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Contents

DENTISTRY

DYNAMICS OF SOME HAEMATOLOGICAL PARAMETERS IN PATIENTS WITH INFLAMMATORY DISEASES OF PERIODONTAL TISSUES WHO OPERATE UNDER DIFFERENT CONDITIONS OF HOTHOUSE EXPOSURE TO PESTICIDES

Dyryk V. T.

Key words: pesticides, greenhouses, inflammatory diseases of periodontal tissues, haematology.

The article presents an analysis of haematological parameters (red blood cells and their volume, haemo-globin concentration and hematocrit) in hothouse employees working in the open (I group) and closed ground (II main group) conditions under the exposure to pesticides. The severity of the inflammatory process in periodontal tissues was taken into consideration. It has been proved that the subjects of the study demonstrate slightly decreased number and volume of red blood cells, although these parameters are within the normal limits. At the same time, a significant decrease in haemoglobin and hematocrit in the main grpup has been identified, that supports the development of hypoxic and anaemic processes, which in turn worsen the course of inflammatory diseases of periodontal tissues.

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ORGANIZATION OF EFFECTIVE MEASURES AIMED AT TIMELY CORRECTION OF ORAL HEALTH IN PROFESSIONAL ATHLETES

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Key words: professional sport, periodontium, saliva, propolis.

Clinical and epidemiological studies involved 200 professional athletes and 200 healthy non-athletes. The athlets represented athletic sports and team sports, their sport experience ranged from 7 to 11 years. The prevalence of periodontal disease among the athletes was determined by using the CPITN index. To assess the functional state of the salivary glands, we studied their salivary secretion rate and secretion stimulated by biologically neutral and conventional preparations, which was prescribed to be taken for two weeks. The background rate of salivation was evaluated immediately prior and after intense workouts. We proposed to use a oral propolis-containing product designed to improve the condition of the periodontal soft and hard tissues, reduce the

degree of microbial contamination of the oral cavity, to increase the quantity and quality of saliva and salivation rate and thus to reduce dental plaque formation. 29 individuals were prescribed to use "Balsam pomegranate" (composition: propolis, extracts of maral root, Golden root, aralia, pine needles) and 22 athletes were prescribed to irrigate gums with gingival gel "ApiBalsam 1" (ingredients: propolis, vegetable oils). Results. The clinical severity of inflammatory reactions of soft tissues of periodontium was ranged from exactly the same as it was prior the treatment due to excessive formation of soft dental plaque resulted from inadequate hygienic oral care and special limiting diet. We registered high percentage of prevalence and intensity of inflammatory and destructive diseases of periodontal tissues. Among the main cause of their development and chronicity we could single out intensive and prolonged physical exertion. Even the younger age groups demonstrated a decline in the number of persons with a healthy periodontium. The mean value of CPITN index according to the frequency of occurrence in non-athlete females aged 18-25 years made up 15, 38±4, 48%, while in the athletes belonging to older age groups, the number of intact soft tissues ranged from 9.33±3, 36% to 5.00±2, 81%, and in athletes aged of 26 it made up 30%. Changes in the initial phases of observations in all groups of athletes can be described as unsatisfactory, since at the stage of intensive training during the precompetitive period, there was a significant inhibition of the functional state of the salivary glands, which was reflected in the decrease in the rate of salivary flow and the number of selected oral fluid to 2.2 ± 0.3 ml/min and 2.2 ± 0.2 ml/min, which significantly differ from similar indicators identified in clinical trials prior to the beginning of the training process and after a course of basic therapy. Conclusions. Hygienic state of the oral cavity and proper functioning of salivary glands in the first months of the intense training demonstrates decline of immunological reactivity, but the application of the drugs described can contribute to their significant improvement.

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CLINICAL AND PREVENTIVE MEDICINE

DIAGNOSIS AND TREATMENT OF COMBAT GUNSHOT ABDOMINAL WOUNDS

Belenky V.A., Mikhaylusov R.N., Negoduyko V.V.

Key words: combat gunshot wounds of abdomen, diagnosis, treatment.

This article presents the analysis of the diagnostic and treatment errors identified in 47 individuals with abdominal injuries and wounds who received medical aid during anti-terrorist operation in Ukraine. Errors in the delivery of medical aid to combatants with abdominal wounds and injuries were identified and classified according to their types. We suggest the complex measures aimed at improving the provision of medical care to those who got abdominal wounds and injuries, as well as the ways to prevent such errors and to im-prove treatment outcomes.

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INDICATORS OF PUBLIC HEALTH AND CURRENT VIEWS ON THEIR CALCULATING

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Key words: public health, statistics, disability-adjusted life years (DALY).

The level of society wellness largely depends on the state of public health. This article presents the analysis the indicators of population health and modern concepts of their calculation techniques. The ap-proach suggested by the WHO requires reconsideration of the methodology of information collecting and its adapting to statistics in Ukraine. The studying of risk factors (socio-economic factors, environmental conditions, etc.) of public health provides a new vision of the health of

Ukrainian population. The indicators of the public health, which are accepted in out state, should be coordinated with the methodology of collecting information approved in most of countries worldwide in order to carry out comparative studies.

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IMPACT OF CARDIOPHYTUM ON INDICATORS OF PRO- AND ANTIOXIDANT SYSTEMS OF BLOOD IN PATIENTS WITH ISCHEMIC HEART DISEASE AND CONCOMITANT NONCALCULOUS CHOLECYSTITIS

Bobkovych Ye.O., Hlubochenko O.V., Mikulets L.V., Korotchuk M.O.

Key words: Ischemic heart disease, chronic noncalculous cholecystitis, cardiophytum, treatment, antioxidant properties.

The changes of pro-oxidative system and mechanisms of antioxidant protection in patients with ischemic heart disease and chronic non-calculous cholecystitis in comparison with patients having isolated cardiovas-cular pathology have been described in the article. It has been proven that concomitant affection of the hepatobiliary system most considerably contributes to the enhancement of lipid peroxidation. It has been also found out that taking of cardiophytum by persons with comorbid pathology eliminates the imbalance of the antioxidant systems. Comprehensive treatment with the combined herbal remedy leads to decrease in lipid and protein peroxidation, improves

glutathione link of antiradical defence, normalizes catalase activity and stabilizes the level of ceruloplasmin.

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ISSUES ON SAFETY OF CHONDROPROTECTORS FOR PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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Key words: alcoholic fatty liver disease, osteoarthrosis, chondroprotectors, safety.

The study included 59 patients with fatty hepatosis and concomitant gonarthrosis. Therapy, standard for non-alcoholic fatty liver disease, was recommended to all the patients. But the patients of the test group were additionally prescribed to take alflutop. No negative influence of this medicine on structural and functional indicators of liver was detected. The patients of the test group demonstrated significant positive trend regarding the block "pain and discomfort" ($p<0,05$) by evaluating articular syndrome according to a Lequesnes scale.

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CLINICAL AND PATHOPHYSIOLOGICAL SIGNIFICANCE OF UTEROPLACENTAL CIRCULATORY INTERFERENCES IN PROLONGED PREGNANCY

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Key words: post-term pregnancy, hemodynamics, ultrasound Doppler examination.

Objectives: to study hemodynamic characteristics occurring in post-term pregnancy and the effects of changes in uteroplacental-fetal hemoperfusion on the course of gestational period and perinatal outcomes. The incidence rate of post-term pregnancy ranges from 3.5 to 16%. Many authors point out the correlation between perinatal mortality and prolongation of pregnancy. The most common perinatal complications of post-term pregnancy are asphyxia, birth trauma caused by macrosomia, and stillbirth, significantly increased incidence of meconium aspiration and fetal distress syndrome. The incidence of macrosomia reaches 20-30%, and the incidence of CNS damage has nearly doubled. The study the characteristics of delayed deliv-ery and perinatal outcomes was based on the observation of 96 pregnant women with prolonged delivery during 2013-2015, who gave birth to children in the period of 41-42 gestational weeks.

The control group consisted of 41 pregnant women, who did not differ from the test group by clinical and demographic characteristics, but delivered children at 37th – 40 weeks of gestation. The examination re-vealed no significant changes in blood circulation in the right uterine artery in both groups, while the full-term gestation group had a slightly higher maximum and minimum blood flow velocity in the left uterine artery compared to the group of post-term pregnancy. This can be explained by greater vascular resistance associated with the prolongation of pregnancy and failure of uteroplacental-fetal circulation. Index of resistance in the middle cerebral artery of the foetus in the first group was significantly lower and was equal to 0.72 conventional units against 1.03 conventional units in post-term pregnancy. Thus, there is increased vascular resistance in the central cerebral vessel of the foetus in the group of post-term pregnancy. Our research can contribute into forecasting of prenatal outcomes in post-term pregnancy. While planning the delivery tactics it is important to take into consideration the findings of ultrasound Doppler scanning that may indicate acute foetal hypoxia as well as other prognostic criteria of hypoxic-ischemic injury of the CNS and asphyxia. Reconsideration and extension of indications for caesarean section will reduce the incidence of prenatal complications including me conium aspiration syndrome, asphyxia, CNS damage.

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ASSESSMENT OF PHYSICAL FITNESS IN PRESCHOOL CHILDREN WITH MUSCULOSKELETAL DISORDERS

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Key words: preschool children, physical fitness, disorders of the musculoskeletal system.

The preschool age is known as an important period in the life of the child characterized by intensive processes of physical and mental development. The level of physical fitness is one of the important indicators of the child health. The state of physical development depends on the interaction of genetic factors and environmental factors and at the same time it is a sensitive indicator, which can alter under the influence of various factors. 357 preschool aged from 3-6 years (183 boys and 174 girls) with disorders of musculoskeletal system (MSS) were enrolled in the study to assess their physical fitness. The children attended preschool settings of Lviv where there were specialized groups for children with MSS disorders. The anthropometric indicators (height, weight, body mass index) were used to assess the physical fitness of the children. The study showed that body weight

of the boys in all age groups (except 4-years-old) on average was slightly higher than that in the girls. The analysis of body weight in children depending on the type of MSS pathology demonstrated that among the girls the highest values of body weight (17.96±0.28 kg) were revealed in those with flat-footedness, while among the boys (18.53±0.41 kg) in those with posture disorders.

The girls and boys who had concomitant MSS diseases weighed less, 16.76±0.30 kg; 17.17±0.28 kg, re-spectively. The estimation of height of children with MMS disorders points out different rates of physical development of children the same age. The estimation of children's height, depending on the type of pathology showed that the lowest (1.08±0.01 m) was identified in the girls and boys with concomitant diseases of the musculoskeletal system. The greatest height (1.11±0.01 m) was registered in the girls with flat-footedness and in the boys with posture disorders. Thus, the growth and development of the child is characterized by large individual variations that depend on age and sex, therefore children of the same age and sex are not a homogeneous group. Therefore, the uneven process of development of the child induces further studies of factors influencing on the physical state of the child.

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CORRELATION BETWEEN DISORDERS OF LIPID METABOLISM, INITIAL CARBOHYDRATE METABOLISM AND PURINE METABOLISM AND ACTIVITY OF INFLAMMATION FACTORS IN PATIENTS WITH ARTERIAL HYPERTENSION AND OBESITY

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Key words: arterial hypertension, obesity, lipid metabolism, carbohydrate metabolism, purine metabolism, inflammation factors.

91 patients with essential hypertension, who made up the main group, and 12 healthy individuals who made up a control group, passed through the examination that included general clinical and anthropometric evaluation, blood lipids and glucose (fasting and after glucose load) tests, assessment of insulin level (with detecting of HOMA index), uric acid level, high-sensitivity C-reactive protein. It was established that the combination of arterial hypertension and abdominal obesity led to significant impairments in the state of lipid metabolism (significant increase in atherogenic lipid fractions), carbohydrate metabolism (increased fasting glucose) and activation of

inflammatory processes (significant increase in C-reactive protein level). It was also found out the association of hypertension, abdominal obesity and hyperuricemia increases insulin resistance that can be considered as an additional factor contributing to the primary disorders of purine metabolism in the progression of arterial hypertension and cardiovascular risk in these patients.

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QUALITY OF LIFE IN PATIENTS WITH STOMACH CANCER

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Key words: quality of life, stomach cancer, survival, prognosis.

This study was designed to compare the quality of life in patients with gastric cancer considering demo-graphic, clinical, psychosocial risk factors of unfavourable prognosis depending on the occurrence of cardiovascular events. We examined 138 patients, all of them received QOL-CS questionnaires; 119 (84%) of them answered the questions and were involved in the study. Parameters of quality of life, clinical manifestations and previous treatment of gastric cancer, demographic parameters were assessed by linear regression to identify factors affecting the quality of life. Patients who had cardiovascular events reported significantly worse psychological well-being, general health, less vitality and health-related quality of life than patients who had no cardiovascular events. Patients who were not diagnosed cardiovascular events reported better social well-being than patients who were diagnosed cardiovascular events. The observed differences in quality of life were significant only when they were measured with the QOL-CS, and not with the SF-36. The general health perceptions and vitality levels of stomach cancer survivors with cardiovascular events remained significantly lower than those of patients without cardiovascular events.

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MODEL TO PREDICT Q-POSITIVE MYOCARDIAL INFARCTION IN PATIENTS WITH ACUTE CORONARY SYNDROME WITH ST-SEGMENT ELEVATION AND CONCOMITANT OBESITY

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Key words: thrombospondin-2, acute coronary syndrome, myocardial infarction, obesity, risk prediction.

An important task that is the basis of prevention of cardiac death and other complications of acute coro-nary syndrome (ACS) is to predict their development and clarification of the role of the new predictors. Re-cently researchers have been focusing their attention to thrombospondin-2, which is a matrix-cellular protein that participates in modelling of cardiomyocytes. Therefore it is important to develop the algorithms of risk stratification for patients with ACS, which would include the data of standard markers identifications in com-bination with new biomarkers such as thrombospondin-2. The aim of our work is to design a model to predict the development of Q-positive myocardial infarction (MI) in patients with acute coronary syndrome with ST-segment elevation and concomitant obesity, based on analysis of the prognostic value of thrombospondin-2 and findings of routine laboratory investigations. This model designed to predict Q-positive MI in the above mentioned patients has demonstrated high sensitivity and specificity that allows us to recommend its introducing into clinical practice.

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PECULIARITIES OF VITRONECTIN ACTIVITY AND ANTHROPOMETRIC PARAMETERS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND CONCOMITANT OBESITY

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Key words: acute myocardial infarction, obesity, vitronectin, anthropometric parameters.

At the beginning of 2016 cardiovascular disease (CVD), and especially coronary heart disease (CHD) are still rankling their leading position among the causes of disability and premature death worldwide. Threaten-ing forms of CHD is acute myocardial infarction (AMI), resulting from atherothrombosis that is especially dangerous for obese people. Today, scientists are trying to find out predictors of acute coronary events and their fatal consequences, one of which is vitronectin. Objectives: to explore vitronectin activity in patients with acute myocardial infarction and comcomitant obesity and to analyze the nature of the correlation of this indicator with anthropometric parameters of the patients. Materials and methods. The study involved 66 patients with AMI divided into groups. The first group consisted of 43 patients with concomitant obesity; the second group was made up of 23 patients with a normal body weight. The control group consisted of 15 healthy individuals. Results and their discussion. The patients with acute myocardial infarction and obesity demonstrated significant increase in vitronectin blood serum concentrations up to 25.92% compared to the patients with normal body weight. Conclusions. Acute myocardial infarction in obese patients is accompanied by significant increase in vitronectin activity compared with the patients with normal body weight that suggests the involvement of adipose tissue in the regulation of the adhesive properties of blood cells.

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PRACTICAL ASPECTS OF TREATMENT TO RESTORE NORMAL POSITION OF UTERUS

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Key words: restorative treatment, pelvic massage, therapeutic exercises, Kegel's exercises abnormal position of the uterus, adhesions, rehabilitation.

This article presents the practical application of therapeutic exercises and complexes of special physical exercises used for physical rehabilitation and restorative treatment of female patients with pathologies of the musculo-ligamentous apparatus of the pelvic floor and with the wrong position of the uterus and female pelvic organs. These methods and means of physical rehabilitation are widely used in gynaecology as conservative and sufficiently effective means of treatment and restoration of gynaecological patients with abnormal uterine provisions of a horizontal axis in relation to the

pelvis. The aim of the study was to investigate the clinical effectiveness of the proposed complex of physical exercises to restore abnormal position of the uterus in relation to a horizontal axis. The specification of own exercises, therapeutic exercises developed by leading experts on this issue are highlighted in the article as well. Practical recommendations to use these rehabilitation and restoration techniques at different stages of the treatment were detailed.

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CHARACTERISTICS OF HYDRO-ECOLOGICAL SYSTEM OF THE RIVER DNIPRO

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Growth of economic activity greatly contribute into the enhancement of man-made impact on environment; it aggravates existing ecologic problems in the powerful industrial Dnipropetrovsk region and, as a consequence, negatively impacts health and life quality of its inhabitants. In view of this, the aim of our research was to evaluate hydro-ecological state of the river Dnipro near the city of Dniprodzerzhynsk by studying objects and amounts of waste water disposals into the reservoir as well as to assess pollutants content in the river water. The result obtained shown the main sources of the increasing ecological risk in the water area under observation and proven that the water quality of the river Dnipro meets the requirements of the II-III class of quality of surface

waters and is characterized by a moderate degree of contamination. The obtained results are the basis for updating set of measures aimed at improvement of ecological state of the water basin in Dnipropetrovsk region.

Key words: water of the river Dnipro, chemical pollutants, hydro-ecological state.

Introduction

Basin of the river Dnipro in Dnipropetrovsk region is related to the unfavourable one as for maintenance and suitability of the qualitative composition of the water [1, 2, 10]. The most challenging state of the water resources is noted in the area of the Lower Dnipro (from Dniprodzerzhynsk to the estuary): here 76% of the water from the total water consumption is used irreversibly and 83% of the polluted water is discharged [8]. The city of Dniprodzerzhynsk of Dnipropetrovsk region is one of the powerful industrial centres in Ukraine, it is infamous as one of the most adverse industrial areas within the territory of 13.26000 ha with the popula-tion of more than 280.000 inhabitants [2]. Dniprodzerzhinsk industrial complex numbers about 60 industrial facilities of various branches. A high concentration of enterprises of heavy industry, chemical industry, heat-and-power engineering complexes, containing physically worn out and obsolete workshops, lack of well-functioning water purification equipment, heavy motor load on the environment cause a high degree of degradation of environmental components [9, 10]. The city accumulates millions of tons of industrial wastes, disposed in storages, area landfill, and refuse dumps. An important factor of the existing critical ecological situation within the limits of Dniprodzerzhinsk is residential and industrial waste waters. Surface water discharge and runoff from the city territory are the grave pollutants of the reservoir. The length of the Dnipro along the territory of Dniprodzerzhinsk is about 15 km; most of the waterfront on the right bank is occupied by the industrial zone, a place of untreated industrial sewage discharge [4, 11].

Environmental protection, along with economic integration, is one of the priorities for the European Community. For the period from 2005 to 2016 the EU adopted the Global Water Initiative "Water for life - health, welfare, economic development and security."

Therefore, negative hydro-ecologic and hydro-economic state of the Dnieper basin caused by an intensive anthropogenic pollution of the environment is one of the urgent ecological and hygienic problems nowadays [4, 5, 7]. Thus, the purpose of the work was to evaluate the peculiarities of hydro-ecological system of the river Dnipro.

Materials and methods of research

In the course of the study there were analyzed statistic data of the state recording of the water use - 2TP (water economy) in Dnipropetrovsk region and the city of Dniprodzerzhinsk in particular over 2012. The ap-proved records provides establishing information on water consumers, water quantity and quality, as well as data on the types of water consumption, on the basis of which the distribution

of water between objects have been performed and measures for rational water consumption have been developed.

Evaluation of quality of water sources was performed by water sampling taken from the Dnipro, both superficial and deep (total 16 samples). Places of sampling were: settlement Auly, Romankovo, Karnauhivka, and Taromske. Dniprodzerzhynsk Sanitary Station provided support in carrying chemical analysis of the water from the surface water source to identify pH, BOD-5, COD, ammonia nitrogen, nitrites, nitrates, mineral oil, sulphates, chlorides, phenols, solids, and suspended solids. Selection of chemicals and parameters for the research was chosen due to the following factors: 1) they belong to the list of key indicators of water pollution; 2) they are "indicators of influence" of contaminated wastewaters on the state of the reservoir in selected water sampling points, which are located directly at the confluence of the land runoffs. To assess the quality of water photometric, gravimetric and titration methods were used. Hygienic assessment was carried out in accordance with "Sanitary rules and norms of protection of surface waters from pollution" [6].

Results of the research and their discussion

Analysis of the volume of water disposal in the city of Dniprodzerzhynsk testifies that the total amount of wastewaters for 2012 made up over 115 mln m3/ year, of which about 15% do not pass through the purification. The main pollutants of the Dnipro river is JSC "Dniprovsk Metallurgical Plant", JSC "Dniprodzerzhinsk HPP", left-bank water and wastewater treatment facilities, Public Utility "City Water Authority", PU "Ekoantylid", JSC "Dniproazot", JSC "Dniprovagonmash", JSC "Bahliykoks", LLC "Dniprodzerzhynsk utility company" (fig. 1). Other companies with a relatively small amount of water consumption or with a high recycling water supply, discharge waters into the city sewerage system and together with household waste water the waters get into city treatment facilities.

Fig. 1. Proportion of wastewater discharged by enterprises of Dniprodzerzhynsk.

Pollutants under investigation were identified in all water samples, mostly within the established normative values. Hygienic assessment of concentrations of chemical parameters in the water, which was selected near the settlements Auly and Romankove demonstrates a relatively high qualitative composition of the reservoir within the residential zone of the areas under the observation, with substances content corresponding to SanPiN 4630-88. Along with this, in the water of the water source near the village Karnauhivka and village Taromske phosphate concentrations exceeded maximum permissible concentrations (MPC) by 21% (0,17 ± 0,01 mg/dm3 in MPC - 0.14 mg/dm3). This fact may testify to pollution with domestic nature predominantly, as

these substances are components of household chemicals (detergents, powders etc.) and enter the reservoir on discharge of domestic wastewater.

In the samples taken near the village Karnauhivka, TPH content in the water on average made up - 0.27 mg/dm3 ± 0,004, which is estimated as excessive compare to the normal (0.23 mg/dm3). Within the limits of the settlement there was established excess of TPH concentration, the latter being significantly higher in surface samples ($p < 0.05$), this can be due to the oil film on the water surface. Thus, it was assumed, that adverse contamination of the surface layer of the water with oil products is not only of industrial nature, but is caused by a significant amount of these substances in surface runoffs from the adjacent territory, polluted by vehicle emissions.

It should be noted that by almost all the studied parameters in the water samples of the river Dnipro, approaching to the maximum permissible values (80-98% of MPC) is observed, this testifies to a moderate pollution of the reservoir. Presence of significant content of petroleum products and that of iron in the reservoir can be explained by industrial pollution of the river Dnieper. This is indicated by the increase of the iron content within the industrial zone [5] and testifies to the unauthorized discharge of industrial wastewater executed by enterprises and companies.

It is necessary to note that the river Dnipro is the main source of drinking water for the left-bank and right-bank areas of the city Dniprodzerzhynsk. There is no alternative water supply source in the city. Therefore, deterioration of the water basin state poses a problem with natural self-cleaning processes, greatly complicates the process of water treatment at water treatment plants, this in its turn affects the quality of drinking water. Water purification facilities can no longer prevent entry of a significant amount of contaminating inorganic and organic substances into the drinking water and this threatens health of the population [3, 7]. To address the problem of hydro-ecologic instability of technologically contaminated region, it is necessary to update programs on the improvement of the water body [10, 11]. Of course, such projects do exist, however, judging from the current state of the river, one should notice that they are ineffective.

Conclusions and prospects of further researches

Comprehensive analysis of the research results has found that concentration of powerful sources of man-made pollution in the water area of Dniprodzerzhinsk negatively impacts the state of the Dnipro and is characterized by the exceeding of the maximum permissible concentration of petroleum products and that of phosphates. Based on the monitoring data of pollutants, it has been revealed that at the time of obser-vation water quality around the current water source meets the requirements of II-III class of the surface water quality and is characterized as moderately polluted. Accumulation of pollutants leads to deterioration of the water quality by hydro-chemical, hydro-physical and sanitary-hygiene indicators and as a consequence, changes in hydro-biological characteristics, leading to degradation of the Dnipro ecosystem. The ability of the reservoir to self-regulation does not provide disturbed balance, leading to a large-scale river control with destruction of biocommunication [6, 9]. Taking into account that at the expense of the water basin of the river Dnipro over 30 mln. of Ukrainians meet water demands, there is a need in further more detailed ecologic and hygienic scientific research to assess the water quality of water sources, in terms of

industrially developed region, this will make it possible to objectively assess the situation and propose a set of measures on improving ecological state of the water basin of Dnipropetrovsk region in order to preserve and restore its natural potential.

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HEART RATE TURBULENCE AND OTHER RISK FACTORS OF SUDDEN CARDIAC DEATH IN PATIENTS AFTER MYOCARDIAL INFARCTION

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Key words: prediction, acute myocardial infarction, heart rate turbulence.

Objective: To investigate the peculiarities of the heart rate turbulence (HRT) parameters and their relation to echocardiographical findings, short-term and long-term prognosis in patients with acute myocardial infarction. The study involved 114 patients with acute myocardial infarction. All patients underwent echocardiography at 8-10 and 4 weeks of surveillance and ECG monitoring at 4-6 weeks after MI. For 25 patients (16 men and 9 women) who had ventricular premature beats on Holter ECG, indices of turbulence onset To (degree of acceleration of the heart rate after the VPB, %) and turbulence slope Ts (the intensity of further slowing the rhythm, ms / RR) were calculated. The risk of SCD and adverse events, hospital and 6-month mortality in patients with acute myocardial infarction and with pathological TCP performance was significantly increased compared with patients with normal values of To and Ts. In addition, the majority of patients with abnormal values of HRT markers showed an average heart rate over 70 beats / min and reduced systolic function according to echocardiography at 8-10 days after AMI; repeated echocardiography at 4-6 weeks after AMI did not show significant differences between subgroups of normal / changed values of To and Ts. HRT parameters obtained in a period of 4-6 weeks after MI were significantly associated with the risk on GRACE scale and LV contractility in the acute phase of the disease. Their assessment is promising in terms of more accurate prognosis of the disease in the long-term period of observation, identification of cohorts of individuals with increased risk of sudden cardiac death, individualization of observation and rehabilitation plan in such patients.

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LEVELS OF REPRODUCTION MARKERS IN WOMEN WITH INFERTILITY (ACCORDING TO HORMONAL SCREENING)

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Key words: infertility, fertility, hormonal profile, specificity, predictive value, relative risk.

The aim of the study was to evaluate reproductive potential of women with primary and secondary infertility based on hormonal screening. Methods. The study included 556 women with infertility, of which 394 (70,9%) were diagnosed with primary, and 162 (29,1%) women with secondary infertility. The age distribution was as follows: 155 (27.9 percent) of women were under 25 years old, 136 (24.5 per cent) of women were 25-29 year old, 130 (23.4 per cent) were women aged from 30-34, 40 (7.2 per cent) women were 35-39 year old, 95 (17.1 per cent) of women were aged 40 years and over. Tubal infertility was diagnosed in 28.4% of (158) women, male factor made up 25.0% (139) of women, ovulation problems were in 23,3% (129) of women, uterine infertility was detected in 13,8% (77), cervical factor was among 5.7% (32), other factors were detected in 3.8% (21) women. The duration of infertility, up to 1 year was observed in 20 (3,6%) fe-males, 1-2 years – 210 (37.8 per cent) of cases; 2-3 years – in 92 (16.5%) cases, and 3-4 years – in 93 cases (16.7%), 4 years and above in 141 (25.3%) cases. Indicators of ovarian reserve, the length of menstrual cycles of 28-30 days was observed in 45.0% of cases, from 25 to 27 days in 21.9% and less than 24 days in 4.3% of cases. Content of luteinizing hormone (LH), follicle stimulating hormone (FSH), prolactin, progesterone, testosterone, estradiol, dehydroepiandrosterone–sulphate (DHEA-s) was evaluated in blood serum by ELISA kit 9 Human company, Germany). Results. The obtained results of hormonal screening showed that the common symptom for women with ovulatory and other causes of infertility is the difference of the hormonal profile, particularly as it is expressed in the content of progesterone, estradiol, prolactin and FSH. Infertility ovulatory Genesis mostly associated with low estradiol levels (78.2 percent) and progesterone (94,5%) and high levels of FSH (97,6%), LH (47.3%) and prolactin (37.2 per cent). The diagnostic sensitivity of individual hormones were low, but the probability of deviation of the level from the norm with infertility compared to fertile women, in particular hyperprolactinemia (21.8%), hyperprolactinemia (8.6-fold) FSH (13.4%) and LH (in 8.8 times) was high. Amid the deviation in the number of hormones from the norm, the likelihood of infertility varies in a wide interval (72,7-98,1%), and their normal level the probability of fertility (of 30.2-37.8 per cent) increased 2.3-3.0 times. Diagnostic specificity of the investigated hormones (in women of reproductive age the probability of hormone levels within the normal range) was high (99, 4%). Conclusions. When assessing the hormonal status of infertile women is the use of indicators such as sensitivity, specificity, predictive value and relative risk, enhance the adequacy of the data.

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STRUCTURE OF OCCUPATIONAL DISEASES IN ZAPORIZHZHYA REGION

Dotsenko S.Ya., Afanasiev A.V., Tyagla V.M., Tokarenko I.I., Kravchenko V.I., Kravchenko T.V., Daniuk I.O., Borodavko L.I., Evtushenko V.O.

Key words: occupational diseases, disease prevalence, diagnosis, prevention.

Deteriorating of working conditions on enterprises in Ukraine, which can be related to the transition to a market economy, demands constant statistical monitoring of occupational diseases. This study was aimed to assess the prevalence and incidence rate of occupational diseases in the Zaporizhzhya region for 2010-2015. Statistical forms P-3 and P-4 on occupational diseases in industrial enterprises of Zaporizhzhya region (482 forms for 2010-2015 and 279 forms for 2004-2009) were analyzed by using program «Statistica® 6.0 for Windows» (StatSoft Inc.) for investigating the prevalence and incidence of occupational diseases. The structure of occupational diseases in Zaporizhzhya region for 2010-2015 demonstrated the prevalence of dust-induced lung diseases, as well as vibration disease, chronic intoxications and polyradiculopathies (the share of 61.0 %, 11.6 %, 6.4 % and 4.2 % respectively). Most of these pathologies are registered in non-ferrous and ferrous metallurgy, mechanical engineering (the share of 45.9 %, 40.5 % and 7.6 %, respec-tively. There is statistically significant increase in the overall incidence of occupational diseases and

signifi-cant decrease in the number of patients with pulmonary tuberculosis in health care sector and patients with disorders among farm workers compared to 2004-2009.

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MINIMALLY INVASIVE TECHNOLOGIES IN AORTIC VALVE REPLACEMENT AND THEIR IMPACT ON SEVERITY OF SURGICAL STRESS AND SYSTEMIC INFLAMMATORY RESPONSE

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Key words: aortic valve replacement, minimally invasive approaches, severity of post-operational stress.

The study is devoted to the analysis of qualitative and quantitative indicators of the surgical stress and systemic inflammatory response in case of different surgical approaches for aortic valve replacement. The study was based on 49 cases of patients who underwent minimally invasive J-shaped sternatomy and 54 cases of patients with median sternatomy. We evaluated the main biochemical markers of hormonal stress reaction, concentration of the key pro-inflammatory cytokines and acute phase proteins of inflammation. It has been shown that in the case of minimal invasive approach we observed systemically less expressed in-flammatory response that was confirmed by lower plasma concentrations of TNF-alpha, IL-6, C-reactive pro-tein and concentration of fibrinogen. The results obtained confirm the benefits of the j-shaped sternatomy and ensure optimal exposure of the surgical field to perform aortic valve replacement, provided by the mini-mal surgical invasion. This contributes to the more rapid recovery of the patients in the postoperative period.

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IRRIGATION THERAPY IN INTEGRATED TREATMENT OF PATIENTS WITH ACUTE PARANASAL SINUSITIS

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Key words: irrigation therapy, paranasal sinusitis, mucous membrane, nasal cavity.

This article describes the effectiveness of the integrated treatment of patients with acute paranasal sinusitis by applying retronasal aspiration technique of nasal irrigation that facilitates abnormal discharge removal, moistens the mucous membrane, improves nasal breathing and prepares nasal mucosa to topical medication. Above mentioned aspects promotes the effectiveness of treatment of acute paranasal sinusitis compared to standard therapies, as this leads to more rapid attenuation of inflammation.

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PATHOGENETIC ROLE OF METAL–PROTEIN HOMEOSTASIS OF IRON IN INCREASING BACTERIAL AGGRESSION AND ENDOTOXICOSIS IN PATIENTS WITH PERITONITIS

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Key words: acute peritonitis, iron, transferrin, endogenous intoxication, bacterial activity.

Growing endotoxicosis and multiply organ failure play a leading role in the development of acute peritonitisis that can be explained by the conflict between patient’s organism, aggression of abdominal microflora and interfering of metal-protein homeostasis of iron, which is regarded as non-specific immune resistance indicator of bacterial infection. 131 patients with acute surgical diseases complicated by acute peritonitis were observed (92 males and 39 females). The leukocyte intoxication index, intoxication index were calculated, middle mass molecules in plasma, malonic

dialdehyde, diene conjugates were investigated. It has been found out that in the patients with peritonitis the development of blood iron deficiency and its enhancement in blood serum with simultaneous decrease of iron content in transferrin must be considered as early marker of bacterial aggression and decrease of immune resistance. This parameter is correlated with severity of clinical course of the disease and requires additional correction to be successfully used in complex surgical treatment.

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PROSPECTS AND RISKS OF OUTPATIENT MANAGEMENT OF CATARACT

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Key words: cataract, outpatient treatment, concomitant morbidity, postoperative complications, medical and social characteristics of patients.

The aim of the study was to analyze the prospects and risks of transition to outpatient management of cataracts nowadays. The study enrolled 842 patients who sought for the surgical treatment of cataracts. Among them 782 answered questions of shortened questionnaire and 60 answered more completed ques-tionnaire. This has enabled us to identify the social and medical profile of a typical patient with cataracts in Ukraine – this is a person usually over 70 years with middle or low income, has children and lives with the family. The most common concomitant eye diseases are glaucoma (18%) and high myopia (21%), while the most common somatic comorbidities include essential hypertension (62%), coronary artery disease (57%), and joint diseases (46%). Our study has shown impossibility to perform transition to outpatient treatment of cataracts nowadays. The best approach to solve this problem may be the preoperative assessment of the risk of postoperative complications, taking into account the financial possibilities and the condition of the patient and the preservation of a certain number of hospital beds for patients with high risk of complications.

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GROWTH DIFFERENTIATION FACTOR 15 IN STRATIFICATION OF RISK OF KIDNEY IN ACUTE CORONARY SYNDROME

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Key words: acute kidney injury, acute myocardial infarction, GDF 15.

Growth differentiation factor 15 (GDF-15) has anti-inflammatory properties and the same time reacts on stress associated with pressure overload, ischemia, reperfusion and as a result, kidney injury. The level of GDF-15 can rise earlier then creatinin. This article describes prediction model of acute kidney injury in pa-tients with acute coronary syndrome. The model includes age, ejection fraction, GDF-15 level and has al-lowed us to predict the risk of acute kidney injury and hospital lethality with sensitivity of 96% and specificity of 68%.

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PECULIARITIES OF IMPACT PRODUCED BY DIFFERENT VISUAL LOAD ON FUNCTIONING OF VISUAL SYSTEM IN CHILDREN AND ADOLESCENTS

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Key words: children, adolescents, visual system, functional performance, paper and electronic media.

The aim of this study was to assess the impact produced by text (in paper and electronic media) load on the functional state of the visual system in children and adolescents. The study involved 97 people aged from 6 to 15 years who worked with the two texts reading from paper. The first text was designed in accor-dance with the age requirements (font size 10), the second text had scale-

down font 7. Operating with text consisted in searching for and crossing out the specified letters. 39 teenagers were asked to work with elec-tronic text. It has been found out the texts designed in terms of normal parameters for all age groups have caused significant changes in the visual system, typical for transient myopia. Following the working with pa-per and electronic texts characterised by reduced parameters of their design we identified three variants in changing visual system functioning: the first variant was characterized by transient myopia; the second one – by visual fatigue; the third variant revealed no significant changes in visual performance that is typical for systems with large functional reserves.

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PREDICTIVE FACTORS OF COLORECTAL CANCER

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Key words: colorectal cancer, prognosis of colorectal cancer, genetic markers of colorectal cancer.

The article summarizes the scientific data on predictive factors of colorectal cancer. Our study demon-strate correlation between the survival rates depending on the stage of the disease at the time of its diagno-sis, the presence of distant metastases, involvement of lymphatic nodes, the degree of

tumour differentiation. We specified the proportional correlation between survival rates for patients with colorectal cancer and the levels of following markers such as PEA, MSI, DSS, TS. We also described the impact produced by genetics mutations of K-RAS, BRAF on colorectal cancer prognosis.

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INTERLEUKIN 15 IN PATHOGENESIS OF NON-ALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH OBESITY

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Key words: interleukin 15, non-alcoholic fatty liver disease, obesity, low-grade chronic systemic inflammation.

Non-alcoholic fatty liver disease and obesity are the most prevalent co morbid conditions that enhance the course of each other. The major pathogenic role in the development of these diseases belongs to insulin resistance syndrome that occurs in conditions of low-grade chronic systemic inflammation. Increased con-centrations of interleukin 15 were observed in patients with non-alcoholic fatty liver disease, which reached maximum values in patients with concomitant obesity. The content of this cytokine correlated with BMI and waist circumference.

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IDENTIFYING SEASONAL FACTOR FOR DETECTING OR PHARYNGEAL CANDIDACIES AND PROPERTIES OF CANDIDA ALBIA'S ADHESION TO BUCKLE EPITHELIAL CELLS IN PATIENTS WITH GASTROINTESTINAL DISORDERS

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Key words: oropharyngeal candidiasis, epithelial buccal cells, adhesion, seasonal prevalence.

The importance of epithelial cells in the mechanism of interaction with Candida Albicans is obvious, but seasonal factor in the course of infection caused by this pathogen, has little been reported. The aim of this study in to detect the seasonal interdependence of the prevalence rate of the infection and the level of Can-dida Albicans loading of oropharyngeal area with indices of the properties of buccal epithelial cells in the pa-tients to the adhere Candida Albicans. Oropharyngeal contamination was evaluated in 634 patients who suf-fered from gastroenterological pathology for 2009 – 2012. The ability of buccal epithelial cells to adhere to the referent strain of Candida

albicans was studied in 66 patients with candidiasis of the upper part of the di-gestive tract. Results demonstrated that the maximal average contamination of oropharyngeal area with Candida albicans was detected in autumn that was in 1,4, 1,2 and 1,2 times higher in comparison with sum-mer, winter and spring seasons (p=0,0008), (p=0,008) and (p=0,036), correspondingly. Chances to detect oropharyngeal candidiasis was higher in 2,3 times in autumn, and the first and the third stages of contamina-tion of Candida Albicans were in 1,8 times higher in comparison with patients without fungi growth. Patients with candidiais of upper part of the digestive tract had the high level of epithelial cell adhesiveness to Can-dida Albicans in 66,7% (n=44) of cases, and there are also high chances to detect maximal level of contami-nation in autumn. Thus, the study has proven the presence of seasonal factor of oropharyngeal candidiasis with high level of its prevalence in autumn. Identification of this factor is based on the detected seasonal variability buccal epithelial cells properties to adhere to Candida Albicans.

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CLINICAL AND METABOLIC EFFECTS PRODUCED BY COMBINED ANTI-ARRHYTHMIC THERAPY (RYTMONORM AND UV-TREATED BLOOD AUTO TRANSFUSION) OF PREMATURE HEARTBEAT IN PATIENTS WITH CHRONIC ISCHEMIC HEART DISEASE

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Key words: rytmonorm, autotransfusion with UV-treated blood, chronic ischemic heart disease, supraventricular arrhythmias, ventricular arrhythmia.

It is known the most anti-arrhythmic agents are effective in 40-50% of cases; moreover, they can cause arrhythmogenic effect. To overcome the resistance to anti-arrhythmic drugs and to prevent arrhythmogenic effects we studied the effectiveness of quantum chemotherapy, autotransfusion by UV-treated blood to stimulate regenerative processes in the body. The comparative study of effects produced by rytmonorm and autotransfusion with UV-treated blood was carried out on 21 patients with chronic ischemic heart disease and comorbid arrhythmia. There were 12 men and 9 women aged 40 – 70 years, the mean age was 66 years. The use of rytmonorm and autotransfusion with UV-treated blood was performed in 10 patients with chronic ischemic heart disease and

concomitant supraventricular arrhythmia, and in 11 patients with ven-tricular arrhythmia. Thus, the combination of rytmonorm and autotransfusion with UV-treated blood was more effective in cases of ventricular arrhythmia compared to monotherapy ritmonorm.

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REHABILITATION OF PEOPLE WITH DISABILITIES: SCIENTIFIC GROUNDS OF NEW APPROACHES

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Key words: disabilities, inclusive tourism, rehabilitation.

The article deals with topical issues of rehabilitation of people with disabilities by using new forms of re-habilitation process known as "inclusive tourism". Objectives: to determine the attitude of people with disabilities through a survey to the issue of inclusive tourism as one of the methods of rehabilitation; to explore the steps of tourist companies towards the needs of people with disabled persons in order to facilitate the rehabilitation of vulnerable layers of the state through the "inclusive tourism". The study was conducted on the basis of the medical facility "Cherkassy regional centre ITU CHOR" in 2015 on the initiative of public organizations of invalids and Chernobyl disaster fighters of Cherkasy oblast and Ukrainian Public Union "Theoretical and Practical Association of Inclusive Tourism for Disabled Persons and Victims of Chernobyl Disaster of Ukraine", higher education setting "Open International University of Human Development", and in pursuance of the decision of the Cherkasy oblast Council dated 26.06.2012 No. 16-4/VI "Program on Development of Tourism in Cherkasy region for 2012-2020". The study involved 3

thousand persons with disabilities. The study was conducted in accordance with the legal framework of the country: the Law of Ukraine "On rehabilitation of invalids in Ukraine", "United Nations Convention on the rights of persons with disabilities", the State target program "national action plan for the implementation of the Convention on the rights of persons with disabilities". The results of the study have proved that people with disabilities actively demonstrate their desire to be engaged in various types of tourism and, to a large extent, and interested in introducing the grounds of inclusive rehabilitation and social tourism" as one of the active forms of rehabilitation. Today the state faces the challenge related to the rehabilitation of people with disabilities and special categories such as former combatants and victims of the anti-terrorist operation in Ukraine. In such conditions, "inclusive tourism" as a form of medical, social and psychological rehabilitation will contribute to their complete socialization. Thus, it is important to promote "inclusive tourism" as a form of rehabilitation, and to introduce into the category of "social or medical tourism" and to qualify it as travelling subsidized from the state funds allocated for social support of people with disabilities.

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URETERAL STRICTURES: POSTOPERATIVE COMPLICATIONS OF URETERAL LITHOTRIPSY

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Key words: ureterolitiasis, contact lithotripsy, complications, ureteral stricture.

Ureteroscopy with laser or ultrasonic lithotripsy was performed in 1268 patients. The analysis of intraop-erative complications found out ureteral strictures in 12 (60%) of 20 patients with ureteral perforation. The greatest risk of stricture was observed in the patients with intraoperative injuries of the ureter wall and in pa-tients with calculi larger than 1.5 cm localized in the proximal sites. The results of the study enable us to conclude that routine postoperative ultrasound and / or X-ray examination should be recommended to all patients after complicated ureteroscopy as well as to all patients after endoscopic treatment of ureteral calculi larger than 1.5 cm. Follow-up for such patients should be carried out within 18 months after operations.

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ANALYSIS OF ASSOCIATION BETWEEN THE ENPP1 K121Q GENE POLYMORPHISM AND DEVELOPMENT OF HYPERTENSION IN PATIENTS WITH DIABETES TYPE 2

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Key words: diabetes type 2, the gene ENPP1, gene polymorphism.

This article describes the results obtained by studying association of diabetes mellitus type 2 (DM type 2) and arterial hypertension (AH) in K121Q ENPP1 polymorphism gene. The study involved 163 patients with type 2 diabetes and 110 healthy individuals who made control group by polymerase chain reaction. It has been established that there is no association between the ENPP1 gene polymorphism and the development of hypertension in patients with type 2 diabetes. There is the correlation between hypertension and the de-velopment of diabetes type 2, regardless of genotype (K / Keeley K / Q + Q / Q) on K121Q ENPP1 polymorphism gene.

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SEX-RELATED PECULIARITIES OF CRANIOCEREBRAL TRAUMA

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Key words: sex-related peculiarities, craniocerebral trauma, scales to evaluate of patients' condition.

The aim of the paper is to evaluate sex-related peculiarities of severe forms of craniocerebral trauma. 106 case histories of survived patients with severe forms of craniocerebral trauma were analyzed. These patients took the course of treatment at the neurosurgical department of Kharkov District Clinical Hospital from 2010 to 2013. There were 85 men (80,2±3,9)% and 21 women (19,8±3,9) %, their age ranged from 19 to 83. Clinical, laboratory, instrumental methods were used to evaluate patients' condition. The patients were also evaluated according to Glasgow Coma Scale, Disability Rating Scale (DRS) and RTS (Revised Trauma Score). Based on the findings obtained it has been found out the women (62%) had more severe forms of trauma, while men (56 %) had moderate traumas. Extremely severe condition was observed in 9-12% of all patients. Maximal score according to Glasgow Coma Scale (15) was detected in 27(32±5,1)% of men and in 5(24±9,3)% of women. In follow-up period (94±2,6)% of men and (90±6,5)% of women demonstrated maxi-mal grades that indicates the efficacy of their treatment. No significant differences between men and women were detected according to the structure of brain damages. The most widespread injuries were subdural haemorrhages (29% of men and 38% women) and contusive foci (28% of men and 33% of women).

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ASSOCIATION BETWEEN ANGIOTENSINOGEN GENE M235T POLYMORPHISM AND ST2, NTPROBNP AND TNF-A LEVELS IN BLOOD SERUM OF PATIENTS WITH CHRONIC HEART FAILURE AND TYPE 2 DIABETES MELLITUS

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Key words: heart failure with preserved ejection fraction, type 2 diabetes mellitus, ST2, genetic polymorphism M235T ATG.

Purpose: To investigate the correlation between ATG gene M235T polymorphism and levels of ST2, NTproBNP and TNF-α in patients with heart failure with preserved ejection fraction (HFpEF)

and diabetes mellitus type 2 (T2DM). 83 patients with HFpEF II-III class NYHA were examined (32 males and 51 females; mean age 62,9 ± 8,1 years), including 45 patients with HFpEF and (T2DM), 38 non-diabetic patients, and 29 healthy individuals. To determine the genotypes and alleles of ATG gene M235T polymorphic we removed genomic DNA from venous blood. Molecular genetic testing of DNA was performed by using a set of re-agents for the detection of SNPs in the human genome by PCR with electrophoretic pattern detection result "SNP-Express". Correct distribution of frequencies of genotypes was assessed by compliance with the Hardy-Weinberg equilibrium. The levels of ST2, NT-pro-BNP, and TNF-α in serum were determined by ELISA. To assess lipid metabolism we investigated content of total cholesterol (total cholesterol), HDL cholesterol, triglycerides (TG). Cardiac parameters were investigated by Doppler echocardiography. Statistical analysis was performed by using the statistical software package SPSS v.19.0.

All patients with HFpEF and T2DM terms of carbohydrate and lipid metabolism were distributed into groups. Study groups did not differ in the distribution of polymorphic variants of the gene M235T ATG. Among the patients of group 1 MM genotype was detected in 20% of cases, MT – in 47% and TT – in 33%. Among the patients of the group 2 MM was found in 24% of cases, MT – in 50% and TT - in 26%. In the control group MM genotype was found in 14.8% of cases, MT - in 55.6% and TT - in 29.6%. Patients with HFpEF and T2DM and non-diabetic did not differ in NTproBNP, TNF-α and ST2 levels. Genotype groups demonstrated no difference in the concentration between NTproBNP and TNF-α and carriers of T and M al-lele in both groups of patients. HFpEF and T2DM who were carriers of the T allele, the level of ST2 was sig-nificantly higher than the figure in MM homozygotes ($p<0,5$). Among all HFpEF patients genotype TT + MT dominated by Stage II essential hypertension compared with patients with genotype MM ($p<0,05$). In HFpEF and T2DM patients-carriers MT + TT genotype, higher levels of total cholesterol, TG and VLDL cholesterol than patients without diabetes ($p<0,05$). Patients with HFpEF and T2DM and non-diabetic have the same genotypes distribution of angiotensinogen M235T polymorphism. Polymorphism M235T ATG associated with the level of ST2 in HFpEF and T2DM patients. The HFpEF and T2DM patients, carrier T allele had more severe disorders of lipid metabolism than patients without type type 2 diabetes.

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ANESTHESIA TACTICS IN DIFFICULT TRACHEAL INTUBATION

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Key words: difficult laryngoscopy, airway intubation, laryngeal mask, complications.

Introduction. Almost a third of all cases of anaesthetic mortality are associated with difficulty in ventilating patients after induction of anaesthesia. Objectives: to increase the efficiency and to reduce the rate of complications associated with patency of airways during difficult laryngoscopy in elective anesthesia. Materials and methods. We have analyzed the results of 66 cases of difficult laryngoscopy in elective surgical interventions on the basis of the Poltava Regional Clinical Hospital for 2013 – 2015. The patients of the 1st group were managed according the clinical protocol of providing medical care to patients with difficult intubation, in the patients of the 2nd group after failed attempts of intubation laryngeal masks of appropriate size were immediately placed. Results. In patients of the 1st group second attempt of intubation was successful in 43,8% cases. With the following intubation attempts efficacy of manipulation progressively decreased. Efficiency of subsequent use of the laryngeal mask was only 45,4%. In patients of the 2nd group the use of laryngeal mask (91,2 % of cases) provided adequate ventilation during surgery. Conclusions. Using a clinical protocol of care for patients with difficult intubation in elective anaesthesia is less effective and has a higher rate of complications associated with direct laryngoscopy compared to single attempt of intubation and subsequent use of the laryngeal mask.

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INCIDENCE RATE OF CHRONIC CONSTIPATION AND ITS ROLE IN MORBIDITY RATE OF ADULT URBAN POPULATION

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Key words: chronic constipation, adult population, incidence, medical aid appealability, somatic morbidity.

Objectives: to study the peculiarities of the incidence rate of chronic constipation among adults in terms of social, climatic, and ethnic factors in Baku and to clear up its role in the formation of somatic morbidity. Methods. The work was carried out by questionnaire in different age groups of the adult population of Baku. Standardized international questionnaire SF-36, modified and adapted to local conditions were used. The questionnaire included set of questions on the main diagnostic manifestations of chronic constipation. 2127 fully completed questionnaires were obtained, of which 1732 questionnaires were submitted by men, 395 questionnaires were submitted by women. Results. According to Rome III criteria (2003) diagnosis of func-tional constipation can be made in the presence of 2 or more of the following symptoms: frequency of stools is less than 3 per week; strains during defecation over 25% of defecation act time; fragmented and (or) solid stool not less than at 1 out of 4 acts of defecation; feeling of incomplete evacuation of intestinal contents not less often than at 1 out of 4 acts of defecation; feeling of obstacles during the passage of the feces mass not less than at 1 out 4 of acts of defecation; the need for digital manipulation to facilitate defecation more than at 1 out of 4 acts of defecation. The criteria must be observed for at least for

the last 3 months from the beginning of manifestations for at least 6 months before diagnosis. The incidence of chronic constipation in adult population of Baku reaches the highest rates and among men it is 36,7±1,2%, among women it reaches 41,3±2,5%. With increasing age, the incidence of chronic constipation is increasing consistently. The average duration of the current chronic constipation in men is of 4.94±0.22 years, while in women this equals 6.17±0.34 years. The prevalence of chronic constipation is largely due to the low appealability for medical care that among men reaches an average 4.48±0,24 visits to the clinic, while women have a 3.30±0,37 visits, and most visits are usually due to other different nosological forms of disease and therefore treatment of chronic constipation is often symptomatic. At the same time, this condition acquires the status of a risk factor for various diseases. Chronic constipation is also associated with high level of stress manifestations. Conclusion. Therefore, the health education among the population can help to seek for proper medical treatment of chronic constipation, to prevent this condition that in turns can limit the incidence of the condition and greatly reduce the risk of chronic constipation in the development of various nosological forms of somatic morbidity.

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RESULTS OF SELF-ESTEEM DIFFERENTIAL EVALUATION OF FUNCTIONAL STATE OF PATIENTS WITH DIFFERENT LEVELS OF CARDIAL VASCULAR RISK

Panchenko M.S.

Key words: medical psychology, cardiovascular risk, health, activity, mood.

We used psychological test of self-esteem evaluating of differential functional states to quantify the characteristics of incidence and severity of psychosomatic factors of young patients. Among 314 young people involved in the study 80,6 ± 2,2% demonstrated low values of self-esteem and well-being, and only 19,4 ± 2,2% of patients assessed their level of health as satisfactory ($p < 0.001$). It has been found that patients comparison groups did not significantly differ in terms of self-assessment of health depending on the level cardiovascular risks (CVR): in the group with minimal CVR (78,4 ± 3,7)%, in the group with increased CVR (82,0 ± 2,8)% individuals have reduced levels of health, $p > 0.05$). A similar pattern was maintained and in terms of scoring, respectively (4,1 ± 0,2) points and (3,8 ± 0,1) points, $p > 0.05$. On average, in the reference level of self-esteem, which is 5.4 points, almost absolute majority of surveyed, (80,6 ± 2,2)%, had a reduction of self-esteem with (3,9 ± 0,3) points. Generally, it was characterized by 27.8% decline in satisfaction of feeling. The activity of patients studied according to the average self-esteem evaluating was reduced by 20.0% compared with the reference indexes, depending on the availability of CWR was significantly ($p < 0.001$) higher in the case of persons with minimal CVR (M = 4.7 b.), but activity (63,2 ± 4,3)% of people in this group were reduced. Patients with increased CVR had significantly lower indicators of activity (in absolute points) than in the group with minimal CVR (respectively - (4,7±0,1) points and (4,0±0,2) points, $p<0$,05) and (86,2±2,5)% of patients with increased CVR had this figure reduced. Virtually the same levels and incidence of poor health at significant ($p < 0.05$) differences in terms of mood and activity were proven and, consequently, considerable self-restraint of activity of patients with an increased risk against the background of depressed mood that can explain the development of psychosomatic condition contributing to non-psychotic mental disorders, followed by psychological adaptation to life in the existing elevated levels of cardiovascular risk.

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IMMUNOLOGICAL CHANGES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND OCCUPATIONAL PNEUMOCONIOSIS

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Key words: immunological disorders, T-lymphocytes, B-lymphocytes.

The most important quality characteristic of society is the health of the population that is regarded as an integral component of a complex interaction of social, economic, environmental, medical, biological and demographic factors. Here are particularly important to develop and to apply modern methods of adequate assessment of the impacts produced by environment and labour process on the state of population health. The dynamics of immunological disorders in COPD and the OP has a clear pattern: in particular, in both groups, in contrast to healthy employees we observed a significant decrease in the level of T-lymphocytes and imbalance of B-lymphocytes. Detected changes of humoral signs pointed to weakening of adaptive re-sponses and showed that increasing the length of seniority in dusty may be a cause of the emergence and development of auto immune response. Based on these results, we have determined that the detected range of changes in the cellular link of immune status of patients may indicate the weakening of cellular immunity and intensification of autoimmune processes, which are known as one of the main pathogenetic factors of dust-induced diseases of the respiratory system.

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CHARACTERISTICS OF INJURIES SUSTAINED BY PEDESTRIANS IN REAR-END COLLISIONS WITH CARS IN FORENSIC MEDICINE

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Key words: road accident, pedestrian, car, bodily injury, contact mechanism.

Though moto vehicle traumas seem to be well studied in forensic medicine, the issue dealing with diag-nosis of injuries sustained by pedestrians in rear-end collisions with cars is little described in the reports available. The purpose of this work is to explore the characteristics of traumas sustained by pedestrians in rear-end collisions with moving cars based on the recorded data and to identify the morphological peculiari-ties and the mechanism of the injuries. 17 complex forensic and traffic expert appraisals taken from the ar-chive of the Odessa Regional Bureau of Forensic Medicine for 2010-2015 were analyzed. It has been found out that the mechanism resulting from the contact between the rear-end of the car and the pedestrian's body has its own characteristics: this contact can be described rather like bump, not blow. This bump usually does not throw the body at the car, this results in the slurring over the specificity of injuries in victims. This study has shown that in cases of the pedestrian’s collision with rear of the car there are no specific characteristics of injuries indicating the type of the collision. The injuries from such collisions are not factual in this situation, thus correct and reliable expert conclusions can be drawn based on careful examination of the clothing and vehicle.

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INDICES OF BLOOD FATTY ACIDS IN PATIENTS WITH CHRONIC ACALCULOUS CHOLECYSTITIS AND ARTERIAL HYPERTENSION

Rezunenko O. V.

Key words: hypertension, chronic cholecystitis, fatty acids, lipids.

We evaluated levels of fatty acids in the blood serum of 106 patients with chronic noncalculous, among them we registered 70 cases with essential hypertension as comorbidity. It has been found out that in this group of patients lipid peroxidation processes are characterised by very rapid rate that may be due to the depletion of antiradical defence system during prolonged course of the disease and its frequent exacerba-tions.

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DIABETES MELLITUS AND OSTEOARTHRITIS: TRACE ELEMENT INTERACTION

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Key words: diabetes mellitus, osteoarthritis, blood trace elements, saliva trace elements.

The study was aimed to identify the content of trace elements in blood serum of patients with diabetes mellitus of the II type and comorbid osteoarthrosis. The work shows the results of a study of certain trace elements in blood serum and saliva of patients with type II diabetes and osteoarthritis. It has been proven that these diseases are associated with increases level of copper, magnesium and sulphur against the back-ground of decreased calcium, iron, phosphorus, manganese and zinc that can lead to the development of specific clinical symptoms and contribute to the progression of diseases.

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CLINICAL AND METABOLIC EFFECTS AND STRUCTURAL CHANGES IN LEFT VENTRICLE AND COMMON CAROTID ARTERIES IN HYPERTENSIVE PATIENTS WITH TYPE 2 DIABETES DURING LONG-TERM COMBINED THERAPY

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Key words: essential hypertension, type 2 diabetes, combination therapy.

This study was aimed to assess the effects produced by prolonged 12-month integrated therapy on the clinical and metabolic parameters and parameters of cardiac and vascular remodelling in hypertensive pa-tients with type 2 diabetes. The results of the study suggest that despite the different options of the therapy, there were no progression of structural changes in the left ventricle of the heart and the in common carotid arteries. Such data may be indicative of the effectiveness of approved options combining antihypertensive, lipid-lowering and anti-diabetic drugs for the patients.

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EFFICIENCY LIPOSOMAL THERAPY OF PATIENTS WITH OLDER AGE CATEGORY WITH THE ATRIAL FIBRILLATION POST-IMPLANTATION

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Key words: atrial fibrillation, treatment, liposomal formulations.

We evaluated the effectiveness of the course of the liposome therapy and determined the links of the mechanisms of its action in elderly patients with post-implantation atrial fibrillation (AF). We examined 387 patients aged 65-80 years with implanted pacemakers. The study included 46 (12%) individuals (30 men and 16 women) with non-ischemic post-implantation AF who showed no signs of stenotic atherosclerosis of the coronary arteries and the main indications for pacemaker implantation was atrioventricular block of II or III degree, "tachycardia-bradycardia" syndrome with syncopation, the presence of binodal blockade. Time of AF occurrence since ECS was implanted was up to 12 months. Inclusion of phosphatidylcholine and quercetin in liposomal form into the complex 10-day treatment program for the patients reduces the incidence and duration of attacks and other clinical signs of disease progression (high grade supraventricular and ventricular arrhythmias, hypertension in the pulmonary artery, peripheral vascular resistance, improve the left ventricular diastolic function), but also helps to reduce systemic inflammation activity, blood hyperviscosity syndrome and hyperaggregation of its formed elements, metabolic disorders, vascular endothelial dysfunction, and laboratory markers of myocardial remodelling.

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PERFORMANCE INDICATORS OF BLOOD PRESSURE IN PATIENTS WITH OSTEOARTHRITIS, ESSENTIAL HYPERTENSION AND OBESITY

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Key words: blood pressure, 24-hour blood pressure monitoring, osteoarthritis, hypertension, obesity.

The article described the analysis of the results of 24-hour monitoring of blood pressure in patients with osteoarthritis, essential hypertension and obesity. It was found that patients with osteoarthritis and related conditions were characterized by higher average values of blood pressure and increased blood pressure variability. Comorbidity of osteoarthritis, hypertension and obesity results in increase in the mean daily BP by 10.3% ($p < 0.05$), and in the night by 14.4% ($p < 0.05$) that leads to an increase in the number of patients with unfavourable types of circadian blood pressure profile: «non-dippers» (44%), «night-peakers» (17%), "over-dipper» (8%) compared to the patients with osteoarthritis and concomitant hypertension without obe-sity, as well as compared to the patients with osteoarthritis without any comorbidity.

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PREDICTIVE AND DIFFERENTIAL DIAGNOSTIC VALUE OF CLINICAL AND GENEALOGICAL RISK FACTORS IN DISORDERS OF STRUCTURAL AND FUNCTIONAL STATE OF BONE TISSUE IN YOUNG INDIVIDUALS WITH OSTEOARTHRITIS AND OBESITY

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Key words: osteoarthritis, osteoporosis, lactase gene polymorphisms, gene polymorphism of D vitamin receptor, gene polymorphism of farnesil diphosphate synthase, obesity, apelin.

On the basis of a comparative clinical-information analysis (by using ANOVA) of the frequency of individual clinical and genealogical factors among patients with OA, with and without impairment of SFCBT (osteopenia, osteoporosis), defined informative anamnestic indicators and predictive value of polymorphic variants of genotype of the genes of the receptor of vitamin D, lactase (LCT) and farnesil diphosphate synthase (FDPS). On the basis of indicators and their predictive value we developed table algorithm, which may be used to provide outpatient care, and in the cases involving genetic methods. The accuracy of prediction by using predictive algorithm depends on the amount of informative indicators available. However, consideration of the clinical and medical history characteristics of patients with OA, as well as radiographic stage of disease in these patients can provide the required level of accuracy in predicting the development SFCBT disorders. The algorithm involves only signs of independent predicting. In cases where the power of correlation (± rxy) between the factors is more than ± 0.70, one of the factors is excluded from the list of indicators. Application of this table algorithm implements predictive approach in assessing the risk of osteopenic disorders in patients with OA.

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CHARACTERISTICS OF NEURODYNAMIC CHANGES IN BRAIN DEPENDING ON SEVERITY OF TRAUMATIC CRANIOCEREBRAL INJURY

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Key words: craniocerebral injury, electroencephalography, visually evoked potentials.

Various types of the courses of traumatic disease of the brain, and a wide range of long-term effects of craniocerebral injury (CCI) determine the necessity to improve approaches to their diagnosis and treatment. Aim. To specify neural changes in the brain in patients in long-term period of CCI depending on the severity of the trauma. Materials and methods. We examined 100 patients with long-term consequences of CCI and divided them into three groups depending on the severity of trauma. Electroencephalography (EEG) analysis with classification of EEG type according to Zhyrmunsky was performed for all the subjects under the study. In addition, the evaluation of long latency components of the visually evoked potentials was performed in the group of 30 patients. Results. Statistically significant changes occur in the distribution of EEG types in the patients with long-term consequences of CCI with an increase in the severity of trauma. The number of patients with the organized α-rhythm was significantly reduced due to the proportional increase in patients with desynchronism, disorganized and severely disorganized types of EEG pattern (III, IV and V types of EEG according to Zhyrmunsky). Amplitude and frequency parameters of the main EEG rhythms between the groups of patients with different severity of CCI in the past history did not differ significantly. We established a statistically significant increase in the proportion of

individuals with β-rhythm and slow-wave activity of δ- and θ-ranges, along with a decrease in the proportion of α-rhythm and increased asymmetry of α-rhythm with increasing severity of TBI. EEG is characterized by the elongation of the latency periods of intermediate and late components of visual evoked potentials in patients in the long-term period of CCI. Conclusion. Significant changes in spontaneous and evoked bioelectric activity of the brain are specific for patients in the long-term period of CCI, some of which worsen with increasing severity of trauma.

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HOLTER ECG MONITORING AND ASSESSMENT OF THE HEART RATE VARIABILITY IN THE DIAGNOSTICS OF THE THYROTOXIC CARDIOMYOPATHY WITH SECONDARY ARTERIAL HYPERTENSION

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The paper presents the results of study of the diagnostic capabilities of Holter ECG monitoring and assess-ment of heart rate variability in patients with thyrotoxic cardiomyopathy and secondary arterial hypertension. This study demonstrates the high efficiency of the use of these instrumental methods in diagnosis of struc-tural, metabolic and regulatory disorders of the cardiovascular system in patients with thyrotoxic cardio-myopathy and secondary arterial hypertension. This technique

enables to carry out dynamic monitoring of the effectiveness of the therapy and to plan post-hospital rehabilitation.

Key words: thyrotoxic cardiomyopathy, secondary arterial hypertension, Holter ECG monitoring, assessment of heart rate variability

This work is a fragment of the complex research project "characteristics of comorbidity courses of internal diseases, risk factors and mechanisms of mutual aggravation, pharmacotherapy», state registration number 0114U002475.

Introduction

Thyrotoxic cardiomyopathy (thyrotoxic heart - TH) is a very common chronic condition in the group of metabolic and endocrine cardiomyopathies and is considered the one of the challenges of cardiology [nowadays [3, 6, 9]. TH is becoming the leading syndrome of the thyroid hyperfunctional diseases accompanied by the development of arrhythmias, secondary arterial hypertension, heart failure, etc. [4, 5, 12, 16]. It has been established that the TH develops mainly in young working-age population with thyrotoxicosis, and often does not acquire the full reverse development even in hyperthyroidism compensation. It is usually characterized by chronic, progressive course [11, 13, 15, 17].

Application of non-invasive instrumental methods of diagnoses of cardiac diseases (Holter monitoring (HM) of ECG and assessment of heart rate variability (HRV)) allows us to objectify and specify metabolic, hemodynamic and autonomic disturbances in TH to optimize the treatment of these patients [1, 7, 8]. In addition, the use of these methods in complex diagnoses of the TH and during treatment helps to evaluate the effectiveness of prescribed therapy, to develop objective selection criteria of drug doses, to conduct monitoring of treatment and rehabilitation of patients with TH [10, 14].

The purpose of the study

To evaluate the diagnostic capabilities of Holter monitoring of ECG and assessment of heart rate variability in the diagnosis and dynamic monitoring of the thyrotoxic heart with secondary arterial hy-pertension.

Materials and methods

The study included 53 patients with clinical presentations of TH and secondary arterial hypertension (38 women and 15 men) aged from 25 to 66 years (mean age was 44.3±5.5 years). The control group consisted of 25 individuals without identified somatic pathology (20 women and 5 men) with the mean aged 41.3±2.6 years.

The diagnosis of TH and secondary arterial hypertension was established after standard clinical and in-strumental examinations. We did not include to the study patients with cardiovascular pathology (ischemic heart disease, myocardial infarction, congenital and acquired heart diseases, essential

arterial hypertension), diabetes mellitus, obstructive lung disease, and severe kidney and liver disorders.

Holter monitoring of ECG and assessment of HRV were carried out according to the recommendations of experts of the European Society of Cardiology and North American Society of Pacing and Electrophysiology (1999) [2] on the device “Diacard" AO “Solveig" (Ukraine) at the beginning of in-patient treatment and in 10-14 days after the admission from the hospital. We analyzed the characteristics and source of rhythm, average, maximum and minimum heart rate per day and per hour, the frequency and characteristics of arrhythmias, the level of elevation and depression ST-segment depending on the physical, emotional activity, level of arterial pressure, and use of medication.

The following parameters of HRV were determined: time parameters - SDNN index (ms), RMSSD (ms), and pNN50 (%); spectral parameters - high-frequency component of the spectrum, HF (ms2), low frequency component of the spectrum – LF(ms2), and very low frequency component VLF(ms2). Also we analyzed the LF/HF ratio like an indicator of the balance of sympathetic and parasympathetic autonomic regulation. For determination of the spectral parameters, we used nonparametric method of fast Fourier transformation. We also measured statistical parameters: the amplitude of mode (AMO, %) and the Bajevsky index (IB, U).

Results and discussion

Criteria for diagnosis of TH with secondary arterial hypertension included clinical findings, anamnesis, objective and subjective data of the cardiovascular system pathology, level of BP elevation, ECG data (rhythm and conduction disorders, myocardium hypertrophy), Echocardiography data (hyper- or hy-podynamic syndrome, hypertrophy of heart walls, dilatation of the heart cavities, mitral valve prolapse) in the presence of hyperfunction of the thyroid gland (confirmed by the elevated levels of T3, T4 or decreased serum concentration of TSH).

During the daily HM of ECG the significant increase in average, minimum and maximum heart rate were revealed in all patients. Absence of significant decrease in heart rate at night was suggested as a manifestation of hyperdynamic syndrome. Different disorders of the heart functions (automatism, excitability and conductivity) were evaluated as a result of the morphological heterogeneity of the myocardium and development of cardiosclerosis, diffuse disorders of repolarization as a consequence of metabolic disturbances in the heart muscle. The level of maximum heart rate in the studied patients was 152.14±3.60 per minute. Ventricular extrasystole was detected in 49% of patients, the number of extrasystoles per day was 25.30±5.65 and does not go beyond a low-grade classes. Atrial extrasystole was detected in 64% of patients, and the number of extrasystoles per day was 104.52±11.61; 19% of patients recorded both versions of extrasystoles. Disturbances of repolarisation in HM of ECG was recorded in all patients in form of ST-segment depression and flattened or biphasic T-wave that can be assessed as a significant impairment of myocardial metabolism in patients with TH and secondary arterial hypertension.

Daily analysis of HRV revealed the pronounced increase in sympathetic influence on the cardiac activity regulation (increase of AMO (63,45±1,85 %), IB (454,34±25,37 U), the relative increase of

the LF and VLF spectral components) and inhibition of the parasympathetic part of autonomic regulation (decrease of RMSSD (14,25±0,56 ms), pNN50% (1,68±0,54 ms), HF spectral component (121,18±10,17 ms2)) on the basement of decrease of the total HRV (SDNNi decrease to 26,21±1,64 ms) and the total power of spec-trum. The detected levels of analyzed parameters were significantly different from those in the control group ($p<0,05$).

To estimate the relationships between the obtained parameters of HRV, medical history (disease duration), clinical data (heart rate, BP) and laboratory parameters (T3, T4), multivariate correlation analysis was applied. There were revealed moderate and strong positive relationship between the T3, T4 levels and heart rate (r=0,55), between the T3, T4 levels and indicators of sympathetic activity (LF, AMO) (r= 0.52-0.53), between the heart rate level and indices of sympathetic activity (LF, AMO) (r=0.54). Strong positive correlation between duration of disease and indicators of sympathetic activity (LF, AMO) (r=0.55) was detected together with the strong positive correlation between level of the blood pressure and indices of sympathetic activity (LF, AMO) (r= 0.67–0.55). Moderate and strong negative correlation was revealed between the total variability, the parasympathetic activity (SDNNi, RMSSD, HF) and the T3, T4 levels in the blood (r= -0,46 – -0,49), and the level of heart rate (r= -0.57 – -0,6), moderate negative correlation between disease duration and spectral index of parasympathetic activity (HF) (r= -0,45).

Dynamic monitoring revealed significant positive changes of HRV parameters, but indicators of the total variability and parasympathetic activity (SDNNi and RMSSD, pNN50%, HF) remained significantly below normal. Indicators of sympathetic activity (AMo, IB) became normalized faster and were compared with control level. Spectral data did not reach the level of control during investigation. That was expressed in reduction of the total power of spectrum in comparing with levels of control due to the decrease in the content of its components. However, a relative index of the autonomic regulation balance (LF/HF) became normal (and was even below the level of control). Tendency of HRV parameters normalization depended of the BP level of investigated patients. Thus, analyzing the obtained data, the therapy of TH with secondary arterial hypertension was assessed as adequate and effective, it was recommended to be continued during post-hospital stage of treatment.

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NON-ENZYMATIC ANTIOXIDANT SYSTEM OF BLOOD AND LIVER IN RATS UNDER PROLONGED CONSUMPTION OF SODIUM GLUTAMATE

Bevzo V.V.

Key words: sodium glutamate, ceruloplasmin, reduced glutathione, C vitamin, E vitamin, blood serum, liver, rat.

Sodium glutamate is known as flavour and aroma enhancer as well as salt substitute. Despite the fact that about 25% of the population is sensitive to sodium glutamate, it is still remaining to be one of the most widely used food additive. The purpose of the work presented was to study of the effect of sodium glutamate produced on the level of non-enzymatic antioxidants in the body under long-term consumption of monosodium glutamate. It has been found out the long-term consumption of 3% sodium glutamate by rats at a dose of 30 mg / kg body weight for 4 weeks resulted in a significant increase in the content of reduced glutathione, C vitamin and E vitamin E in the liver homogenate. While the content of ceruloplasmin in the blood and liver of animals given sodium glutamate, significantly decreased on the 28th day of the experiment. This suggests the long-term consumption of this food additive may lead to a change in the antioxidant status of the organism.

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EFFECT OF INHIBITOR OF NUCLEAR TRANSLOCATION OF TRANSCRIPTION FACTOR κB ON OXIDATIVE METABOLISM IN PERIODONTAL TISSUES OF RATS UNDER EXCESSIVE COMBINED SODIUM NITRATE AND FLUORIDE INTAKE

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Key words: nitrates, fluorides, nuclear factor κB, NO-synthase, superoxide anion radical, lipid peroxidation, antioxidant system, periodontium.

This study was aimed to study the effects of NF-κB activation inhibitor - JSH-23 (4-methyl-N- (3-phenylpropyl) benzene-1,2-diamine) on oxidative (NO-synthase) pathway of L-arginine metabolism, the level of superoxide anion radical production, lipid peroxidation (LPO) and antioxidant (AO) protection in the soft tissues of periodontium under excessive combined sodium nitrate and fluoride intake. The study was carried out 30 white rats. It has been found out the administration of JSH-23 in experimental conditions decreases the total activity of NO-synthase, increases ornithine decarboxylase activity, reduces superoxide anion radi-cal production by NADPH- and NADH-dependent electron transport chains and leukocyte NADPH oxidase, limits LPO activity, enhances AO potential in the soft tissues of periodontium.

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HEMATOCELLULAR ORGANIZATION OF HUMAN CORPUS CALLOSUM

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Key words: corpus callosum, myeloarchitectonics, blood-brain barrier.

Nowadays the questions on the interrelation of the processes between blood and myelinated nerve fibres of the white matter of the brain remain unclear. This study aims to clarify this issue in

relation to the corpus callosum. Flat plates (2 mm thick) made from pre-fixed in 10% neutral formalin whole mounts of the corpus callosum taken from 5 men and 5 women aged 36 – 60 years were used in the study. These plates were di-vided into two groups. One of the groups was subjected to the impregnation in 1% osmium tetroxide solution, and then the plates were plastinated in the epoxy resin. After complete polymerization the blocks obtained were used to make serial semi thin sections. To dye these sections we used 1% solution of methylene blue per 1% borax solution. It was found out that the blood microvessels in the corpus callosum are located in thin interfascicular interstitial (connective tissue) interlayers, which divide the fascicular portions of myelinated nerve fibres. Closely around these micro vessels (true precapillary arterioles and capillaries) throughout all their entire length glial cells are arranged (spaced apart). According to all cytological characteristics they all belong to the fibrillary astrocytes forming around them so-called limiting perivascular glial membranes.

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IMPACT OF SYMPATHICOTONIA ON HEMODYNAMIC PARAMETERS AND FUNCTION OF ENDOTHELIUM IN MODELLED CHRONIC STRESS

Havrelyuk S.V., Levenets S.V.

Key words: sympathicotonia, endothelial dysfunction, abdominal aorta, hemodynamic parameters

This article describes relevant issues relating to the study of the mechanisms of adaptation of the cardio-vascular system to immobilization stress under sympathicotonia against the background of increased activity of the sympathetic division of the higher nervous system and normal tone of parasympathetic division of the higher nervous system. The studies were carried out on three groups of identical 100-day old rats which were examined by ultrasound scan during 10-day exposure to immobilization stress against the sympathicotonia background. It has been found out the healthy laboratory rats exposed to the chronic immobilization stress developed endothelial dysfunction, vascular remodelling by eccentric type, loss of vascular wall elasticity and the ability to compensate for pathological changes. Under chronic immobilization stress accompanied by sympathicotonia with increased activity of the sympathetic division of the higher nervous system and normal tone of parasympathetic division we observed normal diameter of the abdominal aorta, structure and compensatory properties of vessel wall. However, we registered increased sensitivity of endothelium to acetylcholine and the developed of hemodynamic disturbances.

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MORPHOLOGICAL CHANGES OF MYOCARDIAL VASCULAR BED IN STREPTOZOTOCIN-INDUCED DIABETES MELLITUS AND AFTER ITS CORRECTION

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Key words: microcirculatory bed, myocardium, diabetes mellitus, exenatide, insulin.

The aim of this work is to study the morphological changes in myocardial vascular bed in rats with strep-tozotocin-induced diabetes mellitus and its correction by insulin and exenatide. Diabetes was modelled by single intraperitoneal injection of streptozotocin (6 mg per 100 g of body weight). In 56 days since diabetes had been modelled we discovered the signs of diabetic microangiopathy manifested by decreased arteriolar and capillary capacity, destructive changes of endotheliocytes, thickening of the basal membrane, expressed rheological disorders. Daily injections of exenatide

and insulin led to the normalization of blood glucose and glycosylated haemoglobin and restored the morphometric parameters and structure of myocardial vessel.

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DETECTION RATE AND QUANTITATIVE CHARACTERISTICS OF T-LYMPHOCYTES IN LUNG TISSUE HAVING TUBERCULOMAS UNDER VARIOUS ACTIVITY OF SPECIFIC INFLAMMATORY PROCESS

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Key words: lung tuberculoma, immunohistochemical study, CD4 + and CD8 + T lymphocytes.

The article presents data on the incidence and quantitative characterization of the major subpopulations of T lymphocytes in lung tissue in chronic pulmonary tuberculosis in the form of tuberculoma (TB). The aim was to identify the characteristics of the localization and the relative amount of CD4 + and CD8 + T lympho-cytes in lung tissue with tuberculoma under different intensity of specific inflammation. According to the re-sults of the standard histological examination there were formed 2 groups: 18 cases with morphologically highly specific inflammation (test group) and 16 cases with a moderately low level of inflammation (control group) for further immunohistochemistry (IHC) studies. IHC study was conducted b using autostainer AUTOSTAINER 360-2D with Ultra Vision Quanto HRP DAB system for visualizing the reaction products. We used a murine monoclonal antibody (MAb) CD4 MAb and rabbit CD8. Microscopic examination revealed the localization of CD positive cells in the granulation and fibrous layers of TB capsule, in lymphoid aggregates and in granulomas with different localization. It has been established that the CD4 + and CD8 + cells are the permanent cell component in all histological structures of lung tissue in cases of pulmonary TB, regardless of the specific activity of the inflammatory process. We revealed significantly greater number of CD4 + cells in the granulation layer TB and CD8 + T cells in the layer of fibrous TB capsules under morphologically highly specific activity of the inflammatory process ($p < 0.05$). The lymphoid aggregates morphologically with high inflammatory activity showed significantly greater number of CD4 + lymphocytes as compared to CD8 + cells ($p < 0.001$). Granulomas were observed to have significantly higher relative number of CD4 + cells in the group with moderately low specific activity of inflammation ($p < 0.05$). The value of the immunoregulatory index CD 4 + / CD 8 + cells did not change significantly in the different structures of the lung tissue with tuberculoma with varying degrees of specific inflammatory activity, and in general, its value is not significantly different from the normal values.

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L-TRYPTOPHAN: HYPOTENSIVE, HYPOGLYCAEMIC, CARDIOPROTECTIVE EFFECTS AND PECULIARITIES OF METABOLISM IN MODELLED STRESS

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Key words: emotional stress, L-tryptophan.

Currently, emotional stress (ES) is a recognized as one of risk factors contributing into occurrence of cardiovascular disease and diabetes. Negative emotional reactions by setting up sites of long-lasting excitement underlie the development of stable hypertension, accelerated development of atherosclerosis, coronary heart disease, neurosis, etc. Taking into account the significant increase in emotional stress nowadays, the search for adequate pharmacological stress protection among natural metabolite is quite relevant and contemporary. L tryptophan (50 mg / kg) once in the stomach 2 hours before the EC reduces the stress voltage that is manifested by decreased blood pressure, heart rate and the recovery of T wave. L tryptophan under ES affects the metabolism of tryptophan in various brain structures that is manifested by reduction of the level of its metabolites. Antistress effects produced by L tryptophan can be associated with its central neurotropic, anti-oxidant and metabolic actions. Data described in this article and previously obtained suggest further study of the actual metabolism of L-tryptophan and stress-protective effects.

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ANTICONVULSANT EFFECTS OF OXAMINIC ACIDS DERIVATES

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Key words: anticonvulsant activity, CNS, oxaminic acids derivates.

Screening studies on the interaction of 50 new derivatives of oxaminic acid with analeptics were carried out. It has been established that the test compounds have pronounced anticonvulsive effect. Among the de-rivatives of oxaminic acid there are compounds that potentiate effects of analeptics and substances producing a protective effect on the convulsive action of poisons. These properties require further in-depth study.

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COMPARATIVE ANALYSIS OF EFFECTS PRODUCED BY MEDICINES "AMPASSE", "M2" AND "CEREBRAL" ON THE SYSTEMIC GLIAL CELL RESPONSES OF SENSORIMOTOR CEREBRAL CORTEX IN RATS UNDER MODELLED ACUTE HEMORRHAGIC STROKE

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Key words: trophinotropin, sensorimotor cerebral cortex, rats, modelled acute hemorrhagic stroke.

The article describes the results obtained by studying the effects produced by medicines of trophinotropin group, "Cerebral", "M2" and "Ampasse», N- (5- hydroxy nicotinoyl) - L-glutamic acid of calcium salt on the state of glial sensorimotor system of cerebral cortex in white rats with modelled acute hemorrhagic stroke (HS). It has been found that "Ampasse" produces balanced effect on all types of gliocytes, "M2" has pronounced astroglioprotective action by returning PSC 1 to its normal values, and therapy by "Cerebral" demonstrates a significant increase in the number of microgliocytes with partial increase in the number of oligodendrocyte. Comparative analysis of these anti-stroke medicines on cerebral cortex in test rats with modelled hemorrhagic stroke shows high sensitivity and selectivity of their effects produced on individual pools of gliocytes that together with neurons individual cell structures of mammalian brain.

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ANGIOLIN ACTION ON MARKERS OF THIOL-DISULFIDE SYSTEM IN MYOCARDIUM RATS WITH CHRONIC IMPAIRED CARDIAL FUNCTION

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Key words: angiolin, mildronat, chronic impaired cardial function, markers of thiol-disulfide system.

Nitric oxide system plays the important role in regulating many functions of cardio-vascular system including vasorelaxation, inhibition of leukocyte adhesion to the endothelium, migration and proliferation of the smooth muscles, thrombocytes aggregation. Pathologically, the disturbances of nitric oxide formation are associated with the changes of thiol-disulfide system markers. Mediators of the thiol-disulfide system have the transport properties connected with the nitric oxide and increase its bioavailability. The direct endothelioprotector angiolin and indirect endothelioprotector mildronat may have cardioprotective influence due to its action on the markers of thiol-disulfide system in the myocardium under chronic cardiac insufficiency. The aim of this study is to investigate the angiolin action on the markers of thiol-disulfide system in the myocardium of rats with chronic heart insufficiency. The experiments were conducted on the 70 white rats weighed 180-220 g. The test animals were divided into several groups: 10 normotensive rats, 20 rats with doxorubicine cardiac insufficiency, 20 rats with doxorubicin cardiac insufficiency treated by angiolin, 20 rats with doxorubicin cardiac insufficiency treated by mildronat. Angiolin was injected intragastrically in the dose 100 mg/kg with doxorubicin (in the dose 15 mg/kg intraperitoneally). Mildronat was injected intragastrically in the dose 250 mg by the same scheme. The animals were decapitated under thiopental injection. In the myocardium of the rats we identified the following markers of the thiol-disulfide system: cysteine, methionine, glutathione reduced, glutathione oxidative, as well as the general reestablishment of sulphydril groups, the activity of glutathione reductase. We also found out the decrease of methionine, cysteine, and re-establish thiol groups, the activity of glutathione reductase and increase in the glutathione oxidative content. Angiolin normalized the content of the markers of thiol-disulfide system and the activity of glutathione

reductase in the myocardium of rats with chronic heart insufficiency. Angiolin normalized all markers of the thiol-disulfide system, while mildronat had no reliable influence on the markers of the myocardium of the test animals.

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PATHOMORPHOLOGICAL CHANGES IN STRUCTURE OF SPIRAL ORGAN UNDER MODELLED SENSONEURAL BRADYACUASIA OF VASCULAR GENESIS

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Key words: acute sensoneural bradyacuasia, spiral organ, perfused fixation, pathomorphology.

This work describes the pathomorphological changes in the structure of spiral organ in animals (sand-wort) in the conditions of the modelled sensoneural bradyacuasia of vascular genesis. The sandworts dem-onstrated significant changes in the structure of spiral organ compared with intact animals of control grpup. The results obtained show that perfused fixation is an inexpensive, fast and controlled way of preservation of the tissues studied. The light microscopy has proven the development of the destructive processes in spiral organ in the experimental animals.

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TISSUES VIABILITY OF COMPLEX STRUCTURE SKIN GRAFTS: EXPERIMENTAL STUDY

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Key words: tissue viability, impedancemetry, morphology, skin, subcutaneous tissue, muscles of complex skin grafts.

According to the numerous reports of leading professionals in the field of constructive surgery in our country and abroad there is steadily increasing incidence rate and severity of injuries of the extremities re-sulting in prolonged performance loss, higher disability and a significant number of misdiagnosis and im-proper treatment (30 to 80%) of this conditions in its acute phase. The share of combined injuries of extremities makes up 28 - 30% of all injuries. This significant share of these injuries is open, and in 4.8% of cases is accompanied by significant tissue defects that need plastic replacement. Severe damage of the upper and lower extremities is most often due to occupational traumas, increasing number of road accidents, shrapnel wounds and mine-explosive injuries. Adequately performed primary surgical treatment of wounds to eliminate the wound tissue defect and to provide primary care to victims with degloving and combined injuries, in most cases, plays a major role in getting satisfactory treatment outcomes. The implementation of providing early surgical treatment of victims with degloving traumas of upper and lower extremities into medical practice requires improved methods of careful preoperative evaluation of the depth and area of injury, the timing and volume performance surgery. The paper presents the results of the pilot study the viability of skin fragments, subcutaneous tissue and muscle complex grafts using the method impedancemetry of their morphological structure and dynamics. The study revealed the timing vitality of the skin grafts – up to 30 hours, 13 hours for subcutaneous fat, 3 hours – for muscles. The results are recommended to take into account when evaluating the extent of injuried tissue excision during performing primary surgical treatment of degloving and combined injuries.

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EFFECT OF QUERCETIN ON INDICES OF LIPID PEROXIDATION AND ACTIVITY OF ANTIOXIDANT ENZYMES IN PERIODONTAL MUCOSA AND LUNG TISSUE IN LATER PERIOD OF PNEUMONIA

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Key words: quercetin, modelled pneumonia, periodontium, free radical oxidation processes.

A common and challenging problem of modern dentistry is periodontal diseases. Primary periodontal damage leads to disruption of the microcirculation in gums and the growth of free radical oxidation. Modern means used to correct free radical oxidation is bioflavonoids including quercetin. This study has revealed that the later period of experimental pneumonia is accompanied by increase in metabolites of lipid peroxidation and reduced enzyme activity of the antioxidant system not only in lung tissue, but in periodontal mucosa as well. The therapy with medicine "Corvitin" for seven days helped reduce parameters of lipid peroxidation and increased enzyme activity of antioxidant system both in lung tissue and in the periodontal mucous. These results are comparable with the results obtained in guinea pigs, which were not given this antioxidant, on the 20th day of experimental pneumonia

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HUMANITARIAN PROBLEMS OF MEDICINE AND TEACHING IN HIGHER MEDICAL SCHOOL

PECULIARITIES OF TEACHING INTERNATIONAL STUDENTS AT THE DEPARTMENT OF HISTOLOGY, CYTOLOGY AND EMBRYOLOGY, IVANO FRANKIVSK NATIONAL MEDICAL UNIVERSITY

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Key words: higher education, international students, histology, cytology and embryology.

The number of foreign students in higher medical institutions of Ukraine, including IFNMU, increases every year due to the high quality of medical education and its affordability. This in turn

stimulates the development of medical science and education in our country, as well as promotes their integration into the international scientific and educational context. Teaching international citizens at the Department of Histology, Cytology and Embryology contributes to the formation of highly skilled professionals as it is based on individual approach and constantly encourages students to prepare for classes, increases their motivation to work independently, develops their clinical thinking and communication skills.

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NATURE OF LEARNING MOTIVATION OF MEDICAL STUDENTS

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Key words: leaning motivation, internal motivation, and medical faculty.

The article describes the peculiarities in the motivational complex and individual motives for learning ac-tivity of the first and fourth year students who study at medical faculty. It has been shown that in both groups there were well expressed internal motivation for the learning that significantly prevailed over the outer positive and, especially, the external negative motivations. We has found out that among some of the motives for internal motivation, the leading one is the desire to become a highly qualified specialist, to succeed in future profession and acquire deep sound knowledge. Thus, maintenance of these learning motives among the medical students significantly contributes to improving the quality of medical education.

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EXPERIENCE OF IMPLEMENTING INTERACTIVE TEACHING TECHNIQUES IN PEDIATRIC ORAL SURGERY

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Key words: higher education, interactive teaching techniques, case-study, paediatric oral surgery.

The article describes the experience of introducing one of interactive teaching techniques, “case-study”, during the covering a section of children oral surgery “Tumours and tumour-like neoplasms of tissues in maxillofacial area of children” at the Department of Paediatric Dentistry of the Ivano-Frankivsk National Medical University. This method can considerably increase the motivation of students to study the subject through self-study of the basic and additional literature, encourages them to develop their own opinion, to express it properly, to prove their point of view, to argue and discuss, to develop tactics of decision-making in various modelled situations, as well as contributes to the development of clinical thinking of future specialists.

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UKRAINIAN INTERNAL MEDICINE COMPETITIONS AS MEANS TO PROMOTE STUDENTS' CLINICAL THINKING

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Key words: internal medicine, Ukrainian competitions, clinical thinking, interactive computer technologies.

The article analyzes the results of Ukrainian Internal Medicine competitions for medical students held in 2016. It has been proved that the competition contributes to the development of creative clinical thinking of students and involves not only the traditional theoretical knowledge and practical skills, but also the use of novel interactive computer technologies and visualizing techniques (electrocardiography, photos and / or video protocols, echocardiography, coronary

angiography, multislice computed tomography with multiplane reconstruction, magnetic resonance imaging, etc.).

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STUDENT SCIENTIFIC SOCIETY AS A TYPE OF STUDENT RESEARCH ACTIVITY

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Key words: research activity, student scientific society, student.

This article describes the main forms of student research activities within the framework of scientific society at the Department of Internal Medicine, Clinical Pharmacology and Occupational Diseases. The experience gained by the Department members contributes to the development of sound skills of independent scientific research work, increases the quality of learning Internal Medicine, and promotes the development of creative and analytic thinking. Students develop their professional outlook, skills by applying theoretical knowledge and novel research methods in practical context. They can also get assistance in any aspects of research activity.

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SOME APPROACHES TO IMPROVE TEACHING MEDICAL AND BIOLOGICAL PHYSICS AT MEDICAL UNIVERSITY

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Key words: medical and biological physics, new approaches to teaching.

This paper throws light on some methods and approaches to teaching innovations implemented at the Department of Biological Physics and Medical Informatics, Bukovinian State Medical University. In particular, the setting and supporting of the special groups in social networks, creating and supporting the newspaper "Medical physics, engineering and computer science", designing thematic posters and tables for practical training classes as a form of individual self-learning, publishing of qualitatively new teaching materials with accent to the practical aspect of the theoretical knowledge application and the latest achievements of physical science in the field of medical diagnosis and treatment. It has shown that the integrated form of material presentation helps students to become more interested in the subjects that are learned at the department, and deepens their understanding what contributes to the motivation for learning natural sciences and promotes conscious attitude to the future profession.

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CLINICAL CASE

THROMBOPHILIA: CASE REPORT

Dotsenko S. Ya., Medvedchuk G. Ya., Shevchenko M. V., Kravchenko V. I., Kravchenko T. V., Gogoi T.N.

Key words: thrombophilia, mesenterc thrombosis, spleen infarction.

Thrombophilia is a chronic pathological condition of the blood system manifested by imbalanced hemo-stasis and increased propensity to thrombosis. Thrombophilia is characterized by a prolonged course and spontaneous complications including flebotromboz, thromboembolism. The disease can be congenital or acquired. Thrombophilia can be also manifested by multiple and recurrent thromboses of various localization. The consequences of such a pathological condition are deep vein thrombosis, myocardial infarction, infarction of kidney, spleen, brain stroke, pulmonary embolism, often leading to death. Clinical manifestations of thrombophilia depend on the localization and size of the clot, the degree of circulatory disorders and the presence of comorbidities. This condition can be seen in relatively young patients. The diagnosis of thrombophilia is established on the basis of propensity to recurrent blood clots of various localization, family history, findings of laboratory tests. Making diagnosis of thrombophilia can be impeded by a number of obstacles. This is mainly because the disease does not produce any symptoms for a long period of time and because of high costs of laboratory tests that can confirm the presence of thrombophilia.

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LITERATURE REVIEW

CHANGES IN PERIODONTAL TISSUES IN PATIENTS WITH DIABETES

Bida V. I., Hermanchuk S. M.

Key words: diabetes, periodontium, bone, orthodontic correction.

This paper represents the analysis of publications of national and international authors on pathological changes in periodontal tissues in patients with diabetes mellitus (DM). Our study confirms that patients with diabetes, due to the various extent pathological changes in oral tissues and organs of the mouth require special approach in choosing best orthodontic correction and subsequent rehabilitation. Modern prosthetic dentistry is undergoing active development, leading to implementation of new methods and materials in the construction of dentures to replace missing teeth and severely affected dentition. The development and in-troduction of dentures biocompatible with the human oral tissues is especially relevant for patients with seri-ous periodontal diseases including patients with diabetes. The dentures and dental appliances should also provide optimal load distribution on periodontal tissue. The analysis of clinical studies has demonstrated the lack of systematic research of indications for replacement of dentition defects and the selection of the appropriate denture design for patients with diabetes. The influence of dentures on periodontal tissues, especially in the long-term period is also little reported, hence there is urgent need in further studying of integrated approach to provide the people dental orthopaedic care to patients with diabetes.

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EFFECT OF L-ARGININE ON LOCAL AND SYSTEMIC PROCESSES OF BODY RESTORING AFTER AGGRESSIVE FACTORS OF SURGICAL TRAUMA

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Key words: L-arginine, surgical trauma, postoperative stress, traumatic process, surgical suture material.

This review article focuses on the analysis of the modern conceptions on the important role of L-arginine in the mechanisms of reparative regeneration as well as highlights certain stress-protective, antioxidant, anti-hypoxic properties of this amino acid. It has been emphasized that the development of novel medical tech-nologies with systemic and local application of L-arginine to prevent the negative effects of surgical trauma and accelerate wound healing is of great appropriateness, especially in the field of military surgery.

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CLINICAL ASPECTS OF APPLYING DENTAL IMPRESSION MATERIALS IN PROVIDING GOOD OUTCOMES WITH ORTHOPAEDIC APPLIANCES CORRECTION

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Key words: impression materials, functional impressions, edentulous jaw, orthopaedic treatment, dentures.

Development and implementation of a new impression material is an important factor in the development of modern orthopaedic dentistry. The introduction of new impression and restorative materials raises the quality of manufactured dental appliances. General requirements for materials used in dentistry are: safety, durability, resistance to the destructive action of the oral fluid, resistance to aggressive influence of nutrients and air, the ability to cyclic loading and other mechanical factors. Mechanical impacts can be tensile, bending, distortion, temperature factors. The denture must match the natural colour of the teeth, it should not have an unpleasant taste and smell, the availability and cost of restorative materials. Making dentures is impossible without the use of auxiliary materials, which are not parts of the final design of the denture, but contribute to its final quality. Such materials are impression materials, low-melting alloys, moulding and refractory materials, fluxes and bleaches, abrasive materials, separating lacquers, dental cements. The quality of the manufactured prosthetic directly depends on the properties and characteristics of impression materials so now the attention of dental specialists is focused on the improvement of their components and optimal ways of their application. Modern dental industry produces a variety of impression materials that differ significantly in their compositions and properties. They have their advantages and disadvantages; they are used successfully in specific clinical situations. But, it should be noted that to date there is no universal impression material which meets all the clinical and technological requirements and which could be applied in all clinical situations. It should be noted that despite the large amount of impression material at the market, the choice of orthopaedist in favour of a particular material sometimes is far from being well-grounded. The analysis of the literature proves the non-systemic nature of the choice of impression material and method of taking impression. The success of orthopaedic treatment of edentulous patients depends on the quality of fixation of the dentures on jaws. Reliable fixation of dentures depends not only on the anatomical factors of retention, and adhesion, but also it depends on functional suction in the formation of the valve area. Therefore, we can suggest the quality of orthopaedic treatment depends on properties of the impression materials and methods of taking impressions.

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CLINICAL AND PATHOGENETIC ASPECTS OF HYPOGALACTIA IN POST-PARTURIENT WOMEN

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Key words: breast, mammary glands, hypogalactia.

This article presents the analytical review of clinical studies related to the problems of galactosis in post-parturient women. The basic pathophysiological factors of hypogalactia, mechanisms of direct and indirect effects on the level of lactation, their synergy, and methods of prevention and correction of lactation dysfunction were described.

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BIOMINERALIZATION IN TISSUES OF HUMAN BODY

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Key words: physiological biomineralization, pathological biomineralization, hydroxyapatite, calcite, organic-mineral aggregates.

Biomineralization is a process of minerals formation by living organisms in the conditions of biominerals formation and growth from a supersaturated aqueous solution, involving organic matrix, which has a cell ori-gin. During last decades the interest in the study of human pathological biomineralization has greatly in-creased due to the increasing incidence of pathology, associated with this phenomenon. The combination of pathological biomineralization with the common cardiovascular pathology, atherosclerosis, which ranks the leading place in the people mortality and is known as the "diseases of civilization", as w ell as the diseases of the thyroid gland, kidneys, gallbladder, prostate, salivary glands determinates the necessity to develop new methods of prevention, diagnosis and treatment of these diseases. The aim of the work is to perform the analysis and synthesis of data reported to establish the role of biomineralization in the tissues of the human body. Biominerals formation has undergone considerable changes during the evolution

process. Of course, like any useful compensatory adaptive reaction, biomineralization has its pathological reflection: many diseases are complicated by its excessive or untimely manifestations. Studying the role of biomineralization processes in the physiological conditions and in pathology will give an opportunity to understand and identify therapeutic strategies for regulating biomineralization processes. Only after that the ways of preventing or blocking of biominerals formation in the human body must be developed. This can be explained by the fact that in many cases the biominerals development is a protective response to injury by pathogenic factors, therefore inhibition of biomineralization can be rather harmful in some cases (hypercalcification in the case of complicated atherosclerosis, psammomma bodies and stromal calcification of papillary thyroid cancer, osteoblast bone metastases). In the most cases, the development of pathological biomineralization damages an organism, significantly reduces the quality and length of patients life, that's why methods of its preventing and blocking requires in-depth study.

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CHRONIC INFLAMMATION OF LOW INTENSITY AND QUERCETIN: FROM MOLECULAR MECHANISMS TO ITS CLINICAL SIGNIFICANCE

Nedoborenko V.M.

Key words: low-grade chronic systemic inflammationб quercetin, nuclear transcription factor NF-κB

Over the last decade internal medicine has determed the leading role of low-grade chronic systemic in-flammation as a pathophysiological basis of diseases associated with metabolic disorders. Their treatment is not always effective despite the range of anti-inflammatory drugs. This review article describes an anti-inflammatory effect of quercetin from the molecular mechanism to its the clinical application focusing the at-tention on the constituents of the cascade of inflammatory reactions associated with nuclear transcription factor NF-κB.

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ROLE OF PLATELETS IN PULMONARY PHYSIOLOGY AND PATHOLOGY

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Key words: lungs, platelets, endothelial cells, inflammation, adhesion

The article is devoted to an important problem of physiology as studying the influence of platelets on the respiratory system. The analysis of current literature published in Ukraine and abroad

enables us to sum up the main effects of platelets in lungs. Platelets are known as the chief effector cells in haemostasis and have additional functions in vascular integrity and repair. They play an important role in inflammation and can influence immune responses. Recent discoveries have established new findings relevant to influences of platelets on lung biology. The lungs are reservoirs for megakaryocytes, the precursor cells in thrombopoesis Platelets contribute to the pathogenesis of lung diseases, including acute respiratory distress syndrome, asthma, chronic obstructive pulmonary disease, pulmonary hypertension, pneumonia and lung cancer. This review highlights potential role of platelets in respiratory tract disorders.

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ADDITIVE TECHNOLOGIES IN DENTISTRY

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Key words: prosthetic dentistry, indirect restoration, CAD/CAM, intraoral scanner, additive technology, layer-by-layer synthesis, selective laser sintering.

Additive technology or the technology of layer-by-layer synthesis is the fastest growing trend of today's digital production. There are many technologies that can be called "additive", but they all have one common thing: the model is built up by adding the material, unlike the traditional technologies, where the part is built up by casting in pre-prepared mold. Currently, rapid prototyping methods are widely used in dentistry, and the selective laser sintering in particular. The technology of layered synthesis allows dental technicians to re-produce products with high precision, and also to provide a homogeneous structure as well as to improved mechanical properties. This technology reduces the number of steps in denture manufacturing and is time-saving.

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PROPHYLAXIS AND TREATMENT OF CHEMOTHERAPY-INDUCED ORAL MUCOSITIS

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Key words: oral mucositis, chemotherapy, breast cancer.

Anticancer chemotherapy is one of the most important approaches in modern oncology, but it is always associated with the development of side effects, including in the oral cavity. Early detection

of oral mucosi-tis, correct assessment of the clinical situation, and rational treatment plan with active intervention are para-mount in the prevention and minimization of dental problems that in turn will enable preventing delays or in-terruptions in cancer treatment timing for maximum comfort and efficiency of the basic treatment of a patient. This article presents the grounds of thorough dental examination of patients before starting the treatment and keeping proper oral hygiene throughout all cycles of cytostatic treatment. The basic medications used to reduce the manifestations of cytostatic treatment in the oral cavity were also characterised. This article demonstrates the necessity of preventive therapy to reduce the manifestations of oral mucositis.

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