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## **CORRELATION ANALYSIS BETWEEN THE QUALITY OF LIFE IN WOMEN OF CHILD-BEARING AGE AND THEIR INDICES OF HORMONAL AND METABOLIC STATUS BEFORE AND AFTER HORMONAL CONTRACEPTION**

**Avramenko N. V., Barkovsky D. E., Kabachenko E. V., Gridina I. B.**

**Key words: intravaginal hormonal releasing system, oral contraception, overweight.**

The choice of effective, safe and accessible hormonal contraceptive for young overweight women is very pressing question. Hormonal contraceptives are often characterized by the presence of the pronounced adverse effects and uncomfortable mode of administration for patients. In order to improve the choice of optimal hormonal contraceptives for young overweight women, the study involving 90 patients was aimed at investigating efficiency and safety of modern hormonal contraceptives. The women were divided into three groups, one of which used the intravaginal hormonal releasing system, the second group took oral contraceptives with drospirenone, and the third group took oral contraceptives with desogestrel. It has been found out the modern hormonal contraceptives modulates hormonal status, that in turn, is associated with normalization of daily vital functions of patients, both physical and emotional components of health (according to data obtained by SF-36 questionnaire).

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## **EFFECTIVENESS OF SPHERO-CYLINDRICAL CORRECTION AT SHORT DISTANCE IN AGED PATIENTS WITH PRESBYOPIA AND FIRST DETECTED ASTIGMATISM**

**Bezkorovayna I.M., Nakonechnyi D.O.**

Key words: astigmatism, presbyopia, optical correction.

The article presents the results of a survey of 43 patients (86 eyes) aged from 38 to 59 years, an average age is  $47 \pm 0.8$  years. All patients were diagnosed to have mild astigmatism with a cylinder (Cyl) from 0.5 D to 1.0 D. At the diagnostic stage all patients were offered a variant of spherical and sphere-cylindrical optical correction, thus we formed two groups of comparison. Prior the study, 40% of patients (n= 40) had no optical correction for near vision, and 60% of patients (n=26) had spherical correction for near vision, which at the time of their correction did not satisfy them. In all the patients, mild astigmatism was first diagnosed. The value of the adduction with sphere-cylindrical correction in comparison with the spherical increased at the age of 51-59 years by 0,25 D, whereas at the age of 38-45, when applied sphere-cylindrical correction, its value was less than 0,25 D, that in our opinion, due to the age-related accommodation capacity. The average value of visual acuity at close distance (33 cm) in patients with spherical correction was better -  $0.95 \pm 0.06$  ( $73 \pm 1.4$  optotypes) compared with sphere-cylindrical correction -  $0.61 \pm 0.02$  ( $64 \pm 0.8$  optotypes). The mean distance (66 cm) was found to be better in the patients with sphere-cylindrical correction -  $1.58 \pm 0.01$  ( $70 \pm 0,02$  optotypes) compared with spherical correction -  $0.8 \pm 0.05$  ( $55 \pm 1,0$  optotypes). Almost all the patients with spherical cylindrical correction noticed the uniform clarity of the horizontal and vertical lines of the cross-grate, while using spherical correction; they noticed

the unevenness of the clarity of the horizontal or vertical lines. Also, when using spherical correction, the nearest point of clear vision was closer to the eye, compared with sphere-cylindrical correction, but the range of depth of vision at close distance was larger when using sphere-cylindrical correction.

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## **FUNCTIONAL AND ADAPTATION STATE OF CARDIOVASCULAR SYSTEM IN HYPOTHYROIDISM, ISCHEMIC HEART DISEASE AND IN THEIR COMORBIDITY**

**Bobyrova L. E., Horodynska O.Yu.**

Key words: hypothyroidism, ischemic heart disease, autonomic nervous system.

The article focuses on assessment of the features of vegetative status in its connection with the hormonal function of the thyroid gland in hypothyroidism, ischemic heart disease and their comorbidity. The purpose of the research is to study the features of the functional and adaptive state of the cardiovascular system in hypothyroidism, ischemic heart disease and in conditions of their comorbidity. 140 patients aged 38 – 82 who were taking the course of treatment at the

endocrinological and cardiological departments of the Sklifosovskiy M. V. Poltava Regional Clinical Hospital were involved into the study. They were divided into 3 groups: group I included patients with hypothyroidism (n = 61), the duration of the disease was 7.87.98 years; group II involved patients with coronary artery disease (n = 47), the duration of the disease was 9.832.42 years; group III was made up of patients with hypothyroidism and concomitant coronary artery disease (n = 32), the duration of the disease was 11.31□3.09 years. The diagnosis of the disease was confirmed by clinical manifestations of the disease, general clinical, biochemical, and instrumental methods. To assess the functional and adaptive state of the cardiovascular system, the vegetative index of Kerdo, the adaptation potential and the coefficient of circulatory economy were determined. Negative values of the vegetative index of Kerdo enabled us to conclude that in the patients with comorbidity of coronary heart disease and hypothyroidism, the activity of the sympathetic autonomic nervous system changes towards the prevalence of parasympathetic tone level that significantly impairs cardiac systolic function. The evaluation of the state of vegetative homeostasis of the patients with coronary heart disease can be used as a prognostic factor predicting the development of hypothyroidism. The indices of the coefficient of circulatory economy indicate the tension of the functioning of the cardiovascular system under hypothyroidism and coronary heart disease, but do not change in conditions of their comorbidity. The results obtained by assessing the adaptive potential in these groups of patients point out that the adaptive capacity of the body depends on the level of thyroid hormones and the activity of the autonomic nervous system.

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## **OUTCOMES OF NEOADJUVANT CHEMORADIOTHERAPY OF LOCALLY SPREAD RECTAL CANCER**

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Key words: rectal cancer, chemoradiation treatment, application of radiation in the mode of multifractionation.

Today, the standards for treating patients with locally spread rectal cancer include a combination of neoadjuvant radiation or chemoradiation therapy and surgical intervention. Combined treatment of patients with locally spread rectal cancer reduces the incidence of relapses and improves overall survival. At the same time, the heterogeneity of the results presented in the reports describing the effectiveness of various modes of neoadjuvant chemoradiation therapy in the combined treatment of

patients with locally spread rec-tal cancer should be noted. In order to evaluate the results of neoadjuvant chemoradiotherapy, 85 patients with locally spread rectal cancer who received neoadjuvant chemoradiation therapy with radiation in standard mode (Group I) and in the mode of multifractionation (group II) were examined. The study of radiation reactions that arose in the course of treatment and radiation pathomorphosis was conducted. The main criterion for assessing local radiation response during the course of radiation therapy for patients with rectal cancer is the frequency and severity of radiation cystitis and rectitis. The assessment of the studies performed has demonstrated that a significantly lower number of cases of rectitis and cystitis were detected at applying radiation in the multi-fraction mode. In addition, the data on the degree of radiation pathomorphism in the morphological study of postoperative macropreparations suggests a better therapeutic effect of this technique. Thus, neoadjuvant chemoradiotherapy with radiation in a multifractionation mode is found out as satisfactorily bearable by patients, and does not lead to the development of radiation reactions for the vast majority of patients with locally spread rectal cancer.

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## **PRIMARY DELAYED INTERINTESTINAL ANASTOMOSES IN TREATMENT OF COLON CANCER COMPLICATED WITH PERFORATION**

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Key words: perforated colon cancer, interintestinal primary delayed anastomoses.

Despite active efforts of specialists in the treatment of the complicated forms of colon cancer, the results of surgical treatment remain unsatisfactory that requires new attempts in improving surgical tactics and technique. The development of serious complications of malignant affection of colon considerably reduces the possibility to perform non-adjuvant treatment. Moreover, single-stage operation for complicated colorectal cancer is typically associated with worse immediate treatment outcomes as evidenced by the increase in the probability to perform on operations for obstructive variants of colon tumour removal, the growth of postoperative lethality and number of the complications registered in 25-54, 5% of cases. In order to improve the outcomes of treatment for patients with perforative cancer and peritonitis there have been elaborated effective and safe methods to form delayed interintestinal anastomoses for patients at high risk who may need to have intestinal stoma delivered.

We have analysed the immediate results of the treatment of 19 patients with perforated colon cancer with the signs of the decompensated bowel obstruction and generalized peritonitis, the severity of their condition according to the scale of SAPS II exceeded 29 scores (10 cases of cecum cancer and ascending colon cancer; 5 cases of sigmoid cancer; 4 cases of descending colon cancer). The techniques we elaborated were applied to 4 patients with peritoneal carcinomatosis and multiple metastases into the liver and to 6 patients with concomitant diabetes mellitus. To localize perforative tumour in the right half of colon we performed on a right-side hemicolectomy by applying the technique of bringing up delayed interintestinal anastomosis. To localize perforated tumour in the left half of colon we applied the resection of a segment of the bowel with a tumour and delivered delayed interintestinal anastomosis. The techniques proposed for the treatment of perforated colon cancer has been found out as clinically effective and safe for patients: the total number of cases of purulent postoperative complications made up 10,5%, no anastomosis



insufficiency was observed; postoperative lethality made up 5,3%. These techniques contributed to reducing the terms for performing restorative operation to 7-14 days that is determined by their less traumatic effects. Thus, in clinical situations, which can result in the development of interintestinal anastomosis failure, delivering delayed anastomoses according to the techniques described with bringing up proximal area of colon as a stoma that excludes the necessity to perform on complicated reconstructive operation. The elaborated surgical tactics enable to perform on the early extra-peritoneal closing of intestinal stoma in any terms following the normalization of the patient's state and to perform adjuvant chemotherapy in early terms as well.

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#### **CLINICAL COURSE OF ALLERGIC DERMATOSES DURING DYSBIOSIS AND NORMAL INTESTINAL MICROFLORA AND THE EFFICIENCY OF THEIR THERAPY**

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Key words: allergic dermatitis, intestinal parasitosis, dysbiosis, microflora.

The aim of this study is to compare clinical manifestations of allergodermatoses and to evaluate the effectiveness of the treatment of allergodermatoses in their separate forms and in cases of comorbidities with parasites in patients with dysbacteriosis and normal intestinal microflora.

**Methods.** Clinical observations and treatment included 74 patients with separate allergodermatosis (41 patients with dysbacteriosis and 33 patients with normal microflora) and 108 patients with allergodermatosis and comorbid parasitoses (73 patients with dysbacteriosis and 35 patients with normal microflora).

**Results.** Clinical symptoms such as skin rash (wheals, vesicles, papules, blisters) were observed in  $53,7\pm 7,8\%$  of the individuals; erythema was found out in  $70,7\pm 7,1\%$  of the patients;  $63,4\pm 7,5\%$  of patients manifested dry skin; total allergy symptoms (itching, burning) were presented by  $82,9\pm 5,9\%$  of the patients ( $p<0.001$ ); peeling skin was found in  $51,2\pm 7,8\%$  of patients; skin lesions making up 5,0-10,0% of the skin surface made up  $73,2\pm 6,9\%$ . Gastrointestinal problems were the following: nausea was presented by  $22,0\pm 6,5\%$  of the patients; diarrhoea was reported by  $22,0\pm 6,5\%$  and constipation was found in  $26,8\pm 6,9\%$  of the patients. Hepatomegaly was found in  $68,2\pm 7,3\%$  of the cases and was more common in the patients with dysbiosis than in the patients with normal microflora (respectively  $33,3\pm 8,2\%$ ;  $45,5\pm 8,7\%$ ;  $30,3\pm 8,0\%$ ;  $43,8\pm 8,6\%$ ;  $18,2\pm 6,7\%$ ;  $42,4\pm 8,6\%$ ;  $3,0\pm 3,0\%$ ;  $3,0\pm 3,0\%$ ;  $9,1\pm 5,0\%$ ;  $42,4\pm 8,6\%$ ). Other clinical manifestations in the patients with allergic dermatitis and concomitant dysbacteriosis included edematous skin, lichenification, excoriation, lesions from 10,0-20,0% to 20,0-30,0% of the surface of the skin, as well as headaches, bruxism, insomnia, pain in the abdomen; the patients with normal microflora demonstrated approximately the same manifestations. Presenting of clinical manifestations in patients with allergic dermatitis and concomitant intestinal parasitosis are more typical against the background of dysbiosis than against the normal microflora. The patients with dysbiosis were found out to have skin rash in  $80,2\pm 4,7\%$  of cases, erythema in  $74,0\pm 5,1\%$  of the cases, edematous skin in  $60,3\pm 5,7\%$  of cases, dry skin in  $71,2\pm 5,3\%$  cases and systemic allergy symptoms in  $93,2\pm 3,0\%$  of cases ( $p<0.001$ ). Nausea was presented by  $75,3\pm 5,1\%$  of the patients, diarrhea was in  $46,6\pm 5,8\%$  of cases, constipation was registered in  $43,8\pm 5,8\%$  of cases, as well as hepatomegaly ( $91,8\pm 3,2\%$ ), abdominal pain ( $83,6\pm 4,3\%$ ). These symptoms are less common in the patients with normal microflora (respectively  $42,9\pm 8,4\%$ ;  $48,6\pm 8,5\%$ ;  $37,1\pm 8,2\%$ ;  $40,0\pm 8,3\%$ ;  $57,1\pm 8,4\%$ ;  $40,0\pm 8,3\%$ ;  $51,4\pm 8,5\%$ ;  $51,4\pm 8,5\%$ ;  $22,9\pm 7,1\%$ ;  $20,0\pm 6,8\%$ ;  $62,9\pm 8,2\%$ ;  $51,4\pm 8,5\%$ ). Other symptoms, such as lichenification, excoriation, lesions made up 10,0-20,0% and 20,0-30,0% of the skin surface. There was no significant difference between presenting the complains of headaches, bruxism, insomnia by the patients with allergodermatosis, concomitant intestinal parasitoses and dysbacteriosis, and the patients with normal microflora. The therapy was more effective in the patients with allergodermatosis and normal intestinal microflora. Thus, the improvement following the treatment was found out in  $51,2\pm 7,8\%$  of the patients with dysbiosis, and in  $72,7\pm 7,8\%$  of the patients with normal microflora. The same picture was observed after the treatment of the patients with allergodermatosis and concomitant intestinal parasitoses. Hence, better therapeutic outcomes were achieved in the patients with normal intestinal microflora. The group receiving the therapy of allergodermatosis in combination with antiparasitic drugs has shown better results ( $70,8\pm 5,6\%$ ) compared with the group of patients who did not receive antiparasitic treatment ( $27,9\pm 6,8\%$ ).

**Conclusion.** Clinical manifestations in the patients with allergodermatosis and concomitant intestinal parasitosis against the background of intestinal dysbacteriosis are more common than in the patients with normal microflora.

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## **IMPROVEMENT OF SURGICAL TREATMENT FOR COSMETIC DEFECTS OF ANTERIOR ABDOMINAL WALL FOR PATIENTS OF BRACHYMORPHIC SOMATOTYPE**

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Key words: abdominoplasty, cosmetic defect, brachymorphic somatotype, postoperation scar.

The modern conception of treating patients with cosmetic defects involves excising scar tissue with suturing the postoperative wound without excessive tension on the area of suture and grafts. To improve the results of surgical treatment for patients of brachymorphic somatotype with cosmetic defects of the abdominal wall, we proposed a technique to improve a stage of abdominoplasty, consisting in the implementation of the lateral traction of the edges of the proximal transverse skin-fat graft when the surgical wound is closed by applying lateral retention sutures under the range of rotational angles of 44-59° in men and 49-64° in women in order to create uniform tissue tension and to normalize the pressure distribution for skin-fat flap pieces of the abdominal wall. This technique was tested on patients of the first group (n=18) and compared with the patients of the second group (n= 20) who were applied conventional techniques of lifting and mobilizing tissues. The aesthetic results of the treatment (according to the Vancouver scoring scale) and functional results (according to the questionnaire of the quality of life EUROQoL5S-5D) were compared. Local postoperative complications and undesirable results of the operation were assessed in two groups. The new technique in comparison with the conventional one has the following advantages: the formation at the site of the access of qualitative normotrophic scar, reduction of the number of local early and late postoperative complications, obtaining a satisfactory cosmetic result of operative correction, reducing the rehabilitation period and improving the quality of life of patients.

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## **CHARACTERISTICS OF ANTIBIOTIC-ASSOCIATED DIARRHOEA PREVENTION IN PATIENTS WITH PULMONARY DISEASES**

**Zhdan V.N., Kyrian E.A., Babanina M.Yu., Shylkina L.M., Motorna N.M., Petrenko V.A.**

Key words: antibiotic-associated diarrhoea, prevention, antibiotics, pulmonary diseases, probiotics

Antibacterial medication used for the treatment of patients with pulmonary diseases often leads to complications and side effects typically affecting the gastrointestinal tract. Occurrence of the antibiotic-associated diarrhoea depends on the antibiotics prescribed and timeliness of prevention measures. The purpose of the research is to find out incidence of antibiotic-associated diarrhoea in patients with pulmonary diseases and to assess the efficiency of probiotics used as preventive measures. The retrospective analysis of 1191 medical charts of inpatients who took treatment at the Pulmonary Department of Poltava regional clinical hospital for 2016 was performed. Among the patients who received the antimicrobial therapy, 211 (24,8%) were diagnosed to have antibiotic-associated diarrhoea mostly associated with taking inhibitor-protected aminopenicillins, macrolides, cephalosporins and their combinations. Antibiotic-associated diarrhoea was not seen in 639 (75,2%) patients among whom 418 (65,4%) were using probiotics along with antibiotics. Dysbiosis was accompanied by a reduction of lactobacillus and bifidobacterium in 22,3% of cases and by the growth of opportunistic microflora in 34,4% of cases. After analyzing the administration of *Lactobacillus rhamnosus* R0011 and *Lactobacillus helveticus* R0052 in the 1st group of the patients with pulmonary diseases and in the 2nd comparison group receiving probiotic preparations, the positive dynamics was determined in both groups on the fifth day of the treatment; no significant difference was observed. Abdominal pain and the abdominal distention decreased, stool frequency diminished significantly. The analysis of the dysbiosis the reduction of lactobacilli and bifidobacteria was found out only in 11 (32,4%) patients of the 1st group that received

Lactobacillus rhamnosus R0011 and Lactobacillus helveticus R0052 and in 13 (27.1%) patients of the 2nd group. The growth of opportunistic microflora was defined in 4 (11,8%) patients of the 1st group and in 8 (16,7) of the 2nd group. On the 14th day of the probiotic treatment there were no clinical manifestations of the antibiotic-associated diarrhea and dysbiosis in both groups. The probiotics administration has proved to be an effective mean of prevention and treatment of antibiotic-associated diarrhoea in patients with pulmonary diseases.

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## EFFECTS OF EMOXYPINE IN THERAPY OF RAY CYSTITIS

**Zhukova T.O**

Key words: urinary bladder cancer, radiotherapy, radiation reaction, radiation cystitis, "Emoxipine"

Remote Radiation Therapy (RRT) is an effective treatment for many types of tumors. But despite of different approaches, fields and combinations of doses, the bladder lesion is inevitable. Therefore, one of the priority issues in modern radiology is to prevent, control and to lessen radiation reactions and injuries. The purpose of the work was to develop a method for the prevention and treatment of radiation reactions following the treatment of patients with bladder cancer who were exposed to remote gamma therapy (RGT) as well as to substantiate the antioxidant and reparative role of the drug "Emoxipine" in the therapy of this pathology. We assessed the severity of radiation reactions in patients receiving radiation therapy sessions in the fractionation and multi-fractionation modes of dose. The study involved 27 patients diagnosed with bladder cancer and exposed to the RGT in accordance with the radical program. The intensity of reactions of the bladder in the patients of groups I (n=13) and II (n=14) was significantly different ( $p > 0,05$ ). The ulcerative reactions in the group I were found in 8 (61.54%) patients, while in the patients of the group II there were 2 cases (14.28%). The intensity of ulcerative reactions in the group I was four-fold higher that demonstrates more pronounced damaging effect caused by standard RGT and dimexidum solution. Ulcerative desquamate reactions in found in 3 (23,07%) patients of the group I and in 4 (28,57%) of the group II were not significantly different. But catarrhal manifestations were found to be common in the group II: there were 2 (15,38%) patients in the I group vs 8(57,14%) in the group II. The analysis of the results obtained demonstrates that the applying of RGT in the mode of daily dose multifractioning likely ( $p = 0,05$ ) reduces the reaction of the urinary bladder mucosa. Thus, reactions of the 3rd degree of intensity (ulceration) differ by 4.31 times in favour of the group II (test group) received RGT in the mode of of daily dose multifractionnng and the drug "Emoxipine". Reactions of the 2nd degree (erosive-desquamate lesions) were higher in 1.24 times in the group I, but this indicator was unlikely. Reactions of the 1st degree (catarrhal reaction) were higher in 3.72 times in the group I that is an evident of higher therapeutic effect of the approach used for the II group. Thus, the results obtained have shown that the use of standard dimexidum solution and "Emoxipine" act in different directions. Thus, in cases of pronounced fibrosis of the bladder walls and infectious process the use of the dimexidum solution is more beneficial, while for patients with hematuria and ruptured integrity of the bladder walls (erosive or ulcerative-necrotic cystitis) the use of "Emoxipine" is more effective.

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## **ESTIMATE OF EFFECTIVENESS OF COMBINED APPLICATION OF BACTERIOPHAGES AND DECAMETOXINUM IN TREATMENT OF PURULENT WOUNDS FOR PATIENTS WITH ANTIBIOTIC ALLERGY**

**Ivashchenko D. M.**

Key words: bacteriophages, decametoxinum, purulent wounds, allergy to antibiotics.

Antibacterial resistance against the background of uncontrolled and unreasonable use of antibiotics continues to be an important cause of difficulties in the treatment of purulent infections. There has been reported as increase in the number of cases of allergic reactions to antibiotics in patients that makes their application more difficult. Therefore, there is a growing interest in using bacteriophages as an alternative to antibiotics. Studies have already proved that bacteriophages can be a worthy alternative to antibiotics in their effect produced on virulent bacteria. The combination of bacteriophages and surface-active antiseptics (decametoxinum) can be regarded as one of the options to boost the effectiveness of bacteriophages. The aim of this study was to improve the results of treatment for purulent wounds by combining the use of bacteriophages and decametoxinum in patients who are allergic to antibiotics. Clinical studies were carried out on 40 patients with acute purulent soft tissue diseases who had a history of allergic reactions to antibiotics. The patients were divided into three groups. The efficacy was assessed by clinical and microbiological indicators. The results of the study demonstrated the accelerated healing of wounds by using the combination of bacteriophages and decametoxinum: reduction in terms of pain by  $0.8 \pm 0.11$  days, reduction of local tissue edema by  $0.6 \pm 0.14$  days, fast clearance of the wound surface from necrotic tissues by  $0.9 \pm 0.12$  days, formation of active granulations by  $1.0 \pm 0.14$  days, reduction of the wound healing time by  $0.9 \pm 0.18$  days. There was reduction in the number of

microorganisms in the wound area by 18.8%. Therefore we can recommend the combined use of bacteriophages and decametoxinum in clinical practice for the treatment of purulent wounds of soft tissues in patients with allergies to antibiotics to improve their quality of life and reduce the time of inpatient and outpatient treatment.

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#### **MAPPING OF QT INTERVAL AND ITS VARIABILITY IN POST-INFARCTION PERIOD: DIAGNOSTIC AND CLINICAL VALUE**

**Katerenchuk O.I., Ivanitskyi I.V.**

Key words: coronary arteries disease, myocardial infarction, electrocardiography, QT-interval, ventricular premature beats

Introduction. One of the most sensitive and specific method for preventing ventricular rhythm disturbances is to determine the characteristics (duration and variability) of the QT interval associated with an increased risk of arrhythmic death. The purpose of the study is to evaluate the duration and dispersion of the QT interval during post-infarction period in patients having various localizations of heart damage. Materials and methods: analysis of the mean QT interval duration and its variability in patients with different localizations of myocardial infarction areas during the previous 3-6 months followed by an analysis of the degree of ventricular rhythm disturbances after 3 months of follow-up. Results: 38 patients were enrolled to the study. The investigated groups were formed by localization of the myocardial infarction. When analyzing the duration of the QT interval, significantly higher values were found for myocardial infarction on the inferior wall in comparison with myocardial infarctions of other localizations. QT interval variability at inferior wall was longer in comparison with this index in non-affected areas. The longer duration and increased variability of the QT interval in the case of the underlying inferior wall infarctions was associated with the more severe degree of ventricular premature beats. Conclusions: myocardial infarction of the inferior wall of left ventricle was accompanied by prolonged duration and variability of QT interval the in turn was associated with a severe degree of ventricular arrhythmic events.

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## **HYGIENIC ASSESSMENT OF IMPACTS PRODUCED BY TRAINING CONDITIONS ON FUNCTIONAL STATUS OF VOCATIONAL AGRARIAN LYCEUM STUDENTS**

**Korobchanskiy V.O., Bogachova O.S.**

Key words: vocational agrarian lyceum, mental capacity, mode of life, sanitary and hygienic conditions of training.

Introduction. According to official data published by the State Employment Centre of Ukraine, the agricultural professions are becoming increasingly popular; and special attention should be paid to the quality of the vocational educational system for young people, who get agrarian specialities at professional lyceums. The aim of the study is to establish general regularities and peculiarities of the influence of educational environment factors on the functional status of students, who master various agrarian professions at a professional agrarian lyceum. Materials and methods. Under direct supervision, there were 109 male students aged 15-18 years old getting agrarian professions at Odnorobivskiy professional agrarian lyceum (Zolochiv district, Kharkiv region). Training conditions were investigated by the hygienic inspection of the lyceum facilities and the findings obtained were compared with the current sanitary standards. The data of student's life activity were obtained by using the questionnaire "Mode of life". The functional status of the students was evaluated by analyzing the indicators of the mental capacity by the proof-reading method. Results and their discussion. The training environment for adolescents has been generally characterized as favourable, demonstrating normal parameters of noise and electromagnetic radiation; however, there was the lack of artificial illumination in the educational and production-and-training premises. The investigation of the character of life activity of the students has shown no statistically significant difference (from  $p < 0.05$  to  $p < 0.01$ ) between the groups in terms of motor activity, day regimen and nutrition. Moreover, the most stable functional state was noted through the first year of training by the specialty "operator for repairing agricultural machinery and equipment". Conclusions. It is recommended to carry out a complex of preventive measures aimed at correcting the functional status, averting overstrain and overtiredness. This requires the development of the high-standard conditions of vocational training and introducing a system of sanitary and preventive

measures to enhance the psycho-physiological adaptation of adolescents to mastering the future profession.

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## **L-ARGININE EFFECT ON PROCESSES OF FREE RADICAL OXIDATION IN ONCOGEMATOLOGICAL PATIENTS WHO ARE AT HIGH RISK OF CARDIAC EVENTS DURING INDUCTION CHEMOTHERAPY**

**Lymanets T.V.**

Key words: acute leukemia, anthracycline cardiotoxicity, lipid peroxidation, ischemic heart disease, L-arginine.

The issues on prevention of anthracycline cardiotoxicity in patients who are at high risk of cardiac events are extremely relevant in modern oncohematology practice. This requires thorough study of pathogenetic mechanisms clarifying the formation of cardiotoxic effects produced by anthracyclines in this category of patients with the further development and introduction of new methods for their effective prevention. The aim of this study is to investigate the influence of L-arginine upon the balance of free radical oxidation processes in patients with acute leukaemia and concomitant coronary heart disease against the background of low cumulative doses of anthracycline antibiotics in a dose of 100-200 mg / m<sup>2</sup> during the courses of induction chemotherapy. Materials and methods. The study involved 147 patients with the newly diagnosed acute leukaemia, 66 of them had comorbid ischemic heart disease. The patients were divided into groups: I (n=81) group included patients with acute leukemia without concomitant cardiac diseases; group II (n = 66) included patients with comorbid ischemic heart disease. Depending on the prevention of anthracycline-induced myocardial injury, the patients of both groups were additionally divided into subgroups: IA (n=47) and IIA (n=36) – patients who received chemotherapy without prophylaxis of anthracycline cardiotoxicity; IB (n=34) and IIB (n=30) – patients who received L-arginine for prevention of cardiotoxicity. Results. The leading pathogenetic mechanism for the formation of anthracycline-induced cardiotoxicity is the imbalance between the generation of free radicals and the level of their inactivation. In the case of ischemic heart disease in acute leukemia patients, reaching low cumulative doses of anthracyclines from 100 to 200 mg/m<sup>2</sup> leads to an exacerbation of the pro-oxidant-antioxidant imbalance. The use of L-arginine in the patients with acute leukaemia and concomitant ischemic heart disease during induction chemotherapy can improve the state of the antioxidant defence system that reduces the risk of anthracycline cardiotoxicity developing and increases the chances of patients living. Conclusions. The administration of L-arginine during chemotherapy in the patients with acute leukemia and concomitant ischemic heart disease helps to improve the balance of the pro-oxidant-antioxidant system, significantly reducing the risk of early anthracycline-induced myocardial injury.

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## **MAIN CHARACTERISTICS AND RISKS OF HIV-ASSOCIATED TUBERCULOSIS AFFECTION OF THE NERVOUS SYSTEM**

**Lytvyn K. Yu.**

Key words: HIV infection, HIV-associated tuberculosis, nervous system, co-infection, mortality

Tuberculosis is known as a major co-infection and a leading cause of death in AIDS patients in countries where HIV infection has reached the level of the epidemic. The central nervous system involvement is one of the most dangerous manifestations of tuberculosis that requires thorough study to elaborate the optimal management of this disease and thus to reduce mortality. The purpose of this study was to determine the main epidemiological, demographic and laboratory characteristics and the risks of the HIV-associated tuberculosis of the nervous system. The analysis of 168 cases of confirmed tuberculosis of the nervous system in HIV-positive patients aged 21 – 61 included 109 (64.9%) men and 59 (35.1%) women. 123 (73.2%) patients died of the disease. It was found out that the number of patients who had had been diagnosed to have HIV a earlier before the manifestation of the nervous system tuberculosis 74 (60.2%) was higher compared with those 17



(37.8%) ( $p = 0.014$  FET) that considerably reduced the chances of successful treatment outcomes. Nearly one-third of deceased patients (32.5%) were failed to identify the route of infection, while among those who survived, this percentage was two-fold lower (15.6%;  $p = 0.033$  FET). In 53 (31.5%) cases there was a combination of cerebral tuberculosis and other lesions of the nervous system. There has been found out a tendency to increase in the number of fatal cases in combination of tuberculosis and Epstein-Barr infection, fungal infection and in the presence of streptococcus and staphylococcus flora in liquor. The calculation of the odds ratio showed that the risk of death in patients with HIV-associated tuberculosis of the nervous system increases by 2.43 times (OR = 2.43; 95% CI 1.20-4.90) with a CD4 concentration in the blood of less than 50 cells/ $\mu$ l. A higher viral load was also observed in deceased patients – 5.66 (IQR 5.12-5.99) Lg COP/ml that is higher than that of those who were discharged with an improvement of the state – 3.66 (IQR 1, 60-5.49) Lg COP/ml ( $p = 0.001$  U). Indicators of protein and glucose levels in the cerebral spinal fluid were on average typical for tuberculous meningitis, but some patients did not have these characteristic changes that requires further in-depth investigation.

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## FINDINGS OF INVESTIGATION ON INTERNAL CONSISTENCY RELIABILITY OF THE UKRAINIAN VERSION OF HAEMO-QOL QUESTIONNAIRE

Markin A. I.

Key words: hemophilia, psychometric characteristics, quality of life, reliability of the questionnaire.

This publication describes the procedure and results of the research on the internal reliability of the Ukrainian version of the Haemo-QoL questionnaire. Objectives: to investigate the internal reliability of the Ukrainian version Haemo-QoL questionnaire for assessing the health-related quality of life in children with haemophilia. Materials and methods. The quality of life assessment was performed in 106 respondents (53 children with haemophilia A and 53 of their parents) by correspondent method using a pilot complete Ukrainian version of the Haemo-QoL questionnaire. The findings obtained have been analyzed; the internal reliability of the questionnaire has been determined by the method of calculating the Cronbach's  $\alpha$  coefficient. Results: The Cronbach's  $\alpha$  coefficient for the scales of all age groups has been established to be from 0.849 to 0.943. The least consistency between the questions has been established to be found in the group of children, aged 4-7 years (from 0,374 to 0,852) while analyzing the internal consistency with differentiation in the corresponding versions of the questionnaire. Then,  $\alpha$  – Cronbach coefficient corresponds from 0.732 to 0.95 to all other groups, the highest values are observed in group of children aged 13-16

years. Conclusions: The Ukrainian version of the Haemo-QoL questionnaire has been proved to have a sufficient internal consistency of all versions of the questionnaire. It enables to assert that the criterion of internal reliability of this questionnaire can be applied in practical and fundamental medicine. Prospects for further research: the study of the internal reliability of the Haemo-QoL questionnaire version for children aged 4-7 with a larger sample of respondents involved in the study. It is important to carry out a comprehensive analysis of the psychometric characteristics of this questionnaire for the legitimate ability to recognize it as validated.

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## **PECULIARITIES OF MIGRAINE CLINICAL COURSE AND DISEASE PROGRESSION IN ABDOMINALLY OBESE PATIENTS**

**Nikiforova O. S., Delva M. Yu.**

Key words: migraine, migraine progression, abdominal obesity, cutaneous allodynia.

**Introduction.** Migraine is common primary headache, which has a tendency to chronification. Abdominal obesity is a significant risk factor for migraine progression. The aim of this study is to analyze the clinical course of migraine, its impact on patients' routine activity, as well as cutaneous allodynia characteristics as clinical marker of central sensitization in abdominally obese patients. **Material and methods.** The study included 53 migraine patients with normal body weight and with abdominal obesity. The clinical characteristics of the patients were collected through the face-to-face interview using structured questionnaire. Cutaneous allodynia was measured by ASC-12 questionnaire. **Results.** Experiences of episodic migraine as well as chronic migraine in abdominally obese patients were significantly shorter than in the individuals with normal body weight. Moreover, durations of migraine attacks due to episodic migraine in abdominally obese patients were significantly longer in comparison with the similar attacks in the patients with normal body weight and as consequence, dysadaptation level in abdominally obese patients, according to MIDAS scale, was statistically higher. Abdominally obese patients with episodic migraine had significantly increased probability to have cutaneous allodynia as well as significantly more severe cutaneous allodynia (due to its thermal modality). **Conclusions.** 1. Episodic migraine in abdominally obese patients has more severe clinical course and more severe impact on daily activity and daily performance. 2. Episodic migraine in abdominally obese patients is characterized with more often recognized and more severe cutaneous allodynia and this phenomenon may indicate the increased risk of migraine chronification due to abdominal obesity. 3. Migraine patients with concomitant abdominal obesity need active preventive approaches to halt migraine chronification.

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## **QUERCETIN INCLUDED INTO INTEGRATED THERAPY REDUCES THE LEVEL OF I $\kappa$ B $\alpha$ EXPRESSION IN SUBCUTANEOUS ADIPOSE TISSUE UNDER COMORBIDITY OF IRON DEFICIENCY ANAEMIA AND OBESITY**

**Nedoborenko V. M.**

Key words: NF-kB, obesity, quercetin.

NF-kB is a transcription factor, which is one of the key regulators of immunity, stress reactions, apoptosis and cell differentiation. Its activation can result from the numerous stimuli, both intracellular and extracellular. According to the latest conceptions obesity is considered as chronic low-grade inflammation and often occurs due to transcription factors, in particular NF-kB. Quercetin is a member of the family of bioflavonoids, which has anti-inflammatory effects, including those with suppressive effects on NF-kB. The purpose of the study was to determine the effect produced by quercetin included in the integrated therapy on the level of I $\kappa$ B $\alpha$  expression in the subcutaneous adipose tissue under the comorbidity of iron deficiency anemia and obesity. Materials and methods. The study involved 30 women with iron deficiency anaemia and obesity. We evaluated hemogram parameters, iron metabolism parameters (serum iron, ferritin, hepcidin, total iron binding capacity of blood serum, transferrin saturation) in blood serum and level of I $\kappa$ B $\alpha$  gene expression in subcutaneous adipose tissue before and after the therapy with iron sulphate. Results. All patients were females with an average age of  $40.3 \pm 7.59$  years. There was no significant difference between the groups in the hemogram parameters at the beginning of treatment and in  $60 \pm 3$  days after the treatment started ( $p > 0.05$ ). Hepcidin, both before and after the therapy, did not differ significantly between the groups ( $p > 0.05$ ). In contrast, ferritin during the course of the treatment differed significantly between the test and control groups ( $p < 0.05$ ). The level of I $\kappa$ B $\alpha$



expression in the test group and the control group at the beginning of the treatment did not show a significant difference between the groups ( $p < 0.05$ ). In  $60 \pm 3$ rd day of the treatment, there was a decrease in the expression level in the test group with a significant difference from the control group ( $p < 0.05$ ). Conclusion. Integrated therapy of women with the comorbidity of iron deficiency anaemia and obesity including quercetin reduces the level of I $\kappa$ B $\alpha$  gene expression in the subcutaneous adipose tissue and promotes faster recovery from iron deficiency anaemia.

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## **DIAGNOSTICS OF VERTEBROBASILAR INSUFFICIENCY IN YOUNG ADULTS: PRINCIPLES AND EXPERIENCE OF CLINICAL AND INSTRUMENTAL ITS SPONDYLOGENIC FORM**

**Nekrasova N.**

Key words: clinical and morphological spodylogenic index, spondylogenic vertebrobasilar insufficiency

Base on the examination of 240 patients with verified diagnosis of spondylogenic vertebrobasilar insufficiency (VBI), the method of clinical instrumental verification of spondylogenic VBI was substantiated. This method is based on applying of non-invasive ultrasound dopplerography, which reduces the timing of examinations while increasing the availability of diagnosis spondylogenic VBI. In order to improve the diagnosis of the disease it is important to clarify the development of VBI in its early stages, paying particular attention to its clinical, morphological and syndromological features. As one of the basic diagnostic criteria, the data of neurologic examination, blood lipid spectrum findings and clinico-morphological spodylogenic index were substantiated and used. The application of this method enables the comprehensive consideration of quantitative morphological changes in the cervical spine, the absence of atherosclerotic changes of the vascular wall, as well as clinical and neurological manifestations of vascular disorders in young adults at the very early stages of spondylogenic VBI. Coordinate detailing in the form of clinical and morphological index of spondylogenic VBI contributes to the development of patient-centred treatment plans and to slowing down of VBI progression. The study of the spondylogenic circulatory disorders in the vertebrobasilar system in terms of structural and morphological changes of the cervical spines and their association with hemodynamic determined metabolic disorders has a significant clinical value.

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## **CLINICAL FEATURES OF MANIFESTATIONS AND COURSE OF ATOPIC DERMATITIS IN ADULTS AT PRESENT**

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Key words: atopic dermatitis, skin, clinic, anamnesis, severity, course, quality of life, patients, allergy.

The study involved 117 patients: 80 patients aged 18 to 45 years were diagnosed with atopic dermatitis and 37 healthy individuals. Inhabitants of cities, workers, women (48 persons) prevailed. Complaints pre-sented included itching, emotional lability, sleep disorders, depression, gastrointestinal disorders. Their past medical histories included allergic diseases and their family histories revealed allergic diseases in their rela-tives. 65% of mothers reported to have some pathology of pregnancy. The patients with atopic dermatitis demonstrated an abundance of concomitant pathologies. Clinical manifestations of atopic dermatitis were usually typical, but there

were also some peculiarities including the severe course, often pruriginous pap-ules, complicated pyoderma, eosinophilia, frequent relapses, torpidity to traditional therapy. SCORAD of moderate manifestations made up 20-40 scores that of the severe course was > 40 scores, the quality of life index, respectively was  $22.14 \pm 0.02$  and  $23.32 \pm 0.03$  scores.

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## **Frequency and character of gastric lesions in patients with diabetes mellitus depending on its type**

**Radionova T.O.**

Key words: diabetes mellitus, stomach, gastritis, gastropathy, gastric ulcer.

At present the peculiarities of the clinical course and specifics of structural lesion of different organs under different diseases developing in underlying diabetes mellitus are still being disputable. There is no mutual opinion on gastric pathology in diabetic patients. The aim of the study is to evaluate the frequency and character of gastric lesions in patients with diabetes mellitus depending on its type. Materials and methods: a total of 79 diabetic patients complaining of epigastric pain or discomfort and/or dyspepsia were examined. Depending on the diabetes mellitus type, two study groups were formed: I (n=36) included patients with diabetes mellitus type 1, II (n=43) involved patients with diabetes mellitus type 2. They passed through survey, clinical examination, glycosylated haemoglobin assessment and upper endoscopy with biopsy. Results: according to the results of fibrogastroduodenoscopy 20 (55, 6%) patients of the 1st group had erythematous gastric lesions, 4 (11, 2%) patients had erosive gastric lesion, 6 (16, 6%) had congestive gastric disorders. Gastritis was found in 6 (16,6%) patients. An average stomach pH value among the patients of the 1st group was  $2,4\pm 1,4$ . In the 2nd group erythematous gastropathy was diagnosed in 24 (55,8%) patients, erosive – in 9 (20,9%), congestive – in 1 (2,3%) patient, ulcerations were detected in 3 (7%) patients, gastritis – in 7 (16,3%) patients. The average gastric pH in the 2nd group was  $2,8\pm 1,3$ . Conclusions: predominant gastric pathology in patients with both types of diabetes mellitus is erythematous gastropathy. The frequency of ulcerations is rather low, which can be explained by hypoacidity. However, deeper gastric mucosal lesions are seen in the patients with diabetes mellitus type 2 in comparison with patients suffering from diabetes mellitus type 1, who have prevalent congestive mucosal changes.

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## **INDICATORS OF QUALITY OF LIFE AND ACTUAL NUTRITION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY OBSTRUCTION AND COMORBID ALIMENTARY AND CONSTITUTIONAL OBESITY**

**Savchenko L.V.**

Key words: chronic obstructive pulmonary disease, obesity, quality of life, actual nutrition.

Evaluation of the severity of chronic obstructive pulmonary disease (COPD), along with shortness of breath, pulmonary function parameters, includes assessing the quality of life (QL) of patients as a significant marker of the risk of exacerbations and progression of the disease. Particular attention should be drawn to the cohort of COPD patients with alimentary and constitutional obesity, which in itself is an important predictor of chronic systemic inflammation. Considering the fact that the problem of obesity is based on a positive energy balance due to the disruption of eating behaviour, the question regarding the mutual influence of the actual nutrition and QL in COPD patients with alimentary and constitutional obesity remains unresolved. The aim of the research was to assess the quality of life and actual nutrition in COPD patients with alimentary and constitutional obesity. Materials and methods. 83 patients with COPD were examined. Depending on the body mass index, two groups were identified: the first group – 30 COPD patients with normal body weight (BMI 18.5-24.9 kg / m<sup>2</sup>); the second group - 53 COPD patients with alimentary and constitutional obesity of I and II degree (BMI 30.0-39.9 kg / m<sup>2</sup>). All patients were in the stable condition and received conventional therapy. Examination of patients included general clinical methods, anthropometric measurements (BMI, WC). The patients' quality of life was evaluated by using the CAT, SGRQ, SF-36 questionnaires. The actual nutrition was evaluated using the 24-hour food reproduction method with filling-in of a food diary during two days – a working day and a weekend (Saturday or Sunday). Results and their discussion. The total score at the CAT questionnaire in patients of the first group was  $16.27 \pm 2.79$  points, and in patients of the second group -  $29.87 \pm 2.38$  points ( $p < 0.05$ ). Assessing the QL according to the SGRQ, it was found that the patients in the first group had significantly lower indexes at all scales as compared with patients in the second group. In assessing the results by the SF-36 questionnaire, we found significantly higher indicators in patients of the first group by the scale of PA, RF, GH, RE, MH, as compared with patients in the second group. The actual energy value of consumed food per a workday in COPD patients with alimentary and constitutional obesity was in 1.4 times higher as compared with COPD patients with normal BMI, and on the weekend it was higher as much as in 1.6 times ( $p < 0.05$ ). In addition, these patients of this group showed the difference between the recommended daily intake of energy and the actual energy value of consumed food over the period of both days (workday and weekend). Thus, during a workday, the energy value of consumed food was higher by  $781.92 \pm 479.5$  kcal / day and on the weekend – by  $1277.0 \pm 476.1$  kcal / day ( $p < 0.05$ ). The conducted correlation analysis made it

possible to establish an association between the actual energy value of consumed food over the period of both working day and weekend and the QL in COPD patients according to the questionnaires of CAT, SRGQ, SF-36. Conclusions. The presence of alimentary and constitutional obesity in COPD patients significantly impairs the quality of life. In patients with combined pathology, there was an increase in the actual energy value of consumed food over the period of both workday and weekend. The correlation between actual energy value of consumed food and QL in COPD patients has been established.

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## CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF CHRONIC HEPATITIS C THROUGH POLTAVA REGION

**Syzova L. M.**

Key words: chronic hepatitis C, analysis, morbidity, clinical and epidemiological characteristic.

To date, the actual data on the incidence of chronic hepatitis C (CHC) in different regions of Ukraine is in the accumulation stage, since its official registration as an independent nosological unit began only in 2010. The aim of the study was to analyze the clinical and epidemiological characteristics of chronic hepatitis C in Poltava region and forecast the trend of the epidemic in the region for the period up to 2020. To analyze the epidemiological characteristics of CHC, a retrospective epidemiological analysis of the official statistical re-orting data, approved by the Ministry of Health of Ukraine for 2010-2016, was conducted. To investigate the clinical characteristics of CHC we conducted cross-cohort study that included 166 patients who took the course of treatment at the Poltava regional clinical hospital of infectious diseases during 2011-2016. The study found out the incidence of CHC in the Poltava region during 2010-2016 showed steady growth (from 7.4 per 100 thousand of the population in 2010 to 27.7 per 100 thousand of the population in 2016), exceeding the national figure, and in 2020 the region is expected to have a rapid increase in the incidence to 46.2 per 100 thousand of the population. Among the patients, men (66.9%), young and middle-aged people (95.2%) with one CHC genotype (59.6%) and duration of infection of up to 10 years (59.6%) predominates. The clinical course is characterized by signs of astheno-neurotic syndrome (91.6%), abdominal pain (73.1%), hepatomegalic (89.8%) and dyspeptic (63.9%) syndromes, a significant percentage of patients with advanced stages of liver fibrosis F3-F4 by METAVIR (41.6%) and concomitant pathology, with a predominance of diseases of the gastrointestinal tract (93.4%).

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## **THE INCIDENCE OF RETINAL MACULAR OEDEMA DEPENDING ON THE CONTENT OF PROSTACYCLIN AND THROMBOXANE IN INTRAOCULAR FLUID AFTER CATARACT SURGERY**

**Steblovska I. S.**

Key words: cataract, phacoemulsification, macula, prostacyclin, thromboxane.

Retinal macular oedema is known as a very common postoperative problem, in spite of all innovations, research and modern technologies applied. Therefore, the aim of this study was to assess the content of prostacycline and thromboxane in intraocular fluid and their effect on the occurrence of retinal macular oedema after surgical cataract removal. We have revealed the level of prostacyclin and thromboxane, and their relationship that leads to the development of retinal macular oedema. It has been found out the level of thromboxane in intraocular fluid of patients with cataracts was from 24,0 p<sub>kg</sub> / ml to 64.7 p<sub>kg</sub> / ml and  $31.1 \pm 1,3$  p<sub>kg</sub> / ml, prostacyclin ranged from 23,9 p<sub>kg</sub> / ml to 36.6 p<sub>kg</sub> / ml, the average value of  $27.1 \pm 0,4$  PG / ml. Level of the prostacyclin / thromboxane ratio equals  $0,91 \pm 0,02$ . 2. When the values of thromboxane is higher than 60 PCG / ml, the occurrence of oedema in the central retinal zone occurred in 50% of cases after 1 and 3 months of follow-up, and in 100% of cases within 6 months. 3. The increase in values of prostacyclin over 35 p<sub>kg</sub> / ml, and the coefficient of their ratio 0,55-0,58 results in the occurrence of retinal oedema in 50% of cases in the follow-up period of 1 and 3 months, and in 100% of cases after 6 months and 30% a year after the cataract phacoemulsification.

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## **EXPRESSION OF CERTAIN MOLECULAR BIOLOGICAL MARKERS AS A PROGNOSTIC FACTOR IN LEIOMYOSARCOMA**

**Sukhin V.S., Sukhina O.M., Sokur I.V., Zadnipryaniy O.V., Demchenko V.M.**

Key words: leiomyosarcoma, biomarker, relapse, immunohistochemistry, positive expression, negative expression.

The biological features and recurrence of leiomyosarcoma, a subtype of sarcoma, which is observed more often than others, are highlighted in this paper. We present detailed study of the levels of molecular biological markers Bcl 2, p53, Ki-67 and oestrogen / progesterone receptors, changes in their expression and interrelation with tumour recurrence. The prognostic significance of Bcl 2 and progesterone receptors has been proven. It has been concluded that the use of the biological markers mentioned above is promising to improve the prognosis of the course of the disease and help determine the proper approaches of the treatment.

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## **HORMONAL PECULIARITIES IN PATIENTS WITH VIBRATION DISEASE AND HYPERTENSION**

**Sukhonos N. K.**

Key words: vibration disease, hypertension, melatonin, oxytocin.

Occupational vibration is regarded as chronic stress factor that determines functioning and remodelling of hormonal systems. However, prolonged effect of hormones involved in the development of adaptive reactions can result in significant disorders of metabolism of lipids,

carbohydrates and electrolytes, as well as to cardio-vascular disorders. Affecting smooth muscles of vessels, oxytocin causes vasodilatation, increases circulation through kidneys, coronary vessels and brain vessels. Key role of melatonin is determined by its rhythm controlling that promotes all endogenic body rhythms. Circadian rhythms of arterial hypertension are determined by the role of melatonin in regulating cardio-vascular functions. It has been also proved by presence of melatonin receptors in muscles and vascular endothelium. The aim of this research was to study hormonal chain of immunity (melatonin and oxytocin) in patients with vibration disease (VD) and hypertension. Research included 107 patients with VD from local vibration of I and II stage, aged 41–66, mean age was  $54 \pm 6.17$  years. 60 patients with VD were diagnosed to have hypertension II stage (main group); other 47 had isolated hypertension (comparison group). Every group was subdivided by VD stages. Main group included VD I stage and hypertension II stage (26 persons) and VD II and hypertension II stage (34 persons). Comparison group has been divided into isolated VD I stage (21 persons) and isolated VD II stage (26 persons). Amount of hormones (melatonin and oxytocin) in blood serum was assessed by ELISA with test systems “Melatonin Elisa” (“IBL Hamburg”, Germany), “Correlate–EIATM Oxitocin” (“Assay Designs”, USA) and ELISA analyzer Star Fax 303 Plus. Statistical analysis was performed using statistical software Statistica 6.1 (StatSoft, Inc., USA). Analysis of research results has showed that vibration effect inhibits the activity of immune system. We have found out a significant decrease in melatonin in the main group (21,97 pg/ml; ME[17,63;25,61] against 30,3 pg/ml. Statistically significant increase in oxytocin (139,6 pg/ml; ME[92,5;169] against 134 pg/ml; ME[62;191]) was only in the group of combined pathology that can be proven by the constriction of peripheral vessels. Effects of these and some other chains of hormonal regulation that form pressor macrosystem, promotes increasing of arterial pressure, and shows the presence of changes in hormonal regulation in patients with VD. According with data patients with VD and hypertension has secondary deregulatory state of immunocompetent field. This has been proven by increased levels of oxytocin and decreasing in activity of melatonin by 35 %, compared with patients having isolated VD.

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## **ACUTE CEREBRAL AND GASTROINTESTINAL INSUFFICIENCY: NEUROVEGETATIVE IMPACT AND PECULIARITIES OF THE COURSE**

### **Teriv P.S.**

Key words: acute cerebral insufficiency, gastrointestinal insufficiency, cardiointervalography.

Acute cerebral insufficiency is a common condition that requires intensive care and may be accompanied by the development of gastrointestinal insufficiency. Objective: to determine neurovegetative mechanisms of gastrointestinal insufficiency development in patients with acute cerebral insufficiency and their dynamic evaluation. Materials and methods. We conducted a clinical interventional prospective cohort study, which included 45 patients with acute cerebral insufficiency caused by acute cerebrovascular abnormalities. The examination aimed at assessing the severity of the condition, the depth of the impairment of consciousness, the severity and expected consequences of acute cerebrovascular accident, the degree of gastrointestinal insufficiency, and the findings of cardiointervalography. Results. Patients in the study group have never experienced severe degrees of gastrointestinal insufficiency. Within seven days its



manifestations were showing a tendency to decrease. In the dynamic analysis of cardiointervalogram it has been established that at the beginning of treatment the development of gastrointestinal insufficiency is due to an increase in the tone of the sympathetic nervous system and the stresses of compensatory mechanisms, which subsequently yield to parasympathetic tension and the humoral regulatory pathway. We have also established the correlation between the development of gastrointestinal malnutrition, clinical indicators of the severity of the condition and the development of the disease, which are implemented through vegetative regulatory influences. Conclusions. Patients with acute cerebral insufficiency of cerebrovascular genesis are characterized by the absence of severe degrees of gastrointestinal insufficiency, its persistence during the first 7 days of the treatment with a tendency to decrease in the severity. The formation of gastrointestinal insufficiency is associated with the severity of the condition, the severity of manifestations of acute cerebrovascular accident and consciousness. Such results are due to relevant neurovegetative effects.

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## **COMPARATIVE EVALUATION OF THE EFFECTIVENESS OF DIFFERENT METHODS OF ANESTHESIA IN PREVENTING COMPLICATIONS DURING VITREORETINAL OPERATIONS**

**Hagverdiyev F. T.**

Key words: anaesthesia, oculocardiac reflex, oculogastric reflex, vitreoretinal surgery.

The aim of the study is to compare the incidence of oculocardiac reflex (OCR) and oculogastric reflex (OGR) in vitreoretinal surgery performed by using different methods of anaesthesia. Methods. The study included 271 patients aged from 21 to 58 years (153 men and 118 women). Depending on the method of anaesthesia, all patients were divided into 3 groups: group 1 – general anaesthesia; group 2 – general anaesthesia in combination with subtenonian anaesthesia, group 3 – general anaesthesia, subtenonian and application anaesthesia. Both the frequency of oculocardiac reflex (OCR) and oculogastric reflex (OGR) and the nature of clinical manifestations of these reflexes (severity of bradycardia, nausea, single or multiple vomiting, etc.) were analyzed. Results. In the patients of the group 1 the incidence of OCR made up 46.2%. This group of patients demonstrated the highest incidence of OGR in the postoperative period (30.2%). The patients of the group 2 demonstrated a significant decrease in the frequency of OCR to 31.5% ( $p < 0.05$ ), but the decrease in the frequency of OGD to 24.7% was statistically unreliable. The group 3 shown the lowest frequency of OCR (25%), which was significantly lower than in the group 1 ( $p < 0.01$ ), but compared with the group 2 this decrease in the frequency of OCR was unreliable. At the same time, the patients of the group 3 demonstrated a highly reliable decrease in the frequency of OGR (up to 11.8%,  $p < 0.01$ ) compared with the group 1. Moreover, this decrease in the frequency of HRV was also statistically significantly lower than in the group 2 ( $p < 0.05$ ). During the post-operative period OGR was observed in 32 patients of the group 1, including 106 patients. OGR manifested with nausea and vomiting (both single and multiple), 9 patients experienced nausea, 10 of them had occasional vomiting and 13 patients experienced repeated vomiting. In the 2nd group of 89 patients, 22 experienced OGR. Nausea was observed in 8 patients. Relief of OGR in the form of nausea and single vomiting in 8 patients was achieved by cerucal (2 ml) IV. 6 patients having repeated vomiting were administered ketonal (2 ml) intramuscularly in addition to cerucal. In the 3rd group of 76 patients, OGD was noted in 9 individuals. Nausea was observed in 4 patients. To stop OGR (nausea and occasional vomiting), 3 patients of the group 3 were given cerucal (2ml) IV, 2 patients suffering from repeated vomiting were additionally prescribed ketonal (2 ml) intramuscularly. Conclusion. The study has shown the combined application of general, subtenonian and topical anaesthesia reduces the incidence of oculocardiac and oculogastric reflexes when performing vitreoretinal surgery.

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## **PLEIOTROPIC EFFECTS OF STATINS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND COMORBID CORONARY HEART DISEASE**

**Khaymenova G. S., V. N. Zhdan, O. A. Kyrian**

Key words: chronic obstructive pulmonary disease, coronary heart disease, rosuvastatin, pleiotropic action.

When elaborating the approaches to the integrated therapy of chronic obstructive pulmonary disease (COPD) and concomitant coronary heart disease (CHD), much attention is being increasingly paid to plei-otrophic effects of statins. The aim of our studies was to determine the effectiveness of rosuvastatin in the integrated treatment of comorbidity of COPD and CHD. We examined 60 patients with COPD and comorbid CHD aged 51 to 67 (mean age was  $57.03 \pm 3.51$  years) at the pulmonology department of the M.V. Skli-fosovsky Poltava Regional Clinical Hospital. Patients were divided into two groups comparable by age. The patients were examined before and after the 12 week course of treatment, including assessment of respira-tory symptoms of the disease, degree

of dyspnoea. Tolerance to exercise was studied using a test with a 6-minute walk. We also analyzed the level of lipidogram indices, function of external respiration. After the treatment, patients of both groups experienced improvement in clinical status due to a decrease in the intensity of respiratory symptoms of the disease: cough, sputum, dyspnoea, increased exercise tolerance and improved laboratory and instrumental indices. However, the patients of the main group demonstrated a more significant decrease in the intensity of cough and sputum than in the control group. It should be noted that the patients of the main group after treatment showed a significant decrease in bronchial obstruction due to an increase in volume of forced exhalation for the first second ( $p < 0,05$ ). There was also a significant decrease in blood levels of total cholesterol, triglycerides ( $p < 0,05$ ). A retrospective study of the patients' past medical histories showed that the frequency of exacerbations during the last year was observed 1 or 2 times a year ( $1,6 \pm 0,48$ ). Rosuvastatin added in the treatment regimen allows us to reduce and stabilize the main clinical manifestations of the diseases as well as to improve the quality of life of the patients.

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## **CHARACTERISTICS OF THE COURSE OF ESSENTIAL HYPERTENSION IN ELDERLY PEOPLE**

**Ovcharenko L. K., Tsyganenko I. V.**

Key words: advanced age, arterial hypertension.

The paper considers the peculiarities of the manifestation of essential hypertension in the elderly people. The research was conducted on the basis of the Poltava clinical cardiology clinic. In order to ensure the reliability of the results, test and control groups were formed. The test group included 96 elderly people (60 years and over) having hypertension of II degree, 2 stage. The control group included the same number of persons of pre-elderly age (up to 60 years) with hypertension of II degree, 2 stage. We analyzed the data obtained by using questionnaires, by studying medical and social histories and present complaints. We also assessed the findings of clinical examination and some investigations including total blood count, urinalysis, glucose blood test, biochemical blood test and lipid biochemistry test, coagulogram, electrocardiography, echocardiography, daily blood pressure monitoring. Each patient was examined by an ophthalmologist and neurologist. The results were as follows: the complaints of hypertension are more pronounced in the control group, while the test group mainly presented general weakness, headache and ear noise. It has also been found out that the number of concomitant diseases considerably increases with age, involving diseases of the nervous and respiratory system and musculoskeletal system that give rise to the use of non-steroidal anti-inflammatory drugs. The latter not only contribute into pressurizing, but also reduce the pharmacological action of antihypertensive drugs, with the exception of calcium channel blockers. 33.3% of the participants gave the positive result in Osler's test, while it made only 2% of the patients in the control group, that is, 16, 5: 1. Orthostatic test demonstrated that in all persons in the control group, arterial pressure changed with body position changes, while control group patients were significantly less susceptible. Giving the positive result in the Osler test and the orthostatic test, as well as the use of non-steroidal anti-inflammatory drugs in the elderly patients, one can easily be mistaken in determining the severity of hypertension by trusting only the tonometer readings. In addition, in the elderly patients, fluctuations in systolic blood pressure during the day are much less pronounced, and sharp elevations in the level of diastolic blood pressure are almost not observed.

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## **PECULIARITIES OF THE CLINICAL COURSE OF COMORBIDITY BETWEEN TYPE 2 DIABETES MELLITUS AND OBESITY**

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**Key words:** diabetes mellitus, obesity, insulin resistance, chronic systemic inflammation.

The article presents data on the role of obesity in the development of type II diabetes mellitus. The features of the common pathogenesis, in particular the role of insulin resistance and chronic systemic inflammation, are highlighted. The aim of the study was to investigate the features of the clinical course of type II diabetes mellitus and comorbid obesity, based on a comprehensive study of systemic nonspecific inflammation, insulin resistance, carbohydrate and lipid metabolism. The study involved 268 patients with comorbidity of diabetes mellitus type II and obesity. Patients are randomized into 2 groups: the group of comparison (119 patients) with diabetes type II without obesity, and test group with diabetes mellitus type II and comorbid obesity (149 patients). The state



of the inflammatory response, insulin resistance, carbohydrate and lipid metabolism were studied. The analysis of carbohydrate and lipid metabolism showed significantly higher indices in the patients with diabetes mellitus type II and comorbid obesity than in the patients with diabetes without obesity. Patients in the test group had significantly increased inflammatory biomarker concentrations and indices indicating insulin resistance compared to the comparison group that confirmed the presence of insulin resistance and chronic systemic inflammation in this category of patients. Conclusions: 1. When choosing tactics for patients with diabetes mellitus type II and comorbid obesity, the presence of obesity should be regarded as the precondition for the unfavorable course of the disease and the emergence and progression of complications. 2. Type 2 diabetes in combination with obesity is characterized by inadequate control of carbohydrate and lipid metabolism, regardless the duration of the disease, age and sex, and increased concentrations of inflammatory biomarkers and indices that characterize insulin resistance.

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## **INFLUENCE OF HYPOLIPIDEMIC THERAPY ON PROOXIDATIVE-ANTIOXIDATIVE STATE IN PATIENTS WITH ISCHEMIC HEART DISEASE**

**Shcherbak O.V.**

Key words: ischemic heart disease, atherogenic dyslipidemia, prooxidative-antioxidative system, ursodeoxycholic acid, rosuvastatin.

Activation of lipid peroxidation is an important pathogenetic mechanism of atherogenic dyslipidemia and ischemic heart disease progression. Statins are commonly used to treat lipid metabolic disturbances. Effective hypolipidemic therapy can reduce free radical production and, accordingly, decrease risk of acute coronary events. The aim of the study presented is to evaluate the dynamics of prooxidative-antioxidative imbalance in patients with ischemic heart disease receiving hypolipidemic therapy and ursodeoxycholic acid added to the standard treatment. Materials and methods. A total of 63 patients with ischemic heart disease were examined and diagnosed as having stable exertional angina, II functional class. The average age of patients was  $59.2 \pm 6.8$  years. Lipid spectrum, status of lipid peroxidation system and antioxidative protection system were analyzed. The patients were subdivided into two groups according to the prescribed therapeutic complexes. The group I (n=31) included patients who received rosuvastatin in a dose of 20 mg per day. The group II (n=32) group included patients who were prescribed rosuvastatin in a dose of 20 mg a day and ursodeoxycholic acid in a dose of 15 mg/kg/day. Results. Co-administration of rosuvastatin and ursodeoxycholic acid to the patients with ischemic heart disease reduced low density lipoprotein cholesterol in 1.5 times after a month of the therapy as well as lowered triglycerides in 1.2 times. 6-month course of combined therapy resulted in decrease of a total serum cholesterol level in 1.6 times, lipoprotein low density cholesterol – in 2.5 times, triglycerides – in 1.3 times, atherogenic index – in 2.6 times, and at the same time high density

lipoprotein cholesterol increased 1.2-folds. Low density lipoprotein cholesterol target level of <1.8 mmol/l was achieved in 6 months in 25 (78.1%) patients. Lipid metabolism normalization was accompanied by elimination of prooxidative-antioxidative imbalance during the combined therapy of rosuvastatin and ursodeoxycholic acid that was characterized by TBA reactants lowering in 1 and 6 months, 1.4 and 1.7 folds respectively and simultaneous 1.5-fold increase in serum superoxide dismutase activity. Conclusions. Co-administration of rosuvastatin and ursodeoxycholic acid for 6 months contributes to normalizing lipid profile parameters and decrease in disturbances of prooxidative-antioxidative system.

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## **INVESTIGATION OF PECULIARITIES OF MENSTRUAL CYCLE DYNAMICS IN ADOLESCENT TENNIS PLAYERS**

**Bugaevsky K.A., Pashynskiy S. S., Kizilova A. A., Nechiporuk A. V., Kanunova N. S.**

Key words: athletes, tennis players, adolescence, menstrual cycle, sexual dimorphism, sex somatotypes.

This article presents the results of the study aimed at analysis of the development and dynamics of the ovarian-menstrual cycle in adolescent tennis player of different sex somatotypes. It has been found out that 9 (75.00%) young athletes, who started sports before the menarche, usually had their first monthly periods later than the population. Moreover, the study has shown the terms of the menarche in the adolescent tennis players, their beginning, development and normalization following the menarche are typically prolonged. The adolescent tennis players have been revealed to have combined failures of the ovarian-menstrual cycle manifested by hypomenstrual syndrome or secondary amenorrhea. Similar manifestations are characteristic for 4 (33,33%) female athletes who were to be of an andromorphic somatotype and for 6 (50.00%) girls of a mesomorphic sexual somatotype. 3 (25.00%) of the tennis players were revealed to have secondary amenorrhea. All of them belong to the group of athletes of the andromorphic sex somatotype. Even 2 (16.67%) female athletes of a gynecomorphic sex somatotype were found out to have various failures of the ovarian-menstrual cycle.

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## **METHODS OF EXPERIMENTAL INVESTIGATION OF HEPATOCYTES DURING ASEPTIC PERITONITIS**

**Voloshina E.V., Grigorenko A.S., Donets I.N.**

Key words: hepatocytes, experiments, aseptic peritonitis, cryopreserved placenta, morphological.

The majority of functions characteristic of the liver is carried out by hepatocytes that make up 80 % of all the liver cells. Hepatocytes are responsible for synthesis, breaking down and storage of large amount of different substances. They play the central role in a carbohydrate and lipid metabolism, participate in producing proteins found in blood plasma, are connected with a intestinal lumen and through the system of small tubules excrete metabolic wastes into the intestine as well as emulsifying substance, bile, which facilitates lipid absorption.

Considering powerful functional peculiarities of hepatocytes, the purpose of our research is to elaborate the experimental model of an aseptic inflammation in animals with possible correction of damaged hepato-cytes with cryopreserved placenta. Materials and methods. Experiments on animals are carried out according to «The General principles of experiments on animals», approved by V National Congress on Bioethics (Kiev, 2013) and agreed with positions of «The European convention on protection of vertebrate animals which are used for experimental and other scientific purposes» (Strasbourg, 1986), the Law of Ukraine №3447-IV from 21.06.2006 «About protection of animals against cruel treatment» as well as the Helsinki Declaration on the human and animal research. Work was carried out on 140 adult Wistar male rats weighing 180 – 200 g. The animals were divided into four groups: intact group (control) and three experimental (45 animals in each group). The rats in the 2nd group were injected cryopreserved placenta subcutaneously by the technique developed at the Institute of Cryobiology and Cryomedicine, National Academy of Sciences of Ukraine (Kharkiv). The animals of the 3rd group were subjected to modelling acute experimental aseptic peritonitis by intra-abdominal introduction of 5 mg of  $\lambda$ -carrageenan (Sigma, the USA) dissolved in 1 ml of isotonic solution of sodium chloride per one animal. The animals of the 4th group which had developed acute aseptic peritonitis were injected with cryopreserved placenta subcutaneously. After the euthanasia, samples of the liver from the rats were taken for morphological study of hepatic connective tissue stroma, vessels, a hepatic triad, and hepatic cells, hepatocytes. We assessed quantity, appearance, shape of the cells, their nuclei, nucleoli, cytoplasm, its colour, presence of glycogene lumps; Kupffer cells, their size, shape, nuclei, cytoplasm. Morphological study was conducted by using conventional histological techniques: we prepared paraffin sections to evaluate the condition of hepatocytes both at intact animals and in test animals of all groups depending on the term of the experiment. Conclusions. The study has demonstrated

hepatocytes can response to any intervention into the animal's body as well as to inflammatory process as evidenced by morphological studies. The application of cryopreserved placenta will allow us to perform possible correction of a hepatocyte structure during the further studying of morphological preparations of the liver tissues.

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## **COMPARATIVE ANALYSIS OF FIBRO-ARCHITECTURE AND TISSUE TENSION IN MEMBRANOUS GRAFTS OF DIFFERENT TAUTNESS DURING ORAL FLAP SURGERIES**

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Key words: scrap surgery, fibroarchitecture.

Taking into account the development of modern oral surgery, the issue on improving the closure of the wounds of the oral mucous membrane remains relevant. Hence, it is important to study the morphological properties of the oral mucosa flaps for detecting optimal tensile and tissue stress values in the site of suturing. The aim of this study was to carry out a comparative analysis of the fibroarchitecture of oral mucosa under varying degrees of tension during oral flap operations. Materials and methods. To perform histological investigations, samples of healthy mucous membrane of gums were taken from mature cadavers of both sexes at the forensic medical examination office. The material was taken from both the area of gum papilla and from its fixed part. Polarization microscopy was used to study the fibroarchitecture of connective tissue structures. Results. At different degrees of tension of the mucosal flaps in the oral cavity, the connecting flap loses the normal spatial orientation of the bundles, and the entire fibrous framework becomes deeply disorganized. Conclusions. The propria plate of the gingival mucosa includes the dentogingival circular and alveolar-gingival bundles of collagen and elastic fibres forming a single soft core. In the structure of the gingival connective tissue there are marked fibrous bundles adapted to compressive deformation: fiber-fibrillar and arcade types of fibroarchitecture having a high modulus of elasticity.



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## **INFLUENCE OF 1,2,4-TRIAZOL DERIVATIVES ON COMBINATIVE SYSTEMS: REDUCED THIOLS/NO IN VITRO**

**Nagornaya Ye.A.**

Key words: thiol-containing compounds, nitro-oxidative stress, markers of protein oxidative damage, thiol disulfide system, nitric oxide system.

It has been found out that the triazol derivative thiotriazolinum possesses cardio-, neuro-, hepatoprotective action. It has been shown that functional disturbances are connected with endothelial dysfunction and the changing in thiol-disulfide system markers and the nitric oxide system. The aim of the study is to carry out screening of 1, 2, 4-triazole derivatives by their antioxidant action and influence on the thiol-disulfide neuron system in oxidative and nitrosative stress. We studied antioxidant properties and effects on the thiol-disulfite system of neuron suspension in experiments in vitro by modelling of oxidative and nitro-oxidative stress by

introducing the iron dinitrosyl complex in a toxic concentration of 250 mmol/l into the incubation medium according to the Methodological Recommendations of the Ukrainian Ministry of Public Health. During nitro-oxidative stress, we found an increase in the content of oxidative modification parameters of proteins (APG, KFG), oxidized glutathione, nitrotyrosine and reduction of antioxidant activity, glutathione reductase activity, glutathione-S-transferase and the level of reduced glutathione in the neuronal suspension. The introduction of 11 thiol-containing compounds into the neuronal suspension showed that all the compounds used, with the exception of two, had antioxidant effects exceeding the reference drugs as methionine, unitiol, sodium thiosulfate, dibunol, and alpha-tocopherol. Thiol-containing compounds reduced the content of nitrotyrosine, a stable endogenous oxidation product of peroxynitrite, which is used as a marker for NO-dependent damage. Thiol-containing compounds lowered the content of oxidized glutathione and increased the content of reduced oxidized glutathione, which is considered as an inhibitor of reactive oxygen species. Thiol-containing compounds, especially thiotriazolin and angiolin, retained the activity of glutathione-S-transferase and glutathione reductase that confirms their antioxidant effect

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## **CHARACTERISTICS OF MASS AND LENGTH OF THYROID GLAND IN MATURE RATS EXPOSED TO CHRONIC HYPERTHERMIA**

**Rykova Yu.A., Shuper V.A., Shuper S.V., Hordiichuc D.A.**

Key words: thyroid gland, weight, length, chronic hyperthermia, rats.

The experimental study was carried out on 60 white linear male rats of 12 weeks old and weighing 180-230 g. The animals of this series were divided into groups, depending on the agents acting on them. The first group (1) consisted of control rats, which were kept in the thermal chamber for 5 hours at a temperature of 21°C. The second group (2) included animals subjected to chronic hyperthermia of moderate severity (42.0-43.1 ° C). Hyperthermia was simulated from 8 am to 1 pm (5 hours daily) for 60 days. After sessions of hypertension for 1, 7, 15, 30 and 60 days, animals were decapitated under ether anaesthesia. Immediately after the decapitation, the thyroid gland was removed together with the trachea-laryngeal complex, dissection of the thyroid gland was performed, and then it was weighed on an analytical balance of the VLA-200 to an accuracy of 1 mg. The analysis of digital data was carried out using a computer program for organo- and morphometric studies. The results of the parameters of thyroid mass were processed with the help of statistical programs, the probability of error was less than 5% ( $p < 0.05$ ). The dynamics of the thyroid mass and length parameters of rats after long-term exposure to chronic hyperthermia has been studied. A significant decrease in the weight of the organs and decrease in the length of the lobes compared with intact animals was revealed.

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## **INVESTIGATION OF TOXIC EFFECTS PRODUCED BY C60 FULLERENE ON RATS**

**Sylenko B.Yu.**

Key words: fullerene C60 , monomer, prosthetic stomatitis.

Diseases of the oral mucous membrane due to wearing removable dentures are observed in 15 - 70% of patients, who report impossibility or difficulties when using removable dentures. Wearing plate dentures made of acrylates often leads to very serious complications known as prosthetic stomatitis. The causes of prosthetic stomatitis to a greater extent are due to local factors directly associated with the base of the re-movable prosthesis and the material of which it is manufactured.

The main cause of the occurrence of prosthodontic stomatitis is the chemotoxicity of residual monomer of the prosthesis base that is protoplasmic poison and gradually, under the influence of oral biological media, as well as due to chewing loads, diffuses and enters the oral cavity. In order to prevent prosthetic stomatitis, we proposed a new method to improve the removable plate prosthesis made according to conventional technology, of a material of nanosized value, molecules of fullerene C60. The purpose of this study was to investigate the toxic effects of fullerene C60 on rats for the further introduction of the material into the clinical of prosthetic dentistry. The obtained data have proven that throughout the observation period the physiological state of the experimental rats did not differ from the control ones. All animals administered fullerene had a positive body mass gain compared to baseline body mass values and did not differ from animals in the intact control group, indicating no harmful effect of the test substance on the physiological processes of rats upon administration for 21 days. The blood test showed a slight variation of the formed elements that can not be considered as critical, as the values of the studied parameters remained within the values of intact animals. The introduction of Fullerene during 21 days did not affect the activity of hepatic transaminases that points out the absence of toxic effects of the investigated substances on the liver. Therefore, it can be argued that such material can be used in dentistry to reduce the number of complications as prosthetic stomatitis after prosthetic correction.

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## **NEOANGIOGENESIS PARAMETERS AND THEIR SIGNIFICANCE IN KERATINIZING SQUAMOUS CELL LUNG CANCER**

**Filenko B.N., Royko N.V., Proskurnya S.A.**

Key words: VEGF, CD34, correlation, prognosis, microcirculatory blood flow, vessel density.

One of the important medical and social problems nowadays in developed countries is the uncontrolled growth of the incidence of malignant neoplasms. The search for the novel approaches to the prevention, diagnosis, treatment and prognosis of the progress of neoplasia has been the topical issue of contemporary oncology and pathomorphology. An important stage in the development of a tumor is its ability to induce and maintain angiogenesis. The study of the biological characteristics of tumor angiogenesis may be of great significance not only for better understanding of the mechanism of the development of the primary tumor and metastases, but also for the treatment planning. This paper was aimed at studying the processes of neoangiogenesis in keratinizing squamous cell lung cancer and grounding its significance in morphogenesis and prognosis of the progression of the diseases. Our study shows that the vascular component of the stroma was characterized by an uneven number of them in different parts of the tumor. All cases of keratinizing squamous cell lung cancer are VEGF-positive with high or moderate expression of this protein. The comparison of the data of CD34 and VEGF expression has demonstrated a strong correlation between them. No reliable relation between the CD34 and VEGF expression and the age, tumor size, presence of the cavity has been detected; however, a strong correlation with metastasis has been found out. The investigations have revealed active angiogenesis in keratinizing squamous cell lung cancer. Correlation between metastasis, the stage of keratinizing squamous cell lung cancer and VEGF expression verifies its prognostic value, especially in combination with other criteria.

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## **IMMUNOMORPHOLOGICAL AND IMMUNOHISTOCHEMICAL INDICATORS OF PERIODONTAL CONNECTIVE TISSUE IN RATS WITH PERIODONTITIS AND GINGIVITIS**

**Cheremisina V. F.**

Key words: immunohistochemistry, periodontitis, gingivitis, immunity.

This article presents the results of the study of immunomorphological and immunohistochemical parameters of parodontal connective tissue in rats with periodontitis and gingivitis. A thorough investigation of local immunity was not conducted directly at the focus of the injury. Such an

opportunity appeared only with the introduction of immunohistochemical methods. It is known that various population of cells participate in inflammatory-reparative reactions, and the various stages of the development of subsequent events in different phases of inflammation consistently passes from one to another population. Initially, an increase in platelet aggregation is initiated, following the platelet degranulation of substances, among which there are compounds that have a direct stimulating effect on collagen-synthesizing cells, platelet growth factor, endothelial growth factor, and others. As a result, with the expressed inflammatory process in the connective tissue, there are disorders of immunomorphological and immunohistological parameters. It has been assumed that in the local cellular immune response, the T-cell reaction with predominance of cytotoxic CD8 + T cells, both during periodontitis and with gingivitis, is a priority. Concentration of CD8 + T lymphocytes around blood vessels with gingivitis and around small salivary glands during periodontitis with lymphoepithelial and lymphoendothelial lesions indicates autoimmune cytotoxic aggression in the pathogenesis of disease research.

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## FEATURES OF ULTRASOUND DIAGNOSIS OF POSTOPERATIVE NORMOTROPHIC SKIN SCARS OF HEAD AND NECK

**Bukhanchenko O. P., Ivanyts'ka O. S., Lokes K. P.**

Key words: pathological scar, normotrophic scar, ultrasound examination, echogenicity.

**Introduction** Despite the capabilities of modern surgery the issues on prevention and treatment of patients with different types of scar tissue are still relevant. In most cases the cause that fails to treat the scars successfully is the lack of informative techniques for their differential diagnosis. The aim of the study presented was to enhance the efficacy of scar treatment on face and neck regions by US scanning. **Materials and methods** We examined 50 patients with head and neck scars. Thorough investigation of scarring was performed by ultrasonic examination. We selected patients having optically visualized normotrophic scars. **Results** Analysis of the results obtained by US examination allowed us to determine the colour echogenic images of normotrophic scars, which nearly did not differ from the dermis of the intact skin. It should be noted that among the echogenic signs of postoperative normorphic scars there is the depth of scar tissue increased by 8-11% compared with the thickness of the intact derma. **Discussion** Today there is no universal method of differential diagnosis of different types of head and neck scars. Therefore, elaborating an informative and economically feasible diagnostics methods are the matter of topical interest. **Conclusions** Consequently, US examination of scars is a non-invasive technique that enables objective, informative and safe evaluating numerous anatomical structures and determining the type and depth of scar formations. This technique has allowed us to reveal echogenic differences in postoperative normorphic scars compared with the intact skin, thus contributing into making optimal patient-centred treatment plan and achieving maximum therapeutic effect.

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## **COMPARATIVE CHARACTERISTICS OF DENTAL STATUS IN CHILDREN WITH ACUTE INFLAMMATORY PROCESSES IN MAXILLOFACIAL AREA**

### **Dobroskok V.O.**

Key words: children, acute odontogenic osteomyelitis, submandibular lymphadenitis, oral hygiene indices.

Recently there has been a considerable increase in a number of inflammatory diseases of maxillofacial area in childhood that can be explained by the lack of preventive dental care including regular dental check-ups, routine oral sanation, and poor oral hygiene. At that there are a lot of reports positing an association between a significant role of anatomical and physiological features of teeth, jaws and soft tissues in children of different age periods and the occurrence of inflammatory diseases of maxillofacial region. All this can clarify the high level of dental morbidity and the spread of cases of odontogenic infection to some extent. The aim of this study was to compare dental status in children with acute suppurative submandibular lymphadenitis and acute odontogenic osteomyelitis of the jaw bone. The paper presents the analysis of indices of oral health status and oral hygiene in 51 children with acute suppurative submandibular lymphadenitis and 32 children with acute odontogenic mandibular osteomyelitis aged from 7 to 15 years, making up 2 groups. When comparing the indices at the admission to hospital and at the completion of the treatment we observed the deterioration of indices of oral hygiene, which were more pronounced at the time of discharge, and particularly in the patients with acute odontogenic osteomyelitis of the jaw bone due to the lack of appropriate conditions for keeping oral care during the stay in hospital.

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# **INVESTIGATION OF THE CHEMICAL STRUCTURE IN HARD DENTAL TISSUES OF TEETH AFFECTED BY CARIOUS LESIONS AND EXCESSIVE TOOTH WEAR DEPENDING ON TYPE OF FILLING MATERIALS AND TYPE OF ADHESIVE SYSTEMS USED**

**Kovalenko V. V., Tkachenko I. M.**

Key words: increased abrasion, caries, microanalysis of enamel and dentin composition, adhesive systems.

Structure of enamel and dentin in cases of teeth affected by carious lesions and in cases of excessive tooth wear has been known to differ considerably that brings up the question on peculiarities in applying fill-ing materials and adhesive systems for various types of affection of hard dental tissues. Little data have been presented in relevant literature that has predetermined the purpose of our study. We used 3M ESPE Vitremer dual-cured glass ionomer cement, which is formulated by the powder and liquid portions. The powder consists of radiocontrast fluorine silicate glass and composite radiogenic contrasting photopolymer-cured material that releases fluoride based on the CHARISMA microglass (Heraeus Kulzer) in combination with V and VII generations of adhesion systems with different mechanisms of penetration into the enamel and dentin. Thus, based on the data processed statistically we have found out inhomogeneity of trace element composition of enamel in the areas studied during application of various filling materials with restorative purposes. The maximum values of calcium and phosphorus responsible for the resistance of hard dental tissues are noted when using the CHARISMA filling material (Heraeus Kulzer) and adhesive system Adper Easy One, both in teeth with increased abrasion and affected by carious process.

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## **CLINICAL PARAMETERS OF SCAR TISSUES AT 3rd MONTH OF POSTOPERATIVE PERIOD**

**Krinichko L.R., Grygorov S.N., Stavitskiy S.A., Boyko I.V., Ahmerov V.D.**

Key words: neck cysts, pathological scars, regeneration, APRF-clot, thermometry.

At present the problem of the development of keloid and hypertrophic scars of the skin after elective surgical interventions is one of pressing issues in modern cosmetic surgery. This is especially relevant for patients who underwent the operations on open regions of the body, namely on the neck. Operations for the median and lateral cysts of the neck are known as the commonest that determines the direction of our re-search. The aim of this study was to identify the optimal method to prevent the formation of pathological scars on the skin after surgical removal of cysts of branchiogenic origin in a comparative chronic aspect. We formed three groups of observation. To compare clinical changes, we assessed 5 parameters including: type, consistency, colour, sensitivity and scar tissue area. The study has shown significant differences in the regeneration processes in different groups, e.g. the group receiving the treatment with APRF clots demonstrated significantly better clinical signs in comparison with the control groups. We have substantiated the use of APRF-

clot at the stages of early prevention of the pathological scar formation on the skin after surgical removal of branchiogenic cysts.

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### **COMPARATIVE CHARACTERISTICS OF MICROHARDNESS OF DIFFERENT GROUPS OF BASIC DENTAL PLASTICS**

**Kuz' V.S., Dvornyk V.M., Kuz' G.M., Martynenko, I.M. Shemetov O.S.**

Key words: micro hardness, basic dental materials «Ftorax», «Vertex ThermoSens», «Lipol», «Deflex Acrylate».

The aim of this work was to compare the mechanical characteristics of polymers used to make bases of removable dental prostheses. A series of experimental studies to test samples for determining the micro-hardness of materials were carried out. The following plastics were used in the study: fluorine-containing acrylic copolymer «Ftorax», (Ukraine); thermoplastic materials «Vertex ThermoSens», (Netherlands); «Lipol», (Ukraine); «Deflex Acrylate», (Argentina). The plastics were tested by using the portable hardness testing device «PMT-3» with a standard 136-degree diamond pyramid with a square base. Microindentation test by measuring shallowing consists in making impression on the sample surface by static load applied to the diamond tip for a certain period of time. Comparative evaluation of indicators of average microhardness in the samples tested has show that the material «Ftorax» has the highest degree of microhardness, the second place is occupied by the material «Vertex ThermoSens», and the third by the material «Deflex Acrylate».



The material «Lipol» has the microhardness index, which is almost twice lower than the relevant index of the «Ftorax» material.

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## **RESTORATION OF THE PALATAL REGION IN REMOVABLE AND SUPPORTING LAMINAR DENTURES (PRELIMINARY REPORT)**

**Tarashevska Yu.Ye.,**

Key words: removable dentures, thermoplastic stamping, raised palate, articulatory rehabilitation.

**Introduction** The existing technologies for modelling the palatal part of the denture do not fully provide the opportunity to restore the individual structure of the palate, especially on the oral surface of the denture. Therefore, the search for new technologies for its restoration is urgent. The aim of the research is to process and improve the laboratory stages of manufacturing removable plate dentures. **Materials and methods** Using vacuum moulding device «Pro-Form», manufactured by Keystone (USA), palatine blanks were made up of different plate thermoplastic materials, including base 02 wax, manufactured by Stoma (Ukraine), soft (plasticized) polyvinyl, manufactured by ProForm Keystone (USA), rigid (non- plasticized) polyvinyl, manufactured by ProForm Keystone (USA). We selected of plate materials based on visual assessment and micrometric studies with using a micrometre MK 50, range of 25-50 mm, accuracy of 0.01 mm and depth gauge (GM-25, 2nd precision class, 0.01 mm). **Results** Plate thermoplastics at the moment of stamping get stretched, that is, palatal blanks are thinner in comparison with the original thermoplastic plates; they have different uniformity in the thickness of the blanks and different degree of fit to the cast model. **Conclusion** Palatal stamped blanks made of rigid (non-plasticized) polyvinyl can be successfully used in the technological process of making biteplates, wax compositions and ready-made removable dentures.

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## **ISSUES OF SYSTEMIC PATHOLOGIES AT DENTAL EXAMINATION**

**Potapchuk A.M., Melnyk V.S., Horzov L.F., Rivis O.Yu.**

Key words: periodontitis, diabetes mellitus, dental treatment, questionnaire.

The article presents and analyzes the data concerning the issues of systemic pathologies at dental examination. According to the European Association for the Study of Diabetes, 6-10% of the adult

population of the world has this disease, and every year the number of such patients increases. However, unfortunately, dentists underestimate oral-systemic connection and oral manifestations of systemic pathologies, as well as the impact of dental pathology on the course of systemic diseases. We conducted a questionnaire survey of 170 patients and 56 dentists from the city of Uzhhorod and described the results obtained. The level of blood sugar in 42 patients with periodontitis was determined. Among respondents, 97 people suffered from diabetes (57%). The analysis of medical history data demonstrated that 42% of patients at the stage of filling the primary medical documentation were even not asked by dentists about systemic or other diseases. Only every fourth dentist always asked patients about past and present medical conditions during taking history. 12% of the dentists we interviewed never refer their patients to other specialists and started dental treatment immediately. About a half of the dentists (44.3%) involved in the survey reported that all of their patients had periodontal tissue diseases of various severities. Among 34 patients with periodontitis who had not had a history of a confirmed diagnosis of "diabetes mellitus", 6 were found out to have an increase in blood sugar levels (7.8-12.2 mmol / l) by glucose fasting test that was a serious reason for their referring to endocrinologists. Thus, the analysis showed that diabetes mellitus becoming a "non-infectious" epidemic of the 21st century with a rapid spread among the population, has a direct impact on the state of teeth, periodontal tissues and, accordingly, on indices of oral morbidity in individuals with this endocrine pathology.

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## **EFFICACY FOR TREATMENT OF GENERALIZED PERIODONTITIS IN DRUG ADDICTED PATIENTS**

**Fedun I.R., Zubachyk V.M.**

Key words: generalized periodontitis, drug addiction, antioxidant protection, treatment.

The paper presents the analysis of clinical and laboratory efficacy of the integrated therapeutic and pro-phylactic complex in the treatment for generalized periodontitis in patients with drug addiction. The medicinal complex included "Quertin", "Namacit", "Xeros Dentaid". The study involved 28 drug-addicted individuals of both sexes aged from 18 to 45 with generalized periodontitis of initial and I stages. Depending on the therapy, the patients were divided into two groups: test (n=14) and control (n=14). The patients of control group receive the treatment for generalized periodontitis in accordance with Protocol for providing dental care in speciality "General Dentistry". As a result of the treatment, the patients of the test group demonstrated the improvement of clinical (ONI-S, PMA, PI) and laboratory indices of antioxidant protection compared with the indices before the treatment. The therapeutic complex can be considered as promising for the treatment of generalized periodontitis in drug addicted individuals.

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## **CLINICAL SUBSTANTIATION OF APPLYING ANTIDYSBIOTIC PREPARATION "LEKVIN" IN INTEGRATED TREATMENT OF INFLAMMATORY PARODONTAL DISEASES IN PATIENTS WITH HEPATOBILIAR DISORDER**

**Furdychko A.**

Key words: hepatobiliary pathology, inflammatory parodontal disease, index assessment.

Periodontal diseases are one of the pressing issues in modern dentistry. In accordance with existing conceptions on the pathogenesis of hepato-oral syndrome, the impairment of antimicrobial function of the liver plays a decisive role. It has been shown that intestinal dysbiosis negatively affects the functioning of gastrointestinal system. Using of the antidysbiotic "Lekvin" influences microbiocenosis, eliminates the signs of dysbiosis, and provides hepatoprotective effect. Therefore, the purpose of this study was to evaluate the effect of the antidysbiotic "Lekvin" on the efficacy of the treatment for inflammatory parodontal diseases in patients with hepatobiliary disorder. The article describes the results obtained through the study of the state of parodontal tissues in 157 patients with hepatobiliary pathology. The data analyzed included findings of clinical observations and index evaluation (OHI-S, PMA, PBI). 85 persons with non-alcoholic liver steatosis made up the group I and 72 persons with non-alcoholic steatohepatitis made up the group II. Depending on the therapy, patients with hepatic steatosis were divided into two subgroups: 41 patients received the basic treatment, and 44 individuals in addition to the basic therapy, took the antidysbiotic "Lekvin". Based on the the same principle the patients with steatohepatitis were divided into 2 subgroups: 34 patients received basic therapy, and 38 individuals in addition to the basic therapy took the antidysbiotic "Lekvin". The control group consisted of 20 healthy persons without pathology of the

periodontal disease. The indices after the treatment have showed that using of the antidysbiotic agent in the comprehensive treatment significantly improves the oral hygiene index (Green-Vermillion), the periodontal-marginal-alveolar index, and reduces the index of gum bleeding. Therefore, in order to increase the effectiveness of the treatment, it is advisable to use an antidysbiotic "Lekvin" in a complex treatment, and data obtained in 3 months after the completion of the treatment demonstrate a long-term effect.

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## **DYNAMICS OF PERIODONTAL DISEASE IN WOMEN WITH BACTERIAL VAGINOSIS AT DIFFERENT STAGES OF DISPENSARY OBSERVATION**

### **Shulzhenko A.**

Key words: bacterial vaginosis, *Gardnerella vaginalis*, *Atopobium vaginae*, chronic catarrhal gingivitis, chronic generalized periodontitis.

Introduction To date, there is no dental management strategy for women suffering from bacterial vaginosis, though it has been proven that all patients with bacterial vaginosis have chronic generalized inflammatory and inflammatory-dystrophic periodontal diseases such as chronic catarrhal gingivitis, periodontitis of the primary and the first degree of severity. The purpose of this study to carry out clinical and laboratory evaluation of the effectiveness new developed method of

treatment for women with generalized periodontitis against the background of bacterial vaginosis at different terms of observation. Materials and methods 84 women of child-bearing age were examined. The division into groups was based on the gynecological status determined by the gynaecologist: I group (control) included 25 women with I and II degree of vaginal purity, II group included 27 women, Gardnerella vaginalis carriers, III group included 54 women with bacterial vaginosis. III group was divided into III-A (26 patients) with the standard treatment regimen, and III-B subgroups (28 patients) with a patented scheme. Clinical dental, gynecological and laboratory tests were performed. Additionally, we performed an amine test of oral and vaginal fluid, PCR to detect the presence of Gardnerella vaginalis and Atopobium vaginae in the oral cavity and vagina. Results Women of III-A group in 12 months demonstrated an increase in incidence of chronic generalized periodontitis of I degree by 0,3%, while chronic generalized periodontitis of the initial degree decreased by 3,89% that suggests the lack of stable remission and the effectiveness of the standard scheme in the treatment of inflammatory as well as dystrophic diseases of periodontal tissues in women with bacterial vaginosis. Percentage of chronic generalized periodontitis of I degree and chronic generalized periodontitis of initial stage in patients of the III-B group decreased by 10.7% and 32.19%, respectively that is an evidence of the positive dynamics and efficacy of the proprietary treatment regimen. Conclusions All patients with bacterial vaginosis have been diagnosed as having inflammatory and inflammatory-dystrophic periodontal disease and have not had clinically intact parodontal apparatus. There has been revealed an indirect association between the severity of periodontal disease and the number of sexual partners. Objectively, a stable positive outcome of the treatment in women of the III-B group has been established, while the women of III-A group demonstrated the short-term treatment effects.

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## **BIOELECTRIC ACTIVITY OF MASTICATORY MUSCLES AND ITS PARADOXES IN PATIENTS WITH MUSCULOSKELETAL TEMPOROMANDIBULAR JOINT DYSFUNCTION**

**Yatsenko P., Yatsenko O., Rybalov O., Semenenko Ju. I.**

Key words: electromyography, masticatory temporal muscles, temporomandibular joint, dysfunction, analysis of results.

According to the literature, as a result of various internal and external articular disorders there emerges an imbalance between the functioning of different groups of masticatory muscles, the relationship between the anatomic structures of the temporomandibular joint gets shifted that leads

to the development of its muscular and articular dysfunctions. There is little information on the physiological characteristics of masticatory muscles in this category of patients presented in the relevant literature. The purpose of this research is to carry out comparative qualitative assessment of bioelectric activity of the proper masticatory and temporal muscles in patients with muscular-articular compression-dislocation TMJ dysfunction. Objects and methods of research Visual analysis, electromyography of symmetrical masticatory and temporal muscles of 17 healthy volunteers and 83 patients with muscular-articular compression-dislocation TMJ dysfunction were performed. Results. In the majority (64 persons) of cases of muscular-articular compression-dislocation of TMJ dysfunction the characteristic feature of graphic records regarding the functional properties of the muscles under investigation is an expressed prevalence of the maximum indices of their bioelectric activity on the side of the joint with dislocation of the articular head of the mandibular bone in comparison with a joint that is in a state of compression, both during periods of teeth closure and chewing. We can conclude that almost every fourth patient with pathology under study has been found out to demonstrate paradoxical phenomena in functioning of the chewing muscular component that in turn affects the severity of their disease.

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## **A HEALTHY DOCTOR IS THE WAY TO GAIN VICTORY OVER CHRONIC NON-COMMUNICABLE DISEASES**

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Key words: healthy lifestyle, risk factors for cardiovascular disease, medical interns.

In 2016-2017 academic year the Department of Internal Medicine and Medical Emergency Conditions with Skin and Venereal Diseases introduced the educational and diagnostic strategy "Doctor in the fight against non-communicable diseases: start by yourself". The purpose of this work was to evaluate the attitude and readiness to keep healthy lifestyle and the self-awareness of risk factors for cardiovascular diseases among medical interns. Questionnaire "Building up of healthy lifestyle components" and Monitor of the Body Composition BF 500 (HBF-500-E, Omron, Japan) were used in the study. The data obtained reflect the stage of the evolutionary process of personal growth of future doctors. This will help to achieve goals stated by "Global action plan for the prevention and control of non-communicable diseases 2013-2020".

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## **ROLE OF PRACTICAL SESSIONS DURING the cycle of POST-GRADUATE TRAINING OF ORTHODONTISTS, THEIR TYPES, METHODOLOGY AND DIDACTICS PRINCIPLES**

**Davydenko V. Yu.**

Key words: forms and types of training, interactive methods of teaching, practical session, post-graduate education, didactics principles.

The article is devoted to the role of practical sessions during the cycle of post-graduate training of orthodontists, their types and methodology. This issue has been remaining disputable in national and international high school methodology and pedagogy. The task to choose, improve and to update the methodology of practical sessions is quite important and relevant. For any creative teacher, there is always a question about which methods are the most appropriate, the most effective. Our goal is to prove that practical sessions during the cycle of the post-graduate training of dental doctors and orthodontic interns are indispensable components contributing to their professional development; to analyze and assess a set of types and methods used in carrying practical training as well as the didactic principles upon which they are based. For interns, practical sessions are an integral part of the educational process that brings them closer to the real-life conditions of dental practice. Moreover, practical sessions can be regarded as a good way for sharing experience in approaches to orthodontic treatment, methodology of clinical examination, diagnosis and treatment planning. Therefore, the types and forms of practical sessions, their varieties, principles of construction and structuring are of great importance in developing interns' knowledge and professional skills. The final assimilation of knowledge, mastering practical skills is achieved only if they are fully comprehended and preserved in memory, and this is facilitated only by diverse forms, methods used to conduct practical session. Monotony and uniformity in learning does not provide an opportunity to improve, develop abilities, inhibits the professional growth of a

specialist. The search for new teaching aids, types of practical classes, and their introduction into training practice deserves more attention.

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## PHYLOSOPHICAL CONCEPTION OF UNIVERSITY

**Dubinina V. O., Bilanov O.S.**

Key words: education, knowledge, universal knowledge, conceptualization of education, university, philosophy of education.

The phenomenon of education as the institutional basis of humanitarian knowledge is one of the main features of modernity. It is in this capacity philosophical thought reveals its own heuristics and offers alternative approaches to solving problems caused by the development of world civilization, which professional scientific thinking sees only as a set of separate, "special" aspects, devoid of integrity. The orientation towards the search for universal principles of the existence of man, the semantic and value constants of social being, is the "competitive advantage" of the philosophical way of understanding the contradictions of the modern general cultural process, which, in fact, is almost the only link connecting natural scientific approach and humanitarian idealism. However, the use of philosophical categories in the analysis of the realities of the educational process depends on the level of paradigm of modern philosophizing, the nature of which is determined by the depth of the historical and philosophical justification of the concept of education. The generalization of the historical destiny of philosophizing aimed at the conceptualization of human education and educational activities is a priority task of modern science, the solution of which will enable to form a new basis for identifying and evaluating the concepts of institutionalization and reforming the education system, to widen its semantic horizon, to discover the philosophical prerequisites of current educational practices and to design the possibility to build up a new educational community. This article considers the idea of university as the most pronounced phenomenon within the conceptualization of education. We can suggest that it is the European university, which is the embodiment of the concept of education, the quintessence of academic and civil freedom and a pure, impartial search for truth. The purpose of the research is to reveal the historical and philosophical laws of the formation of the concept of learning through higher education. The findings of the research can be assimilated by the modern pedagogical thought which will help looking for optimal ways of constructing educational practices in the higher medical school.

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## **MANIFESTATION OF UKRAINIAN MENTALITY THROUGH MEDICAL DISCOURSE (ON THE MATERIAL OF FICTION WRITTEN BY UKRAINIAN WRITERS-DOCTORS)**

**Zhovnir M. M.**

Key words: medical discourse, linguistic view of the world, mentality, vocabulary, lexeme, lexical-semantic group.

This research is aimed at investigating lexical markers of Ukrainian mentality in the medical discourse. For this purpose we analyzed the fiction written by Ukrainian doctors. The methodology of this research included descriptive method, definition and component analysis, contextual and discourse analysis, elements of sociolinguistic analysis. The author made an attempt to analyze the peculiar functioning of medical discourse and to detect a close connection between the mentality and discourse. The paper is focused on the relevance of studying the linguistic, cognitive and pragmatic parameters of medical discourse in close connection with the basic mental characteristics of the Ukrainian ethnic group. The paper interpreted and systematized relevant theoretical data published in recent years. It has been found out that mentality is a balanced combination of emotional and rational world perception that contains general ethnic cultural norms, basic values, behavioural rules and standards, original traditions and life-affirming beliefs of the nation. The basic characteristics of the mental profile of Ukrainians (religiosity, antaenism, patriotism, lyricism, cordocentrism) have been outlined. Much attention has been paid to studying lexical material of the Ukrainian language. The investigation has shown the pieces of artwork



analyzed contain a significant number of markers reflecting Ukrainian ethnic identity. The research has revealed a range of important lexical-semantic groups of linguistic markers of the Ukrainian mental traits, which distinguish Ukrainians from other nations, e.g. «Religion», «Anteyism», «Patriotism», «Cordocentrism», «Lyricism». The prose of Ukrainian writers describes Ukrainians as pious, emotional, lyrical persons. Their patriotic feelings and the hyperbolized desire for peace and justice complement the variegated range of Ukrainian ethnic features.

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## **SPECIFICS OF APPLYING ETHICAL PRINCIPLES IN PEDIATRIC DENTAL PRACTICE**

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Adhering to the principles of medical ethics and deontology is important in effective communication between doctors and patients and thus reaching the full compliance. Developing and choosing the most effective approaches to the management of young patients at the dentist's is one among the most relevant and challenging issues of health care that is determined by a number of physiological and psychological characteristics of children at different age levels. Being a highly skilled professional, perfectly handling the latest technologies and techniques, a paediatric dentist should have knowledge regarding children psychology and competencies to win child's favour. The dentist should be very watchful and sensitive not only to children, but to their parents or family members as well in order to avoid or to lessen psycho-emotional conflicts. This work is aimed to analyze and to assess the significance of the main issues and principles of medical ethics and deontology in the paediatric dental practice. To provide a highly qualified medical care to children, a dentist should have not only deep theoretical background, be quite skilful in applying proper techniques; the dentist should also understand the psychology of the diseased child and his or her parents, to clearly realize the ethical problems existing in this area. The doctor's skills to calm down or encourage the child, to inform parents about diagnostic methods, peculiarities of treatment plan, occurrence of possible complications, and at the same time to cheer them up and obtain full compliance regarding the treatment are considered as mandatory ethical professional requirements. The key characteristics of applying deontology principles in paediatric dental practice consists in necessity to introduce special child-friendly communicative skills based on the knowledge of age psychological peculiarities. The dentists must remember that failing to communicate with the children and their parents is a major factor in their dissatisfaction. Not only making correct diagnosis, but also the successful treatment outcomes depend on well built-up communication and thus, mutual complete understanding between doctors and young patients.

Key words: ethics, deontology, paediatric dentists, children.

Developing and choosing the most effective approaches to the management of young patients at the dentist's is one among the most relevant and challenging issues of health care that is determined by

a number of physiological and psychological characteristics of children at different age levels. Being a highly skilled professional, perfectly handling the latest technologies and techniques, a paediatric dentist should have knowledge regarding children psychology and competencies to win child's favour. Moreover, a dentist should be very watchful and sensitive not only to children, but to their parents or family members as well in order to avoid or to lessen psycho-emotional conflicts; in case of clash dentists should act with tolerance, tact and patience. Therefore, ethics and de-ontology are important predispositions to build up effective therapeutic interaction between a physician and a patient.

This work is aimed to analyze and to assess the significance of the main issues and principles of medical ethics and deontology in the paediatric dental practice.

Ethics is the doctrine of morality, its origin and development, the rules and norms of human behaviour, their responsibilities when dealing with each other as well as with society, people's attitude to their work and the state they live in.

Medical ethics is a branch of ethical science that studies the objective foundations, the essence, specifics, structure and basic functions of the morale of health care workers. Within the scope of medical ethics, there are conventions existing in the medical settings and typical for medicine as an institution [10], in particular the relations between doctors and patients, possible contradictions between them, and ways to resolve conflicts. Medical ethics is paying more attention to studying the moral and ethical positions and profiles of patients. A modern patient is, as a rule, an active person whose attitude towards his or her health is becoming more and more conscientious. It is the patient who is increasingly seeking to make a decision together with his / her doctor concerning his / her health [9].

The general principles of medical ethics, which have been already laid down by Hippocrates in a well-known oath, are relevant in our time as well. There are eight basic principles of medical ethics [6, 7]:

1. Humane attitude towards the patient;
2. Non-maleficence, or refraining from harming the patient;
3. Providing medical care to all who need it, regardless of race, political membership or religious confession;
4. Solidarity of all doctors in respect of the dignity of people;
5. Keeping a patient's personal health information private;
6. Protecting people's lives from excesses that can threaten them (for example, from environmental pollution);
7. Avoiding involving people into experiments;
8. Refraining from actions that can undermine the dignity of a doctor's profession.

The foundation of successful paediatric dentistry is based on the physician's ability to control the behaviour of the child through the procedures of dental check-up and treatment. Moreover, the paediatric dentist should build up the interaction in the way, which not only contributes to the improvement of the child's oral health, but promotes the positive attitude towards the importance of preventive oral care [3].

Among the most important tasks the dentists typically face during the first child's visit to a dentist's office is to make a positive impression on the child and his / her parents. Both the child and par-ents should be convinced that the doctors definitely want and can help them [8].

In order to provide a highly qualified medical care to children, a dentist should have not only deep theoretical background, be quite skilful in ap-plying proper techniques; the dentist should also understand the psychology of the diseased child and his or her parents, to clearly realize the ethical problems existing in this area. One of the most im-portant issues is to explain the characteristics of a disease to parents or relatives of the child in order to obtain informed consent for treatment. The doc-tor's skills to calm down or encourage the child, to inform parents about diagnostic methods, peculiarities of treatment plan, occurrence of possible complications, and at the same time to cheer them up and obtain full compliance regarding the treatment, and therefore the patient's outcome are considered as mandatory ethical requirements.

Communication is a milestone in the manage-ment of paediatric dental patients, the first step in making the first and favourable impression, the precondition for further cooperation between the dentist and the patient. While interviewing the child, it is not recommended to make any notes – careful listening and eye contact to gauge patient's attraction to the doctor are sometimes the only things the dentists should do. The dentist should not express his or her opinions on previous decisions regarding diagnosis or treatment in the presence of the patients and their parents. It seems to be reasonable and appropriate from the ethical standpoint to give some pieces of advice and recommendations as well as to make the final diagnosis only following a complete examination of the children [5].

It is important to remember that the relationship between the doctor and the patient should not overstep the limits of institutional communication. Most children become much attached to adults and even become jealous of them; therefore the den-tists should be very tactful, sensitive and perceptive in getting in contact with young patients [4].

When communicating with the parents of small patients, the dentist should strictly follow some specific recommendations [2].

1. It is important to initiate contact with the child, because as soon as the parents note that the child does not resist the doctor, they begin putting trust in health care professional.
2. The doctor deserves trust and confidence and typically the children and their relatives consider their doctors trustworthy if they are harmonious as a personality, tolerant, attentive, optimistic, neat, having a healthy complexion, correct posture, non-smoker.

3. Convincing and clear information about child's disease presented in a friendly and soft tone, indicating a high professionalism, entails trust in doctors and institutions.
4. Minimization of fear and anxiety in children and their relatives at the dentist's office is one of the main deontological tasks that can be achieved by using above mentioned doctor's personal qualities and some techniques like distraction, joke, etc.
5. Keeping some reasonable distance combined with utmost benevolence promotes mutual understanding in difficult situations.
6. The manifestation of such spiritual qualities as attention, kindness, benevolence set parents at ease.
7. Strong will, when presenting certain demands to parents, facilitates the treatment course, since parents sometimes lose control over their emotions and sometimes fail to understand that their behaviour can influence the child's condition.
8. Convincing the child and parents that they are exceptionally interested party in following dentist's recommendations eliminates many deontological difficulties.

Today academic society is actively debating about bioethics as a set of knowledge on biology and evaluation criteria of human relationships [11].

Dental ethics is a part of medical ethics that is as a subfield of bioethics (from the Greek bios - life and ethics - ethics, morals, customs) – a science of moral principles of human behaviour and life.

The field of bioethical regulation in dentistry covers:

- the relationship between the doctor and the patient;
- relationships within the professional group of dentists;
- the relationship between dentists and other groups of healthcare professionals;
- relations between property, ownership and profit in dental practice;
- attitude to latest scientific achievements and criteria of their use in dental practice;
- pros and contras on the market of medicines and materials used in dental practice;
- aesthetic standards of dental care;
- attitude of dentists to the social and natural factors affecting the health of their patients;
- principles of identification of this professional group in society;
- attitude to state power and laws that run in this society;
- relationships within a professional group of dental professionals;

- the moral status of the patient in terms of his health and the recommendations of the doctor [12].

An integral part of medical ethics is the deontology that is predominantly of applied character and bears the imprint of a particular medical profession.

Medical deontology puts forward special demands to paediatric dentists, firstly, because their professional activity is based not only on direct contact with children, but also on communicating with the immediate relatives who have their own perception of the health of their children as well as personal and age-related peculiarities [3]. Secondly, the fundamental difference between the deontology of the dentist and the child is based on the necessity to apply special communication skills with children based on knowledge of their age characteristics. Thirdly, we need deep knowledge not only of age-related pathology, but also of age-related physiology, without which it is difficult to detect early deviations, which testify to the disease of the organs of the oral cavity [8].

Paediatric dentists in their daily practice are dealing with children, their parents or other relatives. And each of these categories requires a correct approach. Nowadays, parents and other child's relatives or representatives are armed with knowledge about childhood diseases taken from special and popular literature, the media and the Internet resources. In some cases the enthusiasm they demonstrate for various up-to-the-minute remedies and methods of treatment and prevention that sometimes can be even advertised by healthcare workers and far from being based on evidence-based medicine principles, can seriously affect interaction between doctors and child's parents and therefore impede compliance.

The routine in organizing and providing paediatric medical care typically involves the following ethical and legal problems [1]:

- the paternalistic (paternus means paternal) principle of doctor-patient interaction, when the doctors take upon themselves the responsibility for the treatment and its outcome, and pledge their commitment for the good of the patient making their own decision what is actually good or not for the child without involving child's relatives or representatives;

- time-limited communication between dental care professionals and parents in emergency conditions;

- parents' refusal to undergo diagnosis and treatment for confessional or ethical reasons, or due to the lack of awareness of some issues or prejudices, etc.;

- negative influence of incompetent advisors (relatives, third parties including sorcerers, quacks, unevident medical information presented in popular mass media resources) on parents' decision making;

- torpor of community associations or movements (e.g. groups of successfully recovered or treated patients, which disseminate the information among the parents about the peculiarities of the course and consequences of diseases, hospital and community ethical and legal committees and boards.

Conclusion

The paediatric dentists should build up their re-relationship with the young patients and their families based on the principles of humane ethics and morals, proclaimed with Hippocrates's oath and medical deontology. It is important to give the sick child as much time and attention as it can take to make accurate diagnosis, to provide full medical care and to substantiate the treatment plan and prevention measures. The dentists must remember that failing to communicate with the children and their parents is a major factor in their dissatisfaction. Not only making correct diagnosis, but also the successful treatment outcomes depend on well built-up communication and thus, mutual complete understanding between doctors and young patients.

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## **ANALYSIS OF STUDENTS' AWARENESS ABOUT DRUG ADDICTION IN POLTAVA**

**Pluzhnikova T. V., Kostrikov A. V., Krasnova O. I.**

Key words: awareness, drug addiction, harm, drug use.

Drug addiction is a severe disease that develops very rapidly. The number of drug addicts is increasing throughout the world, including Ukraine. The problem of drug addiction is that this does not imply the only mode to inject drugs. Just smoking sometimes is quite enough to develop heavy dependence. Young people need to be aware that drug use is not only detrimental to human health, but also destroys and kills the body. The urgency of the topic is determined the fact that throughout the world there are more than a quarter of a billion drug addicts. Annually 200.000 people are killed for drug-related reasons. The purpose of the study was to analyze the awareness of the students of the higher educational institutions of Poltava about the harmfulness of narcotic drugs. The methodology of the research included systemic approach and systemic analysis, historical, analytical, bibliosemantic, medical statistics and sociological methods. We processed 510 questionnaires of second year students of the Faculty of Dentistry, Ukrainian Medical Stomatological Academy, and of the first year students of the Pedagogical University, 230 of them were male students (46%) and 280 female students (54%). The age of respondents was 17-19 years old; they were from Poltava and Poltava region. The students responded to various questions that were presented in the questionnaire regarding their knowledge of the harmfulness of drug use, where they could find the setting to take the course of treatment from addiction. The proportion of those who at least once used narcotic drugs or used them on a regular basis has been found out. The attitude of students towards narcotic drugs and psychoactive substances, their behaviour and attitudes towards drug users has been shown.

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## CASE REPORT OF UPPER EXTREMITY NEURILEMMOMA

**Ivanytska T.A., Kapustyansky D.V., Ivanytsky I.V.**

Key words: neurilemmoma, schwannoma, upper limb, ultrasonography.

Neurilemoma is a benign tumor associated with the Schwannian sheath of nerves. Doctors often neglect additional methods of examination such as ultrasound and MRI for differential diagnosis of soft tissue tumours, although the proper treatment largely depends on the type of the tumour. Clinical case. We present the clinical case of neurilemmoma of the shoulder, which was found in a 22-year-old woman. The lump with a diameter of 7 mm in the region of the ulnar fossa appeared after considerable physical exertion, manifested by soreness during palpation and restricted a range of movements of the limb. Ultrasound examination detected a hypoechoic round-shaped mass with clear, even contours, homogeneous by its structure, with a hyperechoic capsule. The mass was not associated with surrounding soft tissues and was found in the subcutaneous fat tissue. When energy Doppler mapping was performed, it was found that the mass had no blood vessels; compression elastometry showed the strain ratio 4.8 when compared with fat tissue, and 3.9 when compared with muscle tissue, indicating increased stiffness of the tumor tissue. We carefully removed it under magnification. Even in the early postoperative period, the patient noted the absence of clinical symptoms, improving the quality of life. Sensitivity in the innervation zone of the nervus cutaneus brachii posterior was not affected. Conclusion. Ultrasound diagnostics makes it possible to differentiate neurilemmoma from other types of tumours of soft tissues and choose the right tactics for managing a particular case. The treatment consists in surgical removing the tumour and involves a precise dissection and extraction from the neural bundle under the magnification. Timely and correctly performed surgical treatment can ensure the absence of neurological defects. Close cooperation between a family medicine doctor and an ultrasound diagnostician and a surgeon will improve the quality of diagnosis of atypical soft tissue tumours.

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## **CLINICAL CASE OF TOXIC LIVER DAMAGE WITH PESTICIDES**

**Shylkyna L.M., Yvanytskyi Y.V., Svytlovska Y.S., Kostenko Y.V., Chyhryn O.O.**

Key words: chronic hepatitis, liver cirrhosis, toxic liver damage, pesticides, clinical case.

The problem of chronic liver disease is currently one of the most urgent in modern gastroenterology and is a serious medical and social challenge. 15-30% of world population is suffering from liver diseases and this is only the part that asked for medical aid. The spectrum of liver diseases is very wide covering a variety of variants of chronic hepatitis and, in the end, liver cirrhosis. According to the World Health Organization, at the end of 2015, approximately 325 million people were reported to have chronic hepatitis. In Ukraine, diseases of the digestive system occupy the third place in the structure of general morbidity and in recent years have increased by 22.8%. Hepatitis demonstrates the highest growth rate, almost 2-fold. The mortality rate for liver cirrhosis over the past 10 years has increased from 7.4 to 22.2 per 100,000 of population. The xenobiotics that enter the human body and animal body and can cause liver damage include industrial poisons, pesticides, carcinogens, synthetic medicines, and chemicals for household purposes. The problem of using pesticides is a major concern for physicians for the number of reasons. Pesticides are biologically active compounds and because of violations of the regulations for handling them, they become hazardous for the environment, the health of people, animals, and plants. According to the International Labour Organization, one of the most dangerous sectors for the health of workers throughout the world is agriculture, which employs almost 1.3 billion people, with a loss of up to 170 thousand agricultural workers each year as a result of poisoning with pesticides and other

chemicals. Pesticides that contain a large amount of hepatotoxic substances and enter the human body through the digestive tract and accumulate in the liver are particularly dangerous. Their interaction with the human body is characterized by direct damage to the parenchyma of the liver and impairment of metabolic processes in the tissue. Increasing the frequency of poisoning with chemicals is accompanied by an increase in the absolute number of cases of chemical-induced liver damage. Liver cirrhosis, especially in later stages, is a significant problem regarding the possibility of specific antiviral therapy, the achievement of a stable viral response and the possibility of reverse development of fibrotic changes. As a consequence, the therapy for these patients is limited only by pathogenetic therapy. A clinical case of liver cirrhosis is described, appropriate treatment is proposed.

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## **THERMAL RADIATION AND THERMAL IMAGING STUDIES IN MEDICINE**

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Key words: thermal radiation, thermal picture, thermographic exploring, infrared thermography, thermal imager.

The purpose of the review is to describe and evaluate the possibilities of infrared thermography in various areas of medicine. Thermography (from the Greek therme - heat and grapho - writing) is a set of methods for measuring and recording thermal radiation. Thermal radiation was discovered in 1800 by the English astronomer William Herschel, who gave him the name "infrared radiation." That is, the radiation that lies behind the red border of the visible spectrum. The first "thermal picture" was called "thermogram". This term is also used in modern literature. Thermography in medicine is a method of recording the visible image of the thermal fields of a human body emitting infrared pulses that can be read directly by a thermal imager and converted into images - a thermogram that records the heat distribution on the surface of the body. The thermograms of the human body contain very valuable information. The human body has a non-uniform surface temperature distribution, which changes in the presence of pathologies, the acceptance of medicinal preparations, carrying out stress tests, and during the natural thermoregulation of the organism. With the help of infrared thermography, it is possible to detect and recognize many pathological changes at an early, pre-clinical stage. The visualized temperature radiation in the complex diagnosis of the disease additionally provides important information on the presence and severity of inflammatory processes and provides an opportunity to assess the effectiveness of conservative treatment. In medicine, the thermal imager is indispensable for absolutely safe and non-contact inspection of the patient. The current level of development of thermal imaging technology in the world allows medical professionals to make reliable diagnosis of a wide range of diseases, which is the reason for the active introduction of thermography into clinical practice, along with other modern methods that exist in the arsenal of doctors: mammography, computed tomography, magnetic resonance imaging and ultrasound scan.

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## **DEVELOPMENT OF METABOLIC SYNDROME DURING SYSTEMIC DYSFUNCTION OF ERYTHROCYTES**

**Ramazanov V.V., Volovelskaya Ye. L., Nipot E.E., Yershov S.S., Ershova N.A., Rudenko S.V., Bondarenko V.A.**

Key words: metabolic syndrome, diabetes, hemorheology, erythrocytes.

Metabolic disorders that considerably predispose to risks of emerging cardiovascular diseases and diabetes mellitus type 2 are combined by a term ‘metabolic syndrome’. Insulin resistance is commonly considered as the basis of the syndrome, although its development is determined by many pathological components, including inflammation, oxidative stress and impairment of hemorheology due to an increase in the degree of aggregation of erythrocytes. In recent years, the hypothesis that a defect in the physiology of red blood cells can contribute to micro- and macrovascular diseases has been confirmed. The ability of insulin to affect the activity of protein kinases and phosphatases in various cells, including erythrocytes in patients with insulin resistance has been found out to be limited. These dysfunctions require more attention of researches in order to explore the possibility of developing a new therapeutic strategy for the treatment of metabolic syndrome and diabetes type 2.

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## **CHARACTERISTICS OF DIFFERENT NOSOLOGICAL FORMS OF LYMPHADENITIS OF MAXILLOFACIAL AREA IN CHILDREN**

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Key words: children, face, neck, lymphadenitis.

During the first three years of a child's life, the formation of lymph nodes as anatomical structures occurs gradually. However, in the functional and immunological aspects, they do not reach perfection, so they get easily infected and may develop serious consequences and complications. The anatomical and physiological characteristics of the structure of the maxillofacial area, and in particular the presence of temporary and permanent teeth are quite important and complex aspects related to the involvement of the lymph nodes in the pathological process. Dental rudiments are surrounded by a lymphatic ring, which forms numerous interconnections with the lymphoid structures of the periosteum and the bone. This is a feature that probably contributes to the high occurrence of inflammatory process in regional lymph nodes in children having complicated forms of dental caries. It should be noted that even when the odontogenic inflammation focus is in the stage of remission, the manifestations of inflammatory reaction directly in the lymph node may progress. In addition, depending on the entrance gate, they may be of dermatogenic, rhinogenic, otogenic, tonsilogenic and dental origin. Recently, much attention has been paid to lymphadenitis associated with "cat scratches" and post-vaccination reactions, especially after the administration of BCG vaccine. Chronic nosological forms of lymphadenitis are triggered as a result of arresting the acute serous process or under the influence of subvirulent microorganisms. Long-term persistence of an infectious agent in the lymphatic system leads to the replacement of the lymphoid substance by the granulation one. At the same time, remissions and manifestations of the exacerbation may interchange.

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## **ORTHODONTIC REHABILITATION OF PATIENTS WITH STROKE DURING NEUROLOGICAL DEFICIT BY THEIR HEMITYPE AT THE RECOVERY PERIOD**

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Key words: orthodontic rehabilitation, stroke, quality of life, disability.

The author of this work points out that a partial or complete absence of teeth often leads to a decrease in vital functions (chewing, speech production), as well as significantly affects the socio-psychological sphere of patients. The study of the quality of life related to health allows us to study the effect of the disease and its treatment on the quality of life of a sick person, including all the components of health as physical, psychological and social wellbeing. The article focuses on one of the components of rehabilitation for patients with consequences of acute cerebral circulation event, and namely, the restoration of the masticatory function, because this disorder may result in the uncoordinated work of the musculoskeletal system of the dentoalveolar region. The aim of the work was to analyze and generalize the knowledge on the necessity for prosthetic correction and re-establishing of existing orthodontic appliances in patients with acute impairment of cerebral circulation during neurological deficit by the hemitype and the improvement of the functioning of their neuromuscular apparatus, as this greatly affects their quality of life. Studying of relevant literature has pointed out some directions requiring thorough investigation of the masticatory functioning in patients with a complicated course of acute cerebrovascular events and neurological deficiency by the hemitype; approaches to improve prosthetic and orthodontic corrections; as well as the development, implementation and research of the effectiveness of the therapeutic and prophylactic complex at the stage of orthopaedic adaptation. The ways to improve the quality of life of patients with a complicated course of acute cerebrovascular accident and neurological deficit by the hemitype are of great clinical and social importance and require more detailed investigation.

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## **THE ROLE OF MINOR SALIVARY GLANDS IN MAINTAINING ORAL HOMEOSTASIS AND THEIR CHANGES UNDER THE INFLUENCE OF VARIOUS FACTORS**

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Key words: minor salivary glands, secretion, functional activity, acrylic plastics, removable plate prostheses, residual monomer.

The balance of processes in the oral cavity, stability and integrity of oral organs and tissues are determined by the constancy of the quantitative and qualitative composition of saliva. Changes in this constancy can occur under the influence of a number of factors: taking chemicals, inflammatory processes of the salivary glands, their mechanical trauma, aging, loss of teeth, which leads to a decrease in the height of the occlusion; systemic diseases that affect the condition of the salivary glands, the use of various types of dental prostheses. The latter, together with the age-related changes in the salivary glands, plays an important role in the secretion of both large and minor salivary glands, especially in patients wearing various removable acrylic plastics dentures. The aim of this work is to carry out a comparative analysis of the condition of minor salivary glands exposed to impacts produced by various factors according to research data covered in the literature. Conclusion. The analysis of publication devoted to the conditions of minor salivary glands in normal state and under the influence of various factors has shown that much attention has been paid to their secretory function, its changes with age. However, the questions of the clinical and morphological state of minor salivary glands have not been adequately studied, especially in patients using removable plate prostheses made of acrylic plastics.

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## **THERAPEUTIC ASPECTS OF ANALYSIS OF ADHESIVE SYSTEMS**

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Key words: adhesive system, restoration.

Currently, a large number of different adhesive systems are present on the dental market. However, the problem of ensuring a reliable and durable connection of composite materials with the tooth surface has not yet been fully solved. Therefore, at the same time the formulation and improvement of dental adhesive systems is as important as the elaboration of composite materials. There are adhesive systems for dental enamel, as well as for enamel and dentin simultaneously. By their composition, the systems can be one-, two- or multicomponent; by the way of curing they are self-curing, light curing and double curing. Depending on the content of the filler the systems are filled or unfilled. If the adhesives contain acid, then the system is known as self-etching. Having studied the relevant literature, we can suggest that an ideal perfect adhesive system providing an optimal application rate, high strength and durability of the adhesive compound has not yet been formulated. All available adhesive systems have their advantages and disadvantages. Therefore, the main task of the dentists is to select the system that meets the specific clinical demands.

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## **CHALLENGES IN DIAGNOSIS, DEVELOPMENT AND THERAPY OF POST-TRAUMATIC STRESS DISORDER**

### **Halchenko A.**

Key words: post-traumatic stress disorder, comorbidity, PTSD management, cognitive-behavioural therapy, pharmacotherapy.

A systematic review of modern clinical and research literature has been conducted in order to highlight the issue of post-traumatic disorder. This question has been discussed actively in Ukraine for the last few years. The existing socio-political situation in our country is characterized by a high level of tension of psychic stress adaptive mechanisms that significantly impairs the mental health of the population. Internally displaced people, servicemen, as well as their family members constitute a risk group for the development of mental disorders, and in particular post-traumatic stress disorder.

Such patients require professional comprehensive care, but the fact of stigma and lack of psychological education and information makes them to search for medical aid at general practitioners. Comorbidities disguise the true cause of maladaptation that leads to the ineffectiveness of the treatment. Therefore, this article highlights some important aspects of diagnosis of the disorder, its mechanisms of the development, differentiation, taking into account the comorbidities, the peculiarities in choosing therapeutic options based on the evidences of national and international medical science. Considerable attention has been paid to strategies for the management of post-traumatic stress disorder. Analysis of research publications allows us to conclude that in the management of post-traumatic stress disorder benefits are primarily given to psychological interventions. Pharmacotherapy is recommended only in cases of insufficient effectiveness of psychological methods or the presence of stable comorbidity.

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## **THE ROLE OF ENDOTHELIAL DYSFUNCTION IN THE PATHOGENESIS OF SCLERODERMA**

**Yemchenko Ya. A.**

Key words: scleroderma, pathogenesis, immunity, dysfunction of the endothelium.

Scleroderma ranks one of the leading positions by its incidence rate among systemic dermatoses. Though there is the lack of official statistics data, it can be claimed that the number of patients with scleroderma is increasing and the disease has become more aggressive for the last time. This disease is characterized by systemic progressive affection of connective tissue with predominance of fibrosclerotic and vascular changes that is manifested by generalized vasospastic disorders and affection of microvascular structures in the form of obliterating endarteriolitis, intima proliferation of smooth muscle cells, thickening of the vascular walls and narrowing of the vessels, microthrombosis, as well as perivascular and tissue infiltration with mononuclear leukocytes. At the same time we observe the development of intravascular changes including platelet aggregation and adhesion, activation of plasma factors VII and VIII, release of vasoactive amines, hypercoagulation, microthrombosis, which enhance local ischemia. Activated by the "coagulation cascade," the mediators intensify the destruction of the endothelium by maintaining the cycle of damage and subsequent repair of the vascular walls with reduplication of the basal membranes, the intimate proliferation of the smooth muscle cells, and collagen, which promotes the development of hemorheological and immune disorders. As a result, the characteristic sclerodermic microangiopathy associated with the connective tissue metabolic disorders develops. Therefore, the basis of the pathogenesis of scleroderma consists in the complex interaction between endothelial cell dysfunction and the damage of the microvascular channel, inflammation, autoimmune reactions, and activation of fibroblasts that leads to increase in collagen synthesis and metabolic abnormalities in the extracellular matrix.

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## THE LOCAL DRUG DELIVERY SYSTEMS IN DENTAL PRACTICE

**Komarytsya O. Yo., Uhliar I. M.**

Key words: removable prosthetics, hydrogel of active adhesive polymer, chlorhexidinum bigluconate, system of local drug delivery.

The presence of prosthetic constructions in the oral cavity often contributes to the development of dysbiosis with the emergence of pathological processes in the oral mucosa. A prospective direction of pharmacotherapy is aimed at formulating and applying drugs with local and prolonged action in dental practice. All methods of prolongation are divided into technological, chemical and physiological. The most of methods aimed at achieving drugs with prolonged action relates to chemical ones. The principle of their synthesis consists in transformation of the chemical structure of drugs and excipients. This system is gaining more popularity due to prolonged drug action and greater concentration of an active agent in predicted place, the use of low dose of the overall effect with a corresponding reduction of side effects compared with systemic administration. Pharmaceutical activity is provided through spreading capillary network in oral mucosa, thus avoiding the liver and the gastrointestinal tract that in turn leads to high bioavailability. This approach enables to use pharmaceutical ingredients, which are not suitable for systemic administration. There are two types of monolithic systems that are used in the oral cavity: non adsorbable, when the polymer preserves its integrity during the release of the ingredient, and adsorbable, which disintegrate during the release of drug. The first literature data on studying of monolithic fibres serving as the depot system and as the local drug delivery system during periodontal diseases were reported by Dr. Max Goodson (1979). Another promising approach dealt with the development of gel polymer chips. The system of synthetic polymeric chips has been proven to be an effective transport system of biodegradable collagen. The recent studies have proposed multiple multi-layer films with the gradual release of pharmaceutical ingredients according to the stages of the treatment process.

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## **DIAGNOSTIC CRITERIA FOR SJOGREN'S DISEASE IN DENTISTRY**

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Key words: literature review, Sjogren's disease, xerostomy, diagnostic criteria in dentistry.

Sjogren's disease is a common cause of oral mucosa dryness resulting resulted from hypertrophy and lymphoid infiltration of salivary gland stroma. 5-11% of patients with Sjogren's disease develop lymphoma that may be explained by late diagnosis and the absence of effective treatment

for this condition. Therefore, the efforts should be directed at early detection of this disease and rational therapy. Available literary sources demonstrate that even at the present stage Sjogren's disease diagnosis is still difficult to establish due to the variability of its clinical manifestations and the absence of conventional diagnostic criteria. Patients with Sjogren's disease when visiting dentists usually complain of swelling in the salivary glands and xerostomy, which is present even at the early stages of this disease. Therefore, more attention should be paid to this group of patients and additional diagnostic methods should be used. Identification of the "major" and "minor" criteria for this disease is based on general sialometry. In some cases incision biopsy of the salivary glands, cytology of the affected glands and sialography are required to confirm the diagnosis. It should be stressed that in at present there is an increasing interest to the role of cytokines in saliva secretion. It has recently been discovered that patients with Sjogren's disease have lower levels of interleukin-1 in saliva that can initiate inflammation of oral mucosa ultimately leading to xerostomy.

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## **ENDOVASCULAR TECHNIQUES IN TREATMENT OF ISCHEMIC FORM OF DIABETIC FOOT SYNDROME**

**Lyakhovsky V.I., Puzyrev G.S., Sakevich R.P., Gavlovskiy A.L., Khanenko Ye. B.**

Key words: diabetic foot syndrome, ischemic form, occlusive stenotic lesions, vascular and interventional radiology, balloon angioplasty, stenting.

This article covers the causes of the development of the ischemic form of diabetic foot syndrome and the development of purulent necrotic complications of the lower limbs. The aim of this

literature search is to conduct an analysis of the scientific literature devoted to the role of vascular radiology methods of treatment for occlusal stenotic atherosclerotic lesions of peripheral arteries in the lower extremities in patients with ischemic form of diabetic foot syndrome. We focused on the restoration of blood circulation in the lower extremities by means of vascular radiology interventions on peripheral arteries. It has been found out these methods have significant advantages over open reconstructive interventions on the arteries including the possibility of their fast performing under local anaesthesia with low traumatic, low mortality, and rapid recovery of patients. This approach enables to save an extremity and the life of patients. The disadvantages of balloon angioplasty and stenting of lower limb arteries are also described in details. Conclusion. Modern surgical treatment of the ischemic form of diabetic foot syndrome associated with the application of X-ray endovascular methods remains topical issues of our time and requires further extended study.

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## **COMPARATIVE CHARACTERISTIC OF MODERN METHODS FOR ASSESSING MASTICATORY EFFICIENCY**

### **Zaporozhchenko IV**

Key words: masticatory efficiency, chewing test, computer analysis, test samples

This article posits that masticatory efficiency is one of the most important indicators of human oral health, and assessing the performance of the grinding function and the preparation of bolus for further digestion is considered to be the most objective marker for determining the degree of this efficacy. The article focuses on the existence of a large number of methods and techniques for measuring masticatory efficiency, but there are no protocols for conducting these procedures that would regulate the sequence of conducting and evaluating these methods. The purpose of the work was to analyze the main known methods to measure the masticatory efficacy, factors that may influence masticatory efficiency, the ability to determine the optimal masticatory measure tests and the most adequate test material based on foreign and national available literary sources. Having analyzed the literature data, it has been found out that agar-agar is the most optimal test material because it relates to food products, but has neither taste nor smell, therefore, the probability of swallowing by a patient is minimal, as opposed to hazelnuts or almonds, and also this material has optimal density, which allows its use for patients wearing various dental appliances. The technique of carrying out masticatory performance test requires further research. The methodology on assessment of masticatory efficiency elaborated by the team of the Department of Orthodontic Propaedeutics, Ukrainian Medical Stomatological Academy seems to be promising in dental practice.

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## **SEVERITY OF NEURONAL DNA DAMAGE UNDER THE ACTION OF RESVERATROL IN MODELLED CHRONIC CEREBRO-VASCULAR PATHOLOGY OF MICE**

**Harmatina O.Yu., Voznesenskaya T.Yu., Grushka N.G., Lapikova-Bryhinskaya T.Yu., Krasilnikov R.G.**

Key words: chronic occlusion of common carotid artery, DNA-comet assay, resveratrol

The purpose of this work was to investigate changes in DNA fragmentation of neuron nuclei in both cerebral hemispheres of mice subjected to chronic unilateral occlusion of common carotid artery under action of resveratrol. Methods. The study covered 3 groups of C57 male mice: control group; mice subjected to modelled chronic unilateral occlusion of common carotid artery; mice subjected to modelled chronic unilateral occlusion of common carotid artery under resveratrol action (10 mg/kg, intraperitoneally, 7 days before and 3 days after the modelled occlusion). Chronic unilateral occlusion of common carotid artery was performed by applying left common carotid artery ligation. In 8 weeks, brain tissues samples were taken from left and right hemispheres of narcotized animals and neuron nuclear DNA damages were investigated by DNA-comet assay. Results. Under conditions of chronic unilateral occlusion of the common carotid artery modelling, the level of living cells (classes 0-1 of DNA-comet) in both cerebral hemispheres lowered due to an increase in damaged neurons (classes 3-4 DNA-comet), mainly on the unilateral side up to  $17.20 \pm 0.29\%$  ( $p < 0.05$ ). The administration of resveratrol during the modelled chronic unilateral occlusion of the common carotid artery increased the number of living cells (classes 0-1 of the DNA-comet), especially from the symptomatic side to  $90 \pm 0.37\%$ , by reducing the level of damaged cells to  $1.33 \pm 0.09\%$  and restoring the DNA fragmentation parameters to the relevant findings of the control group ( $p < 0.05$ ). Conclusion. Chronic occlusion of the common carotid artery was accompanied by DNA fragmentation of the neurons in both cerebral hemispheres mainly from the unilateral side. The introduction of resveratrol reduces the DNA damage that indicates its neuroprotective effect in these pathological conditions.

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## **INFLUENCE OF AP-1 TRANSCRIPTION FACTOR INHIBITORS ON THE PROTEIN DEPOLIMERIZATION IN PERIODONTAL CONNECTIVE TISSUE OF RATS UNDER SYSTEMIC INFLAMMATORY RESPONSE**

**Yelins'ka A.M., Kostenko V.O.**

Key words: activator protein 1, systemic inflammatory response, connective tissue, collagenolysis, proteoglycans, glycoproteins, periodontium.

This article presents the results obtained in the experiment on 30 white rats aimed at investigating the influence of an AP-1 transcription factor inhibitor (activator protein 1) SR 11302 on collagenolysis, as well as the depolymerization of proteoglycans and glycoproteins of the extracellular matrix of periodontium under lipopolysaccharide-induced systemic inflammatory response. The latter was simulated by intraperitoneal administration of lipopolysaccharide *Salmonella typhi* (pyrogenalum) in a dose of 0.4 µg/kg 3 times for the first week, and once a week for the following 7 weeks. SR 11302 ((E, E, Z, E) -3-methyl-7 (4-methylphenyl) -9- (2,6,6-trimethyl-1-cyclohexen-1-yl) -2,4,6,8 -nonatetraenoic acid, manufactured by “Tocris Bioscience”) was administered intraperitoneally in a dose of 1 mg/kg 3 times a week starting on the 30th day of the experiment with using pyrogenalum. Collagenolysis was assessed by the concentration of free hydroxyproline, the level of depolymerization of proteoglycans and glycoproteins was assessed by the content of their components – glycosaminoglycans and N-acetylneuraminic acid, respectively. It has been concluded that the application of SR 11302 under experimental conditions significantly reduces the depolymerization of collagen, proteoglycans and sialoglycoproteins in soft and osseous periodontal tissues, and restricts the resorption of the jaw alveolar process.

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## **STATUS OF NITROGEN OXIDE SYSTEM AFTER EXPERIMENTAL ULTRAVIOLET IRRADIATION IN REMOTE TIME INTERVALS**

**Kitsyuk N.I., Zvyagintseva T.V.**

Key words: local ultraviolet irradiation, nitric oxide, post-erythematous period.

Nitrogen oxide (NO) is considered as an important factor in immunity that however provides not only protective but also harmful effects on body during ultraviolet irradiation (UVI). The purpose of this study is to investigate the content of NO metabolites in the skin of exposed skin areas, as well as their concentration and activity of iNOS in the vblood after the local UVI of the skin of guinea pigs in the post-erythematous period. Materials and methods. Guinea pigs (n=24) were irradiated with a mercury-quartz device OKN-11M (UV A and B) in a dose of 1 MED (minimal erythematous dose) and removed from the experiment in the post-erythematous period (on the 8th, 15th, 21st, 28th days) in accordance with the principles of bioethics. We studied the content of total NO

metabolites, the content of nitrites, nitrates in the blood and skin and the activity of iNOS in the blood. Results. Exposure of guinea pigs' skin to local UVI resulted in NO system imbalance in remote post-erythematous period. There was an increase in the content of total NO metabolites in the skin on the 8th, 15th and 21st days with a maximum on the 8th day. The greatest shifts in blood were observed in the concentration of nitrites and iNOS activity, whose rates significantly exceeded the normal indices throughout the experiment (8th - 28th days) indicating the damaging effect of NO. Conclusions. 1. In the skin of the UVI exposed foci the increased content of total metabolites of NO, nitrites and nitrates is observed in remote post-erythematous period, on the 8th, 15th, 21st day after the exposure. 2. Local skin exposure increases the overall concentration of NO metabolites on the 8th, 15th days, nitrates – on the 8th day, nitrites –throughout the remote post-erythematous time period (8th, 15th, 21st, 28th day). 3. The sharp activation of iNOS in the blood is observed throughout the study period – on the 8th, 15th, 21st and 28th days.

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## **BIOCHEMICAL CHANGES IN THE EXOCRINE PORTION OF THE PANCREAS IN RATS KEPT ON HYPOCALORIC DIET**

**Nikolayeva O.V., Kovaltsova M.V., Sirenko V.A., Sulhdost I.O., Zhuravliova P.V.**

Key words: hypocaloric nutrition, pancreas, rats, enzymes.

Introduction. The urgent problems of the modern world are diseases of the digestive and endocrine system, namely, diseases of the pancreas (P). The number of patients with pancreas pathology is steadily increasing, moreover now there is a tendency towards the growth of pancreatic diseases in children. It has been reliably known that when the correlation of the concentration of nutrients in the blood changes, the risk of pancreatic diseases increases. Scientists suggest that dysfermentoses and other metabolic disorders of the pancreas can develop because of malnutrition. The aim of the study is to elucidate the effect of hypocaloric nutrition on the morphofunctional state of the exocrine portion of the pancreas in rats. Materials and methods. The experiment was carried out on 20 rats, divided into 2 groups of 10 rats in each. The group 1 included rats kept on hypocaloric diet (57.4 calories per day). This group was exposed to modeled alimentary protein deficiency. The animals of the control group (group 2) received a balanced diet (104.5 calories per day). In a biochemical study, a spectrometric method was used to assess the levels of lipase and  $\alpha$ -amylase in blood serum, and an immunoturbidimetric method for determining the level of  $\alpha$ 1-antitrypsin. All the obtained digital data were processed by the single-factor analysis of variance. All procedures on animals, as well as the removal of animals from the experiment by decapitation, were performed

under anesthesia using thiopental anesthesia in accordance with national generally accepted ethical principles. Results of research. Changes in the caloric content of the ration of animals caused morphological changes in the pancreas in the rats of the main group that probably contributed to functional changes in the disturbance of the secretory activity of the pancreas. Analysis of the exocrine activity of the pancreas in rats has shown that 100% of the animals in the group 1 demonstrate a deviation of the level of enzyme from the normative values that indicates exocrine pancreatic dysfunction. Such biochemical changes in blood serum of the animals of the main group are most likely a consequence of prolonged hypertrypsinemia, which is caused by insufficient activity of the blood plasma antiproteinase system due to protein deficiency in the diet, as well as active consumption of plasma inhibitors. Hyperenzymemia in rats receiving hypocaloric nutrition is probably due to a stimulating neurohumoral effect on the acinocytes, for example "vagotonia," and damage to pancreatic cells or the consequence of the "enzyme evasion phenomenon". Conclusions. Hypocaloric nutrition negatively affects the function of the exocrine part of the pancreas, causing its hyperfunctioning, as indicated by an increase in the level of enzymes. Due to the long-term hypertrypsinemia, the antiprotease system is depleted, causing intoxication and damage cells of the body by the active enzymes of the pancreas. Unbalanced nutrition is a risk factor for the pathology of the pancreas with subsequent involvement of other systems and organs in the pathological process.

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## MODELLING OF TAKOTSUBO CARDIOMYOPATHY IN PRESENILE RATS

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Key words: Takotsubo syndrome; experimental model, stress cardiomyopathy,  $\beta$ 2-adrenergic receptors,

Takotsubo syndrome is clinically manifested by signs of acute coronary syndrome with elements of acute heart failure. It is also known as left ventricle apical ballooning, stress cardiomyopathy, and "broken heart syndrome". For the first time the disease was described in 1991. Currently an international register of patients has been established, and diagnostic criteria of the syndrome have been established. But underlying pathophysiological mechanisms are still not clearly understood. There is also a discrepancy in experimental models of the syndrome. Existing rodent models have been developed using young male rats. This point does not match the epidemiology of the syndrome. In the present study we aimed to develop an experimental model of Takotsubo syndrome which would be the most exact simulation of this clinical pathology. Methods. Experiments have been performed on female Wistar rats of presenile ages (18 months old). This corresponds to sex and age criteria of the majority of patients with the syndrome. The  $\beta$ 2-adrenoreceptor agonist isoprenaline was administered intraperitoneally with 0,5 ml saline solution in a dose of 50 or 80 mg/kg. Electro- and echocardiographic parameters were recorded during the experiment. Results. It has been shown that the administration of 50 mg/kg of isoprenaline in rats of this sex-age group reproduces main criteria of Takotsubo syndrome in terms of functional manifestations and the course of pathological changes. Conclusions. The experimental model of the disease similar to clinical pathology was developed using pharmacological stimulation of  $\beta$ 2-adrenergic receptors. Corresponding criteria for of the experimental model have been improved. The model we developed can contribute into studying pathophysiological mechanisms of Takotsubo syndrome.

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## **EFFECTS OF ACUTE HYPOXIA ON FIBRINOLYSIS IN BASAL GANGLIA OF BRAIN IN RATS WITH PINEAL HYPOFUNCTION**

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Key words: pineal hypofunction, basal ganglia, acute hypoxia, fibrynolysis

Epiphysis plays an important role in the processes of homeostasis regulation and aging. An inhibition of pineal gland functioning disturbs endogenous circadian rhythms, and suppresses melatonin secretion that may result in reduction of organism resistance to stress. Inhibition of pineal gland in the experiments on ani-mals is simulated either by pinealectomy or keeping in conditions of twenty-four-hour light exposure (physiological pinealectomy). Thus, the aim of our research was to study the activity of tissue fibrinolysis under acute hypoxia as a stress factor during pineal hypofunctioning in basal ganglia of brain (the caudate nucleus, the nucleus accumbens, the globus pallidus, and the amygdala). Pineal hypofunction was modelled by keeping rats exposed to round-the-clock lightening. Acute hypoxia was modelled by simulating the lifting of rats on a height of 12 000 m. Samples of brain structures were then taken: the caudate nucleus, the nucleus accumbens, the globus pallidus, and the amygdale. Fibrinolytic activity in the basal ganglia was determined by an intensity of tissue fibrinolysis. It has been shown that both an acute hypoxia and a decrease in functional activity of pineal gland in rats are accompanied with a significant increase in fibrinolysis activity in basal ganglia. On the other hand, modelled acute hypoxia in rats with decreased pineal activity caused a significant decrease in fibrinolysis activity in these brain structures comparing to the control. Therefore, there is a reason to assert that the inhibition of the functional activity of pineal gland affects a sensitivity of the brain to hypoxia; in particular, the activity of tissue fibrinolysis under the combined influence of specified factors is significantly lower than under separate hypoxia.

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