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STOMATOLOGY

PREVALENCE AND INTENSITY OF CARIES PROCESS AMONG NATIVE AND FOREIGN MEDICAL STUDENTS

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Keywords: prevalence of caries, intensity of caries, oral hygiene.

Introduction. The study of dental status in students is an important task of dentistry since their health is of great social and medical significance. The comparative characteristics of the dental status of both domestic and international students contribute to developing a differentiated approach aimed to create new schemes of therapeutic and preventive measures for hard dental tissues as well as to improve the methods of regular dental check-up and follow-up care for these patients.

The study was aimed to determine the prevalence and intensity of caries process among first year students of the medical, dental faculties, and as the preliminary faculty for foreign students of the Ukrainian Medical Dental Academy, Poltava, and to compare their characteristics.

Materials and methods. 554 (100%) domestic students among whom there were 240 (43.32%) males and 314 females (56.68%) underwent the routine dental examination. 74 foreign students (66 (89%) males and 8 (11%) females) aged 17 to 29 years were involved into the study. The conditions of hard dental tissues were studied for index of dental caries prevalence, oral hygiene index (GI) calculated by J.C. Green, J.R. Wermillion (Oni-S, 1964). Statistical processing of data was carried out by conventional methods of variation statistics.

Results and their discussion. Thorough clinical examination of hard dental tissues showed differences in the prevalence of dental caries among residents of different countries. Thus, the value of this index made up the foreigners. It was determined that the percentage of foreign students whose oral health was within normal limits formed 20,27% ± 0,74%, that in 6.7 times higher compared to the residents of Ukraine, whose index was only 3,3% ± 0,19%. We evaluated the intensity of the caries process as well. Mean index of the amount of dental caries among the native students constituted 5,2 ± 0,2, which exceeded the index in the foreigners 1.7 times. Mean number of carious teeth per a person under the observation amounted to 2,75 ± 0,2 and 4,7 ± 0,17 among the foreign and native students respectively.

Analysis of the data obtained showed the prevalence of dental caries among the student was within mean value in Ukraine. It was found about a half of the domestic and international students examined showed low prevalence of tooth decay, and the amount of affected teeth ranged 3 to 6 ones. However, the very low prevalence of caries was mainly detected foreigners (by 6.52%). In 23.87% of domestic students the DMFD referred more than 6 teeth.

It should be stressed that in the structure of the index of caries prevalence the number of filled teeth ("F") dominated in both domestic and international students. Thus, among the foreigners "F" was 1,26 ± 0,20, and among Ukrainians it made up 3,46 ± 0,18. Number of missing teeth ("M") caused by complicated caries among the foreign students was higher (0,51 ± 0,19), while the domestic students showed the following figures as 0,36 ± 0,12, (p < 0.001 ). Number of decayed teeth ("D") in both examined groups did not significantly differ. It should be noted that 32.6 % of students regularly brushed their teeth and had good hygiene index, 43.47 % of the student demonstrated satisfactory indices, and the rest of 23.9 % were observed to have poor oral health. Statistical difference in the hygiene index among the students from different faculties was not registered.

Thus, the prevalence of dental caries in the native students makes up 96 ± 0,89%, which is by 29 % higher than in the foreign students. Mean index of caries prevalence among the domestic students equals 5,2 ± 0,2, which in 1.7 times exceeds the index in the foreigners. 23.87 % of Ukrainians have DMFT index higher than normal. Analysis of the structure of the DNFT indices has shown the prevalence in the number of filled teeth ("F"). The number of missed teeth ("M") among the international students is 1.4 times higher and makes up 0,51 ± 0,19. The values of oral hygiene index correspond to satisfactory conditions of hygiene.

References
FEATURES OF MANDIBLE GROWTH TYPE IN PATIENTS DWELLING IN NORTHERN AND CENTRAL REGIONS OF UKRAINE WITH CLASS II MALOCCLUSION

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Keywords: Class II anomalies by Engle, type of growth, mandible, orthopantomography, northern and central regions of Ukraine.

Compared to other radiographic techniques orthopantomography (OPT) has become a very frequently employed radiological examination of dentofacial apparatus for the last 30 years. This technique possesses undeniable advantages for both a patient and a dentist as short-term exposure to low X-ray irradiation doses and high informative value. This makes it possible to prognosticate orthodontic treatment, to control its stages and outcomes (Rotraut R., Wilfried R., 2005).

One of the leading factors contributing to severe morphological changes in dentofacial apparatus and malocclusions is the type of mandible development. Therefore this examination is of great theoretical and clinical significance for determining the proper time to start orthodontic correction of sagittal malocclusions, to make up the plan of treatment, to choose better techniques, and to prognosticate its outcomes.

The aim of the research is to improve techniques for diagnosing malocclusions II class (by E. Angle) in patients with mixed dentition by estimating the type of mandible development according to OPT findings. We also intend to compare the type of mandible development in patients from northern and southern regions of Ukraine who have above mentioned bite abnormalities.

Materials and methods. 76 patients with delayed mixed dentition were subjected to OPT to determine the type of mandible growth at the Sumy Regional Clinic of Pediatric Dentistry. The patients were diagnosed to have dentofacial anomalies, II class by E. Angle. OPT findings with mandible angle measurement were used to determine the type of mandible development. The comparative study of mandible development in patients with bite abnormalities class II from Poltava and Sumy regions was based on the data reported in 2006 and in 2013.

Results and their discussion. The patients dwelling in central regions of Ukraine (Poltava city and Poltava region) who were diagnosed to have distal occlusion in 2006 demonstrated the highest proportion was made up by combine type of mandible development (40,23%), slightly less proportion was constituted by horizontal type of mandible development (32,18%). The neutral type formed 19.45%, and only 8.05% of the patients showed the vertical type of mandible development.

The results obtained from the northern region of Ukraine (Sumy and Sumy region) were somewhat different. The neutral type of mandible development was diagnosed in 36.84% that was twice as more as in the patients from the central region compared with the data of 2006. The identical pattern was observed by
comparing the findings of vertical and horizontal mandible development (19.74% and 18.42% respectively). Conversely, the abnormalities associated with horizontal type were detected in 25% of cases, that a twofold decrease than in the group of Poltava patients.

**Conclusions.** Having compared the type of mandible development by OPT findings in Ukrainian patients from two regions with malocclusion class II by E.Angle it was shown the well-proportioned neutral type of mandible development was inherent for the patients from Sumy region, while the patients from Poltava regions typically had combined type of mandible growth.

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**APPLICTION OF CONE-BEAM COMPUTED TOMOGRAPHY IN PROSTHETIC DENTISTRY**

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**Key words:** diagnosis, orthopantomography, cone-beam computed tomography, temporo-mandibular joint (TMJ).

**Introduction.** The significance of X-rays examinations is steadily increasing in modern dentistry that to a large extent is determined by the development of computer technologies.

The choice of the proper approach in the dental treatment mainly depends on the correct diagnosis based on awareness of the problem and the use of supporting diagnostic techniques. Therefore, the early diagnosis of dental diseases and maxillofacial injuries, objective assessment of treatment results in short-term and long-term periods is an urgent problem of prosthetic dentistry.

The introduction of the up-to-date integrated approach in providing dental care makes dental professionals to insist on the supporting diagnostic techniques. Orthopantomography (OPT) has become an obligatory stage of qualitative primary diagnosis, and the latest OTP equipments supplied with various diagnostics software enable to obtain 3D image of particular areas with minimal X-ray dose exposure.
The study was aimed to ground the potentialities of cone-beam computed tomography (CT) in prosthetic dentistry based on the analysis of investigations carried out on 3-D cone-beam CT and processed by computer programs.

Materials and methods. We used cone-beam computed tomography scan PICASSO (Vatech South Korea). 80 patients who went to the orthodontists were subjected to CT scanning.

Results and their discussions. Applying of supporting X-ray examination techniques assisted us in detecting TMG asymmetry and certain changes depending on the site of injuries (sagittal, coronal, axial plane).

Having analyzed 20 images of unilateral defect (class II by Kennedy) we marked the difference between the position of the heads relative to the bottom and the slope of the articular tubercle. The inhomogeneity of the bone structure in the alveolar process on the side of the edentulous jaw was found out as well.

Having analyzed 30 CT images we thoroughly studied the condition of the alveolar ridge, the width and profile of the bone tissue at its various sites, the condition of periodontal gap of abutment teeth, root canal status in the cervical and apical areas, the intensity of bone resorption, and profile of the bone tissue at its various sites, the condition of periodontal gap of abutment teeth in the patients before and after inserting root canal post or applying stump crown.

Conclusion. The results obtained show the CBCT is very helpful in examining TMJ in sagittal, coronal, axial planes. This technique contributes much to the estimation of the articular head position in the glenoid cavity and helps to visualize the shape of the mandibular head. Moreover, the CT scans may display erosions, osteophytes, sclerosis, ankylosis, cartilage space narrowing, and other changes caused by TNJ traumas. This technique also indicates the condition of prosthesis bed including characteristics of bone tissue structure, the type of bone tissues, the size of alveolar process, and the condition of abutment teeth involved in supporting dental appliances. Evaluating abutment teeth much attention should be focused on the condition of dental roots, periodontal fissures, presence and size of cysts and granulomas. CBCT allows us to examine teeth in three planes and to obtain 3D images of teeth that helps to estimate the conditions of the tees to be abutment ones.

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APPLICATION OF OPERATING MICROSCOPE IN ORTHODONTIC PRACTICE

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Key words: magnification, dental operating microscope, microdentistry, minimally invasive dentistry, ergonomics.

Human eye potentials determined by the nature restrict the dentists' possibilities to provide thorough dental treatment. The results of dental restorations which might appear ideal when estimated by naked eye...
are often far from been perfect when magnified. This encourages to search and to imply the latest techniques in dental restoration.

The latest models of operating dental microscopes have pushed back the boundaries of restorative dentistry potentials. The ability to see fine anatomical structures and to detect their peculiarities, to provide visual control of minimally invasive treatment and to estimate the results obtained, and moreover, to make this clear for a patient and dental technician has resulted in the acceptance of new treatment standards which seemed unattainable before.

The last half of the century when operating microscopes have been widely used in medical practice and the last 25 years of extent introduction of microscopy into dental practice have raised the qualification standard to dental health care providers.

This paper is devoted to the conception of microdentistry which is defined as minimally invasive practice using optic devices to magnify the operative field. As a direct result provided by the magnification treatment may become more thorough and less traumatic, that prevent health tissues from needless involvement into the treatment process.

The statement of more qualitative and simple dental care under magnification provided by the operating microscope makes no doubts in current dental literature.

But in restorative dentistry and orthodontics the application of microscopy is in its early stages. Many dentists having new devices at their disposal usually use them only to treat frontal teeth and sometimes to assess the restoration done. This is far from the rational use of the latest dental equipment.

Operating microscopes help carry out more sparing cavity preparation, promote more accurate use of restorative materials, better final processing of new restorations and make more precise diagnosis. This technique enables us to visualize dental textures and their anatomical traits which are invisible by dental loupes.

References


ANTIHIPOXANTS IN COMPLEX THERAPY OF GENERALIZED PERIODONTITIS IN PATIENTS WITH STABLE EXERTIONAL ANGINA

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**Keywords:** generalized periodontitis, antihypoxants of metabolic action, stable exertional angina.

Periodontal diseases rank the leading position in the structure of dental diseases. Generalized periodontitis is considered to be the most common dental pathology, especially in over-middle-aged persons. There is close correlation between periodontal diseases and systemic diseases, among which cardiovascular conditions and coronary heart disease (CHD) namely are most commonly diagnosed.

There are few integrated studies of oxidative disorders, impairment of regional hemodynamics and microcirculation in patients with periodontal diseases and concomitant CHD which have been carried out before. Furthermore, the leading pathogenetic factors at different severity of periodontal diseases that mainly determine the treatment approaches and preventive measures are still unclear. At the same time an adequate correction of pathogenetic disturbances including metabolic, hemorrhheological and microcirculatory changes seems to be an important and obligatory component in the complex therapy of generalized periodontitis with CHD.

Therefore, the **aim** of the study presented is to ascertain the effectiveness provided by patient-centered intake of antihypoxants of metabolic action to correct metabolic and hemodynamic disturbances in patients with stable exertional angina (SEA).

It has been found out the patients with chronic generalized periodontitis I –II stases and concomitant SEA who were managed according to conventional standards of dental treatment and who were prescribed antihypoxants of metabolic action (mexicori in capsules) to take for 10 days in a dose of 100 mg three times a day demonstrate the decrease of acute inflammatory manifestation in the mouth. This has been proved by the amelioration of periodontal indices, Green-Vermillion index, papillary-marginal-alveolar index, that occurred in 3 – 4 days faster. So, as the intensity of free-radical lipid peroxidation decreases, the antioxidant protection increases.

Alongside with conventional therapy prescribed for the patients with chronic generalized periodontitis I –II stases and concomitant SEA the administration of local antihypoxic therapy promotes the improvement of the clinical picture which is shown by subjective and objective characteristics, positive shifts in periodontal indices, correction of antioxidant system indices as well as by the optimization of regional hemodynamics and microcirculation, the decrease of periodontium rheographic index, the index of vessels tonic contraction, and the index of vessels peripheral resistance.

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SIMPLIFIED EXPRESS-DIAGNOSIS OF FLUORINE ION EXCESS IN ENAMEL OF PERMANENT TEETH

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Key words: teeth, enamel, over fluorine, express-diagnostics.

Introduction. Prevention of tooth decay is still an urgent dental problem worldwide that is determined by the high rate of its prevalence and intensity. Caries-preventing effectiveness of fluorine is nearly commonly accepted. Therefore there is a wide choice of fluorine-containing toothpastes, oral rinses, dental varnishes, gels, sealants as well as different procedures as electrophoresis, phonophoresis, but fluorines are also known to produce unwanted effects. The commonest side effects caused by fluorines are dental fluorosis and fragility of hard dental tissues. Nowadays there is no technique which helps diagnose the accumulation of excessive fluorine ions in dental enamel in one visit and without tooth removing therefore the development of such techniques is of great importance.

The research was aimed to develop the simplified technique to diagnose the excess of fluorine ions in enamel of permanent teeth.

Materials and methods. There were 33 patients aged 20 – 25 who have been living in Poltava since their birth. To provoke the changes in permeability of enamel etched for methylene blue we applied aminofluoride solution on it and then compared the intensity of enamel staining before and after fluorine loading. Afterwards we analyzed the results obtained that helped to design the technique for simplified express-diagnosis of fluorine ion excess in enamel of permanent teeth (Patent of Ukraine № 73965).

Results and their discussion. The technique we developed includes enamel etching of upper incisors 1 N with 3% hydrochloric acid and further detection of staining intensity in etched areas with 1% methylene blue. To provoke the changes in permeability of enamel etched we applied 0.15% water solution of amino-fluoride or 2% water solution of sodium fluoride on it for 3 – 15 min. The acid was used to etch the enamel of two teeth (11 and 21) simultaneously, where one tooth was test, while another was control. Fluorine solution was applied upon the test tooth, and distilled water was applied upon the control tooth. To detect the increase in enamel permeability following the fluorine loading methylene blue was applied upon the both teeth simultaneously. The comparison of staining intensity of the test and control teeth was then carried out.

More marked intensity of blur in the area studied compared to the control suggested the accumulation of excessive fluorine ions in dental enamel caused by additional fluorine loading.

It was found more than third of the patients under the observation who have been living in Poltava since the very birth additional fluorine loading on etched mature enamel of permanent teeth led to increasing of enamel permeability for methylene blue.

Conclusion. The technique for simplified express-diagnosis of fluorine ion excess in enamel of permanent teeth enables the dentists for 15 – 20 min to detect the accumulation of excessive fluorine ions and to avoid mistakes in choosing the decay-preventive measures for certain patients.

References


CLINICAL MEDICINE

ORGANIZATION OF INFORMATION SUPPORT OF GENERAL PRACTITIONER - PATIENT COOPERATION

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Keywords: information, general practitioner, family medicine, patient, cooperation.

This paper focuses on the importance in developing the information support for general practitioner - patient cooperation. Among the strategic mechanisms designed to reorganize the health care system an important part is played by the introduction of the latest medical technologies. The paper presents the strategy of step-by-step implementation of information support which would be effective and fruitful at each stage of its implementation.

A special part in the process of implementation of IT technologies is assigned to a patient and his consent to the processing of personal data and the forming of the electronic documents circulation. This approach allows GPs to obtain a constant access to the information of national and global health information sources; to form their clinical thinking based on the principles of evidence-based medicine; to fix the results of health care professional – patient interaction in patient’s medical history recordings; to reduce non-productive time on paperwork as well as on recording and reporting.

One of the key moments in the development of an effective health care infrastructure is the creation of a common information space for all parties in interests: patients, physicians, health care organizations, public health authorities.

It has been found out that in Ukraine at the beginning of 2013 primary health care was provided in the 6095 general outpatient departments, among which there were 3824 in rural areas, and in cities and villages of a town type there were 1046 structural subunits of primary health care centers and 1225 outpatients departments.

The indicators of general health in Ukrainian population show the settlement of patient – general practitioner co-operation is a priority in the organization of health care provision. Thereupon, the rapid introduction of information technologies in daily routine of health care institutions of primary level allows them to render health care services more effectively.

The main tasks of the implementation of IT technologies in the primary health care system are aimed to improve an institution management in general; to ensure quality of the current monitoring of primary health care institutions to provide more detailed expertise of health care, to simplify the formation of accounting and reported information data base due to the comprehensive implementation of electronic health records and statistical passes for patients; to use health care staff more effectively, to cut down time needed for processing medical documentation; to spend more time for patient-centered communication and therefore to increase a number of persons who are satisfied with medical care.

A special part in the process of IT implementation is assigned to patients and their consent to the processing of personal data, as well as to the creation of electronic documents. This approach allows the healthcare providers to gain constant access to information of national and global health information sources; to form their clinical thinking on the principles of evidence-based medicine; to fix the results of interaction with the patient and to set up patient’s medical history; to reduce non-productive time devoted to paperwork; to get regulations and methodological information in time.

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PRINCIPLES OF DIFFERENTIAL THERAPY OF AUTOIMMUNE THYROIDITIS DEPENDING ON CHARACTER OF METABOLIC DISORDERS

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Key words: autoimmune thyroiditis, formation of thyroid nodules, Hashitoxicosis, euthyreosis, hypothyroidism, immunity, peroxide, metabolic-latent type of metabolic course.

Autoimmune thyroiditis (AIT) has become one of the commonest autoimmune diseases and makes up the largest part of all thyroid diseases. The incidence has been steadily increasing. The increase in this disease, which is caused by disorders of the immune system, may also be attributed to the deterioration of the environment. AIT is characterized by the development of immediate and delayed hypersensitivity to thyroid antigens.

While the glandular tissue is being destroyed cytotoxic lymphocytes and autoantibodies support the tendency of the gradual development of hypothyroidism that results in hypothyroidism. The increasing tendency of the gradual development of hypothyroidism that results in hypothyroidism.

We examined 140 patients with autoimmune thyroiditis and 20 healthy individuals. Diagnosis verification was based on clinical course of the disease, physical examination of the patients, laboratory findings and instrumental methods. Patient consent was obtained to perform fine-needle aspiration biopsy to the patients with nodular forms of autoimmune thyroiditis. Authors highlighted four types of autoimmune thyroiditis metabolic flow: immune, peroxide, mixed and metabolic-latent. Autoimmune thyroiditis types may be classified depending on the clinical manifestations of the disease, hormonal state of the thyroid gland, immune system status, free radical lipid peroxidation, and antioxidant defense system status.

Stage sequence (Hashitoxicosis, then euthyroid and hypothyroidism) and autoimmune thyroiditis duration was established. The introduction of immunomodulators for the immune type), antioxidants (for peroxide type) and metabolism-regulating agents into the complex therapy enables to reduce the process of thyroid cells destruction by thyroid antibodies, immune cells as well as by free radicals that hampers the development and progress of hypothyroidism.

References

CHRONOTHERAPEUTIC APPROACHES IN TREATING DRINKING BOUT IN ALCOHOL ADDICTION IN TERMS OF CIRCADIAN RHYTHM

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Key words: drinking periods, alcohol addiction, circadian rhythm, biorhythmic status, chronotherapy.

Over the past decades in Ukraine researches and reports registered a tendency towards a significant growth of alcohol dependence and especially its drinking bouts among young people. In the list of the most urgent problems of modern addictology there is a study of psychopathological manifestations of alcoholism, its pathogenic mechanisms and the consideration of these factors in the development of therapies. But the biorhythmic features of severe drinking bout and the application of chronorhythmic approaches in the treatment almost are still little known.

Manifestations of alcohol dependence, which had been mutated under the influence of clinical pathomorphism complicated the clinical picture and aggravated somatoneurological and mental disorders in drunken states. Occurrence of drunken forms of alcohol abuse in the clinical picture indicates the special gravity of the dependence syndrome and its malignancy. At the same time, many pathological processes in the body at the onset and outcome of drinking bout are accompanied by desynchronosis and rhythms mismatch is one of the causes of severe pathological changes. Meanwhile, there are few studies on the biological rhythms in patients with alcoholic drinking bout and the development of effective treatment with regard to biorhythмological status of the patient.

The aim of the study was to investigate circadian rhythms in severe drinking bouts of alcohol dependence o develop the most efficient and at the same time patient-centered models for the complex treatment of drinking bouts taking into account biorhythmic status of a patient. According to the objectives of the study we carried out a comprehensive study of patients with severe drinking conditions (F 10.2 - F 10.4), who were hospitalized in the intensive care units of the A.F. Maltsev Poltava Regional Clinical Psychiatric Hospital. The study included 293 patients (217 men and 76 women). The study included 293 patients (217 men and 76 women).

Among 217 men under the observation who had drinking bout there were 86 (39.64%) so called "early risers", 69 (31.79 %) with irregular rhythm and 62 (28.57 %) so called “owls”. Among 76 women there were 43 (56.58 %) early risers, 22 (28.95%) with irregular rhythm, and 11 (14.47%) so called "owls". It should be stressed the subjective evaluation of biorhythmic patterns did not always coincide with the objective data. Male patients were better to differentiate their type of efficiency, but they did not always detect it accurately by themselves. This especially applied to the "owls".

Analysis of circadian rhythm parameters in different biorhythmic groups showed that the pulse rate and temperature, as well as mean and maximum values of the respiratory rate increased in the patients of all the biorhythmic types compared to the healthy subjects. Parameters of the respiratory rate, systolic and diastolic blood pressure in the patients under the observation approximated to normal. In cases of drinking bouts the parameters of physiological body functions largely differed in different biorhythmic groups than in healthy controls.

Based on these results obtained, the treatment regimens along with conventional approaches included trans-cutaneous haemotherapy taking into account biorhythmic status of the patients.

Among 129 "early risers" 113 (88.00 %) were observed to develop positive therapeutic effect on the 5-7th day, among 91 patients with irregular rhythm there were 68 (75.00%) and 61 (84.00%) of “owls”. This, according to our observations, in 82.59 % of cases showed a positive therapeutic effect, significantly reducing the duration of treatment.

References
STATE OF PITUITARY-ADRENAL SYSTEM IN PROGRESSION OF SILICOSIS WITH CORONARY ARTERY DISEASE

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Keywords: silicosis, coronary artery disease, pituitary-adrenal system, corticotropin, cortisol.

Introduction. Silicosis and coronary artery disease (CAD) are in the focus of researchers’ attention as they are serious medical and social problem causing high rates of morbidity and disability [5, 8]. Recently, epidemiological and clinical studies indicated of the increase in combining chronic respiratory disease with CAD. Combination of pulmonary and cardiovascular diseases is considered to be an unfavorable prognostic factor for patients because of their reciprocal burden and progression [1, 3, 4, 7, 9]. The growth of incidence rate of chronic diseases and their combination causes some difficulties in the timely diagnosis and choosing the adequate complex treatment. Lack of polysystemic approach in revealing pathogenesis of silicosis and concomitant CAD, such as providing various stages of intracellular homeostasis and metabolism in their correlation with clinical manifestations indicates the urgent necessity to study and clarify some aspects of this problem. An important role in the neurohumoral complex of homeostasis and in the development of adaptation processes of formation is played by pituitary-adrenal system [10].

The aim of this research was to study the state of activity of the pituitary-adrenal system in patients with silicosis of various stages of clinical course and comorbid CAD by the concentration of corticotrophin and cortisol in blood serum.

Materials and methods. The study involved patients with the confirmed diagnosis of silicosis who were examined and treated at the clinic of Research Institute of Occupational Health and Occupational Diseases of Kharkiv National Medical University. The main group consisted of 64 patients with silicosis and CAD, which was divided into subgroups depending on the stage of clinical course of silicosis: 42 patients with silicosis of stage I, 22 patients with silicosis of II stage. Control group consisted of 77 health persons who were not exposed to occupational impacts and in particular to the inhalation of quartz-containing dust, and who did not differ significantly by gender and age of the patients of test group. The study was conducted in accordance with the Helsinki Declaration of Human Rights (1975) with additions of the Council of Europe “On human rights in biomedicine” (1996), Laws of Ukraine (the requirements and standards of ICH GCP (2008), the provisions of GLP (2002 g.).

Blood serum concentration of corticotrophin, cortisol was determined using ELISA diagnostic test kits «DSL-10-5100 Active ACTH Elisa» (USA), "Steroid-ELISA cortisol-01" (Russia) and ELISA analyzer Stat Fax 303 Plus. Statistical analysis was performed by using the computer application package for processing statistical information Statistics 6.1 (StatSoft, Inc., USA).

Results and discussion. The results showed a statistically significant (p <0.001) increase of corticotrophin in both the basic group and the test group compared with the control group: at stage I of silicosis on average in 1.6 times, while at the stage II in 1.3 times. The patients with comorbid CAD and silicosis were observed to have significantly increased concentration of corticotrophin compared with the patients who had silicosis in the absence of coronary artery disease: for the stage I it made up to 22% (p = 0.006), for stage II it formed 29% (p = 0.008). It should be noted that the comparison of subgroups of patients with silicosis at both stages in the presence of CAD no statistically significant differences were found out (p = 0.23), and a similar tendency was also observed in the absence of CAD (p = 0.18).

Conclusions. Silicosis depending on the stage of clinical course and presence or absence of CAD is characterized by increased activity of pituitary-adrenal system that is proven by the elevated blood serum concentration of corticotrophin and cortisol and indicates the tension of body adaptation system.

Activation of pituitary-adrenal system in silicosis and concomitant CAD may act as one of factors contributing to the development of lung fibrosis and enhancing the occurrence of cardio-vascular complications.
Activation of pituitary-adrenal system may be considered as one of the mechanisms involved in the fulfillment of pathogenic effect of mental state caused by the progression of silicosis and in particular with CAD.

Correction of pituitary-adrenal system indices should be considered as pathogenetically substantiated and an important component in silicosis therapy.

References

ENVIRONMENTAL AND HYGIENIC ASSESSMENT OF FUNGICIDES (CLASS ETHYLENE-BIS – DITHIOCARBamate) IN MODERN TECHNOLOGIES DESIGNED FOR CHEMICAL PROTECTION OF CROPS

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Keywords: fungicides, ethylene-bis-dithiocarbamates, soil, acceptable daily intake, vegetables, fruit.

This paper presents the dynamic changes in the content of active substances of class of ethylene-bis-dithiocarbamate (metiram, mancozeb) in the soil, the green mass of plants and fruits (apples, potatoes, tomatoes, onions, grapes). It has been found out that a day after the cultivation of soil the concentration of metiram, mancozeb in soil depended on the application rate and method of processing plants. Thus, in the ventilation processing of vineyards the concentration of the class of ethylene-bis-dithiocarbamates was higher and made up 0.95 mg / kg and 0.92 mg / kg of mancozeb and metiram respectively. The analysis of the decomposition of this class of ethylene-bis-dithiocarbamates in fruits treated showed that the concentration of mancozeb and metiram in potato tubers in all study periods was detected below the limit of quantified by the method, in the tops of potatoes the concentration of mancozeb was detected to be below the limits quantified by the method in 20 days after the treatment. In other vegetables (tomatoes, onions), initial concentration of the class of ethylene-bis-dithiocarbamates were 0.12-2.1 mg / kg. Their content in fruits decreased gradually during the growing season crops.

In 7-20 days after the processing (depending on the rates of preparation consumption) the compounds under observation were detected to have the amounts below the limits quantified by the method. The study of the dynamics of content of the class of ethylene-bis-dithiocarbamates in apples, grapes and green mass of plants showed that the initial terms of their concentration in the leaves was 2.67 mg / kg, and in fruit 0.14-1.8 mg / kg. Within 20 days after the last treatment with mancozeb and metiram the fruits and leaves were found out to have the concentrations below the limits quantified by the method. At harvesting the treated crop residual amounts of the class of ethylene-bis-dithiocarbamates in soil and fruits were identified. The study of the organoleptic properties of fruits vegetables, pomes, stone fruit crops and grape crops after the
treatment with fungicides showed that odour, colour, appearance and taste of the fruit after treatment did not differ from the control samples.

When applying fungicides of the class of ethylene-bis-dithiocarbamates the most danger is that ETS has a high tendency to migrate in the soil due to its high solubility in water and weak adsorption in soil. In aerobic conditions ETS decomposed to CO2. The rate of degradation of mankozeb and ETS does not depend on the type of soil. The ETS in soil makes up 30 days. It has been established that the dynamics of residual amount of the active ingredients of fungicides of the class of ethylene-bis-dithiocarbamates (metyram, mankozeb) in soil, fruit crops and green mass of plants when applied at the recommended maximum consumption rate is subject to exponential dependence. At the time of harvesting the studied compounds were absent in fruits vegetables, fruit crops and grapes.

It was established the degradation of the test compounds in plants was significantly faster than in fruit of crops studied (p <0.05; t = 9.84), and significantly faster than in the soil (p <0.05; t = 2.32). It was proven the differences in the values of F50 ethylene-bis - dithiocarbamate in the soil, fruits and green mass of plants was not significant (p> 0.05). It was found out the average values of the degradation rate of fungicides, class of ethylene-bis - dithiocarbamate - F50 in soil made up 7.3 ± 0.2 days, in fruits took 6.7 ± 0.2 days, and in green plant mass was 3.8 ± 0.2 days. The compounds tested for resistance in soil were attributed to low hazard compounds (class IV), in fruits, green plant mass were attributed to moderately hazardous compounds (class III). Due too food consumption the human body may obtain 5.7% of metiram, 18.8% of mancozeb of acceptable daily intake. The compounds studied are pesticides of little ecotoxicity (class I) (Ecotox <0.1); the index of pesticide persistence of soil contamination was safe (PPI<4.1).

It has been proved that the class of fungicides of ethylene-bis-dithiocarbamates by their stability in soil and climatic conditions of Ukraine is low-risk and in accordance with current safety classification of pesticides can be attributed to the IV class of danger, and in vegetative crops to the third class of danger.

References
RESULTS OF STUDYING RISK FACTORS PREDISPOSING TO DEVELOPMENT OF MENTAL AND BEHAVIORAL DISORDERS IN WOMEN WHO GAVE BIRTH TO A PREMATURE BABY DEPENDING ON SOCIAL AND ECONOMIC CONDITIONS

Zavgorodnya N.I.

Keywords: mental and behavioral disorders in women, premature newborn, social and economic conditions.

This research paper focuses on some peculiarities of premorbid background in women who gave birth to preterm babies, depending on the social and economic conditions as well as on the risk factors predisposing to the development of mental and behavioral disorders which might follow the childbirth.

We have conducted a comprehensive survey of 150 women who gave birth to premature babies. The work was carried out on the basis of the Kharkiv Regional Clinical Perinatal Centre, the Kharkiv Municipal Perinatal Clinical Centre, and Kharkov Regional Clinical Hospital № 1. To achieve the purposes mentioned above the following methods were used: clinical, psychopathological, clinical and medical history taking, psychodiagnostic techniques, as well as the methods of mathematical statistics. We also used the method of “Assessment of the quality of life» (Mezzich I. et al., 1999, completed by N.A. Maruta), which consists of 10 scales that characterize the different orientations of life graded from 0 score - "bad" to 10 scores - "excellent".

4 (2.67%) women living in rural areas regularly attended schools of expecting parents; 10 (6.67%) women did it from time to time. Among the main obstacles to regular visiting schools there were problems associated with transport (needs to go into a town or a district centre and the lack of support from other family members as for the necessity to attend such courses. 25 women (16.67%) searched for the information dealing with the course of pregnancy and childbirth by themselves. Among the sources of the information for women in most cases there were stories older relatives, doctors and midwives, sometimes data obtained from the related literature. None of 25 women received specific information that might relate to the possibility of occurrence of preterm childbirth, characteristics of preterm infants. 34 women (22.67%) never attended any training for childbirth.

The main reasons of such non-attendance were the lack of understanding the necessity to visit the training programs and the difficulties with their organization, including unresolved transportation concerns. Among women who are city residents the situation associated with attending prenatal training revealed some features. There were 23 women (15.33%) who decided to familiarize themselves with the necessary information. The main motivation for this decision was the presence of children, or some difficulties in combining their work time with the training schedule. 37 women (24.67 %) who were city dwellers never attended such training.

Conclusions: 1. The features of premorbid background in women living in rural areas or small towns include the reduction of their spiritual realization, as well as the lack of public and official support, psychological well-being, external living conditions, indicating a tendency to a lack of personal attention to the psychological state of a woman during pregnancy. 2. The results of the retrospective analysis on attending schools of expecting parents revealed occasional attendance of training programs by women living in rural areas or small towns that seriously limits their possibility to get special information on the onset of preterm labour, peculiarities of preterm newborns and some others. 3. It has been found that the features of the clinical picture of adaptation disorder in women residing in rural areas includes the prevalence of symptoms of anxiety due to lower availability of information caused by these socio-economic conditions. 4. Objectively determined lack of the information on issues dealing with premature birth and related to the curriculum of training programs dictates the need to develop and implement the programs aimed to correct psycho-emotional status in women who gave birth to a premature baby.

References
OPTIMIZATION OF THERAPY TO CORRECT METABOLIC ABNORMALITIES IN PATIENTS WITH CORONARY HEART DISEASE AND CONCOMITANT METABOLIC SYNDROME

Vynnik N.I.

Keywords: coronary heart disease, metabolic syndrome, pioglitazone, systemic inflammation, insulin resistance, lipid metabolism, complex.

Introduction. In recent years the concept of the important role of chronic systemic inflammation (HSI) and insulin resistance (IR) in the pathogenesis of atherosclerosis and coronary heart disease (CHD) has become a valuable addition in the medical science, which is of great importance for people with metabolic syndrome (MS). IR in terms of the disturbances of PI-3-kinase (metabolic) pathway under maintaining the MAP kinase pathways activates a lot of proinflammatory intracellular pathways, including NF-κB/inhibitor κB and c-Jun N-terminal kinase. Therefore the therapy of coronary artery disease and comorbid MS by regulating IR and SI and related hyperlipidemia seems to be promising. A new group of drugs is presented by thiazolidinediones (TZDs).

One of the most substantiated, effective and safe medicines among the TZDs is pioglitazone (PG) due to its properties to stimulate not only receptors that activate peroxisome-gamma (PPAR-γ) proliferation, but PPAR-α as well, has a wide range of positive metabolic and pleiotropic cardiovascular effects, prevents the development and progression of atherosclerosis, endothelial dysfunction, obesity and dyslipidemia as well as actively overcomes IR, shows anti-inflammatory effects and may be used as a part of pathogenetic therapy of coronary heart disease in the and concomitant MS.

The aim of the study was to examine the impact of adjuvant therapy with PG on the level of SI, IR indices and lipid metabolism in patients with coronary heart disease and comorbid MS.

Object and methods. The test group was formed with patients having coronary heart disease (CHD) (stable exertional angina, functional class II) and concomitant MS (110 patients, mean age 59,09 ± 6,93 years). The diagnosis of CHD and MS was established according to the criteria of WHO and IDF. All the patients were prescribed to receive standard therapy according to the Order of Ministry of Health Care of Ukraine № 436 (2006) to achieve the stabilization of CHD indicators for a month. After clinical and laboratory assessment having been done the patients were randomized into 2 groups (the test group compared with the standard therapy and the control group taking PG in a dose of 30 mg once a day as an addition to conventional therapy). The patients received the course of therapy for 3 months.

The level of SI was studied by the concentration of ceruloplasmin (CP), C-reactive protein (CRP) and tumour necrosis factor-alpha (TNF-α). Changes in carbohydrate metabolism were evaluated by the concentration of fast blood glucose, C-peptide, immunoreactive insulin (IRI). The index HOMA-IR was calculated as well. Lipid metabolism was investigated by the concentration of total cholesterol (TCh), triglycerides (TG), HDL cholesterol, total lipids (PLN), low density lipoprotein cholesterol (LDL-C).

Results and discussion. The therapeutic results demonstrated a positive impact produced by PG on the dynamics of SI indicators: despite higher values of all the inflammatory biomarkers at the very beginning of the treatment in the test group there was reliable decrease of SI level by all the parameters after the completion of 3-months therapy with PG: the level of CRP decreased by 63.6 % (p < 0.05), the level of TNF-α by 55.2 % (p < 0.01) and ATP by 19.6 % (p < 0.01). At the same time, the control group demonstrated a significant decrease only in terms of CRP (p <0.001 ), which might be due to pleiotropic effects of atorvastatin and the level of CP tended to increase. There was a significant decrease in IR in the test group: C-peptide level reduced in 1.21 times, blood glucose significantly lowered in 1.12 times, IRI reduced by 42%, and almost there was double reduction HOMA-IR index, indicating a positive effect produced by PG on IP indices.

Inversely, the group receiving standard therapy for CHD demonstrated worsening for all the IR parameters. Lipid metabolism during the therapy was observed to have significantly decreased TG levels by 41%, LDL cholesterol by 30%, PLN by 27.2 % and 1.3% increase in HDL cholesterol. The patients who received conventional therapy showed no reliable dynamics of lipid metabolism indices.
Conclusion. Thus, the results obtained indicate the administration of pioglitazone in the complex therapy of patients with CHD and concomitant MS improves lipid profile, reduces the SI index, reduce IR effectively that promotes the normalization of the metabolic processes in these patients. This allows us to recommend GHG as scientifically grounded preparation for the complex therapy of coronary heart disease and comorbid MS.

References

CLINICAL FEATURES OF MENTAL DISORDERS IN WOMEN SUFFERING FROM ORGASMIC DYSFUNCTION

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Keywords: orgasmic dysfunction, dysgasia, neurotic disorders.

Research reports of both international and national scientists indicate a fairly significant growth of family adaptation dysfunctions due to non-psychotic mental disorders and sexual disorders in women. Orgasmic dysfunctions are the most common sexual dysfunctions in women. Impairment of sexual nature, including the inability to achieve orgasm leads to disharmony in sexual and interpersonal relationships between spouses (dysgasia), reducing the frequency and rhythm of sexual intercourses, congestive hyperemia of the pelvic organs and contributes to neurotic disorders.

The study involved 75 women aged 21 to 42 years (mean age 20.85 ± 5.93), who applied for consultative assistance to the Department of Psychiatry, Narcology and Medical Psychology of the Ukrainian Medical Dental Academy and were treated at the Department of Neuroses, A.F. Maltsev Poltava Regional
Clinical Hospital during 2010-2013. All the women were subjected to clinical examination, including thorough study of physical, neurological and mental status, as well as to special sexological researches.

The study allows us to establish a definite correlation between the various types of orgasmic dysfunction in women and non-psychotic mental disorders.

The patients with neurotic disorders were predominantly observed to have partial anorgasmia, combined with lowered libido that occurs mainly against the background of asthenic phenomena and / or due to long-lasting traumatic situation. The patients with specific personality disorders experienced orgasmic dysfunction in the beginning of sexual activity against the background of delayed psychosexual development and pathological features of the sexual education and were of either total or partial nature and often accompanied with lowered libido. The data obtained should be considered when carrying out psychodiagnostic, medical and psychotherapeutic interventions.

References

INTEGRATED TREATMENT OF GASTRIC AND DUODENAL ULCERS

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Key words: ulcerative diseases, stomach, duodenum, therapy, integrated approach.

Introduction. Ulcerative diseases of different segments of gastrointestinal tract are widely spread among the population and show the tendency to grow. In spite of the fact that each organ demonstrates its own specificity in ulcer development, the mechanisms of ulceration have certain common features. In medical literature and manuals the ulcerative diseases of the stomach and duodenum have an umbrella term “peptic ulcer”.

The research was aimed to stress the importance of integrated approach in the therapy of peptic ulcers and to study the effectiveness of medication with “Vipromak”.

Materials and methods. The study of pathogenetically grounded integrated approach in the therapy of peptic ulcers which included conventional medication and administration of “Vipromak”, special diet, was carried out on 80 individuals aged 26 – 60 (40 patients with gastric ulcers and 40 patients with duodenal ulcers). There were 61 males and 19 females who have been suffering from the disease up to 7 years.

The test group was made up of 40 persons (20 patients with gastric ulcer and 20 with duodenal ulcer) who underwent the integrated therapy including “Vipromak”. The control group was formed with 40 patients with identical diagnosis who underwent the conventional therapy. All the patients were examined on admission to the hospital to establish diagnosis and were subjected to repeated examination before being discharged from the hospital.

Results and their discussion. Having compared subjective results, objective results and findings of laboratory and instrumental investigations we have found out the test group taking “Vipromak” demonstrated better results. The patients of the test group with duodenal ulcers showed better health condition and ulcer healing on 8,4± 2,7 day compared with the control group which achieved identical results on 13± 3,7 (P<
The patients with gastric ulcers of both groups demonstrated the identical results on 14.3± 3.8 and 21.5± 4.7 days respectively (P< 0.05).

Conclusion. Integrated therapy including “Vipromak” enabled to obtain better subjective results, objective results and findings of laboratory and instrumental investigations compared to the results of the conventional therapy. Irrespective of ulcer localization, pathogenetic action, “Vipromak” should be taken since the very onset of the disease and for 2 months.

References

EFFECT OF ATORVASTATIN ON THE CLINICAL COURSE OF ACUTE PANCREATITIS DEPENDING ON THE PRESENCE OF METABOLIC SYNDROME

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Keywords: chronic pancreatitis, metabolic syndrome, triglycerides, atorvastatin.

The incidence rate of acute and chronic pancreatitis (CP) has doubled for the last 30 years worldwide. Much impact on the occurrence and progressing of CP is produced by the high level of triglycerides which is usually corrected by statins. At the same time the development and severe course of CP is often associated with failure of pancreatic of blood supply.

Our study was aimed to detect the intensity of atherosclerotic changes of celiac trunk and upper mesenteric artery in patients with CP depending on the presence of metabolic syndrome (MS) and to find out the possibilities to correct the detected changes with atorvastatin.

The study involved 35 patients with CP and MS, 28 patients who had CP and had no MS. 15 healthy persons made up the control group. All the patients were subjected to the biochemical blood test which included the determining of lipid profile and in particular the level of triglycerides (TG) and low density lipoproteins (LDL). Following the examination the patients with MS and CP and the patients with CP were prescribed to take atorvastatin in a daily dose of 20 mg. Re-examination was carried out in 3 months.

We observed that prior the administration of atorvastatin the group of patients with CP and MS had significantly higher levels of resistance index of trunk and mesenteric arteries than the group of patients with CP and without MS. At the same time, the level of resistance index of celiac trunk and mesenteric arteries in patients with CP was significantly higher than that of the control group.

The analysis of lipid profile showed the triglyceride levels significantly varied in the patients of all groups, but this level was reliably higher in the patients with MS and CP than in the patients with CP and in the control group. The correlation analysis demonstrated the strong correlation between the resistance index and TG level in the patients with MS. The patients with CP and MS who received the therapy with atorvastatin were observed to have lower index of resistance of mesenteric artery and celiac trunk compared with the initial level. Thus, we may draw conclusions about the impact of atherosclerotic damages of celiac trunk and superior mesenteric artery on the course of CP, the need for correction of TG level in patients with CP and MS by statins. At the same time, the therapy with statins for the patients who have CP but have neither MS nor hypertriglyceridemia seems to be inappropriate.

References
PRACTICAL ASPECTS OF PREGRAVIDA PREPARATION AND THE MANAGEMENT OF PREGNANCY OF WOMEN WITH HABITUAL ABORTIONS

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Keywords: pregnancy, habitual abortion, endometrium, progesteron, antioxidants.

Introduction. The problem of habitual miscarriage is still remaining to be urgent and shows no tendency to decrease. All pregnancy which do not develop are exceptionally caused by chronic endometritis. Risk factors are endocrine disorders: hyperandrogenism, insufficient luteal phase against the background of progesterone deficiency, that lead to immune disorders, oxidative stress, the development of inflammatory and autoimmune processes in the body and therefore determine high levels of perinatal morbidity and mortality. Thus, thorough study of impact produced by oxidative stress and the possibility to correct its destructive potential is an important research task.

The aim of the research was to study the effect produced by dydrogesterone (a steroidal progestin) and ozone therapy on the concentration of interleukin 1β and interleukin 4, and on the intensification of lipid peroxidation in the blood of women with habitual miscarriage.

Materials and Methods. 286 women with habitual miscarriage passed through comprehensive examination at the stage pregravida preparation. The first group consisted of 72 women who were prescribed to take dydrogesterone in a dose of 40 mg per day for 14 days and ozone therapy. The second group included 75 patients who took dydrogesterone in the same dose and D, L α - tocopherol acetate per os at a dose of 300 mg per day for 14 days. The control group involved 70 women with normal reproductive history and physiological pregnancy. Analysis of progesterone, the concentration of IL-1β and IL-4 in blood serum was performed by ELISA, the activity of lipid peroxidation was investigated by spectrometric method measuring the content of malonic dialdehyde in the blood.

Results. Progesterone in blood serum of patients with miscarriage was significantly lower than determined reliable increasing of IL-1β in 3.8 times compared with the control group. Analysis of IL-4 and malonic dialdehyde concentration in the patients with habitual miscarriage showed its significant excess compared to the control group. Further studies demonstrated that in the patients of the first group against the likely increase in the concentration of progesterone in the blood there was a significant reduction IL-1β and malonic dialdehyde and significant increase in the IL-4 concentration. At the same time, the second group showed a significant increase in progesterone and a decrease IL- 1β in the blood.

Conclusions. We may suggest the immuno-endocrine, metabolic disorders enhancing oxidative stress in the body of pregnant women play a significant role in the pathogenesis of habitual miscarriage that in turn leads to the complicated gestational process. Combination of dydrogesterone and antioxidant drugs in the prevention and treatment of habitual miscarriage improves immune and metabolic co-functioning in the maternal body and develops favorable conditions for the development of pregnancy, and the use of medical ozone treatment has a pronounced positive effect on the processes of lipid peroxidation and antioxidant defense system in patients, thus avoiding taking a number of drugs that are conventionally used for threatened miscarriage.

References
ASSOCIATIONS BETWEEN PULMONARY DYSPLASIA AND POSITIVE BLOOD CULTURE IN PRETERM NEONATES DURING NEONATAL PERIOD


Key words: gestational age, preterm neonates, broncho-pulmonary dysplasia, late infections, blood cultures.

Broncho-pulmonary dysplasia (BPD) is one of the most severe and common respiratory diseases in preterm neonates which may affect their quality of life, leads to increase in treatment expenses for a certain family and for state health care system of Ukraine as well. Recent numerous studies have paid much attention to the risk factors predisposing to BPD and have suggested the models for prognosticating its occurrence. The data presented by Woynarowska M. have indicated the associations between a severe BPD form and late infections. But there are few studies focusing on the associations between the neonate colonization or late sepsis and the development of BPD at different time intervals from the birth up to 36 weeks of post-conceptional age.

The research was aimed to study the associations between the development of BPD and late infections, positive blood cultures in preterm neonates at different age periods.

Materials and methods. Cohort retrospective study involved 49 preterm neonates diagnosed to have BPD and 41 newborns with gestation age less than 32 weeks and whose body wt was less that 1500 g. Blood culture was tested in all neonates with body wt less that 1500 g in three age periods: I period – from the 0 to 7 day, II period – from the 8 to 28 day, III period – from the 29 day to 36th week.

Late infections were detected when neonates manifested symptoms of infection (tachycardia, tachypnea, apnea, desaturation, cramps, perfusion impairment) and / or when the symptoms of infection were proven by laboratory investigations (when WBC was higher that 20x10⁹ or less that 5x10⁹, increased C-reactive protein). The presence of gram-positive or gram-negative microflora in blood also pointed the occurrence of late infections.

Statistical data manipulation was performed by «STATA 11» computer program. To carry out paired comparison in normal distribution we used paired t-test.

Results and theirs discussion. The results obtained showed no associations between the blood colonization in preterm neonates in early neonatal period and the development of BPD.

The analysis of blood culture samples in preterm neonates performed for 7 – 28 days demonstrated the newborn colonization with gram-positive microflora was a considerable predisposition for the further development of BPD.

We obtained representative associations between the colonization with gram-positive microflora since 28th day of life and the development of BPD. It should be stressed the risk to develop BPD increases after 28 days of life than in the period of 8 – 28 day.

With regard to data obtained we have analyzed the associations between the occurrence of late infections and BPD.
Most children with BPD were diagnosed to have late infections. Moreover, their occurrence rate was reliably higher among the children with BDL compared with the children in the group of comparison (83.67% vs 17.07% respectively). At the same time the occurrence rate of necrotizing enterocolitis mainly caused by infections was diagnosed equally in both groups. Our calculations proved there were no associations between necrotizing enterocolitis and the development of BPD.

Conclusion. Our research which has found out the associations between the late infections, blood gram-positive colonization since the 7th day after birth and the development of BPD seems to be an important in studying role of infection in the pathogenesis of the disease, in developing prognostication models for BPD development in preterm neonates at different age periods. In our opinion it is important to implement the system of infection control in neonatal intensive care units in order to prevent the development of nosocomial infections in this group of children.

References
9. Postnatal inflammation in the pathogenesis of bronchopulmonary dysplasia / V.

CLINICAL AND PARACLINICAL CHARACTERISTICS OF PATIENTS WITH ACUTE PAIN SYNDROME CAUSED BY DISKOGENIC RADICULOPATHY L5, S1

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Keywords: pain intensity, uniform scales, vertebral column, disks, diskogenic radiculopathy.

Pain syndrome is one among the main neurological manifestations of lumbosacral osteochondrosis. It is known that the formation of the pain sensation is mediated by the structures of nociceptive system. Degenerative changes in the spinal column may contribute to the activation of nociceptors under overloading, but the perception and assessment of pain will depend on the central mechanisms engaged in the regulation of pain sensitivity.

The purpose of this research was to study clinical and paraclinical features of the course of acute pain syndrome caused by diskogenic radiculopathy L5, S1.

Materials and methods. 100 hospital patients (54 females and 46 males) of employable age from 27 to 55 years (mean age was 43.87 ± 0.7 years) underwent through comprehensive examination. The examination was carried out according to a specially designed card of a patient with pain in the lower back, which included medical history, present complaints, neurological status, findings obtained by additional investigations. All patients were diagnosed to have acute radicular pain associated with compression of L5.
and S1 roots against the background of protrusion and herniation of intervertebral disk. The patients were examined by a neurosurgeon and at the time of the hospital staying did not require neurosurgical care.

In order to carry out an objective assessment of pain syndrome, intensity of pain, extent of active movements in the lumbar spine, the presence of depression, the patient's anxiety level, the patient's personal characteristics and the impairment of th vital activity the following standard scales were used: visual analog pain scale (VAS), the McGill pain questionnaire, the Spielberger-Hanin test, the Beck Depression Inventory, the Roland- Moris Disability Questionnaire Scale.

**Results and their discussion.** The period since the first episode of pain noticed by the patients in the lower back to the time of the hospital survey lasted an average 59.34 ± 3.9 months. The period from the aggravation to hospitalization made up 3.59 ± 0.2 days. 36 % of the patients believed hypothermia to be a principal factor initiating pain exacerbation, 37% of patients considered physical overloading as a basic cause of pain, and 27% referred their pain exacerbation to other causative factors. In the group of patients examined the individuals with the secondary vocational education (46%) prevailed, 54% of patients had bad habits (smoking). For most patients (68%) their regular work was associated with regular physical activity.

The occurrence of acute pain in the lower back was accompanied with marked static and locomotive disorders (100%), compression symptoms (100%), autonomic disorders (57%) and significant impairment of patients' life quality (11.5 ± 0.25 scores by the Roland-Morris Disability Questionnaire Scale. The patients under the observation demonstrated a high level of reactive anxiety (45.87 ± 0.5 scores) and moderate level of personality anxiety (38.45 ± 0.8 scores) by the Spielberger - Hanin test, at that time there was statistically significant positive correlation (τ = 0.29, p < 0.0001) between the values of reactive and personality anxiety, but the severity of depression and anxiety showed no correlation with the intensity of pain according to VAS.

According to the McGill pain questionnaire, the sensory component of pain was significantly (p <0.05) higher than the affective (emotional) component. Between VAS values and ranks of sensory, affective and evaluative questionnaire scales by Mc Gil there was statistically significant positive Kendall correlation (τ = 0.76, τ = 0.2 and τ = 0.95 respectively), indicating the concordant increase in somatic perception, emotional and affective perception of pain and its intensity.

**Conclusions.** The results of the clinical and psychometric studies enable us to recommend anxiolytics and psychotherapy as a treatment for patients to prevent the pain syndrome to become chronic.

**References**
PECULIARITIES OF ELECTROLYTE HOMEOSTASIS IN MEN WITH SECONDARY OSTEOPOROSIS AFTER GASTRECTOMY

Krystopchuk S.A.

Keywords: male patients, elderly age, osteoporosis, gastrectomy, electrolyte homeostasis.

This research paper presents the analysis of the results of the survey of 190 mostly middle-aged and elderly men and the conclusions obtained that have proven the vast majority of the patients operated for complicated ulcerative disease of the stomach in the remote period after gastrectomy develop bone affections manifested by generalized osteoporosis.

Among the persons who were operated and diagnosed to have osteoporosis the majority (77.4%) had clinical signs of calcium metabolism, and 89.0% of them were observed to have explicit link with PU. Almost 2% of the patients had a strong lowering of the disease of the stomach in the remote period after gastrectomy develop bone ed patients with osteoporosis. In our opinion, this indicates the implicit value of identified and sometimes had very different vector of deviations compared to the patients who were diagnosed to have osteoporosis. They demonstrated a metabolic abnormalities and from the patients who underwent gastric reection and demonstrated no signs of osteoporosis were not reliably different from the comparable figures of healthy persons, who had no concentration of calcium in the blood had none.

Patients without clinical signs of calcium homeostasis disturbances none of them had normal blood calcium concentration (1,91 ± 0,02 mmol / l; p <0,05). At the same time 77.4% of the test group had clinical signs of osteoporosis, and therefore the disturbances of calcium metabolism. It should be stressed that among the patients without clinical signs of calcium homeostasis disturbances none of them had normal blood calcium concentration of calcium in the blood had none.

Significant abnormalities in electrolyte homeostasis revealed in the operated patients with osteoporosis were not reliably different from the comparable figures of healthy persons, who had no metabolic abnormalities and from the patients who underwent gastric resection and demonstrated no signs of osteoporosis. They demonstrated a tendency to metabolic changes, which were not statistically significant, and sometimes had very different vector of deviations compared to the patients who were diagnosed to have osteoporosis. In our opinion, this indicates the implicit value of identified abnormalities in the pathogenesis of secondary osteoporosis in this category of patients.

References
COMPARISON OF THE EFFECTS OF CATARACT PHACOEMULSIFICATION ON RETINA IN PATIENTS WITH CONCOMITANT OPHTHALMOLOGIC PATHOLOGY

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Keywords: phacoemulsification, cataract, macula, the thickness of the retina, degenerative diseases.

Introduction. Pathology of the lens, according to WHO report, ranks the first place among the causes of curable blindness in the worlds. More than 17 million people worldwide mostly after age 60 are suffering from cataract. The individuals with diabetes, especially uncompensated, may develop cataract much earlier due to metabolic disorders and a decrease in the supply of nutrients to the lens. As elderly patients who are at risk for developing cataract, are often diagnosed to have uncommon age-related macular degeneration. In consideration of the growth of elderly population share of the elderly it is expected that the social and economic consequences of blindness caused by the above diseases will be significantly growing in the next decades.

Cataract surgery in diabetes and age-related macular degeneration is a risk factor for postoperative cystic macular edema which may develop either in the absence of changes in the retina prior surgery or in the presence of preoperative macular changes.

This research was aimed to study, to assess and to compare findings reflecting the state of the central zone of the retina in patients with cataracts and concomitant ophthalmic diseases (diabetic retinopathy, age-related macular degeneration) obtained by optical coherence tomography in the postoperative period after cataract phacoemulsification with implantation of an intraocular lens (IOL).

Materials and methods. The study involved 15 patients (20 eyes) under observation who had cataract and concomitant ophthalmic pathology (diabetic retinopathy, age-related macular degeneration), who were divided into two groups according to the type of pathology of the retina.

The first group consisted of 7 patients (8 eyes) aged 51 to 76 years (mean age was 65.7), who had cataracts and diabetic retinopathy. The second group included 8 patients (12 eyes) aged 59 to 82 years (mean aged 70.8), who had cataracts and age-related macular degeneration.

The degree of the cataract maturity in both groups corresponded II-III degree of nucleus density by L. Buratto. To detect structural changes in the macular area all the patients before and after cataract phacoemulsification were subjected to optical coherence tomography (OCT) by Optovue iVue canner during which we evaluated the thickness of fovea. All patients underwent simultaneous cataract phacoemulsification with following IOL implantation by applying Infinity Vision System. In all cases the soft IOL were implanted.

The observation terms in the postoperative period included the 1st day, the 1st, 3rd and 6th months.

Results. In a month since the surgery has been done the thickness of fovea increased, differed by the indicators and prevailed in the group of patients with diabetic retinopathy. The increase in the thickness of macular area was 65,35 ± 15,19 µkm in the group 1 and 2 - 24,37 ± 6,89 µkm in the group 2. After 3 month there was the regression of the above mentioned changes in both groups, but further retinal thickness was greater in patients with DR. Further increase in macular edema was registered in 6 months of postoperative period in both groups of the patients.

Conclusions. Cataract phacoemulsification under concomitant ophthalmic pathology demonstrates complicated postoperative course. The nature of these complications which are manifested by the development of macular edema and the severity of complications depends on the nosology of comorbidity, the exposure of ultrasonic energy used during cataract extraction and intraoperative course.

References
LAPAROSCOPIC CHOLECYSTECTOMY IN THE TREATMENT OF ACUTE CHOLECYSTITIS

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Keywords: laparoscopic cholecystectomy, acute cholecystitis, "early" and "delayed" surgery.

Introduction. Acute cholecystitis is the most common complication of cholelithiasis. In many hospitals worldwide the number of laparoscopic cholecystectomy (LCE) in acute cholecystitis exceeds 90%. However, some tactical problems of surgical treatment of acute cholecystitis are still unsolved.

Objectives: to carry out the comparative analysis of results of surgical treatment of acute cholecystitis in persons who underwent "early" or "delayed" laparoscopic cholecystectomy.

Materials and methods. We studied the results of surgical treatment of 82 patients with acute cholecystitis aged 29 – 79, mean age 51.7 years. There were 70 (85.4%) females and 12 (14.6%) males who were subjected to laparoscopic cholecystectomy at the surgical departments of the Second Municipal Hospital of Poltava and Poltava Central Regional hospital in the period from 2012 to 2014.

"Early" surgeries are considered to be those performed on up to 3 days after onset (AA Shalimov et al., 1983). "Delayed" surgeries are those performed on 72 hours late since the first symptoms have appeared. Patients who were subjected to laparoscopic cholecystectomy (LCE) made up the first group, and the patients who were subjected to delayed laparoscopic cholecystectomy (DLCE) were included in the second group.

Results and their discussion. The diagnosis of acute cholecystitis was established based on the combination of clinical manifestations of the disease (severe pain in the right upper quadrant of the abdomen, the body temperature over 37.0°C and leukocytosis over 10×10³/l) and the findings of ultrasound scanning (enlarged distented gallbladder, thickened edematous or uneven layer of the gallbladder wall, positive sonographic Murphy's sign, the presence of concretions in the gallbladder, and free fluid in perivascular space).

In our opinion the attempts to carry out LCE can be done in all patients with acute cholecystitis. However, time factor plays as important role in performing LCE.

The patients receiving prolonged conservative treatment for acute destructive cholecystitis usually developed gangrene of the gallbladder wall, marked infiltrative and infiltrative-adhesive process within hepatoduodenal area, cicatrical adhesions with nearby organs. During cholecystectomy for acute cholecystitis some technical obstacles might often appear mainly in the patients with whose acute period lasted over 6 days.

Postoperative complications in early LCE occurred 2 times less compared with delayed LCE. The advantages of early LCE over delayed LCE also consisted in almost double reducing of the overall length of inpatient stay: 9 – 11 and 5 – 6 days respectively. In both groups there were no deaths or conversions.

Conclusions: 1. When a patient is diagnosed to have acute calculous cholecystitis and have no contraindications to the surgery he/she should be operated as soon as possible since the onset of the disease.

2. Laparoscopic cholecystectomy may be performed at any time since the onset of the disease.

3. Early laparoscopic cholecystectomy for acute cholecystitis is a safe procedure and reduces the overall length of hospital stay.

4. Delays surgery for acute cholecystitis increases technical obstacles during cholecystectomy.

References


EXPERIMENTAL MEDICINE AND MORPHOLOGY

ACTIVATION OF MECHANISMS OF PERIODONTAL TISSUE REGENERATION BY APPLYING CELL TECHNOLOGIES

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Keywords: bone tissue, periodontium, bone regeneration mechanisms, cytokines, mesenchymal stem cells.

This research was aimed to study the peculiarities of the course of periodontal inflammation and to estimate the efficiency produced by regulatory impact of mesenchymal stem cells (MSC) on the regeneration of the jawbone. Osteotrophic material in combination with MSCs and their culture supernatant fluid were applied onto the bone lesions of the rats.

Materials and methods. The investigations were carried out on 195 male Wistar rats weighing 270 ± 58g and aged 11-12 months with spontaneous periodontitis. The regeneration process was simulated by applying a burr hole in the area of mandibular process.

To elucidate the mechanisms for the participation of MSCs in the inflammatory process we studied morphological markers of inflammation and healing of modelled wounds as specific volume of microhemocirculation, bone fragments in the lumen of the bone injury, bone and connective tissue granulation, bone trabeculae and bone marrow cavities, polymorphonuclear leukocytes, lymphocytes, macrophages, plasma cells. The regulatory effect was studied by the dynamics of the level of IL-1β, IL-4, IL-8, IL-6, IL-10 and TNFα in blood serum of rats in target dates using photometric method.

Results and their discussion. The analysis of morphological characteristics of bone regeneration in test groups and cytokines showed that the main pathophysiological mechanism of influence produced by MSCs on the regeneration of the jawbone was the participation of cell culture in the chain of mutual paracrine regulation of osteoblast – osteoclast system by isolating stem cell regulatory factors.

Conclusions. It has found out the use of MSCs culture on carriers leads to an acceleration of the repair process in the 2.1 - 2.6 times and reduces inflammatory response in the wound in the 6.7 - 14.3 times. The Induction OP-materials by regulatory factors of MSC culture fluid demonstrated their high efficiency in the regeneration of bone injury (reducing the inflammatory response in 12.3 times, accelerating the recovery of bone tissue in 1.3 - 2.1 times).

References
PATHOGENETIC ASPECTS OF LIPID-TRANSFERRING SYSTEM IN PATIENTS WITH ATHEROSCLEROSIS UNDER LIPID LOAD

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Keywords: lipoproteins, lipoprotein lipase, lipid load, atherosclerosis, postprandial dyslipidemia.

Introduction. Postprandial dyslipidemia is considered as one of the leading factors influencing the development and progression of atherosclerosis by prolonged exposure of lipoproteins in the systemic circulation, the activation of their oxidative modification. However up to date atherogenic abnormalities in lipid-transferring system of latent action have been studied insufficiently.

The present study was aimed to investigate the statet of lipid-transferring system and its functional activity in terms of fat load in patients with atherosclerosis.

Materials and Methods.

The study involved 51 patients, including 26 males and 25 females, the mean age was 55.65 ± 2.43 years, who gave written consent. The control group was formed by 12 healthy persons, whose mean age was 42.97±1.18 years. All the patients were divided into the groups according to nosological characteristics. The methodology of standard one-time food fat load proposed by J. Patsch was applied. The study evaluated the blood lipid and lipoprotein lipase activity (using T. Olivecron in the modification of V.N. Titov).

Results. The early postprandial phase (3 hours after the load) was characterized by typical TG increase in all groups under the observation, which confirms the absence of differences in this period compared with baseline in the control group and should be considered as physiological. However up to date atherogenic abnormalities in lipid-transferring system of latent action have been studied insufficiently.

The reaction of lipids to fat loading in 6 hours was of atherogenic character in the subjects of all the groups studied, that was manifested by even more pronounced HDL deficiency compared with the initial data as opposed to those with AT + GB, where it partially offset by higher postprandial HDL response.

Conclusions. It has been found out the patients with CHD were observed to demonstrate prolonged postprandial lipemia, where surround parameters of plasma lipids did not exceed optimum levels, which, in our opinion, may be the evidence of hidden plasma lipid metabolism disturbances.

It has been shown that dietary fat load does not only lead to postprandial hyperlipemia, but it results in certain changes in HDL-mediated cholesterol efflux, as evidenced by no increase in HDL cholesterol after fat load in the subjects under the observation.
There is also a marked reduction of tolerance of lipid-transport system to the fat loading, manifested by considerable impairment of both direct and reverse cholesterol transport and the metabolism of lipoproteins as a whole against the background of inadequate LPL activity by reducing the efficiency of lipolysis in the patients with atherosclerosis.

**References**


**TOPOGRAPHIC AND ANATOMICAL PECULARITIES OF LOWER RESPIRATORY TRACT AND LUNGS IN WHITE RATS**

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**Keywords:** morphology, lungs, lower respiratory tract, rats.

Modern anatomy often requires carrying out experimental researches to study the dynamics of morphogenesis of various organs and body systems. As far from every experiment may be performed directly on humans, various laboratory animals as objects of research are often used therefore it is important to know the basic characteristics of their species morphology.

This research was aimed to study the topographic and anatomical peculiarities of lower respiratory tract and lungs in Wistar rats. The experiment was carried out on 20 male Wistar rats weighing 240 – 260g aged 8 – 9 months.

The laboratory animals were decapitated under intraperitoneal thiopental sodium anesthesia. Thoracic organs and lungs were subjected to macroscopic investigation. Samples of lung tissues were fixed in 10 % formalin solution. Following the processing with spirits of increasing concentrations, lung slices were placed in paraffin according to the conventional methods. Microtome sections were stained with hematoxylin-eosin.

**Results and discussion**

Rat’s trachea is a direct continuation of the larynx, to which is connected by the cricoid tracheal ligament. Rat’s trachea has cervical and thoracic parts. In the cervical region adjacent to both lateral
surfaces there are thyroid lobes, which are interconnected by an isthmus, placed in front of the trachea. The thoracic portion of the trachea within the rat’s chest reaches the level of IV intercostal space, where it divides into main bronchi. Almost the entire front surface of the thoracic part of the trachea in rats is covered thymus of a relatively large size.

Bronchial tree in rats starts with right and left main bronchi, which pass towards the respective hila of the lungs. Lung hila are at the VI intercostal space. At this site the main bronchus and pulmonary artery enter the lung parenchyma while pulmonary veins exit forming the root of lung.

Pulmonary artery lies lateral and inferior to the main bronchus, pulmonary veins are the lowest. Right main bronchus divides into four partial bronchi, and left one divides right away into segmental bronchi. Further branching of bronchi occurs dichotomically. Arteries adjacent to bronchi above, and the veins are slightly lower than the corresponding bronchus.

The lungs and heart occupy all the space of rat’s chest cavity. The right lung is larger and consists of four lobes. The smaller left lung has no lobular segmentation. In rats, the average vertical size of the left lung is 2.5 ± 0.1cm, right is about 2.75 ± 0.13cm average transverse dimension of the lungs is 1.5 ± 0.1m left and 1.7 ± 0.11 cm on the right. Sagittal size of the left lung is on average 1.0 ± 0.1cm, and the size of right one is 1.2 ± 0.11cm.

It was found out the upper respiratory tract and lungs of the Wistar rats possessed specific peculiarities in topographic and anatomical correlation. The larger right lung consists of 4 lobes while smaller left lung has no lobular structure. The right primary bronchus is divided into four lobular bronchi, while the left one is subdivided directly into segmental bronchi. The further branching of bronchi runs by dichotomic type. The arteries adjoin to the bronchi superiorly and veins do slightly lower of corresponding bronchus.

1. Upper respiratory tract and lungs of Wistar rats possess specific features of the structure, topographic and anatomical interrelations.
2. Cervical trachea is covered interiorly with of thyroid gland, and in thoracic trachea is covered with thymus, which are relatively large in sizes.
3. Right main bronchus divides into four partial bronchi, and the left one divides right away on segmental bronchi. Further division of the bronchi occurs by dichotomy type.
4. Arteries and veins accompany the bronchi and follow their course; usually arteries adjacent to bronchi superiorly, and the veins are slightly lower than the corresponding bronchus.
5. The lungs and the heart occupy the entire chest cavity of the rats; a larger right lung consists of four lobes, lower left lung has no lobular segmentation.

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**INVESTIGATION OF NEURO- AND GLIOGLIAL TRANSFORMATIONS IN CELL SYSTEMS OF THE BRAIN IN NORMAL STATE AND UNDER MODELED CEREBROVASCULAR PATHOLOGY**

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Keywords: glial cells, autohemorrhagic stroke, nervous tissue, cerebral cortex, cerebral vascular endothelium.

Insufficiency of cerebral circulation is considered as one of the most common pathologies nowadays. In terms of mortality rate reaching 11-12% in Europe and in the United States, stroke ranks the second
EFFECT OF MEDICAL PREPARATION “CORDICEPS AND LINCHZHI” ON OXYGEN-DEPENDENT METABOLISM OF PHAGOCYTES OF DIFFERENT POPULATIONS

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Keywords: “Cordiceps and Linchzhi”, blood mononuclear, peritoneal macrophages, oxygen-dependent metabolism.

The study presented is aimed to investigate the effects produced by effect of “Cordiceps and Linchzhi” on oxygen-dependent metabolism of human peritoneal macrophages and blood mononuclears and mouse peritoneal macrophages. It has shown that propelled vehicle performance oxygen-dependent metabolism studied phagocytic cells. Most “Cordiceps and ganoderma” effect on human blood monocytes, namely making agent in a concentration of 200 micrograms/ml stimulated the oxygen-dependent metabolism to 50-fold compared with control.
For a long period of study medicinal fungi (for 50 years the effect of the fungus ganoderma have been under the study as well as fungus Cordyceps) researches selected some active substances that possessed important properties. Chinese fungus Cordyceps (Cordyceps sinensis) and ganoderma (tinder lacquered, Ganoderma lucidum) are potent immunomodulators having total firming action, should be stressed that the antitumorous activity of Cordyceps is not a result of direct cytotoxic effects on tumor cells, leading to immunomodulatory action [2], while the antitumor activity of ganoderma might be considered as a result of an immunomodulatory action, and direct cytotoxic effects on tumor cells [3].

A wide range of body cells characteristic cytotoxic effect, realized by production of reactive oxygen species. Among these cells belong particular importance macrophages localized mainly in tissues [4-6]. In response to phagocytosis of pathogens or by contact with soluble pathogen-associated molecules and pro-inflammatory cytokines in macrophages develop system responses, which is generally termed "oxygen burst" as a result of which forms monovalent derivative of molecular oxygen - superoxide anion. The result of these reactions is the occurrence of other toxic metabolites such as hydrogen peroxide, hypohlorysta acid (carrier), hydroxyl radical and singlet oxygen [7,8].

Materials and methods. Mononuclear cells of human peripheral blood were centrifugated in a density gradient [9]. Blood donor bred twice buffered Hanks solution (pH 7,2). The diluted blood to mix with NBT and incubated for 15 minutes at 37 °C. Then the cells were washed (1500 rev / min, 10 min) [9]. The precipitate was resuspended in 1 ml of Hanks and adjusted to a final concentration of 5 x 10^6 cells / ml. The number of viable cells was calculated by the standard method using supravital trypan blue staining.

Functional activity of the cells was determined by nitroblue tetrazolium recovery (NST). NBT test was performed according to methods Perederiy VG and others. [10]. 100 ml of peritoneal exudate cells brought into the flat plate at a concentration 3 x 10^5 into the hole. In experiments using the drug "Cordyceps and ganoderma" (manufactured by McAster, Ukraine), certificates UA.1.003.X7862-13 from 17.07.2013 g; UA.1.003.H001638-13 from 15.02.2013 g; UA.1.003.H001637-13 from 02.15.2013 g) in liquid form. Prepared water solution at three concentrations: 50 mg / ml, 100 pg / ml and 200 mg / ml. In experimental wells contributed 20 ml of solution preparation. To stimulate oxygen-dependent metabolism we use zymozan incubated for 30 min at 37 °C for macrophage adhesion to plastic surfaces. The samples were added 0.01 ml NBT in a concentration of 5 mg / ml, and incubated for 15 minutes at 37 °C. Then the cells pelleted by centrifugation at 1500 rev / min for 10 min. The supernatant was collected. The reaction was stopped by adding NBT Recovery 0.1 ml of 2 M KOH + 0.1 ml of 50% dimethyl sulfoxide district. Optical density measured at dyformazanu mikropleyfotometri type "Reader" at a wavelength of 630 nm. To determine the probability of performance differences between experiment and control using Student's t-test [11].

Results and discussion. The drug taken in any above described concentrations resulted in a significant increase in the oxygen-dependent metabolism of human peripheral blood mononuclear cells compared with the control. The drug taken in the concentration of 50 mg / ml was observed to increase oxygen-dependent metabolism by 20 times compared with the control. Taking the drug in the concentration of 100 mg / ml resulted in an increase by 22 times, so the effect produced by these concentrations were not significantly different. The "oxygen explosion" was observed when the drug concentration was 200 mg / ml, which was in 50 times higher in comparison with the control and doubled in comparison with other concentrations of the drug.

The drug "Cordyceps and ganoderma" in the combination with the classic activator of oxygen-dependent metabolism prodeuce an activating effect on macrophages compared with the stimulated control. Addition of the drug at a concentration of 50 mg / ml and 100 pg / ml stimulated action zymozana 2.3 times. However, significant differences between stimulated and non stimulated samples with described concentrations were not observed. The drug in the concentration of 200 mg / ml increased the effect in 4.4 times compared with the stimulated control. However, compared with the non-stimulated samples of the same concentration, the rates were significantly lower.

The response of macrophages in mice, adding the drug was similar to that of human peripheral blood mononuclear cells. The introduction of the drug at a concentration of 50 mg / ml led to an increase in oxygen-dependent metabolism of 14-fold compared with control. The most effective concentrations were 100 and 200 mg / ml, which was observed by adding increasing metabolism in macrophages 19 and 18 times, respectively, compared with controls and a significant increase compared to the administration of the drug at a concentration of 50 mg / ml.

Conclusion. The drug "Cordyceps and ganoderma" has a stimulating effect on the oxygen-dependent metabolism of mouse peritoneal macrophages and mononuclear leukocytes of human blood. For human blood monocytes the most effective dose was 200 mg / ml led to increased oxygen-dependent metabolism by 50 times compared with the control. The most effective dose that stimulated the "oxygen burst" of...
peritoneal macrophages of mice was a dose of 100 and 200 mg / ml, which increased the oxygen-dependent metabolism in 19 and 18 times respectively.

References
The advances of medical treatment have enabled the modern people to delay death and live longer. Yet, the incurable diseases can turn one’s life into an excruciating existence of diminished quality. The debate over assisted death is complex and ambiguous indeed, since it involves the issues of legal and moral ethics. As a matter of fact, it is quite a challenge to the physician’s ethical responsibility. For instance, in the USA, assisted death and its subcategory – physician-assisted suicide – are illegal in most states, except for Oregon (by Death with Dignity Act from 1994), Washington (via Death with Dignity Act from 2008), Vermont (via Patient Choice and Control at End of Life Act from 2009), and Montana (since 2009). Likewise, throughout the world the attitude towards this phenomenon and its legalization varies (for instance, physician-assisted suicide is legal in Netherlands since 2002, but illegal in a number of other European countries). Thus, euthanasia definitely proves to be a divisive topic which generates the most diverse interpretations and attitudes.

Physician-assisted suicide implies the situation when a physician provides a terminally-ill patient with appropriate information or direct medical means for self-homicide. Since its publicized application by Michigan pathologist Dr. Kevorkian in 1990, the procedure of physician-assisted suicide has evoked a wide response and remains a hotly debated problem nowadays.

In the context of assisted death discourse, one can distinguish some prevailing communicative intentions. The aim of the article is to analyze these intentions and the peculiarities of their implementation. J.R. Searle provides the following taxonomy of intentions of speech: illocutionary acts are classified into five types, i.e., assertive, directive, expressive, commissive, and declaration. According to J.R. Searle, an assertive is to “commit the speaker to the truth of the expressed proposition”; directive is “to get the hearer to do something”; expressive is “to express the psychological state specified in the proposition”; declaration is about how a “successful performance guarantees that the propositional content corresponds to the world”; and commissive is to “commit the speaker to some future course of action” [13]. Both opponents and adherents of the assisted death phenomenon extensively display assertive and directive intentions. These intentions are challenged with a range of ethical problems and controversies (for instance, the potential abuse of assisted death).

There are reasonable arguments on both sides of this polemics. Undoubtedly, the position of those who deny the relevance of assisted death and physician-assisted suicide is quite feasible. In fact, the adversaries of the physician-assisted suicide argue that this phenomenon is fundamentally repugnant to the medical practitioner’s role. As Lois Snyder and Daniel P. Sulmasy observe, “pronouncements against assisted suicide date back to the Hippocratic Oath and have formed the ethical backbone for professional opposition to the practice of physician-assisted suicide” [14]. The authors of the article articulate the position of American College of Physicians-American Society of Internal Medicine as to the problems of assisted death and physician-assisted suicide. In their opinion, the legalization of this phenomenon will not only endanger the ethical integrity of medical service, but will jeopardize certain categories of population. Therefore, the scholars emphasize the necessity of improving the quality of palliative care instead of turning to physician-assisted suicide. Doctor-assisted suicide is therefore considered as inconsistent with the Hippocratic Oath. Indeed, this traditional oath taken by physicians explicitly inhibits a doctor from supplying patients with a deadly drug at their request. Moreover, the paramount value is placed upon human life by the Declaration of Independence and the U.S. Constitution.

However, it is necessary to remark that the unconditional denial and criticism of assisted death and doctor-assisted suicides can hardly help the patients whose quality of life is eroded by a terminal illness. The opponents of physician-assisted suicide propel a number of alternatives, such as hospice and palliative care; yet, these alternatives are not always able to adequately relieve the patient’s intolerable pain. In other words, it is necessary to strike the right balance in every issue, and the problem of assisted death and physician-assisted suicides requires such an approach like no other. In fact, assisted death provides relief from suffering when “excruciating pain and prolonged agony” [4] infest the patient’s existence at the end of life.
The adherents of doctor-assisted suicide argue that “the decision to end one’s life is intensely personal and private, harms no one else, and ought not to be prohibited by the government or the medical profession” [14]. In this context, Tibor Machan lets in the possibility of “aiding and abetting” such kind of suicides in case if “one’s life by all reasonable estimate can no longer contain any but the most negative meaning – such as relentless pain and agony” [9]. Thus, the scholar asserts that physician-assisted suicides are legally justified under certain circumstances, namely “when it is as clear as possible that ... an individual’s choice not to live could only be carried out through another person’s solicited aid or support” [9]. It is argued that assisted death and doctor-assisted suicide must be legally justified under certain conditions, for instance, when the patient’s existence has lost all meaning. It is concluded that in case if the patient is unable to independently put into operation his or her voluntary decision to terminate life, it is the physician’s duty to relieve his or her suffering.

Thus, assisted death must be considered by policy-makers and medical professionals as a feasible method of release the terminally-ill patients from pain. In fact, the opponents of doctor-assisted suicides often emphasize that this phenomenon involves numerous cases of abuse and serious risks of involuntary deaths. For instance, Margaret K. Dore extensively discusses the contemporary tendencies of doctor-assisted suicide legalization in Vermont and Oregon. The author admonishes the advocates of physician-assisted suicide procedure of possible cases of abuse and identifies the potential groups of people who can be jeopardized by this abuse. Margaret K. Dore contends that legalization of doctor-assisted suicides will actually “create new paths of abuse” [6]. Moreover, Kurt Darr discusses the legal and ethical issues that are raised by the phenomenon of physician-assisted suicide, for instance, the danger of “slippery slope” which can ultimately lead to involuntary death [5]. As one can easily observe, the metaphorical image of “slope” occupies a central place within the framework of this communicative intention. Thus, the discourse generated by the opponents of this phenomenon extensively demonstrates the assertive intention, primarily implemented by means of vivid figures of speech.

Indeed, this practice can trigger the abuse against elders which is statistically widespread, yet difficult to detect in due time: “Assisted suicide acts empower heirs and others to pressure and abuse older people to cut short their lives. This is especially an issue when the older person has money” [6]. Likewise, in order to secure the patient’s free choice and comprehension of the situation, the advocates of physician-assisted suicide extensively focus upon numerous safeguards against involuntary death. Thus, the condition of voluntary decision is indispensable for both sides. Vicki Lachman [8] extensively analyzes the safeguards and guidelines in the Oregon Death with Dignity Act. The emphasis is placed upon the challenge which will be faced by physicians and nurses in the context of gradual legalization of physician-assisted suicide. In fact, the Oregon Act “applies only to the last 6 months of the patient’s life” [8].

The Act also implies a number of crucial guidelines and safeguards which are aimed at preventing the abuse and involuntary death. Moreover, in order to ascertain that the patient makes a fully voluntary and conscious decision, the Act requires “two oral requests by the patient, as well as a written request by the patient” [8]. Further, a 15-day waiting period must occur upon the first oral request, and 2-day waiting period must elapse upon the submission of the written request. The Act also requires that the patient informs the next of kin and pass examination of two physicians in order to determine the patient’s mental adequacy and determination to end his or her life. J. Pereira provides “a moral defense” of Oregon’s Act and argues that it is the physician’s duty to reduce the patients’ suffering. Moreover, the scholar emphasizes that doctor-assisted suicide is an essential instrument of maintaining the patient’s autonomy and dignity. In fact, the scholars contend that “to respect autonomy is, first and foremost, to respect a person’s ability to make decisions that shape his or her destiny” [12]. Therefore, the scholars assert that physician-assisted suicide “is not in conflict with the goals of good end-of-life care” [12].

As one can easily observe, the procedure of physician-assisted suicide involves a ramified system of preconditions and prevention mechanisms. However, it is not devoid of flaws and legislative gaps which need to be eliminated. These measures aspire to prevent the doctor-assisted suicide in case of patient’s psychological disturbance or depression; yet there is still space for combating the cases when patients experience external pressure. Hence, the advocates of assisted death adhere primarily to the assertive and directive intentions. In this context, the discourse is saturated with digital data and such lexical units as “request”, “require”, “must”. In other words, the discourse generated by euthanasia advocates assumes a form of requests and advice, as opposed to metaphorical representations within the speech of euthanasia critics.

Thus, it has been shown that both sides of this polemics adhere to different communicative intentions and apply various means of their implementation. The assertive intention is “to commit the speaker to something’s being the case, to the truth of the expressed proposition” [13], while the directive intention aspires to cause the hearer to take a particular action. It is the task of representatives of both sides of this debate to pool together their efforts and develop an immaculate procedure of assisted death and physician-assisted suicide. By joining their efforts, both advocates and adversaries of this procedure will be able to elaborate a system of life termination which will be able to relieve the patients’ suffering if nothing else can be done about it. Only by way of uniting the forces from both sides of the polemics, this system will be
improved as free of legal or moral breaches, containing no potential abuse and danger to vulnerable populations.

References

APPLICATION OF INNOVATIVE TECHNOLOGIES IN TEACHING HUMANITIES AT IN HIGH SCHOOL

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Keywords: innovation, technology innovation, training, technology, educational technology.

Global educational tendencies are characterized by deep engagement in effective innovation processes. The directions in the development of Ukrainian educational system, its priorities are determined by national, ideologic, social, economic and technical factors. The topics covered by the Higher Education system in Ukraine focus on the basic values of democracy, human rights and the rule of law and our belief that education and higher education play a key role in developing the democratic culture without which democratic societies cannot thrive as well as in developing the skills, knowledge and values that modern, complex societies require. It this context it is of great importance to implement and to enhance the holistic educational process of the higher educational institutions, to introduce new training and educational technologies, which may significantly alter the nature of the educational process.

This article is aimed to focus on implementing innovative technology in teaching humanities at high school.

Studying the source base on this problem we have paid attention the issues referring the intensification of training at high schools came in the focus of scientific attention only in the late twentieth century.

The concept of "technology" is being actively studied by both foreign (G. Gates, J. Carroll, D.Hamdyn etc.) and domestic (Yu.K. Babanskyy, V.V. Bespalko, V.A. Slastonin, T.A. Kramarenko etc.). Researchers
considered technologies known in the world can be divided into two types: industrial and social. For example, S.I. suggests the definition of a social technology as social one which concentrates its initial and the end result on a person, and the main parameter subjected to changing is one or more of its properties.

The main factors that stimulate the analysis of educational technologies are the following. First, the steady growth of information content that in turn leads to obstacles in learning. Second, technological direction in the development of modern civilization that forces the global society to think about how great may be the cost of poor professional training. This stimulates the search for and implementation of innovative technologies.

It should be noted the term "innovation" is of Latin origin and means renewal, modification, introduction of new. Pedagogical interpretation of innovation means updates, which improves the course and outcome of the educational process. This is the process of creation, implementation and dissemination of new ideas, tools and management techniques in educational practice that results in increased rate of progress of structural educational components, in the transition from the conventional education system to a qualitatively new phase. The word "innovation" has a multifaceted meaning, because it consists of two forms: the actual ideas and the process of their implementation.

Thus, we can conclude that the use of innovative technologies is actualized due to the new paradigm of professional training based on considering the hierarchy of state, professional and operational purposes, the essence of which is to upgrade vocational teacher education and training and holistic educational process of higher education institutions by improving, ie modernization, modification and rationalization.

References
LITERATURE REVIEW

IMPACTS OF CORONARY HEART DISEASE AND ITS PHARMACOTHERAPY ON ORAL TISSUES

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Keywords: coronary heart disease, oral condition, adaptation to removable denture.

Perspectives for increasing the effectiveness of prevention and therapy of complications which might be due to prosthodontic treatment nowadays refer not only the quality of the base material of the dentures, clinical characteristics of prosthetic bed conditions, but somatic pathology in individuals who undergo prosthetic correction.

The problem of improving prosthetic treatment for patients with complete and partial adentia is still remaining a very relevant, especially considering that the morbidity rate of coronary heart disease is permanently increasing as well as the necessity of population in dental prosthetic correction that determines its exceptional urgency.

Examination of patients with coronary heart disease and patients with myocardial infarction in their past history shows that about 75% of them have oral disease, 80% of them require orthopedic treatment and the level of periodontal disease in all age groups ranges from 55% to 99%.

This paper focuses on the analysis of literature devoted to the impacts produced by coronary heart disease (CHD) and its pharmacotherapy on the state of oral tissues. A lot of reports and articles on this issue are fragmentary and conflicting, there is little information about interrelation between the hemodynamics in periodontal tissues and great vessels of the head. The problem is mainly investigated to determine the relationship between CHD and periodontal disease and the harmful effects produced by pathological oral microflora on the cardiovascular system.

Side effects of drugs used in the therapy of CHD are little described. CHD may produce many different oral manifestations, cause oral discomfort, increase the risk of infections, and reduces the adaptation to dentures. Moreover the key oral manifestation of CHD and its pharmacotherapy is dry mouth.

Xerostomia causes marked discomfort, increased risk of infectious diseases, lowered adaptation to dentures. However, the treatment in out country is mainly symptomatic and does not lead to the improvement. The foreign reports present the information referring artificial saliva agents, local agents to enhance salivation, toothpastes with enzyme content that improve the condition of patients and simplify their adaptation to removable dentures.

Currently considerate practice has been obtained in carrying out dental procedures, establishing positive relationships between patients and health care providers but nevertheless about 70-80% of patients experience dentophobia at the dentist’s. Visiting the dentist by the patients with CHD can cause exacerbation of their underlying disease. Compensated in habitude and clinically silent ischemia in stressful situations can cause myocardial infarction, cardiac arrhythmia with serious complications due to increased corticosteroids in the blood and to increased oxygen demand by myocardium. Therefore the much attention should be paid to improve the quality of orthopedic care for patients with CHD.

As a result of studying the literature we may conclude that there are no well-designed rational etiopathogenetically grounded approaches to improve the level and quality of prosthetic care for patients with IHD. These approaches should include series of pre- and post-prosthetic measures aimed to improve the conditions of the mucous membrane of prosthetic field and periodontal tissues as well as to enhance the adaptation of patients with CHD to removable dentures. Moreover in Ukraine there is no registered local medication to relieve dryness in the mouth.

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BIOMODELING OF DENTAL CARIES


Keywords: caries, prevalence rate, biomodeling.

Cariology contains a number of unexplained or little known paradoxes and phenomena. Among them there is a sharp reduction in the incidence rate of dental caries in the younger age groups which has been observed since the last quarter of the twentieth century until the present.

Some researchers refer this with the active implementation of community caries prevention programs, while others with the phenomenon of acceleration in young people.

In this regard, it is more relevant to put question about the possibility to reproduce of this phenomenon in human population in order to detect the explanation for caries reduction instead of putting questions about the way of the fulfillment of the above mentioned phenomenon. Such a circumstance may change the direction of the vector of searching for truth in the right direction.

Based on mentioned above, the purpose of this study is to search for information on the simulation of the caries process on practical material and its following analysis.

Sources focusing on this phenomenon served as objects. The methodology included analysis of these sources, the comparison of the information obtained and the interpretation of the results.

In the 1980-1990 the community caries prevention programs were implemented in the most countries worldwide. Their effects were not manifested everywhere but only in some countries where there was a noticeable decrease in the prevalence and intensity of dental caries in children and adolescents. Studying indices of dental caries Dr. David Barms could predict declining trend of dental caries for long-term period (beyond the twentieth century).

It is known that animals suffer from tooth decay as well. Moreover in order to confirm their theoretical positions in dentistry many researches used natural modeling. Experiments were carried out on animals.

These experiments helped to model cariogenic situation and to obtain the main stage of dental caries development. Contents of white rats on sucrose-casein cariogenic diet in the laboratory led to the production of alimentary caries in several generations of animals. It was established white rats kept in laboratory conditions and fed with sucrose-casein cariogenic diet developed alimentary caries which run in generations. However, rats and hamsters susceptible to dental caries developed a strong resistance in few generations and further keeping the animals of these lines on cariogenic diet did not cause tooth decay. Such a situation is very similar to that described for the human population.

This study indicates that biomodeling being one of the most important approaches to test anticariogenic remedies is still maintaining its relevance in fundamental cariology. Modeling of experiments in this direction will help to find perspectives which allow us understand the phenomenon of caries.

References
PERSPECTIVES IN APPLYING ADHESIVE FIBER SYSTEMS TO RESTORE SMALL DEFECTS OF DENTITION

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Keywords: fiber systems, adhesive bridge, small defects, dentition.

One of the priority directions in the development of current medicine is the active implementation of innovative technologies that provide more efficient, faster and at the same time minimally invasive and psychologically comfortable care for patients. Therefore the achievements of adhesive chemicals, consisting in creation of light and extremely durable materials on the basis of compound of special substances of glass, ceramic, polymer and carbon fibers are of particular importance.

Fiber systems gain favor among dentists and patients due to their successful application in teeth splinting, restoration of tooth crowns, stabilization of reimplanted or damaged teeth, post-prosthetic retention. However much broader prospects of such systems in aesthetic dentistry deal with the complex restorations aimed to remove individual dental imperfections, which are also named as adhesive bridge.
Much experience is obtained in creation of such fiber composite structures, but there are still a lot of questions about the indications for their manufacturing, choice of structural elements, prosthetic technology in different clinical situations that require further development.

The purpose of this study is to analyze and summarize data on the properties of different fiber systems and the peculiarities of their application in manufacturing adhesive bridge prosthesis to replacement of small defects in teeth.

Until recently, dental defects resulting from the loss of one or two teeth were more often restored by metal and whole-ceramic dental bridges made in dental laboratories, or by implantation. However, considering the possibility of using conventional indirect dental appliances many researchers point out their shortcomings such as rigid functioning and low elasticity compared to natural teeth.

Moreover when replacing missing teeth with metal and ceramic prostheses it is far from an easy task to get their natural color that might be achieved by removing a lot of hard dental tissues in abutment teeth which are often intact.

Some research papers indicate that the impossibility of implantation is often conditioned by a number of contraindications dictated by systemic diseases of patients. It is also impossible to perform implantation in young adults with congenital or traumatic adodontia until the formation of bones of the facial skeleton is completed. These circumstances explain the need to find out and implement methods for recovery of small defects of the dentition without significant invasion of the abutment teeth and surgery.

It is interesting to note in this respect that the researches dealing with this promising area of modern dentistry as application of adhesive fiber composite dental bridges are of great clinical importance.

However the problem of using fiber systems in the dental practice is far from being completely studied. Therefore the authors suggest their views on the selection dental bridges to restore of the integrity of the dentition. It is planned that following reports will present this to scientists and dental practitioners.

References
modern concepts on treatment of toxic osteonecrosis of jaw in narcotoc-dependent patients

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Keywords: drug addiction, pervitin, toxic necrosis of jaws, treatment.

The urgency of researches focusing on the treatment of toxic necrosis of jaw bones may be explained by the high prevalence rate of the disease nowadays that is a direct consequence of the widening of the social disasters like narcotic addiction. Unfortunately, we must recognize that drug addiction is increasingly becoming one of the most serious global problems of modern civilization. Only in Ukraine according to estimates of international and domestic researchers there are about 310 thousand of intravenous drug abusers. One of the diseases directly related to the use of drugs is toxic necrosis of jaw bones. It has been proven that these atypical lesions of the jaws occur in persons who have taken bush-league narcotic previtin for a long period of time made.

The aim of this work is to analyze and to summarize the researches devoted to developing the most effective approaches in the treatment of toxic necrosis of jaw bones in drug abusers.

In recent decades the experts have gained some experience in the treatment of toxic necrosis of the jaw bones. The scientists stress the need for a comprehensive approach to treatment that includes not only a combination of surgery, medication and orthopedic methods, but also the involvement of related health care professionals (infectious diseases specialists, narcologists, immunologists, neurologists, otolaryngologists, psychologists, etc.).

Whereas patients with osteonecrosis of the jaws against the background of drug addiction develop profound pathological changes in various body systems of (immune, vascular, hematopoietic, hemostatic), medication should not be limited only to antibiotics. It should also include infusion-transfusion therapy aimed to enhance vital parameters (detoxification, hemoglobin increasing, normalization of blood clotting), use of drugs to correct immune imbalances and to enhance overall health.

However, despite the importance of drug therapy in cases of toxic necrosis of the jaws, it is impossible to stop the course of the disease without surgery. Taking this into consideration the experts in the field of maxillofacial surgery pay special attention to surgical treatment. The choice of surgical method depends on the extent and duration of the disease. These methods can include necrectomy, sequestrectomy, sequestrenchrectomy of jaws, jaw fragment block resection, resection of the mandible fragment with...
maintaining the integrity of its lower edge, resection of the mandible fragment with disarticulation of the jaw head.

Studies carried out by many experts have testified for radical surgery to the extent of jaw resection to the limits of jaw bones which are not involved into the pathological process. However, such radical surgeries in the maxillofacial area often lead to not only cosmetic defects but also functional disorders of speech, chewing, swallowing and some others. Therefore the importance of restorative surgery and providing orthopedic care in the complex treatment of these patients is obvious. Moreover it is necessary to convince the patients to overcome their destructive addiction to drugs for their successful rehabilitation. Of course, this problem should involve narcologists and psychologists. The treatment can not be effective without establishing trusting atmosphere in the relationship between health care providers and patients.

References


