering of images in cases of bone injuries at the area of facial skeleton, that cause problems with

adequately interpretation the severity of the fracture and the volume of defects formed. The effectiveness of using the diagnostic visualization method in the form of cone-beam computer tomography, based on the described advantages of its use in clinical and forensic activities, can also be justified from the standpoint of the concept proposed by Fryback-Thorbury.

Conclusions. The use of tomographic diagnostic methods provides higher possibilities for mandible fracture evaluation compare to other methods, such as orthopantomography, plain radiography or extra-oral radiography performed in different projections. According to the indicators of sensitivity, specificity, prognostic positive and prognostic negative results, method of cone-beam computer tomography is similar to the computed tomography method in cases of mandibular fracture diagnostic, but it is characterized by lower dose of X-ray exposure, higher availability and lower cost of the procedure. In cases of high suspicion for cranial structure injuries associated with the mandible fracture, the argumentation of the tomographic examination is recommended to be carried out according to the algorithm proposed by Czerwinski and colleagues (2008).

Key words: mandible fractures, evaluation methods, cone-beam computed tomography.

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CHANGES IN THE QUALITY OF LIFE IN PATIENTS WITH NON-ALCOHOLIC STEATOHEPATITIS USING INTEGRATED CARDIOPROTECTIVE METABOLIC THERAPY

Introduction. Nowadays doctor other than the objective data of laboratory and instrumental methods, which do not always give a complete picture of the patient's vital welfare required study of quality of life (QoL) in the immediate and in the remote period after treatment. The method of assessing the quality of life associated with health, allows you to evaluate the processes of human adaptation.

The purpose of the study. Determine changes in the quality of life in patients with NASH after integrated treatment using of thiotriazoline in the near and distant period after treatment.

Materials and methods. The subject of the study was 154 patients with nonalcoholic steatohepatitis (NASH), 83 of them were males and 71 women. 32 patients (20 men and 12 women), representative of their age, family status, and education were examined for comparative analysis of patients with NASH. Depending on the presence of ED and the method of treatment, all patients with NASH were divided into 4 groups. The diagnosis was based on a complex analysis of complaints, physical examination data, results of laboratory and instrumental studies, according to a unified clinical protocol (order of the Ministry of Health of Ukraine No. 826 dated November 6, 2014). During the survey excluded: alcohol, viral, medicated liver damage, autoimmune and congenital liver disease. The study of endothelial

dysfunction was performed by measuring endothelial-dependent vasodilation in the brachial artery.

Quality of life was assessed by the non-specific for any disease questionnaire, which reflects changes in the physical, mental and social condition of patients. The survey was conducted on the first day of the survey and one month after the start of the therapy using the Medical Outcomes Study-Short Form (MOS SF-36 or SF-36) questionnaire.

Results. Discussion. It has been established that the physical activity of patients with NASH is significantly limited, and the ability to engage in day-to-day activities, including work at home and out of the home, significantly decreased. Patients noted fatigue. The physical and emotional conditions limited social activity. Some patients noted the presence of depression. Comparing the patients with I and II groups after treatment, statistically significant improvement in quality of life should be noted on all scales of the questionnaire SF-36. Moreover, the quality of life of patients treated with the addition of thiotriazolin was higher.

Conclusions. Patients with NASH have statistically significantly lower quality of life than healthy individuals. The lowest rates were noted in patients with NASH with the presence of endothelial dysfunction. The use of a cardioprotective metabolic agent, thiotriazolin, contributed to improving the quality of life of patients with NASH.

Key words: nonalcoholic fatty liver disease, endothelial dysfunction, treatment, quality of life.

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MEDICAL PHYSICAL TRAINING IN PATIENTS WITH EARLY STAGE OF COCSARTHROSIS AFTER CARRYING OUT ARTHROSCOPY OF THE TAZEDED JOINT

Introduction. The hip joint - coxarthrosis (CA) is 40% of the total number of patients with osteoarthritis and affects from 7% to 25% of the adult population. CA in 60% of cases leads to a reduction in disability and 11.5% to disability. All this testifies to the high medical ,and social significance of CA, which not only significantly impairs the quality of life of the patient, but also leads to large socio-economic costs of society.

Ca is a multifactorial joint disease. Among the risk factors, trauma, inflammation and dysplasia of bone and cartilaginous tissues occupy a significant place; in 26% of cases, the causes of the degenerative-dystrophic process are uncertain. One of the possible factors for the development of the so-called "idiopathic" coxarthrosis may be undiagnosed intra-articular damage to the hip joint. Today, about 60% of intra-

articular injuries directly to the hip joint (cop) are diagnosed incorrectly due to the lack of changes in radiographs in the early (roentgenological) stages. Intra-articular lesions of the soft tissue elements of the cop are diverse, in particular: traumatic and degenerative damages of acetabular lobes, circular ligaments, cartilage of the articular surfaces of the femoral head and the acetabulum, femoral acetabular impulsion, free body of the ca. At initial lesions of articular cartilage. Which characterizes the i-ii stage of ca arthroscopy of the is a "gold standard" for diagnosis and treatment that allows you to visually assess not only the structural and functional state of intra-articular structures, but also to identify the relationship and their behavior during joint movements.

During the last decade, arthroscopy of the hip joint has become increasingly widespread. With the introduction of arthroscopy of the hip joint, the possibilities of recognizing intra-articular hip abnormalities have increased, as well as the method of their treatment improved. Therefore, as a result of the practice of performing arthroscopy of the hip joint, there is a need for the development of rehabilitation methods to provide optimal postoperative results. Understanding the whole process of rehabilitation, from pre-operative preparation to complete restoration of functions, is extremely important in achieving a patient's full functional independence. Although it is generally acknowledged that rehabilitation after arthroscopy of the hip joint is important, there are still few evidence-based studies in support of rehabilitation principles / recommendations. Development of rehabilitation programs for patients after surgical interventions using modern methods of osteosynthesis is one of the most important directions of development of modern restorative treatment of patients with orthopedic and traumatic profile. Therefore, interesting in scientific and practical terms was the development of exercises of medical physical education in the complex treatment of patients in the early stages of coxarthrosis after the arthroscopy of the articular joint.

The purpose of the work is to develop exercises of medical physical education in the complex treatment of patients in the early stages of coxarthrosis after the arthroscopy of the articular joint.

Materials and methods. The analysis of treatment of 100 patients with osteoarthrosis of the hip joint I-II, which was arthroscopic surgical intervention on the basis of the traumatology department of Vinnitsa Regional Hospital. E. Pirogov and the Institute of Traumatology and Orthopedics of the National Academy of Medical Sciences of Ukraine in the period from 2006-2015. The study involved 105 (65 men, 40 women) patients with initial stages of coxarthrosis and femoral acetabular impulsion, aged 22 to 72 years (in on average 42.21 ± 10.99 years) with an average duration of the disease 13.26 ± 8.5 months.

Inclusion criteria were: the age of patients under the age of 75, arthroscopic treatment for the initial stages of coxarthrosis (arthroscopic partial resection of the acetabular lobe and / or femoral head and / or acetabular osteochondroscopy), consent of the patient to participate in the study. The study did not include patients aged <18 and> 75 years; from stage III and IV of the coxarthrosis; the presence of obesity (body mass index is more than 30); heart rhythm disorders; severe circulatory failure IIB-III stages; concomitant severe somatic pathology; pregnancy.

The basis for assessing the results of treatment patients is advanced advanced standards for assessing the quality of treatment of injuries and diseases of the

movement and resistance, set forth in the Order of the Ministry of Health of Ukraine No. 41 of March 30, 1994 "On the regulation of orthopedic and traumatic services in Ukraine" with modification

Results. Discussion. The exercises of the physical education depended on the time after the surgical intervention and were divided into: 1 - mobility exercises and initial exercises; 2 - stabilization exercises and intermediate exercises; 3 - exercises on neuroencephalous control and complicated exercises; 4 - exercises for returning to labor (sports) activities.

the load on the operated limb depended on the type of surgical intervention performed.

During the initial phase of rehabilitation, the program aims to protect the restored fabric, reduce pain and inflammation, restore painless volume of movement, prevent muscle weakening and normalize the course. The first task at this stage is the healing of soft tissues and the avoidance of negative consequences of immobilization. The main goal after surgery is to restore the dynamic stability of the hip joint. The prevention of muscle weakening can be achieved through exercises to increase muscle tone, which should begin from the first week after the operation. The progress of treatment depends on the patient's stamina, but should not be overly intense. The choice of exercise should be based on data relating to the specifics of the muscles involved and at the same time to take into account all postoperative warnings regarding the effect of the use of force on tissue restoration.

The intermediate phase of rehabilitation usually starts from about the 4th week and is a continuation of exercises to restore the amplitude of muscle movements and muscle strength. Exercises for restoration of the amplitude of movements should be continued until complete restoration of movements without pain. Exercise for strengthening and stabilizing should also be continued to eliminate existing muscle weakness and balance recovery.

Proprioceptive deficiency usually occurs when injuries to the joints. The hip spine of the hip contains free nerve endings and sensory organs. It is believed that these free nerve endings regulate nociceptive and proprioceptive mechanisms. The spine of the hip joint, supporting intraocular pressure, also improves the stability of the joint itself. In case of injury to the lips, such pressure is lost and this adversely affects the stability of the hip joint. The goal of proprioceptive re-training is to restore this deficiency and help restore neuromotor's control. For this recovery, such elements as proprioceptions, dynamic joint stability, reactive neuronal control, functional motorways pressure, and also improves the stability of the joint itself. In case of injury to the lips, such pressure is lost and this adversely affects the stability of the hip joint.

After discharge from the surgical hospital it was expedient to stay the patient in the rehabilitation department or in the sanatorium, but most of the patients continued treatment in the clinic at the place of residence. Therefore, doctors from other institutions in practice reproduced the basic principles of rehabilitation - continuity, consistency and continuity, based on our recommendations. This made it possible to get good treatment results. Early and late postoperative periods proceeded without complications. The proposed types of exercises in physical therapy in the complex of rehab programs allowed 100% of patients to have effective rehabilitation.

Conclusions. Based on the conducted comprehensive examination of patients in the early stages of coxarthrosis after the arthroscopy of the hip joint, the exercises of physical therapy in the complex treatment of this category of patients were developed.

The proposed exercises corresponded to the period of the postoperative period, the peculiarities of surgical intervention during arthroscopy of the hip joint and individual characteristics of the patients and made it possible for 100% of patients to have effective rehabilitation. Implementation of the proposed physics exercises proposed by the authors in the early stages of coxarthrosis after the arthroscopy of the hip joint will allow for a full differentiated treatment and improve the effectiveness of the provision of medical care in this category of patients.

Key words: coxarthrosis, hip arthroscopy, exercises of physiotherapy exercises.

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EFFECTIVENESS OF PREVENTIVE INTERVENTIONS IN WOMEN WITH MULTIPLE PREGNANCY AND SONOGRAPHIC SHORT CERVIX

Introduction. Spontaneous preterm birth is the leading cause of perinatal morbidity and mortality. In twins, the rate of preterm birth is higher than in singletons; interventions to prevent preterm birth are needed in this high-risk population.

Purpose: To compare the effectiveness of different options for preventive interventions in order to reduce the frequency of spontaneous preterm labor in the term up to 34 weeks of pregnancy and adverse neonatal effects in women with multiple pregnancy and sonographically shortened cervix.

Materials and methods. A prospective study was conducted in 219 women with twin pregnancy and a sonographic short cervix ≤ 25 mm, which had no signs of premature birth and chorioamnionitis. In 36 women the watchful waiting strategy (group №1, control) was applied. In 65 women the installation of cerclage cervical pessary in

combination with the vaginal form of micronized progesterone 200 g (group №2) was used. Other 49 pregnant women of our study were using intravaginal micronized form of progesterone 200 mg (group №3). Another 69 participating women had an installation of a cervical pessary (group №4). The primary outcomes of the study were spontaneous deliveries up to 34 weeks of gestation, the secondary results were perinatal mortality, unwanted neonatal consequences and need for specialized neonatal help. Statistical processing of the data was carried out with the help of the statistical package SPSS 20 (©SPSS Inc.).

Results. It has been established that in women with multiple pregnancy and sonographic short cervix (< 25 mm) the frequency of spontaneous preterm labor up to 34 weeks reaches 33.3%.

Intravaginal use of progesterone in women with multiple pregnancy does not reduce the level of preterm birth, but in comparison to a watchful waiting strategy is accompanied with an improvement of secondary consequences: birth of children with small body weight (<2500 g) as a whole by 16.3% (OR: 0.5 ; 95% CI: [0.26-0.94], p = 0.029) and presence of respiratory disorders by 25% (OR: 0.4; 95% CI: [0.2-0.8]; p = 0.009).

In women with multiple pregnancy and with the cervical length less than 25 mm the cervical pessary does not reduce the frequency of preterm births and does not improve the perinatal outcomes. However, compared to a watchful waiting strategy the use of pessary was associated with an increase in the latency period from the diagnosis to the childbirth on average by 12.9 % (p = 0.016).

It was established that in addition to the pessary the intravaginal administration of progesterone decreases the absolute risk of spontaneous preterm labor up to 34 weeks by 22.4% (OR: 0.25, 95% CI: [0.09-0.7], p = 0.006), the birth of children with a critically low body weight (<1500 g) by 12% (OR: 0.4; 95% CI: [0.18-0.88], p = 0.02) and respiratory disorders of the newborn by 21% (OR: 0.51; 95% CI: [0.27-0.96], p = 0.034), which could be explained by the summation of the positive effects of each of the applied interventions.

Conclusions. The application of a pessary in combination with a vaginal progesterone is possible in women with sonographic short cervix and with multiple pregnancy given the probable summation of the positive effects of each of the applied interventions

Key words: twin pregnancy, preterm birth, short cervix, cervical pessary, vaginal progesterone.

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FEATURES OF THE TREATMENT OF OSTEOARTHRITIS IN PATIENTS WITH CORONARY HEART DISEASE

Introduction. The aging population, which has been observed recently in the whole world, causes an increase in the interest of scholars in the issue of comorbidity. In the elderly, as a rule, there is a combination of a variety of the nature and course of pathology, which compete in their predictive significance and influence on the quality of life. To diseases with a high level of comorbidity include osteoarthritis.

The purpose of our study was to study the efficacy and safety of the use of the combined drug chondroitin sulfate and glucosamine hydrochloride ("Theraflex®") in the complex therapy of patients with a combination of OA and CHD.

Materials and methods. The efficacy and safety of the combination therapy Theraflex® (400 mg chondroitin sulfate + 500 mg glucosamine hydrochloride) has been studied in 23 patients with osteoarthrosis of the knee joints II-III in combination with a stable chest II-III functional class (FC) (9 men and 14 women, mean age 60.5 ± 4.2 years). The comparison group consisted of 20 patients with coronary artery

disease in combination with OA, representative of the age, sex and diagnosis received NSAIDs (meloxicam) in short courses (10-12 days) with increased pain without the use of chondroprotectors. All patients gave written consent to participate in the study. The duration of the observation was 3 months.

Results. The article presents the results of the study on the effect of a three-month application of «Theraflex®» in the complex therapy of comorbid pathology - osteoarthritis of the knee joints in combination with coronary heart disease. The positive drug effect on the symptoms of the combined pathology, both gonarthrosis and coronary heart disease, is shown. A conclusion is made about the active influence of «Theraflex®» on the pathogenetic mechanisms of gonarthrosis progression.

Conclusions. 1. "Theraflex®" has a positive effect on the quality of life, the frequency and severity of angina attacks, the magnitude of systolic blood pressure. 2. The use of "Theraflex®" does not cause serious adverse reactions and the drug may be recommended for long-term use in patients with osteoarthritis. 3. Given the clinical efficacy, high safety and good tolerability of the drug, "Theraflex®", the combination of chondroitin sulfate and glucosamine hydrochloride can be considered as an effective remedy for the treatment of clinical manifestations of OA in patients with stable ischemic heart disease.

Key words: osteoarthritis, gonarthrosis, coronary heart disease, «Theraflex®».

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FEATURES OF NECROTIZING ENTEROCOLITIS COURSE IN CHILDREN BORN PREMATURELY

Introduction. Necrotizing enterocolitis (NEC) is one of the most serious diseases in newborns, one of the main causes of mortality in children of this group and one of the most common causes of urgent surgical interventions in the neonatal period. The pathogenesis of NEC is multifactorial and not definitively defined. The risk factors are premature birth, intestinal immaturity, peri- and postnatal hypoxia, conditions associated with hypoperfusion, artificial feeding, colonization of pathogenic flora.

NEC in premature infants occurs not only as a single diagnosis but also in combination with other diseases, in particular sepsis, intrauterine infection.

Aim of the study. To establish the clinical features of the course of necrotizing enterocolitis in children born prematurely, depending on the severity.

Materials and methods. Analysis of the results of a clinical examination of 50 children who were born prematurely and had NEC. Depending on the severity of the NEC, the children were divided into two groups.

The first group consisted of 30 preterm infants with NEC of II stage (gestational age 28.66 ± 0.66 weeks, birth weight 1180.55 ± 95.02 g).

The second group consisted of 20 preterm infants with NEC of I stage (gestational age 29.90 ± 0.74 weeks, birth weight 1277.75 ± 92.11 g).

The following methods of examination were used: general-clinical, laboratory (general blood tests) and instrumental (X-ray of the abdominal cavity organs).

Statistical processing of the data was carried out using methods of variation statistics using the program (Excel Microsoft Office), adapted for medical and biological calculations. The difference in parameters was considered statistically significant at $p < 0.05$.

Results. Children of the I group had significantly lower body weight at birth than children of the II group (1180.55 ± 95.02 g and 1277.75 ± 92.11 g) and lower gestational age (28.66 ± 0.66 and 29.90 ± 0.74 weeks) ($p < 0.05$). Extragenital pathology of mothers of 1st group children was more frequent than that of mothers of the second group: 53.3% to 40.0%, respectively. The course of pregnancies in mothers of children from both groups was complicated in 95.0%. The course of labor was also complicated in mothers of children from both groups in more than 80.0%.

To assess the severity of the condition at the time of birth, an analysis of the status of children on the Apgar scale was conducted, which showed that the mean values for Apgar did not differ significantly, but differences in the level of trends were observed: children of I group have a lower estimate on 1 and 5 minutes of life.

The average length of stay on mechanical ventilation was the highest among pre-term infants of group I - $9,1 \pm 3,1$ days ($p < 0.05$). The duration of stay on CPAP therapy did not significantly differ $8,2 \pm 4,5$ days for children from the 1st group and $7,3 \pm 5,0$ for children from the 2nd group ($p > 0.05$).

Relatively more often, the NEC II stage arose in patients with intrauterine infection - 23 children (76.7%), while the NEC I stages in patients with intrauterine infection occurred only in 9 children (45.0%) ($p < 0.05$). Sepsis, which further led to the development of the NEC II stage, was in 6 children (20.0%) from group I and only in one child (5.0%) from group II. Hypoxic-ischemic damage of the central nervous system was found equally frequently in children from both groups and amounted to 96.7% and 90.0% respectively.

Taking into account the significant influence of feeding on the development of NEC, we analyzed the characteristics of feeding children from both groups. Children of I group started enteral nutrition later (in $2,9 \pm 0,4$ day) than those from the second group - (on $1,4 \pm 0,1$ day) ($p < 0.05$). On breastfeeding, there were 2.4 times less children in group I than group II, which was 8 (26.7%) and 13 (65.0%) children.

The development of the NEC led to a prolonged stay of children on parenteral feeding - 34.8 ± 4.8 days, and a longer enteral pause of 7.0 ± 1.3 ($p < 0.05$).

Among the nonspecific symptoms that were detected during the examination in children from group I, there was a significant increase in the incidence of a positive symptom of "white spot" in 27 (90.0%) children, thrombocytopenia in 19 (63.3%) children ($p < 0.01$) and bradycardia in 18 (60.0%) children ($p < 0.05$).

The first abdominal NEC manifestations began in both groups from abdominal distension and poor peristalsis (100.0% in both groups), as well as stasis on gastric tube - 21 children (73.3%) in group I and 12 children (60, 0%) in the 2nd group of

children ($p > 0.05$). In children of group I the most common symptoms were poor peristalsis, contouring of the intestinal loops, moderate edema of the anterior abdominal wall and ascites ($p < 0.05$).

The analysis of the peculiarities of the clinical course of the NEC in premature infants with very low and extremely low body weight has demonstrated that the clinical features are nonspecific and ineffective in determining the severity of the NEC. Another promising direction of the study is the search for new, more specific, early laboratory markers to determine the severity of the NEC course.

Conclusions. 1. It has been established that the heavier course of NEC is associated with a lower body weight (1180.55 ± 95.02 g) and a lower gestational period (28.66 ± 0.66) ($p < 0.05$). 2. The risk factors for the development of the heavier course of the NEC are later enteral nutrition - 2.9 ± 0.4 days, longer stay on parenteral nutrition - 34.8 ± 4.8 days, absence of breastfeeding in 22 children (73.3%) and a longer enteral pause - 7.0 ± 1.3 days ($p < 0.05$). 3. In the clinical picture of NEC II stage, the following symptoms were significantly more common among the general manifestations, such as the positive symptom of the "white spot", thrombocytopenia ($p < 0.01$) and bradycardia ($p < 0.05$), among abdominal manifestations - absence of peristalsis, contouring of the intestinal loops, moderate edema of the anterior abdominal wall ($p < 0.01$), as well as ascites and bloody stool ($p < 0.05$).

Key words: necrotizing enterocolitis; children born prematurely.

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SF-36 QOL INDICATORS IN PATIENTS WITH OSTEOARTHRITIS OF KNEE JOINTS AND ABERRANT PRODUCTION OF MELATONIN AND GALECTIN-3

Introduction. Osteoarthritis (OA) is characterized by persistent pain syndrome, functional constraints and deteriorating quality of patients' life. Therefore, the study of clinical and pathogenetic importance of pleiotropic modulators of physiological and psychological functions - melatonin and galectin-3 - and influence thereof on quality of life indicators in OA patients is considered quite reasonable. *The objective of the study* was to develop QOL indicators specific for patients with OA of knee joints with aberrant production of melatonin and galectin-3.

Materials and methods. We examined 141 patients with OA knee joints (76.6% women) with the average age of 58.4 ± 7.91 years and a 10.5 ± 6.50 -year history of the disease. 94 (66.7%) OA patients presented with knee joint lesions, 47 (33.3%) patients – with a combination of OA of knee and hip joints. Radiographic grade II OA was diagnosed in 77 (54.6%) patients, grade III - in 64 (45.4%) patients. OA was diagnosed under ACR (1991) and EULAR (2010) criteria. We examined 36 healthy individuals with the average age of 57.1 ± 9.95 years (72.2% of women) from the control group in order to establish the reference intervals for the indicators. Melatonin

production was assessed against the level of 6-sulfatoxymelatonin (6-SMT) urinary excretion, correlated with the nocturnal peak blood hormone levels. We used the immune enzyme method for determination of 6-sulfatoxymelatonin (6-SMT) content (Buhmann, Sweden). The content of serum galectin-3 was determined by the immune enzyme method (Platinum ELISA, eBioscience, Austria). The quality of life of patients was assessed using the SF-36 (The Short Form-36 Health Status Survey) validated by the “Evidence clinical and pharmaceutical research” company.

Results. It was found that patients with OA of knee joints had the 6-SMT urinary excretion lower (by 29.4%) than that in practically healthy controls, while the level of serum galectin-3 in the same was higher (by 64%) ($p < 0.001$). Aberrant 6-SMT levels were detected in 93 (66%) patients, including low 6-SMT levels (< 13.7 ng/mg creatinine) in 51 (36.2%) patients. In patients with OA, a drop of 6-SMT urinary excretion was associated with a moderate decrease in the QOL indicators (1.17-1.42 times, $p < 0.05$) at account of the SF-36 psychological health component.

Aberrant levels of galectin-3 were detected in 106 (75.2%) OA patients, including high readings (> 15.8 ng/m) in 62 (44%) people. The growth of blood galectin-3 level in OA patients was associated with a significant QOL drop at account of a decrease in the physical health component (1.4-3.8 times, $p < 0.01$) and a less pronounced decrease in the psychological SF-36 health component (1.2-2.3 times, $p < 0.05$). An inverse associative relationship appeared to exist between the blood galectin-3 and 6-SMT excretion levels.

Conclusions. Therefore, the inhibition of melatonin production and growing production of galectin-3 are associated with QOL disturbance in OA patients. The above disorders may modify the clinical course of the disease and affect the efficacy of treatment of OA patients.

Key words: melatonin, 6-sulfatoxymelatonin, galectin-3, osteoarthrosis, knee joint, SF-36, quality of life.

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PREDICTION OF SEVERITY OF CORONARY ARTERY ATHEROSCLEROSIS IN PATIENTS WITH CARDIAC VALVES CALCINOSIS DEPENDING ON GENDER

Introduction. Atherosclerosis of coronary vessels as a cause of coronary heart disease (CHD) is a common cause of death. In Ukraine in 2016, the death rate from CHD was about 700 cases per 100,000 population, which is almost twice as high as in European countries.

Materials and methods. Gender features of clinical factors associated with severity of coronary arteries atherosclerosis was investigated in patients who underwent coronary arteriography (CA) and possible prediction of coronary atherosclerosis severity was estimated. CA results was assessed using coronary atherosclerosis severity index (CASI) that represent coronary atherosclerosis severity and extension.

Results. Patients with heart valves calcinosis (HVC) and severe aortic stenosis (AS) has significantly lesser CASI compared with HVC patients without AS (0 (0; 3,5) in group with grade 3 of AS and 3,0 (0; 10,0) in group with grade 2 of AS compared with 12,0 (5,5; 20,0) in group without AS, $p < 0,010$). Patient with coronary artery disease (CAD) and HVC more often had myocardial infarction (odds ratio 2,04 for men and 2,35 for women). CASI was higher in group with combined presence of aortic valve calcification (AVC) and mitral annular calcification (MAC) (16,25 (7,0; 24,5) in group with combined presence of AVC and MAC; 11,5 (5,0; 19,0) in group of isolated AVC and 8,5 (3,5; 18,5) in group of isolated MAC, $\text{Pisol.}_{\text{AVC-comb.lesion}} = 0,023$). Correlation analysis (CASI association with age, body mass index (BMI), smoking, hypertension, diabetes mellitus (DM), cholesterol level, glomerular filtration rate (GFR) and type of calcific valves lesion was analyzed) revealed CASI association with age ($r = 0,248$, $p = 0,006$), cholesterol level ($r = 0,186$, $p = 0,011$), DM ($r = 0,126$, $p = 0,085$) and combined presence of AVC and MAC ($r = 0,149$, $p = 0,042$) in male group and with DM ($r = 0,212$, $p = 0,0046$), GFR ($r = (-0,251)$, $p = 0,018$) and combined presence of AVC and MAC ($r = 0,220$, $p = 0,038$) in female. Possibility of CASI prediction was evaluated by using stepwise logistic regression analysis. For men CASI significant predictive factors included age, cholesterol level, DM and combined presence of AVC and MAC and for women only combined presence of AVC and MAC was significant predictive factor.

Conclusions. In patients with cardiac valve function, IWACS significantly differed from the presence of signs of aortic stenosis. In the analysis, depending on the type of impressions of the valves, IWACS was the largest in patients with a combined effect of AK and CMC. In the correlation analysis in the group of patients without signs of AK stenosis in the male subgroup, a correlation between IWACS with age, level of SAR, presence of diabetes in history, the presence of calcine in the valves and the combined effect of the valves were revealed. In women, a correlation relationship between IWACS with a history of diabetes, GFR, and a combined valve effect was detected.

Key words: heart valves calcinosis, coronary arteriography, coronary atherosclerosis, gender features.

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Clip "City Interdistrict Oncology Dispensary in the city of Mariupol" (80 Mira Avenue, Mariupol, 87500, Ukraine)

THE RESULTS OF TREATMENT OF THE DESCENDING COLON'S NECROSIS AFTER SPHINCTER-SAVING OPERATION OF PATIENTS SUFFERING FROM COLORECTAL CANCER

Introduction. The work is devoted to the immediate results of treatment of necrosis of the lowered intestine after performing sphincter-saving operations and patients with colorectal cancer. The aim of the work was to increase the effectiveness of treatment of patients with colorectal cancer.

Materials and methods. The material for the work was data on 271 patients with NOC who were on treatment for the period from 1990 to 2014. All patients with NOC were divided into two groups - a control group, in which the standard treatment regimens for NOCs were used, and the study group, in which the developed set of treatment measures was used. The control group included 176 patients operated in the interval from 1990 to 1999, in the study group - 95 patients, operated from 2000 to 2014.

Women were $46.5 \pm 3.0\%$, men - $53.5 \pm 3.0\%$. At the age of 60 years, a $59.4 \pm 3.0\%$ patient was operated. The most common tumor was located in the proximal parts of the rectum - $44.7 \pm 3.0\%$ of patients, less often - in the middle-ampullar department - $41.3 \pm 3.0\%$ of patients; the defeat of the lower-ampute department of the PC was most rarely observed. Adenocarcinoma occurred in $84.5 \pm 2.2\%$ of patients. Most patients were operated with a locally advanced tumor (T4) - $88.9 \pm 1.9\%$ of observations. Metastatic damage of regional lymph nodes of different levels occurred in $36.5 \pm 2.9\%$ of patients. Remote metastases occurred in $12.5 \pm 2.0\%$ of patients, the most frequent localization of distant metastases was the liver. Most often, the prevalence of the tumor process corresponded to T4N0M0 - $53.1 \pm 3.0\%$ of the observation. In $26.9 \pm 2.7\%$ of patients 86 different complications of the tumor process were noted; most often there was an intestinal obstruction of varying severity - in $73.3 \pm 4.8\%$. Associated diseases were noted in $62.4 \pm 2.9\%$ of patients; the most common diseases of the cardiovascular and respiratory systems.

In the treatment of patients with PC cancer, along with other types of operations, three types of surgical procedures were used with reduction of the colon to the perineum: proximal resection of the PC with a reduction (PRN), ventral-nadanal resection of the PC (BNR) and abdominal analgesia PC (BAR). The most common surgical intervention among patients with this complication was BAP - $82.3 \pm 2.3\%$ of the case, less often - BPR and PRN - $10.3 \pm 1.9\%$ and $7.4 \pm 1.6\%$, respectively. In treating patients, NOCs used treatment tactics based on three main parameters: the duration of necrosis, its height and the patient's condition, in particular the presence or absence of peritonitis. Conservative treatment was used in $28.0 \pm 2.7\%$ of patients, surgical treatment in $72.0 \pm 2.7\%$. The most frequent surgical intervention was colostomy - in 101 ($51.8 \pm 3.6\%$) patients. In the second place was donizvedenie transplant-tata - 58 ($29.7 \pm 3.2\%$) observations. Amputation of the lowered intestine took place in 20 ($10.3 \pm 2.2\%$) patients. In 12 ($6.2 \pm 1.7\%$) cases, preinemia of the mobilized gut with colostomy was performed, and in 4 ($2.0 \pm 1.0\%$) cases, relaparotomy with renal disease. The use of the developed treatment tactics made it possible to reduce the frequency of colostomy, RR = 0.6 (95% CI 0.4-0.9) compared with the control group.

Results. As a result of such an integrated approach, we were able to reduce the frequency of NOC in patients with CRC. When surgical intervention was performed, 28 ($10.3 \pm 1.8\%$) of 271 patients experienced intraoperative complications in patients who subsequently developed NOC. In the control group, intraoperative complications were noted in 23 ($13.1 \pm 2.5\%$) of 176 patients, in the study group - in 5 patients ($5.3 \pm 2.3\%$) ($p = 0.06$). The most frequent intraoperative complication was tumor perforation, which was noted in 20 patients, which amounted to $71.4 \pm 8.5\%$ in the structure of intraoperative complications and $7.4 \pm 1.6\%$ of the number of operated. In 271 patients with NOC, the incidence of postoperative complications was $18.1 \pm$

2.3% (49 patients). The use of the developed tactics made it possible to reduce the frequency of postoperative complications from $21.6 \pm 3.1\%$ (38 patients) in the control group to $11.6 \pm 3.3\%$ (11 patients) in the study group ($p = 0.047$). The use of the developed tactics allowed reducing the risk of postoperative complications, $RR = 0.54$ (95% CI 0.29-0.99) compared with the control group. Out of 271 patients with NOC after surgery, 28 ($10.3 \pm 1.8\%$) patients died. Using the developed treatment tactics, postoperative lethality was $6.2 \pm 2.5\%$ (6 patients), in the control group - $12.5 \pm 2.5\%$ (22 patients), the difference is not statistically significant ($p = 0.17$). The most common cause of death was a pelvic abscess ($32.1 \pm 8.8\%$). There was no significant difference in the incidence of abscess as a cause of death in the study and control groups ($p = 0.184$). Among patients operated in the interval from 1990 to 1999 (control group), NSC was detected in 176 ($13.6 \pm 0.9\%$) patients. Among the patients operated in the interval from 2000 to 2014 (study group), NNK was detected in 95 ($3.7 \pm 0.4\%$) patients. Thus, the use of 3-stage prevention of NOC with the use of the developed set of preventive measures allowed to reduce ($p < 0.001$ by the chi-square test) the risk of development of NOCs by 3.7 times, $RR = 0.27$ (95% CI 0.22 - 0.35).

Conclusions. Thus, the tactics of treating the necrosis of the invertebrate are optimized depending on the time of its onset and the level of necrosis: in patients with early high necrosis of the invertebrate, amputation of the lowered intestine is shown, in patients with early low necrosis of the lower intestine, preionization of the lowered intestine from the perineum is shown; in patients with late necrosis of the lower intestine, disconnection of the left half of the colon is shown by forming a loop transversome on the right side of the colon with simultaneous tamping of the pelvic cavity and reinforcement of the anal canal to prevent its stenosis. The use of the developed tactics made it possible to reduce ($p < 0.05$) the risk of postoperative complications in this category of patients, $RR = 0.54$ (95% CI 0.29-0.99) compared with the previously used technique (the period from 1990 to 1999), the postoperative lethality in this case was $6.2 \pm 2.5\%$. Thanks to the use of the developed treatment tactics, the decrease in postoperative lethality was noted in 2 times - from $12.5 \pm 2.5\%$ (22 patients) to $6.2 \pm 2.5\%$ (6 patients) ($p = 0.046$).

Key words: rectal cancer, sphincter-preserving operations, necrosis of lowered intestine, treatment.

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THE ROLE OF OSTEOPONTIN IN THE DEVELOPMENT OF LIVER FIBROSIS IN CHILDREN WITH CHRONIC VIRAL HEPATITIS B

Introduction. The aim of this study was to determine the plasma osteopontin (OPN) level in chronic viral hepatitis B (CHB) children with acute lymphoblastic leukemia (ALL), depending on sex, age, viral load, degree of fibrosis and inflammatory activity in the liver.

Materials and methods. The article represents the study of 71 children with CHB aged 3 to 17 years, including 41 CHB patients with ALL (main group) and the control group consisted of 20 healthy children.

The verification of the CHB diagnosis was performed on the basis of HBV-DNA detection in the blood of patients using PCR technique and ELISA for HBsAg, HBeAg, anti-HBsAg, anti-HBcAg, anti-HBeAg. The degree of fibrosis was determined on the METAVIR scale using Fibrotest. The level of OPN in serum was determined by ELISA (Human Osteopontin Quantikine ELISA Kit, USA).

Results. Discussion. According to results, the level of this glycopeptide in CHB children with ALL is significantly higher than in patients with CHB and healthy individuals ($p < 0,05$). Irrespective of gender, age, and viral load, significantly higher values of OPN were detected in CHB children with ALL than in the rest of the individuals. Many children of the main group have been diagnosed with fibrosis (F1-F3) with different inflammatory activity process in the liver (A0-A3). In CHB patients with ALL, the level of plasma OPN positively correlates with the degree of fibrosis and inflammatory activity in the liver ($p < 0,05$).

Conclusions. Osteopontin claims to be a new non-invasive biomarker of liver fibrosis. Further study of OPN in detail will give us not only a promising prospective sensitive biomarker of progression of liver fibrosis, but also a criterion for assessment of the effectiveness of treatment and the prognosis of chronic HBV in children.

Key words: chronic hepatitis B, children, lymphoblastic leukemia, fibrosis, osteopontin.

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AMBULATORY HYPERTENSIVE WOMEN BLOOD PRESSURE AND CIRCADIAN REGULATION TIME PROFILE DEPENDING ON A PRESENCE OF UNDERLYING IRON-DEFICIENT ANEMIA IN THE COURSE OF 6-MONTH THERAPY WITH RAMIPRIL AND VALSARTAN IN COMBINATION WITH INDAPAMIDE

Introduction. Arterial hypertension, along with other cardiovascular diseases, is considered a leading cause of disability and mortality in the world, including the population of Ukraine. The iron-deficient anemia incidence in Ukraine is very high. Therefore, a detailed study of special features of using certain groups of medicines for treatment of hypertensive patients with concomitant iron-deficient anemia is extremely topical. Was to study the time profile of outpatient hypertensive women blood pressure and circadian regulation depending on the history and severity of underlying iron-deficient anemia in the course of a 6-month therapy with ramipril and valsartan in combination with indapamide.

Materials and methods. One hundred and forty one 54-87 year-old women with Stage II arterial hypertension, with and without underlying iron-deficient anemia were surveyed. The clinical efficacy of antihypertensive therapy and time profile of

systolic and diastolic blood pressure were assessed using a 24-hour ambulatory blood pressure monitoring.

Results. The survey results suggested that administration of valsartan + indapamide combination in women with arterial hypertension without underlying iron deficiency compared with the ramipril+indapamide regimen was associated with a significant decrease in the average number of morning elevated blood pressure episodes (2 versus 4, $p = 0.04$) and those round the clock (6 vs. 9, $p = 0.004$).

In contrast to ramipril + indapamide, administration of valsartan + indapamide combination in the group of women with underlying iron-deficient anemia resulted in an increase of the incidence of episodes without BP elevation throughout the day (17.2% vs. 0, $p = 0.04$), and a decrease in the average number of episodes of increased blood pressure at night (6 vs. 10, $p = 0.008$). The results of the study demonstrated more favorable effect of valsartan + indapamide regimen on the circadian regulation of ambulatory blood pressure in women with arterial hypertension, regardless of the presence of concomitant iron-deficient anemia.

Conclusions. A 6-month administration of combinations of ramipril and valsartan with indapamide SR for treatment of hypertensive women with concomitant iron-deficient anemia was associated with almost identical and statistically-significant decrease in the level of ambulatory systolic and *diastolic blood pressure independently on the severity and history of concomitant anemia*.

In contrast to ramipril + indapamide SR combination, the administration of valsartan + indapamide SR regimen was associated with a more favorable effect on the circadian profile of blood pressure in all surveyed groups. This was characterized mostly by an increase in the number of patients without episodes of increased blood pressure around the clock, as well as a decrease in the average number of episodes of elevated blood pressure at night, and episodes of symptomatic arterial hypotension.

Key words: arterial hypertension, iron-deficient anemia, ramipril, valsartan.

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DYNAMICS OF COMPOSITIONAL CLIMATIC SYNDROME ASSOCIATED WITH EXTRAGENTIAL PATHOLOGY AFTER THE APPLICATION OF COMPLEX TREATMENT

Introduction. Non-medicated methods of treatment of physical nature are widely used and proved their effectiveness in preventing the occurrence of symptoms of climacteric syndrome, while the issue of therapy of climacteric disorders with antihomotoxic drugs is disclosed only in a few scientific developments.

Materials and methods. The study included 414 women aged 45 to 55 years old, who were divided into 4 groups: 1st group (control) were women of the perimenopausal age without somatic pathology; group 2nd – women with type II diabetes mellitus; group 3rd – patients with hypothyroidism) and 4th group – patients with hypertension (GC). In order to establish the effectiveness of physiotherapeutic

methods in combination with antihomotoxic drugs, patients are divided into 3 groups. The control group (CG) of women received only baseline therapy according to the National Consensus on the management of patients in the climacteric population (hereinafter - baseline therapy). Group 2 included patients who received physiotherapy at the background of basic therapy. Group 3 consisted of women who, besides basic therapy, prescribed antihomotoxic medicines Climact-Hel, Mulimen.

Results. Separately, the dynamics of neuro-vegetative, metabolic and psycho-emotional components of climacteric syndrome in patients from control groups receiving basic therapy was studied; basic therapy, laser therapy and contrast baths; basic therapy and antihomotoxicologic drugs. Comparing the influence of different types of therapy on the dynamics of the constituent of the climacteric syndrome, it turned out that in the group of patients who received only basic therapy and revealed a reliable dynamics of only the metabolic component of the climacteric syndrome in the group of patients with hypertension - the number of patients decreased by 10,6%. Patients with other concomitant pathology and without her reliable evidence of improvement were not obtained. In the group of patients who received treatment in the physiotherapy department against the background therapy, the following results were obtained: in patients without concomitant disease (group 1), no significant reduction in the manifestations of any component of the climacteric syndrome was found, however, the tendency to decrease the manifestations of neuro-vegetative syndrome. Analyzing the clinical manifestations of patients with type 2 diabetes mellitus (group 2) before and after treatment, it can be concluded that only in the neuron-vegetative component a significantly positive dynamics was obtained - 27.4% to 16.7% - after treatment. Similar data were obtained in the group of patients with hypothyroidism (group 3) - the manifestations of neuron-vegetative syndrome before treatment were 28.8% of patients in this group, and after - 15.1%. In group 4, a patient suffering from hypertension in addition to a climacteric syndrome, a significant decrease in the manifestations of neuro-vegetative and metabolic components was found to be 10.2% and 10.4%, respectively.

Conclusions. In the course of treatment of climacteric syndrome with the use of basic therapy, reduction of manifestations of the metabolic component in patients with hypertension was detected by 10.6%. The use of physiotherapeutic methods allowed to reduce the neuro-vegetative component in patients of the second, third and fourth groups by 10.7%, 13.4%, and 10.2% respectively. In patients with climacteric syndrome, which was used against antihomotoxicological drugs in the baseline therapy, there was a decrease in the number of complaints on the psychoemotional component of the climacteric syndrome in patients with type 2 diabetes, hypothyroidism and hypertension in 10.9%, 10.4%, and 10.5% respectively.

Key words: climacteric syndrome, antihomotoxicological preparations, basic therapy, physiotherapeutic methods.

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CLINICAL PROFILE OF KNEE JOINT OSTEOARTHRISIS IN FEMALE POPULATION OF THE VINNYTSIA REGION

Introduction. Osteoarthritis (OA) is the most common joint disease, as well as one of the main drivers of the loss of ability to work and full disablement. Poor diagnostics of OA at the early stages of the disease and lacking efficacy of existing treatment motivate an in-depth study of the OA problem. *The objective* of our work was to study the clinical profile of OA in female population of the Vinnytsia region.

Materials and methods. We surveyed 104 female patients with OA of knee joints admitted to the Rheumatologic Department of Pyrohov Memorial Vinnytsia Regional Clinical Hospital in 2012-2015. All patients were subject to full clinical and laboratory examination in accordance with Order of the Ministry of Health of Ukraine No. 676 dated October 12, 2006 "Clinical protocol of medical care to patients with osteoarthritis".

Results. The average age of the examined patients was 57.60 ± 11.69 , the average history of the disease in 46% of the subjects ranged from 5 to 10 years, and the excessive weight was diagnosed in almost 90% of the subjects.

Conclusion. The revealed clinical profile of OA in female population of the Vinnytsia region suggested a need for improvement of both diagnostic and therapeutic approach, and health outreach in the above population.

Key words: osteoarthritis, woman, body mass index, radiological stage, joint disorder, clinical form, disease history.

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EVALUATION OF EFFECTIVENESS OF COMPLEX TREATMENT OF PATIENTS WITH CHRONIC PANCREATITIS WITH METABOLIC SYNDROME

Introduction. Currently, the metabolic syndrome is considered as a factor in the development of chronic pancreatitis, and type 2 diabetes mellitus (type 2 diabetes), along with insulin resistance, pain-visceral obesity, hyper- and dyslipidemia, arterial hypertension and activation of nonspecific generalized inflammation are considered as metabolic syndrome manifestations.

The aim was to evaluate the effectiveness of complex treatment of patients with chronic pancreatitis with metabolic syndrome.

Materials and methods. A prospective study included 62 patients with a verified diagnosis of chronic pancreatitis in combination with type 2 diabetes mellitus.

Patients were divided into two groups. The first group included 20 patients with chronic pancreatitis, type 2 diabetes and normal body weight. The second group included 42 patients with chronic pancreatitis, type 2 diabetes mellitus and increased body weight.

Treatment of chronic pancreatitis was carried out according to the clinical protocol of the Ministry of Health of Ukraine. In addition, preparations of α -lipoic acid were prescribed.

The range of studied parameters included Apeline-36, α -amylase, C-reactive protein, elastase-1, fasting blood glucose (FBG), glycosylated hemoglobin (HbA1C), immunoreactive insulin (IRI), insulin resistance index HOMA-IR (Homeostasis model assessment), tumor necrosis factor α (TNF- α), total cholesterol, triglycerides, low density lipoprotein cholesterol, high density lipoprotein cholesterol, very low density lipoprotein cholesterol.

Results. Discussion. In both groups of patients, after the completion of treatment, the general condition was improved. In Group 1, the improvement was occurred on the 7th day of treatment, the disappearance of the majority of subjective and objective pathological symptoms - on the 12th day of treatment, in Group 2 – on the 8th and 12th day respectively.

Under the influence of complex treatment in patients of both groups there was a decrease in the activity of adipokine, Apelin-36, which was raised before the start of treatment. A significant decrease in the levels of Apelin-36, without achieving control values, indicates a decrease in the level of the inflammatory process in the pancreas and insulin resistance.

In both groups there was an improvement in the control indices of the functional state of the pancreas. The level of α -amylase and C-reactive protein decreased reliably, there was a tendency to increase elastase-1.

Complex treatment of chronic pancreatitis and type 2 diabetes mellitus was accompanied by a significant decrease in the metabolism of carbohydrates: FBG, HbA1C, IRI and HOMA-IR.

Under the influence of complex treatment in patients of both groups there was a significant decrease in TNF- α activity.

Conclusions. The results of the study demonstrate the effectiveness of the combined use of substitution enzyme therapy and α -lipoic acid due to a positive effect on the adipocytokine status, carbohydrate, lipid metabolism and indicators of the functional state of the pancreas. This combination affects the main pathogenetic links of chronic pancreatitis and type 2 diabetes and promotes the correction of glucometabolic disorders. The good tolerability of α -lipoic acid and its pancreatoprotective effect justify the appropriateness of the appointment of α -lipoic acid in the complex therapy of patients with type 2 diabetes mellitus and chronic pancreatitis.

Key words: chronic pancreatitis, metabolic syndrome, diabetes mellitus, treatment.

METHODICAL ARTICLES

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THE USE OF HIERARCHY ANALYSIS METHOD FOR SYSTEMATIC STUDY OF FORMATION OF GIRLS' REPRODUCTIVE POTENTIAL

Introduction. It is well known that women of early reproductive age face a lot of reproductive health problems; for them reproductive risk is manifested at the individual and population levels. The unsatisfactory state of reproductive health of the younger generation highlights the need for preventive measures on reproductive health violations not only in the health sector, but also through educational work in education institutions and activating the work of the Clinics, which are youth-friendly. From the point of view of the study of reproductive health as the basis of demographic security of the country, it is more justified to assess the level of the aggregate reproductive potential of the female contingent. *The purpose* of the study was to apply the information technology of defining weight coefficients to characterize the reproductive potential of the younger generation.

Materials and methods. For the study the method of hierarchy analysis based on reasoned judgments of specialists familiar with the state of affairs regarding the demographic situation in the country, problems of low reproductive health of young people, and the negative consequences of risk behaviors in the youth environment was chosen. The methodology consisted of forming matrices of pairwise comparison of indicators, which are grouped into separate units, by degree of significance.

Results. According to the experts, the most contributing to the reproductive potential of young people are the genetic factors ($0,57\pm 0,11$), state of somatic health ($0,41\pm 0,05$) and awareness of health issues with the availability of health care ($0,37\pm 0,13$).

However, the least significance of genetic factors in the formation of reproductive potential of young people was recognized by a physician-therapist ($0,28$) and a psychologist ($0,35$), which is confirmed by the differences in their own weight coefficients from the average weight coefficients of all experts of a separate block of indicators according to the Student criterion ($t=-2,62$, $p=0,06$; $t=-1,96$, $p=0,12$). These experts are more inclined to give preference to socio-hygienic factors, psychological peculiarities of the person, and awareness on health care. Among the socio-hygienic factors experts identified the first positions for the use of narcotic drugs ($0,33\pm 0,08$), the use of alcoholic beverages ($0,28 \pm 0,05$). In the unit of characteristics of the state of somatic health, the first places, according to their importance in the formation of reproductive potential of youth, take the following factors: diseases of the endocrine systems ($0,39\pm 0,03$), diseases of the cardiovascular system ($0,32\pm 0,03$), diseases of blood and hematopoietic organs ($0,32\pm 0,07$), infectious diseases ($0,30\pm 0,09$).

Among the characteristics of psychological peculiarities of an individual, primary importance was given to the “signs of depression” ($0,32\pm 0,05$), “gender identity type” ($0,31\pm 0,08$), “sexual promiscuity” ($0,30\pm 0,06$), “chronic stress” ($0,28\pm 0,04$) and “level of personal anxiety” ($0,25\pm 0,04$).

Conclusion. The use of the block grouping of the studied indicators allowed the experts to determine the weight coefficients of girls' reproductive potential

components in the system of binary evaluative relationships. It has been established that the consistency of experts' assessments is entirely dependent on experts' training. The analysis of the deviations of the weight coefficients of the studied units (indicators) of each expert from the mean value allowed to determine which issues and their estimations caused contradictions in comparison with the general (average) opinion of the group of experts, which enables identifying the most comprehensible areas of the problem for the purpose of its in-depth study.

Key words: reproductive potential, weight coefficients, girls, hierarchy analysis method.

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METHOD OF COMPLEX ASSESSMENT OF THE LEVEL OF EXPRESSION OF EDUCATIONAL STRESS IN STUDENTS DURING THE ACADEMIC YEAR AND IN PRE-EXAMINATION AND EXAMINATION PERIOD

Introduction. The main directions of improvement of approaches to scientific regulation of modern objective approaches to determine the peculiarities of the functional readiness of trainees, and overcoming of the consequences of stress phenomena, which are caused by educational stress, should be considered the development of integral techniques that create the preconditions for an effective comprehensive assessment of it on the basis of determining the leading characteristics of the functional state of the organism and personality traits inherent in certain girls and young people.

Therefore, the scientific substantiation of the method for the integrated assessment of the level of expression of educational stress among students during different periods of stay in a higher medical school should include the carrying out of a prognostic assessment and determining the degree of significance of the psychophysiological functions and characteristics of the student's personality during the academic year (permanent educational stress), as well as in the predefteness and examination periods (situational (urgent) educational stress) on the basis of the use of expert appraisal techniques.

The aim of the study is scientific substantiation of the method of complex assessment of the level of expression of educational stress among students during the school year and in the preexam and exam periods.

Materials and methods. Scientific researches were conducted at Vinnitsa National Medical University named after. E. Pirogov with the involvement of specialists who have experience in the field of psychophysiological and physiological and hygienic assessment of occupational problems for at least 7-10 years. At the core of the development of methodological approaches adequate to the purpose of the creation and scientific substantiation of the method of integrated assessment of the level of expression of academic stress among students during the academic year and in the pre-exertion and examination periods was the method of expert evaluations using the

methods of group expertise with the following ranking and pair comparison. In the course of psychophysiological studies, the functional features of higher nervous activity were evaluated using the computer complex "Efecton Studio", manifestations of anxiety was carried out on the basis of the use of Spielberg's personal questionnaire, to assess the degree of expression of the asthenic state - a personal questionnaire of Malkova, to determine the level of expression of a depressive state – Zung's psychometric scale for self-esteem of depression. Statistical analysis of the obtained results was carried out on the basis of application of a package of applied programs of multidimensional statistical analysis "Statistica 6.1 for Windows" (license №AXX910A374605FA).

Results. In the course of the conducted researches, a scientifically grounded method of a comprehensive assessment of the level of expression of academic stress among students during the school year and in the predeftening and examination periods was developed. The leading stages of the application of the technique are determining the degree of expression of psychophysiological functions and personality characteristics, reflecting the degree of expression of the stress response of the body of students of the medical university, transfer of the results to standardized points in accordance with special scales for assessing the level of psychophysiological functions and personality characteristics, calculation of values of indicators of the level of expression of educational stress as a student during the academic year (permanent academic stress), and in the future replacement and examination periods (situational educational stress), integrated assessment of the acquired values of the level of expression of educational stress on the basis of application of the established quantitative criteria for their qualitative evaluation, determination of the leading laws of the processes of psychophysiological adaptation, justification of individualized means of psychophysiological correction of existing deviations from the processes of adequate professional formation of future specialists of medical field.

Conclusions. The obtained data allow to develop generalized formalized approaches to a comprehensive assessment of the degree of expression of academic stress among students both during the academic year and in the pre-exertion and examination periods. Also, to establish the leading regularities of the processes of psychophysiological adaptation, to substantiate both generalized and completely individualized strategic decisions and tactical means of psychophysiological correction of existing and probable deviations from the processes of adequate professional formation of future specialists of the medical branch, which determine the perspective directions of further research in the future.

Key words: students, educational stress, academic year, pre-exam and examination periods, methodology of integrated assessment.

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ASSESSMENT OF THE LEVEL KNOWLEDGE IN RESIDENTS PEDIATRIC SURGEONS AND CADETS PEDIATRIC SURGEONS OF CYCLE OF POSTGRADUATE EDUCATION ON THE TOPIC «SYNDROME OF SWELLING SCROTUM IN CHILDREN»

Introduction. *Aim*-Evaluation of knowledge of residents in pediatric surgery and cadets pediatric surgeons on cycle of postgraduate education of the topic "Syndrome of swelling scrotum in children" by using of testing methods that was developed and implemented in pediatric surgery chairs in VNMU named after M.I. Pirogov and NMAPE named after P.L. Shupik.

Material and methods. Has been analyzed the theoretical knowledge of 100 residents in pediatric surgery and cadets pediatric surgeons on cycle of postgraduate education in 8 groups in VNMU named after M.I. Pirogov and NMAPE named after P.L. Shupyk on the topic "Syndrome of swelling scrotum in children" on the profession "Pediatric surgery" on the results of testing on the related disciplines, oral questioning, interactive learning in groups, anonymous survey. Has been identified causal connections between the level of residents and cadets' knowledge, the formation of clinical thinking, the ability to determine a preliminary diagnosis, therapeutic and diagnostic approach.

Results. Results of the study have identified insufficient knowledge on the topic of classes in related subjects, inability of residents and cadets to fully collect complaints, anamnesis of disease and life, interpret results to additional methods of examination, determine the tactics of conservative and surgical treatment. A lot of residents and cadets not enough guided in matters of pathogenesis of acute scrotum, etiotropic pharmacological properties of drugs, and only a small percentage of students have used more information sources to prepare for classes. Many residents and cadets have inadequate assessment of their own level of knowledge on the topic of employment.

Conclusions. To increase motivation of residents in pediatric surgery and cadets pediatric surgeons on cycle of postgraduate education in learning, in teaching practice preference should be given to interactive teaching methods to be aimed at forming of clinical thinking. Residents and cadets should participate in the communication with thematic patients, analyzing of medical information, be present in performing of professional manipulations and surgical interventions. Lack of knowledge of residents and cadets is a reason for doing of constant monitoring, further detailed explanation and advisory work, joint search by teachers of chairs effective teaching methods.

Key words: swelling scrotum syndrome, residents, testing, interactive learning.

© Mazchenko V.F., Shevchenko V.N., Bashinska O.I., Skoruk R.V.

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PRINCIPLE OF INTEGRATION IN TEACHING PROCESS AT THEORETICAL DEPARTMENTS OF MEDICAL UNIVERSITY

Introduction. The program of study for medical students includes theoretical and clinical training. Knowledge acquired by students at clinical departments depends on the progress made by future doctors while studying at theoretical departments. While studying at the preparatory course, students experience significant mental overload due to adaptation to studies at the university with a large number of highly informative theoretical disciplines, large volume of the researched material and lack of time to master it.

At the initial stages of the development of medicine, observations and generalizations regarding the structure and functions of human body as well as possible abnormalities and ways of their elimination were studied as an integral complex of scientific knowledge with its parts closely interconnected in the course of theoretical interpretation and practical use. In the process of scientific development, obtaining new information resulted in the natural division of medical science into a large number of directions depending on the study of different systems of organs and types of possible abnormalities. There also existed a tendency to separate theoretical science from its practical counterpart. Contradiction between existence of a large number of practically isolated disciplines and the need to form an integrated system of knowledge leads to the necessity to use integrative approach in the educational process.

National and foreign pedagogy has rich experience in researching the problems of integration. A number of scientists have studied the task of using interdisciplinary connections in the educational process in different periods of time. Specifically, they have shown that, while the volume of information is growing rapidly, the ability to perceive and understand information is diminishing. The solution lies in the synthesis of different academic disciplines, development of integrated courses, interconnection between all disciplines.

The goal of integration of different branches of theoretical and practical medicine lies in an opportunity not only to find common ground between several academic disciplines, but to give students an idea about the unity of structures, processes and phenomena in the human body by showing real organic connections between them. Integration erases boundaries between separate sciences and allows to specialize not in sciences, but in problems.

Conclusions. Therefore, the use of the idea of integrated studies, implementation of interdisciplinary connections in the educational process help to form a unified picture of the studied discipline and stimulate additional potential abilities of a student. Active use of integration in the educational process allows to expand the students' mental outlook, help to develop their ability to think out-of-the-box and compartmentalize the acquired knowledge.

Key words: integration, theoretical departments, educational process.

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METHODOLOGICAL PROBLEMS OF MEDICINE AND MEDICAL PERSONNEL TRAINING IN MODERN CONDITIONS

Like all other spheres of human activity, medicine is modified and improved. Medicine of one time inevitably differs from medicine of another time. There is no eternal and absolutely invariable medicine and cannot be. Modern medicine, which is practically presented in a multidisciplinary, highly specialized clinic, requires the scientific generalizations of individual studies as creative processes, the disclosure of each new movement of thought in the head of a separate doctor or scientist-consultant, not his subconscious associations, and, above all, a complex system of interpersonal relationships that rooted in a specially organized activity of the mutual comprehension of the essence of pathology. Sphere of functions and activities of doctors, scientists-consultants, and medical staff includes not only the appropriate informative system, but also a system of values. Any activity exists only in relation to its goal, the aim. The main goal of medical work is to prevent illness, to treat patients, and if that is not possible, to ease their suffering – has the greatest importance and at the same time represents the highest value in medicine. Among the most important values of medicine, the intention or orientation towards mutual understanding, mutual respect between medical-scientists, consultant-specialists and practicing doctors occupies a special place. Medicine can exist only as a joint medical practical and scientific activity. The essence of the medical practice determines the creative collaboration of medical-scientists, clinicians, healthcare organizers, who are united by a single direction of joint search, a single understanding of the purpose and meaning of their work, and have a single field of application of concerted, coherent efforts.

In medicine, value acts as an aim or goal itself. The purpose is the main, not purely material or spiritual interest, benefit or professional satisfaction. As values in medicine, for example, psychosomatic, moral and intellectual health of a patient, his cheerful mood and confidence in recovery, etc. can be. Values in medicine do not exist, they contain only meaning. These requirements are addressed simultaneously to both the treating physician, the consultants and the patients, to their will, the goals that predetermine and determine the direction and motivation of their joint activities. The *purpose* of the work is to study and explore the general theoretical, methodological foundations of modern medicine and training of medical personnel.

Conclusions. 1. Medicine as a science can exist only in the form of collective creative collaboration of scientific schools and directions, which are united by the single task and the purpose of joint search. 2. While basic clinical concepts were not sufficiently well defined, by that time knowledge of the nature of diseases, the structure of pathology and the culture of clinical thinking. 3. While a practitioner is a full-fledged representative of medical science and practice, it is his holy duty to scrutinize and research of patient.

Key words: scientific-technical progress, particular specialization, improvement of medical business, personnel training, multiple-discipline clinic, formalization.

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

EDUCATIONAL ASSESSMENT OF STUDENT-DENTIST'S LEARNING OUTCOMES AT SPECIALIZED DEPARTMENT IN THE CONTEXT OF COMPETENCE APPROACH: PROBLEMS AND PROSPECTS

Introduction. Modern standards of higher medical education based on competence approach. That is, the result of study in modern higher medical education is competent professional who can compete successfully with other specialists both in Ukrainian and in the European labor market. Assessment of learning outcomes is one of important criteria for the process of improving the quality of higher medical education.

Materials and methods. Foreign experience asserts that effective modernization of curricula and teaching programs is possible only against the background corresponding changes not only content, but also forms of assessment. Educational evaluation is not an exact science and requires constant search for more advanced approaches under conditions of intensive development of modern information technology. The assessment should provide an understanding of what students are knowing and can doing, send them to the desired results, encourage the search activity, and to obtain information on the effectiveness of teaching. Such aspects of assessment of learning outcomes of students could be highlight: oral answer student; work with the patient; problem solving clinical situation (case); solving of tests; demonstration of practical skill or ability, particularly in phantom; work at small groups. At the specialized departments the professional adaptation of future specialists, determining of his specialization are being. Teachers usually well aware of capabilities and possibilities of each student, his psychological characteristics. It promotes the paradigm of student centric learning, that is, flexible, self-managed learning, based on experience and individual approach to each student. As our experience proves, traditional evaluation methods were not sufficiently reliable and objective. Therefore, we consider it necessary to put into practice the technology, designed to assess knowledge in the context of their practical application. At the Therapeutic Dentistry Department we actively used the following methods: testing, training in conditions simulating of professional activities, computer stimulation, etc. We are actively introducing interactive teaching methods, including: business and role-playing games, brainstorming, work at small groups. On this basis, we evaluate student's work in class for complex criteria: "verbal reply", "test check", "solving of clinical situational task", "demonstration of practical skills", "activity". Each of these criteria of the evaluation has positive and negative aspects, requires careful study and improvement. Very important is the pedagogical abilities of the teacher and individual approach to each student.

Conclusion. An analysis of scientific sources and our own experience of teaching, efficiency to solve the problem in the medical, in particular dental education, much depends on the creation of the complex examination of the quality of higher medical education at the national level. Every single component of educational assessment needs to be improved and view of projection of the development of science and introduction of new technologies in the educational sector. The approach to the

assessment of learning outcomes of future specialists should be comprehensive and differentiated. Formation of new types of assessment should be based on the classic standardized and proven effective methods.

Key words: educational assessment, competence approach, specialized department.

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HYGIENIC ASSESSMENT OF ORGANIZATION OF EDUCATIONAL ACTIVITY OF YOUNG LEARNING SCHOOLS AND THE MAIN AREAS OF ITS OPTIMIZATION

Introduction. The purpose of the study is to carry out a hygienic assessment of the organization of educational activities of junior high school students and the scientific substantiation of effective directions for its optimization.

Materials and methods. The research was conducted on the basis of school-lyceum number 7 in Vinnitsa among 204 junior pupils, which were divided into 2 groups: intervention and control group. 74 interlocutors were assigned to the intervention group, with a feature of their daily activities the use of a complex of activities aimed at optimizing the educational activities of junior schoolchildren-lyceum students, 130 students who were in the traditional conditions of study at the lyceum school. In addition, a number of studies were carried out on the basis of ordinary general schools number 1 and number 4 in Vinnitsa.

Results. According to comprehensive hygiene research, the nature of the educational process of the junior high school students is analyzed. The established shortcomings in the organization of the educational process were the basis of a set of measures for the optimization of students' educational activities, which included: rational organization of the educational process and bringing the level of general educational load to the limits of hygienically-justified standards, optimization of the regime of the day and the curriculum of lessons, the use of traditional and non-traditional forms physical education. Elected as a criterion for evaluating the effectiveness of optimizing the educational activities of junior schoolchildren-lyceum students for three years, the level of academic performance determined the availability of dynamic shifts of favorable content both from the indicators of overall success and the success of individual subjects (native language, mathematics, reading) that were established.

Conclusion. Studying the peculiarities of the educational activities of junior high school students revealed a number of shortcomings in its organization and required the development and implementation of a set of measures to optimize the organization of educational activities of schoolchildren-lyceum students. The complex of measures aimed at optimizing the organization of educational activities of students of lyceum students, which was developed and implemented, envisaged: rational organization of the educational process and bringing the level of general educational load to the limits of hygienically-based norms, optimization of the regime of the day and the curriculum of lessons, the use of traditional and non-traditional

forms physical education. The chosen criterion for assessing the effectiveness of the optimization of the educational activities of junior schoolchildren-lyceum students for three years determined the favorable content of the dynamic changes in both overall progress and success in individual subjects (native language, mathematics, reading) that were established.

Key words: school-lyceum, junior schoolchildren, educational activity, optimization, educational achievement.

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ON INNOVATIONS IN THE TECHNOLOGY OF TEACHING MEDICAL STUDENTS

The current stage of the development of the professional medical education is characterized by the search for new ways of cooperation between teachers and students, in the process of which is the formation of initiative, independence and creativity of the latter, their involvement in research and educational activities. *The purpose of the work* is to find out the effectiveness of the application of integrated teaching technologies in the educational process at the Department of Internal Medicine of the Medical Faculty № 2 of the Vinnytsya National Pirogov memorial Medical University and to analyze their impact on the quality of students' knowledge. During the 2016-2017 academic year students of the Stomatology Faculty were divided into two investigated groups: in the 1 st group (41a, 42a, 43a, 44b, 45b academic groups, 72 students) traditional teaching methods were used; in the 2 nd group (41b, 42b, 43b, 44a, 45a academic groups, 68 students) integrated technologies were applied. Interactive teaching methods are used at different stages of the learning process. At the stage of initial learning of discipline the lectures-discussions, lectures with problem statement, video-lectures with partial discussion, methods "Microphone", "Brainstorming", "Carousel" are conducted. At the stage of formation of professional skill based on theoretical knowledge prevailing methods: "Work in pairs", "Case method or situational analysis", "Business game", training. At the stage of consolidation and control of knowledge we use methods: "Round Table", "Discussion", "Debate", "Teaching - Learning", "What, Where, When", "Blitz Tournament", "Smartest", computer testing. Assessment of students' competence in discipline has been carried out depending on the training methods according to the developed criteria. It was found that low (fragmentary) and elementary (reproductive) levels of competencies prevailed with training by traditional methods (83% and 66% respectively). Sufficient (partial-search) and high (research) competencies prevailed with the use of integrated technologies (65% and 79% respectively). Use in training activities considered interactive teaching methods contributes to formation of cognitive activity of the student, creative assimilation of the theoretical material of the disciplines being studied; ability to compare, generalize and solve non-typical situational problems; leads to the connection of theoretical knowledge with practice,

acquisition of professional skills; wide disclosure of individual abilities of students, formation of personalities; formation of the ability to focus attention and mental efforts on the solution of the actual problem; formation of experience of collective mental activity; greatly increases the quality of learning and is an important "driving force" of general development.

Conclusion. The use of interactive methods in the learning process leads to: intensification of educational, cognitive and scientific activity of students; creative assimilation of theoretical material from the disciplines being studied; Ability to compare, generalize and solve non-typical situational problems; connection of theoretical knowledge with practice, acquisition of professional skills; skills; wide disclosure of individual abilities of students, formation of personalities; formation of the ability to focus attention and mental efforts on the solution of the actual problem; formation of experience of collective mental activity.

Key words: medical education, educational process, interactive methods.

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THE POSSIBILITY OF INSTALLING THE SITUATION OF THE BULK SURFACE BETWEEN THE SURFACE OF SKINS WITH USE OF A RENTHEN-FLUORESCENT SPECTRAL ANALYSIS BY DISTRIBUTION OF METALS

Introduction. Among the many known methods of forensic criminology to investigate the factors accompanying the shot (additional factors of the shot), one of the most effective methods of elemental composition of metal layers and other factors accompanying the shot is X-ray fluorescence spectral analysis. Its use allows to carry out the diagnostics of firearms (damage), to identify micro-walls from wound channels, to determine the type of projectile and the micro-element composition of the products of the shot. In recent years, the technological capabilities of the X-ray fluorescence spectral analysis have increased significantly, although scientific research is devoted to the complex and in-depth study of the factors accompanying the shot, including in cases where the position of the bullet cut of the trunk relative to the surface of the skin and the specific identification of the weapon is determined by the use of X-ray fluorescence spectral elemental analysis - is not enough yet.

Materials and methods. Order to establishing the position of the shaft cut of the trunk relative to the surface of the skin at the time of firing the shot and carrying out the identification of the weapon by using an X-ray fluorescence spectral elemental analysis by the peculiarities of the distribution of the metal particles of the shell of the ball formed during the passage along the canal of the gun barrel as part of the product of the shot.

Results. To determine the presence of metals (elemental composition of layers), the micro-X-ray fluorescence spectral analysis was applied to the surface of the skin

scrubs. As a result of a scan plane scan study, the spectra of the following elements were obtained: P, S, Cl, K, Ca, Ba, Fe, Cu, Zn, and Pb. Subsequently, a mapping of the distribution of detected elements was performed on the scanning plane of the skin fractures. The obtained maps determined the uniformity of the topography of the distribution of most of the detected elements. While the distribution of barium (Ba), iron (Fe), copper (Cu), zinc (Zn) and lead (Pb) on the skin fraction with wounds number 1 and number 2 was uneven, the areas of oval shape with high the contents of the elements, both along the edges and around the edges of the wounds, within the confinement of the skin. At the same time, the distribution of iron elements around wound number 2 has a minor appearance due to an increase in length, in the direction of 13 hours of conditional dial. The propagation of copper and zinc elements had an arcuate character with filling cavities in the center. This effect can be explained by overlaying on the area of layering of copper and zinc layers of iron elements. This is possible under the condition of contact of the lateral part of the muzzle cut of the barrel of the weapon with the skin of wound number 2 at an acute angle. Consequently, the presence of soot in the wound number 2 of copper and zinc, the origin of which was the metal shell of the ball, externally coated with a tombac (alloy of copper and zinc) indicates that the ball was shell.

Conclusions. 1. From the detected elements that were part of the soot around wound number 2, it is possible to separately allocate iron, the distribution of which distribution cards was of an oblong nature and formed from the contact of the skin with a muzzle cut of weapons, as well as copper and zinc, the source of which was the metal shell of the ball, externally covered with a tombac (alloy of copper and zinc). So the ball was shell. 2. The nature of the distribution of elements of iron, copper, zinc along the edges of wound number 2, namely - an elongated form of distribution of iron elements around the wound, and elements of copper and zinc - arched-type with cavities of filling in the center, indicates that at the time of the firing there was a contact of the lateral part of the trunk of the weapon with skin wound number 2 at an acute angle. 3. Detected areas of the deformation of the bullet number 1 were formed from the effect of the margins of the canal of firearms and are cuts on the surface of the shell of the ball, the bottom of which are parallel rolls and grooves alternating with each other. This fact indicates the use of rifled firearms.

Key words: forensic medicine, gunshot trauma, short-barrel firearms, X-ray fluorescence spectral analysis.

SOCIAL ARTICLES

© Havryliuk A.O., Zharlinska R.H., Datsenko H.V., Korol T.M., Poliova O.A., Vovchuk O.M.

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CLINICAL AUDIT IN THE SYSTEM OF THE GOVERNMENTAL QUALITY CONTROL OF THE HEALTH CARE IN UKRAINE: CONTENT, GOALS AND CLASSIFICATION

Introduction. As a rule, more attention we pay for the medical treatment, quality of medical services and their relevance to normative documents, as well as for contentment of patients with quality of received medical service. The control in this direction is carried out with the help of special check - Clinical Audit (CA). Therefore, the clarification of the nature of the CA, its types is an actual problem and needs separate research. The purpose is to consider existing approaches to the CA, to sum up them and to develop their own definition, to carry out the classification of CA types.

Results. Clinical Audit is analysis and an assessment of medical care and effectiveness of its organizational structure; check of relevance of medical service to rules of NHS, standarts and normative acts. KA is to be seen as a part of prolonged process of study, which is intended to support both the personal and professional development but not sanctions or process associated with losses. The audit may be associated with a particular field or specialty, or it may cover activities of a health institution or unit that covers the whole path of the patient in the hospital.

Conclusion. CA is an effective tool in the system of state control of quality of medical service. The main types of CA are basic, arbitrary collection of documents, prospective, topical, monitoring of adverse results. By levels of performance: local, regional, national, international. Good Clinical Practice is a level of medical care that should be recommended on the basis of recent review of evidence-based medicine and perennial experience with knowledge of medical care.

Key words: clinical audit, governmental control of the quality of care, medical audit, proper practice.

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THE CURRENT STATE OF THE PROBLEM OF SURGICAL ASSISTANCE TO SERVICEMEN AS A RESULT OF MODERN MILITARY OPERATIONS AT THE STAGES OF MEDICAL CARE

Introduction. At the beginning of the third millennium, Ukraine, its citizens and the army appeared to be drawn into an armed conflict in the territory of their own state, which has signs of a hybrid war and includes open combat actions of varying intensity, sabotage and reconnaissance operations, separatism, information warfare and economic confrontation at the regional and international levels. *The purpose of our work* was to improve the existing system of surgical assistance to the military as a

result of modern military operations at the stages of medical care based on the experience of Ukraine and the world.

The nature and extent of surgical assistance to those affected by modern combat operations in Ukraine, in spite of the progress achieved, needs to be reformed. The experience of NATO and other developed countries in developing a system of surgical care from modern combat operations should be extrapolated and adapted to the realities of hostilities in eastern Ukraine.

Materials and methods. To perform our research, we analyzed the state and problems of surgical care for the victims of modern combat operations. The analysis concerned the victims of modern military operations that were carried out over the past 25 years and included counterterrorist operations in the Chechen Republic, military operations in Iraq and Afghanistan. The experience of providing surgical care to the victims of modern combat operations was based on the treatment of 168 people with fire and explosive injuries that were received as a result of hostilities in eastern Ukraine and were treated at the Military Medical Clinical Center of the Central Region in the period 2014-2017. All the victims who participated in our study were males. The average age of the victims was 41.1 ± 2.2 years.

Results. According to many authors, the organization of providing high-quality and timely medical care to the wounded, their rapid evacuation, further treatment and rehabilitation provide not only the preservation of life, but also the rapid recovery of combat capability in 80% of the wounded in conditions of modern armed conflict. Eastridge, B.J (2012) indicates that of the 4,596 fatalities in the 2001-2011 wars in Iraq and Afghanistan, 87.3% of the wounded were killed before reaching medical facilities. 35,2% of them were instantaneous, 52,1% - acute (from several minutes to several hours) to the achievement of medical institutions (with provision of surgical care). It is important that 24.3% of those who died before the time of hospitalization could survive. From these studies, it is also believed that the causes of lethal effects that could potentially be saved were acute blood loss, respiratory tract obstruction, and tense pneumothorax. The distribution of these factors was as follows: blood loss was 90.9%, respiratory tract obstruction - 8%, and stressed pneumothorax - 1.1%. In the context of the conduct of hostilities, a system of medical and evacuation support for the wounded, which includes units and units of the medical service of the Armed Forces of Ukraine (3CY), other security structures and health facilities, is created and is constantly being improved. Medical assistance is provided to the wounded by personnel, mobilized military and civilian doctors. At the same time, there is a problem in the common views and principles of etiology, pathogenesis, diagnostics and treatment of gunshot wounds in conditions of the phased provision of primary care and further treatment of the wounded.

Conclusion.1. The nature and volume of surgical assistance to the victims of modern combat operations in Ukraine, despite successes achieved, needs to be reformed.2. The experience of NATO and other developed countries in the development of a system of surgical care from modern combat operations should be extrapolated and adapted to the realities of hostilities that are taking place in eastern Ukraine.

Key words: surgical care, injured, military actions, sanitary losses.

© Oniskova O.V., Yushchenko L.O., Chyhir I.V.

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PECULIARITIES OF KEEPING CLEANLINESS OF THE GENITAL REGION IN CHILDREN: AWARENESS OF PARENTS

Introduction. The importance of hygiene is something that needs to be taught to the kids from a very young age. Apart from washing hands, face, hair etc., they need to be taught to keep their genital areas clean too. Parents do it till 2 or 4 years. It's important to keep baby's genitals clean. This will help prevent infections and keep a child healthy.

The aim of the study was to assess the parents' awareness of intimate hygiene of children from birth to 3 years, the correctness of the care of the genitalia, and the frequency of urinary tract diseases.

Materials and methods. The study included 65 children from birth to 3 years (30 girls and 35 boys). Their parents have been interviewed about caring for the genital region of their children. Types of questions depended on the sex of the child. All children had some treatment at various departments of the Vinnytsya Regional Children's Clinical Hospital. Children didn't have any pathology of kidneys and urinary tract.

Results. Results showed that 57% of girls' parents of and 71% of boys' parents kept the cleanliness of the genital region. At the same time, 20% of parents swept the girls in the wrong direction, and 33% of parents used soap, which fell on the genitalia mucous. When caring for boys, 28% of parents displaced the foreskin of their sons. 85% of the respondents think, that posterior fetal usually displaces in young boys, half of them (54%) believe that the foreskin bias normally takes up to 3 years. Displacement of the foreskin in 51% of boys occurred at the age of three years without intervention, doctors helped to displace in 17% of boys. Only 46% of parents visited doctors to know about hygiene the genital region. Moreover, 53% of boys' parents and 27% of girls' parents received correct and accurate advices. In addition, 46% of parents used intimate hygiene perfumery. Among the polled parents, the girls of the cynic of the labia did not meet. We didn't find girls with synechiae of the labia minora or vulvitis. Only five girls had urinary tract infection. Parents of two of them didn't associate the disease with the wrong care of the external genitalia. Only one boy had sinechia of the foreskin and got surgical treatment, such as dissecting existing adhesions. The boys' parents believed that it sinechia of the foreskin caused balanoposthitis and urinary tract infection. They admitted the wrong care of the genital region of their son.

Conclusion. It was found that parents' awareness of the hygiene of genitalia in children is not on appropriate level. Less than half of them were interested in this question and asked for advice their general practitioners. We can make a conclusion that they were poorly informed about the correctness of the hygiene of genitalia in children and the possible consequences of it. That is why doctors should actively inform their parents and give correct and accurate advices of the clearness of genitalia in children according the gender and age, because it is important for their health.

Prospects for further scientific developments are the study of the influence of the hygiene of genitalia in children to the occurrence of inflammatory urogenital system diseases with the purpose to prevent their occurrence.

Key words: children, cleanliness of the genital region, synechiae of the labia minora.

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THE INFLUENCE OF THE ORGANIZATION OF THE PRIMARY HEALTH CARE CENTERS WORK ON PATIENTS' SATISFACTION WITH QUALITY OF MEDICAL AID

The quality of providing primary health care to the population is determined by a large number of factors: professionalism and communicative skills of doctors, material and technical support of the medical institution, organization of the patient's route and coordinated patient-oriented work of all units and medical staff of the institution, including registries and diagnostic offices. Evaluation of the patient's satisfaction with the quality of health care provision at an institution is an important informative tool for identifying possible disadvantages and removing them through effective management and implementation of world experience.

The process of computerization of the health care system will help to create a single electronic register of patients for reducing costs and optimizing distribution finances in the health care system, the disappearing of informal and corrupt payments will push the primary care physicians to review and replace the concept in the treatment of diseases for the concept of prevention and public health (or create additional incentives for doctors which are using unified international standards for diagnosis and treatment of diseases), will allow patients to control their medical records and make an appointment to his general practitioner (GP) at home using a PC and the Internet. During the responses' analysis of questions about medical and therapeutic and preventive work, obtained the following results: 41% of primary healthcare center (PHC) visitors argue that physicians provide a full comprehensive information about their health status and treatment plan, 29% were partially satisfied by received information; 15% were somewhat satisfied; 39% of respondents gave an excellent assessment of the doctors on the recommendations for the prevention or an exacerbation of the disease, 31% of visitors were partly satisfied by preventive work of physicians, 9% were somewhat satisfied; 53% said that doctors in this PHC perform their professional duties at a high level of qualification requirements under specialty "GP", 17% were partially satisfied by qualified physicians' skills, 12% were somewhat satisfied; 47% were satisfied with the knowledge and professional skills of nurses, 27% of visitors were partially satisfied, 9% were somewhat satisfied; 31% were completely satisfied with the provision of medical doctors of PHC at home

residence of the patient, 34% - partly satisfied, 12% of visitors were somewhat satisfied; with various issues of the question's block 6-8% of respondents were strongly dissatisfied with the professional level of training of health workers at the PHC in connection with that they have not provided high quality medical care.

After careful analysis of responses to a questionnaire of questions about the quality of healthcare and level of medical care in this health care institution, obtained the following results: 32% of respondents were generally satisfied with the quality of medical care at PHC №1 Zhytomyr, 41% of visitors were partially satisfied with the services provided by this PHC, 17% of respondents were somewhat satisfied with rendered medical services; 4% of respondents expressed strong dissatisfaction with the quality of service; 66% of respondents indicated that service at PHC №1 is similar to other medical institutions; 5% indicated that service in this health care institution is much worse than in other institutions Zhytomyr. Reorganization process of PHC on the basis of family medicine is hampered by a large number of objective reasons, such as: low financial and logistical support; understaffing of qualified medical workers with appropriate skills (ability to work with PC and foreign language knowledge (which is quite important for the professional development of medical staff)); imperfect functioning of PHC registry (in front functioning medical facilities left a large number of Soviet elements that decrease satisfaction rating of institutions), lack of clear criteria for monitoring compliance of "doctor-patient". In order to improve the quality of patient satisfaction with medical care should strengthen the process of PHC computerization for continuously improving the skills of health workers, reducing defect levels of care, modify the remains of Soviet elements in modern PHC. To monitor the satisfaction rating of PHC should conduct polls for controlling patients' satisfaction with the quality of health care as it's one of the integral parameters that determine the quality of treatment.

Key words: quality of medical care, primary health care, primary health care center, health care reform

REVIEW ARTICLES

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POSSIBILITY OF USING OF EARLY BIOCHEMICAL MARKERS OF ORGAN LESIONS IN THE DIAGNOSTICS OF COMPLICATIONS OF THE ABDOMINAL COMPARTMENT SYNDROME

Introduction. The *aim* is to conduct a survey of modern literary sources and to focus on the possibility of using the early markers of organ lesions in predicting and preventing of complications of intra-abdominal hypertension syndrome and abdominal compartment syndrome.

Since the abdominal cavity is a closed space, an increase of intra-abdominal pressure may negatively affect the function of the organs of the gastrointestinal tract, respiratory, cardiovascular and central nervous systems. This condition is defined as the abdominal compartment syndrome that quickly leads to the death of a patient without proper treatment. Hypothermia less than 33 degrees Celsius, acidosis with a pH of less than 7.2, large volumes of hemotransfusion (more than 10 doses per day), coagulopathy, sepsis are the factors contributing to the development of the abdominal compartment syndrome. The following sequence is the most typical stages of the abdominal compartment syndrome development: severe intra-abdominal pathology – intensive infusion-transfusion therapy – postperfusion edema of the internal organs and coagulopathy – fluid accumulation in the abdominal cavity – intra-abdominal hypertension – abdominal compression syndrome – development of multiple organ failure. An increase of pressure in the abdominal cavity is not always and not immediately accompanied by the development of an abdominal compartment syndrome. Clinical pattern is not specific. Symptomatology includes symptoms of the underlying disease, including abdominal pain, rigidity of anterior abdominal muscles, melanorrhea, nausea and vomiting, and nonspecific symptoms of organ dysfunction / failure – respiratory affection, decreased urine flow, syncope, paresis of the intestine, etc. The growth of peak inspiratory pressure and oligohydruria are manifested earlier than other symptoms. At the present time intra-abdominal hypertension has the following classification based on levels of intra-abdominal pressure: I degree – 12-15 mm Hg, II degree – 16-20 mm Hg, III degree – 21-25 mm Hg Art., IV degree – more than 25 mm Hg Art. The abdominal compartment syndrome is currently defined as a steady increase in intra-abdominal pressure to a level greater than 20 mm Hg, which is associated with manifestation of organ failure / dysfunction. Important is the fact that, unlike the phenomenon of intra-abdominal hypertension, the abdominal compartment syndrome does not require classification by the degree of intra-abdominal hypertension, since this syndrome is represented by the phenomenon of "all or nothing" in the modern publications (that is, a further increase of intra-abdominal pressure does not matter with the development of ACS at some degree of intra-abdominal hypertension).

Materials and methods. Scientific sources which highlight the problem of intra-abdominal hypertension, abdominal compartment syndrome and organ failure, the reason for which they were analysed. Measuring the pressure in the bladder is a simple and reliable method. Creatinine clearance is used for the calculation of the glomerular filtration rate (GFR). However, the level of creatinine does not fully reflect the dynamics and degree of kidney damage, due to the fact that in some conditions (large muscle mass, rhabdomyolysis, drug administration) they may lead to a transient increase of its concentration in a blood serum. In addition, serum creatinine reflects the kidney function but not its damage, and cannot be an early marker of acute kidney injury. In general, as numerous studies have shown, high serum creatinine is not specific for kidney damage, its level may vary in a wide range depending on many unreal factors, up to 50% of the actual functions may be lost before creatinine increasing, the level of creatinine does not reflect the function of the kidneys until a "stationary state" is established, that is, after 48 - 72 hours, with different forms of substitution therapy the creatinine levels vary in different ways. Currently, there are several new biomarkers that reflect the pathogenetic stages of

acute kidney injury development. Their topical distribution is as follows: glomerule – albumin, serum cystatin C, alpha1-microglobulin, beta2-microglobulin, etc.; proximal tubule - NGAL, KIM - 1, L - FABP, urine cystatin C, interleukin - 18; distal tubule - GST, NGAL; collecting tube - calibinidine D 28; Henle's loop - osteopontin, NHE-3. NGAL, L-FABP, KIM-1, IL-18 are the proteins expression of which is increased at the acute kidney injury. Neutrophil gelatinase-associated lipocalin (NGAL), molecule-1 kidney damage (KIM-1), interleukin-18, the liver fatty acid-binding protein (L-FABP), cystatin C, and a number of enzymes that are localized in proximal tubule cells are the most widely studied markers of the acute kidney injury.

Conclusions. Thus, there is a certain potential in the possibility of early diagnostics of kidneys and lungs damage including abdominal compartment syndrome, namely the use of early biochemical markers available in Ukraine (cystatin C and interleukin – 1 beta). Further research can confirm or refute this thesis.

Key words: intra-abdominal hypertension, abdominal compartment syndrome, kidney failure, cystatin C.

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MODERN INFORMATION CONCERNING TOPOGRAPHIC-ANATOMICAL PECULIARITIES OF THE SUPRA-, INFRAORBITAL AND MENTAL FORAMENS

Introduction. To make the analysis of specialized scientific literature with the purpose to substantiate the data concerning topographic-anatomical peculiarities of the supra-, infraorbital and mental foramens. Nowadays physicians who are specialists in the facial area of the head draw their attention to the knowledge of the size, shape and topography of the supra-, infraorbital and mental foramens which are the places for passing the branches of the trigeminal nerve. Moreover, the data concerning the distance between the mentioned openings from the contralateral sides differ considerably. Such kind of information can be of certain interest to determine facial asymmetry and assessment of modern methods of radiation diagnostics.

Conclusion. The supraorbital, infraorbital and mental foramens are of different size, shape and location, correlation with sex and type of the cranium is found. To perform qualitative local conduction anesthesia of the supraorbital, infraorbital and mental nerves and other surgical manipulations in the facial area of the head topographic-anatomical structural peculiarities of the vascular-nervous bundles and location are recommended to be considered with the purpose to prevent iatrogenic complications.

Key words: anatomy, supraorbital foramen, infraorbital foramen, mental foramen, human.

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DIFFERENTIAL DIAGNOSIS OF NONTRAUMATIC DAMAGE OF VERTEBRAE IN THE MIDDLE-AGED AND ELDERLY PATIENTS: LITERATURE REVIEW AND OWN EXPERIENCE

Annually 1000-1200 operations are performed in the Department of Mini Invasive and Laser Spine Neurosurgery of Institute of Neurosurgery named after A.P. Romodanov during last 20 years (since 1996). Among them 100-300 operations are due to nontraumatic damage of corpora vertebrae. Our current experience of 2500 patients in whom we performed surgical management of nontraumatic corpora vertebrae damage.

The actuality of this problem is very high in view of the high incidence of pathological processes leading to vertebra damage. The latter is common among many diseases. Correct diagnosis is essential for proper treatment and prognosis. The vertebra injures are common at: Vertebral hemangiomas, Metastatic disease, Myeloma, Osteoporosis.

The estimated incidence of spinal hemangiomas in the general population is 10-12%. Spinal hemangiomas are 2-2.5 times more common in women than in men. The absence of hemangiomas in children during first ten years of their life gives evidence that this process is not congenital. Hemangiomas arise mainly in adulthood between 30 and 60 years. The predominance of hemangiomas in women is due to hormonal reorganization during pregnancy and menopause.

Skeleton and especially spine bones is the typical localization of metastatic lesions. So, according to randomized studies, up to 60% of metastases of all neoplasms are located in the spine. In 40% of patients with malignant neoplasms, a secondary lesion of the vertebrae is detected. Given that the death rate from malignant diseases in Ukraine alone, reaches 100 thousand per year, the defeat of the bodies of the vertebrae with metastases occurs in tens of thousands of patients.

The incidence of myeloma is 1% of all malignant tumors and 10% of all hemoblastoses. The disease occurs mainly at the age of 60-70 years, more often in men.

Osteoporosis is mainly observed in patients of older age groups. Despite the small incidence of the disease in young people, in the elderly it is epidemic reaching 60% in women older than 80 years.

Each of them can significantly worsen the quality of life of the patient, lead to the appearance of severe pain syndrome and appearance of neurological disorders.

Proceeding from the presented epidemiology of diseases affecting the body of vertebrae, this topic is extremely actual. Physician has to know about differential diagnosis between these diseases, as they require different approaches to treatment. The X-ray, computer tomography and MR-tomographic imaging of vertebral body lesions at various diseases are presented in Tables 1, 2 and 3.

In addition to standard and conventional methods of research, such as spondylography, computer and magnetic resonance imaging, there are specific studies that can determine or refuse the diagnosis.

Specific changes in the blood composition can make a diagnosis of myeloma. In osteoporotic lesions, bone density changes are determined based on the osteodensitometry data.

The most «dangerous» in the context of setting a wrong diagnosis are the «anonymous» single metastases, the initial focus in which is not defined. All patients who have characteristic changes for a metastatic process can be conditionally divided into 2 groups - with and without an oncological anamnesis. In the first case, the diagnosis is unquestionable, in the second one - it requires further additional research methods allowing establish a correct diagnosis.

Mandatory to determine the diagnosis is to conduct osteoscintigraphy. This method allows determine single or multiple lesions of the bone tissue. In the presence of a large number of foci of accumulation of radiopharmaceutical substance, the diagnosis is beyond doubt. The patient requires an obligatory consultation with an oncologist.

We have the experience of 5 cases in which «anonymous» metastases were determined based on the biopsy of the vertebral body, as the first stage of minimally invasive vertebroplasty of the affected vertebra. The absence of a verified primary focus and metastases in other organs and tissues can be defined as a positive prognostic sign.

All such patients were sent for the oncology consultation. Proper treatment allowed increases of their life expectancy as they all came for a follow-up examination a year after vertebroplasty without signs of the oncologic disease progression.

Surely, these cases are not enough to make statistically and evidence-based decision, but the results are encouraging and indicate the importance of early diagnosis treatment.

Conclusions. Due to our experience and literature review we want to propose algorithm which, we hope, will help clinicians to establish right diagnosis and give to patient adequate treatment.

Key words: percutaneous vertebroplasty, osteoporosis, spinal metastases, spinal hemangiomas, myeloma.