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THE INTERNATIONAL SCIENTIFIC CONFERENCE FOR STUDENTS AND YOUNG RESEARCHERS IN ENGLISH "TOPICAL ISSUES OF MEDICINE" DEVOTED TO THE 85TH ANNIVERSARY OF STAVROPOL STATE MEDICAL UNIVERSITY

Abstract Book

Stavropol – 2023

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THE INTERNATIONAL SCIENTIFIC CONFERENCE FOR STUDENTS AND YOUNG RESEARCHERS IN ENGLISH "TOPICAL ISSUES OF MEDICINE" DEVOTED TO THE 85TH ANNIVERSARY OF STAVROPOL STATE MEDICAL UNIVERSITY (Abstract Book) – Stavropol: StSMU, 2023. – 184 P.

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МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ СТУДЕНТОВ И МОЛОДЫХ УЧЁНЫХ НА АНГЛИЙСКОМ ЯЗЫКЕ «АКТУАЛЬНЫЕ ВОПРОСЫ МЕДИЦИНЫ», ПОСВЯЩЕННАЯ 85-й ГОДОВЩИНЕ СТАВРОПОЛЬСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО УНИВЕРСИТЕТА

Сборник тезисов

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В сборнике представлены тезисы работ авторов из российских и зарубежных учебных заведений для Международной научной конференции студентов и молодых ученых, по актуальным вопросам теоретической, практической медицины и медико-биологических наук на английском языке.

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Dear Participants of the Conference!

It's a matter of great pride to organize the International Scientific Conference for Students and Young Researchers in English «Topical Issues of Medicine» within the walls of the Stavropol State Medical University, rightfully considered one of the leading universities in the country, in the year of its' 85th Anniversary. Such event became a good tradition for the past fifteen years. The Conference brings together more and more talented and enterprising young people from different parts of our country and abroad who are interested in the achievements in the field of medicine. This effectively contributes to the development of scientific relations, stimulates and promotes innovative projects, increases the interest of students and young scientists to research work.

Modern science is developing rapidly, new scientific developments amaze with their surprise, depth of research, grandiose steps forward in this or that field of science, including medicine. The view of young people on the urgent problems of modern medical science is valuable because it reflects their attitude to the changes that are taking place in our country and the world.

We wish all participants of the Conference fruitful work, creative productive discussion, activity, optimism and the acquisition of friendly contacts.

We hope that it will be possible to create conditions for a constructive dialogue and exchange of experience and opinions between young scientists.

Let our Conference become a place for further interesting and fruitful meetings. We are confident that the results of the Conference will be useful to all participants of this Conference, and the proposed recommendations will find their application in the further practical activities of each of them.

Good health, well-being and new scientific achievements to all!

Mazharov Victor Nikolaevich
Candidate of Medical Sciences, Associate Professor,
Rector of Stavropol State Medical University, Russia.

SCIENTIFIC ABSTRACTS OF STAVROPOL STATE MEDICAL UNIVERSITY STUDENTS AND YOUNG RESEARCHERS, RUSSIA

ABSTRACTS

COVID-19 IN GHANA AND NIGERIA

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Background: Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). First the disease was reported in China in 2019 hence the name COVID-19. The disease has taken lots of life and is still taking more till today. The COVID-19 pandemic has changed the world and our place within it – for us all as individuals, as well as for our nations and how they relate to one another. It has been enormously painful and hugely disruptive, and its implications will be played out in ways we cannot even anticipate for years to come. In countries like Nigeria and Ghana their first cases of the pandemic was reported in 2020 with massive confirmed cases and deaths. Most of the infected people presented such common symptoms as cough, headache and sore throat. As the pandemic skyrocketed, there was no readily available treatment most people went with all sort of superstitious remedies and treatment such as bathing salt water, drinking salt water, steam inhalation with certain herbs etc. Medically patients were treated symptomatically. They were given nutritional supports, supplementary oxygen and antiviral drugs such Remdesivir, dexamethasone etc.

The pandemic had a great impact on these countries such as a sharp rise in numbers of infected persons and death rate, a dramatic change in the economy, increased fear and anxiety in people and the likes considering the complex nature of the countries, large population, poor health care systems manned by inadequate diagnostic and isolation centers.

The widespread of the disease warranted a mandatory nationwide lockdown until further notice to limit the spread of the disease. All schools, colleges and workplaces were closed. Bands were placed on traveling and a mandatory wearing of nose mask and sanitization if hands were put in place.

After almost a year, vaccinations such as Covax were launched in Ghana and Nigerian. These vaccines were first administered to people above the age of sixty, followed by people from the age of forty to sixty, above eighteen and then younger kids. Vaccinations were given in two doses with an interval of one and a half to two months in between. With the government

making vaccinations mandatory for travel and other purposes, almost all people had taken the vaccinations. A third dose of the vaccine (booster dose) also has been launched. Other vaccines such as Johnson and Johnson (Jcovden), Pfizer, Sputnik V and many others have been introduced. The government has taken efforts to set up multiple vaccination booths in government schools and hospitals. With continuous efforts from the government, medical and police officials, and cooperation from the citizens, Ghana and Nigeria has successfully seen a decrease in the number of cases and deaths, and an increase in the number of recoveries.

Objective: To review COVID-19 in Ghana and Nigeria, the statistics, the signs and symptoms, diagnosis, risk factors, vaccination and prevention.

Methods and materials: The material for this study is an online data obtained from the World Health Organization (WHO), Premium Times Nigeria and Ghana, Ghana and Nigeria medical Journals, Pubmed, Mayo Clinic, World meter.

Results: From the above data we realized that at the start of the pandemic 7000 confirmed cases were recorded with 34 deaths being recorded in Ghana, and 1337 cases with 34 deaths rate in Nigeria due to poor health systems and poor safety and sanitary measures and protocols (to about 22,562 active cases and 220 deaths in Nigeria and about 7000 plus active cases in Ghana). Having looked at the introduction of the vaccination we noticed that the number of active cases has reduced drastically (to 266,593 cases, 3,155 deaths and 259, 850 recovered in Nigeria whiles in Ghana 171, 172 cases, 1,462 deaths and 169, 697 recovered) in both countries which is a proof that the vaccination is really being effective even though not everyone in the country has been vaccinated.

Conclusion: Even though the virus has not been completely eradicated from the system we know that continual education of the general public on the positive effects of the vaccine will help to reduce the death rate of COVID-19 in the country.

Keywords: Coronavirus-19, pandemic, vaccination, vaccine, anxiety.

COMPLICATIONS OF COVID-19 IN CHILDREN

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Background: Since December 2019, Covid-19 has become a challenge for doctors around the world, including pediatricians. In most infected children, the disease manifests itself in a mild or characterized by a subclinical

course. At the same time, in some cases, a severe clinical picture (acute respiratory distress syndrome (ARDS), pneumonia, and multi-organ complications) of the so-called late Covid disease. Children represent about 19% of all reported COVID-19 cases in the United States, since the pandemic began and up to 50% of children and adolescents might have COVID-19 with no symptoms. However, some children with COVID-19 need to be admitted treated to an intensive care unit or placed on a ventilator to help them breathe. The most common symptoms of COVID-19 in children are cough (becomes productive) and fever. Other symptoms are chest pain, loss of taste or smell, changes in the skin (such as discolored areas on the feet and hands), sore throat, nausea, vomiting, belly pain or diarrhea, chills, muscle aches and pain, extreme fatigue, severe headache, nasal congestion etc.

Objective: To review the various complications of COVID-19 in children.

Methods and materials: The material used for this study is an online data obtained from World Health Organization (WHO), News Medical Life Sciences, National library of medicine(PubMed), Mayo Clinic, Stony Brook University Hospital,

Results: While the pediatric population in general experienced milder SARS-CoV-2 infections, 19 studies reported that 12.8% of children who experienced severe COVID-19 requiring hospitalization suffered from neurocognitive impairments of the patients who exhibited neurological abnormalities; 24.2% had Multisystem Inflammatory Illness in Children(MIS-C), 10.1% had neuroinflammatory manifestations such as acute disseminated encephalomyelitis, myelitis, encephalitis, meningitis, meningism, or meningoencephalitis, and 8.1% had encephalopathy. Symptoms such as muscle weakness and drowsiness were more prevalent among children as compared to adolescents. Children also exhibited more irritability and agitation than infants did. Evaluation and analysis revealed MIS-C to be the most prevalent followed by neurological complications, whereas the least prevalent were septic shock and ophthalmic complications.

Conclusion: The complications of the virus have caused a great deal of stress to the pediatric patients' parents and pediatricians worldwide, post-covid complications are more common in children aged 12 to 18 years and with an increase in the severity of the course of the disease, the frequency of complications increases significantly. Their main manifestations are multi system inflammatory syndrome, neurological complications, respiratory complications, infectious-toxic damage to the heart etc. The new coronavirus infection is a challenge for doctors of all specialties. Given the high rates of complications from multiple system, the need for high-quality diagnostics and treatment at the pre-hospital and hospital stages is shown in order to improve the prognosis of recovery and improve the quality of life of patients.

Keywords: Complications, prevalence, multisystem inflammatory illness in children (MIS-C), pediatrics.

THE ASSOCIATION BETWEEN E-CIGARETTE USE AND THE RISK OF CARDIOVACULAR DISEASES

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Background: E-cigarettes popularly known as vapes have emerged as a popular form of smoking among students worldwide. The use of e-cigarettes has been associated with a multitude of negative health effects, including an increased risk of cardiovascular diseases.

Objective: The aim of this study is to investigate the effects of the use of e- cigarettes on the cardiovascular system among students.

Methods and materials: A comprehensive search of electronic databases was conducted to identify relevant studies on the effects of using e-cigarettes on the cardiovascular system. Studies that met the inclusion criteria were selected, and data was extracted and analysed.

Results and discussion: The findings of the review indicate that using e-cigarettes is associated with several negative effects on the cardiovascular system, which include increased heart rate, increased blood pressure and arterial stiffness. These effects are due to the presence of nicotine and other harmful chemicals and toxic substances found in e-cigarettes, which can lead to the development of cardiovascular diseases.

Keywords: Vapes, e-cigarettes, cardiovascular system, students, nicotine, cardiovascular diseases.

ISSUES AND CHALLENGES OF COMBATING HIV/AIDS IN WEST AFRICA

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Background: The history of HIV/AIDS in Africa dates back to the early 1900s when the first cases were reported in the Democratic Republic of Congo. Since then, the virus has spread rapidly throughout the continent.

According to UNAIDS, there were an estimated 25 million people living with HIV/AIDS in Africa in 2019. In the same year there were an estimated 1.7 million new HIV infections and 890,000 AIDS-related deaths in the region.

Understanding HIV in West and Central Africa (WCA) is limited to data from few cities in a region that covers 24 countries and over 350 million people. Western and Central Africa has over 65 million people living with HIV representing 19% of global burden and yet only 21% eligible for treatment have coverage. HIV in Western and Central Africa averages 4.9% ranging from less than 1% to 5%. HIV also has drastic effects on underdeveloped or developing countries that include increased morbidity, healthcare utilization or ineffective healthcare system, public health facility use and increased spread of the infection.

Objective: To review the epidemiology, prevalence and incidence rates of HIV/AIDS virus in West Africa, to point out the issues leading to the high level of occurrence in this area, to evaluate the challenges faced with prevention or prophylaxis of the virus in West Africa and to devise strategies for combating the virus properly in West Africa.

Methods and materials: A comprehensive study of numerous publications published over the last 10 years and review of numerous data available on the epidemiology, prevalence and incidence rate of the HIV/AIDS virus in West Africa while also discussing with locals from the rural and urban areas in the two most popular and biggest West Africa countries (Nigeria and Ghana).

Results: In Nigeria the results showed 1.9 million people are actively infected with HIV/AIDS, 1.1 million female adults (15 years and over) predominantly among female sexual workers (FSW), 630,000 male adults (15years and over) predominantly among male sex with male (MSM), 170,000 children (0-14 years old), 74,000 new infections and 51,000 AIDS- related deaths. In Ghana a total of 350,000 people are infected with the human immunodeficiency virus (HIV), 34% are males predominantly those who have sex with male, 66% are females commonly female sex workers. In 2022 there was also a high infection rate in the first half of the year with a record of 23,495 new HIV infections in Ghana.

Conclusion: These issues and challenges are faced by not only West Africa but the whole of Africa and other undeveloped countries around the world. The results show high incidence rate among female sexual workers and males having sex with males. The health sector in every of these countries should ensure the proper education of citizens especially people living in the rural areas without access to media and electronic devices and risk group individuals on the need and importance of safe sex and education on stigmatization and discrimination of infected individuals while maintaining

proper screening, self-testing, viral load monitoring and even access to treatments. The government needs to make healthcare accessible to all and build more clinics or hospitals in rural areas with qualified and competent medical personnel, subsidy on antiretroviral drugs to make it affordable to the masses, free sex protection (condoms) should be easily accessible to everyone.

Keywords: HIV, AIDS, prevention, epidemiology, prevalence, incidence.

CARDIOVASCULAR POSTCOVID SYNDROME IN CHILDREN

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Background: After emerging in Wuhan, China in December 2019, the novel coronavirus infection (COVID-19) had rapidly spread throughout the globe and had a profound impact on the lives and health of people, in particular on the children's population. Studying the features of this infection, scientists came to the conclusion that every tenth patient after the acute phase of the disease has a number of persistent symptoms witch can persist for a long time, and this condition is called post-covid syndrome (post-covid) in generally recognized institutions.

In view of the gradual increase in the number of cases of a new coronavirus infection, post-covid changes are increasingly monitored by pediatricians in children who have the disease in the acute period from asymptomatic to severe course. Like acute COVID-19, post-COVID syndrome can affect multiple organs and affect a range of systems, including but not limited to the respiratory, cardiovascular, nervous, digestive, and musculoskeletal systems.

Objective: To review the cardiovascular related complications that occurs after the COVID infection in children.

Materials and methods: A study was conducted to study the post-covid syndrome of the cardiovascular system after suffering COVID-19 in children. Under supervision there were 50 children aged from 1 month to 18 years old who recovered from COVID-19 in asymptomatic, mild and moderate severity, who had various complaints and subsequently underwent electrocardiogram (ECG), cholesterol monitor, echocardiography and cardiac markers. Retrospective review of children that presented with cardiac related complaints after COVID infection in various city hospitals in Nigeria was used. The outcome was also monitored at 2 weeks, 6 weeks and 3 months.

Results: After analyzing of the age of patients and the number of disorders of the cardiovascular system after a new coronavirus infection, we found that with an increase in the severity of the course of the disease, the frequency of cardiac complications increases from 66.7% with mild severity to 100% with moderate severity. Postcovid cardiac complications are more common in children aged 12 to 18 years (24%). The most common complications after coronavirus infection are secondary myocardial dystrophy, sinus tachycardia, supraventricular extrasystole, and aortic valve dysfunction. The main cardiac complications in all forms of the course of COVID-19 are infectious-toxic damage to the heart (23.3% with mild severity and 90.9% with moderate severity); supraventricular extrasystole (10% with mild severity and 72.7% with moderate severity); dysfunction and insufficiency of the aortic valve (30% and 27.3%, respectively). Other cardiac manifestations at presentation included coronary dilatation and pericardial effusion in 46.4% each, ventricular dysfunction (32.1%), atrioventricular valve regurgitation (25%), prolonged QT interval (40%) and first-degree atrioventricular block (16%).

Conclusion: The results of the studies have shown that the post-covid syndrome in children from the CCC is very common, has a direct dependence on the severity of the course of a new coronavirus infection and its detection increases depending on the type of instrumental studies performed. Early diagnosis and prompt administering of a combination of antiplatelet therapy, steroids and intravenous immunoglobulin appear to be beneficial.

Keywords: Cardiovascular, post-covid syndrome, myocardial dystrophy.

CHEST WALL TRAUMA AND RIB FRACTURE

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Background: Chest wall trauma is common and contributes significantly to morbidity and mortality of trauma patients. 10% of all injured patients have chest injury, 39% of all thoracic trauma patients will have rib fractures, with a reported mortality in up to 22% in blunt chest injury, pulmonary complications develops in isolated rib fractures in patients aged over 65 in 36%. Early identification of major chest wall and concomitant intrathoracic injuries is critical. Generalized management of multiple rib fractures and flail chest consists of adequate pain control (including locoregional modalities), management of pulmonary dysfunction by invasive and noninvasive means; and, in some cases, surgical fixation. High proportion of elderly patients re-

quire ICU and 12% require mechanical ventilation. If not properly managed, life threatening complications can develop in first 72 hours.

Objective: The aim of the work is to study the mechanism of chest wall trauma, development of rib fractures, complications, associated injuries, investigation strategy and management of patients with chest wall trauma and rib fracture.

Materials and methods: The material used for this study are online data obtained from Orthopaedic Trauma Association, Western Trauma Association Critical Decisions in Trauma, News Medical Life Sciences, SAGE Publications and National library of medicine(PubMed).

Results: Adequate pain control in chest trauma is sometimes the most basic and best treatment. With definite diagnosis, the morbidity and mortality can be significantly reduced by simple treatment methods. Multiple studies have shown that patients with flail chest have substantial benefit (decreased ventilator and intensive care unit days, improved pulmonary function, and improved long-term functional outcome) when they undergo surgery compared with nonoperative management. Complication observed were compromised respiratory function, acute respiratory distress syndrome, poor pulmonary clearance, pneumonia, sepsis, etc., the associated injuries are pneumothorax, hemothorax, sternal fracture, pulmonary contusion, myocardial contusion, etc.

Conclusion: Intensive care is recommended for patients over age 65 years with more than two significant rib fractures and patients with preexisting respiratory dysfunction, anticoagulant use, flail chest, or evidence of severe pulmonary contusion on CT. Vast majority of rib fracture are appropriately managed nonoperatively, however, operative stabilisation should be considered for certain patients. The gold standard for surgical approach is 3D reconstruction of chest wall, multimodal approach for pain management and a chest radiograph should be done prior to discharge.

Keywords: Chest trauma, rib fracture, flial chest.

DRUG HYPERSENSITIVITY SYNDROME (DRESS-SYNDROME) WITH A FATAL OUTCOME (CLINICAL OBSERVATION)

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Background: DRESS-syndrome (Drug Reaction with Eosinophilia and Systemic Symptoms) is a drug reaction with eosinophilia and systemic symp-

toms, debuting 3-8 weeks after taking the "guilty" drug, manifested by skin rashes, fever, lymphadenopathy, blood changes, and multipleorgan pathology. The prevalence in children is not known, and the mortality rate is 10%.

Objective: To present the target audience with a clinical case demonstrating that DRESS syndrome is a difficult to diagnose, unpredictable and severe allergic reaction, that potentially threatens the life of a child.

Methods and materials: We used a retrospective analysis of the medical history of a patient with DRESS syndrome who was treated in the infectious diseases department of the Stavropol Regional Children's Clinical Hospital (SKDKB).

Results: The patient was a boy of 16 years old. Since 9 months he was observed by a neurologist for symptomatic focal epilepsy and received anticonvulsants. The disease began with an increase of temperature to 39.0^0 C with fatigue and the appearance of a rash on the face. With the diagnosis of acute urticaria he was treated in a hospital at the place of residence with unstable positive dynamics. The condition worsened, catarrhal and urinary syndromes joined, the rash spread all over the body. Due to self-treatment he was hospitalized in the SKDKB. The following syndromes prevailed in the clinical picture: general intoxication, febrile, cutaneous, urinary, hepatolienal, anemic, lymphoproliferative, cytolytic. Respiratory and cardiovascular insufficiency was determined.

The examination revealed: lymphocytic leukocytosis up to 44.28×10^9/l; anemia (erythrocytes $2.95\times^{10\text{-}12/L}$ Hb 99 g/L), monocytosis (23.8%), accelerated ESR (34 mm/h), atypical mononuclears (39%), eosinophilia up to 17%. A biochemical blood test showed an increase in the level of CRP to 227.9 mg/l. Abnormal liver function was confirmed in the laboratory by an increase in the level of Transaminase (ALT 49.4-493 U/l, AST 51-343. 9 U/L), GGT 1481 U/L, alkaline phosphatase 480-706 U/l. Virus reactivation syndrome HSV-1, 2, a high level of avidity (77.7%) was confirmed.

Based on the results of anamnesis, laboratory tests, clinical manifestations of the disease and consultations with narrow specialists, it was suggested that the drug hypersensitivity syndrome was present.

Against the background of the therapy, the child's condition showed sharply negative dynamics in the form of an increase in neurological symptoms, cerebral, cardiovascular, respiratory failure, severe microcirculatory disorders, depression of consciousness, hypocoagulation, coma I-II. 10-days intensive care in the intensive care unit was unsuccessful and a fatal outcome occurred.

Conclusion: This clinical case demonstrates the difficulty of diagnosing DRESS syndrome, the extreme danger of the disease which accompanied by rapid generalization of the process with damage to various organs

and systems can end fatally, especially in patients with a burdened premorbid background.

Keywords: DRESS-syndrome, hypersensitivity, eosinophilia, drug reactions, clinical case.

CHARACTERISTICS OF PATIENTS SUFFERING FROM CHRONIC HEART FAILURE WITH A MODERATELY REDUCED LEFT VENTRICULAR EJECTION FRACTION IN OUTPATIENTS

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Objective: To evaluate drug therapy in patients with chronic heart failure (CHF) with a moderately reduced left ventricular (LV) ejection fraction at the outpatient stage of treatment.

Methods and materials: An analysis was made of 20 outpatient records of patients suffering from CHF with a moderately reduced ejection fraction (from 41 to 49%) of the left ventricle. Fraction evaluation was carried out on the basis of the results of echocardiography performed at least a year from the date of inclusion in the study. Information about drug treatment and the presence of co morbid diseases in these patients was analysed.

Results: In the anamnesis of the studied patients, the most common disease was hypertension – 85%, 20% had a history of myocardial infarction, 35% had diabetes mellitus, 30% had atrial fibrillation, 15% had chronic kidney disease, and 5% had chronic obstructive pulmonary disease. In 35% of cases, patients had one disease that was the cause of CHF. 65% of patients had various comorbid diseases, of which: 50% had 2 diseases, 10% – 3 diseases, 5% – 4 or more. Blockers of the renin-angiotensin-aldosterone (RAAS) system were received by 90% of patients, beta-blockers – 75%, mineralocorticoid receptor antagonists – 55%. An analysis of the prescribed dosages of drugs showed that in 35% of cases the drugs were prescribed at doses lower than those recommended for this pathological condition.

Conclusion: In patients undergoing treatment on an outpatient basis, in most cases, the cause of the development of CHF syndrome with a moderately reduced LV ejection fraction was hypertension. In most cases, patients had 2 or more comorbid diseases. The study revealed a discrepancy between the dosages of prescribed drugs recommended for the effective

treatment of this pathology and showed the need to increase the adherence of doctors to the implementation of clinical recommendations in the treatment of CHF patients with a moderately reduced left ventricular ejection fraction.

Keywords: Chronic, heart failure, moderately reduced, left ventricular ejection fraction, co morbidity.

DYNAMICS OF INCIDENCE WITH MAIN HELMINTHOSIS IN THE STAVROPOL TERRITORY FOR 2018-2022

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Background: Helminthiases are alone from most common diseases in humans. According to rough estimates by experts from the World Health Organization, every fourth person on the planet is infected with one or another helminth. The scale of the incidence of helminthiases doctors equate to the spread of influenza and SARS.

Objective: To assess the dynamics of the incidence of helminthiases over the past five years; to carry out a comparative analysis of the etiological structure of parasitic morbidity in the Stavropol Territory.

Materials and methods: Analysis of the data of the Ministry of Health and the Department of Veterinary Medicine of the Stavropol Territory on the structure and dynamics of the main helminthiases in the Stavropol Territory for 2018–2022.

Results: In 2022, 2262 cases of parasitic diseases were registered in the Stavropol Territory, which is 1.7 times less than in 2021 (3809). The structure of parasitic diseases is dominated by human contact helminthiases – 72.4% of all registered cases, the share of geohelminthiases – 7.6%, biohelminthiases – 0.7%.

In the structure of helminthiases, enterobiasis accounts for 89.6%. In 2022, 1,640 cases were registered, the incidence rate was 58.67 per 100,000 populations, which is 1.7 times lower than in 2021. The proportion of the urban and rural population affected by enterobiasis is practically at the same level. Of the geohelminthiases in 2022, 173 cases of ascariasis were registered in the region. The incidence rate of ascariasis is 6.19 per 100 thousand of the population, which is 1.5 times lower than in 2021 (9.03). The proportion of children with ascariasis remains significant, and in 2022 it was 90.2%. In 2022, compared to 2021, the incidence of echinococcosis increased by 2 times; 14 cases were registered against 7.

Conclusion: Thus, analyzing the dynamics of the incidence of major helminthiases in the Stavropol Territory for 2018-2022, it should be noted:

1. Over the past 5 years, there has been a decrease in incidence rates helminthic infestations and especially in 2022, with the exception of cases of echinococcosis.

2. The reason for the persistence of a high level of morbidity in the population echinococcosis is a tense situation for this helminthiasis among farm animals and dogs – the main sources of invasion.

Keywords: Helminthiases, geohelminthiases, biohelminthiases, enterobiasis, echinococcosis.

MODERN FEATURES OF UTERINE LEIOMYOMA (UTERINE FIBROIDS)

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Background: Uterine leiomyomas (uterine fibroids or myomas) are the most common pelvic benign neoplasm in females. They are noncancerous monoclonal tumors arising from the smooth muscle cells and fibroblasts of the myometrium of the uterus. They arise in reproductive-age females and can be mostly asymptomatic, about 30% are symptomatic which includes; symptoms of abnormal uterine bleeding, anemia, back pain, urinary frequency, constipation, pelvic pain and pressure. Uterine fibroids may also have reproductive effects (eg, infertility, adverse pregnancy outcomes). Recent studies have estimated that the overall risk of fibroids in women over the age of 45 years is more than 60%, with incidence higher in blacks (80%) than in whites (70%). Uterine fibroids generally has negative effect on obstetrics results for expectant women and older women.

Objectives: To review the modern peculiarities of uterine fibroids, the features and characteristics of uterine Leiomyoma, plans for early diagnosis, treatment and prevention of complications during pregnancy and childbirth and also to highlight areas that requires additional research for better prognosis.

Methods and materials: The material and method involved the analysis and review of online data and research from multiple sources (PubMed, International Journal of Gynecology and Obstetrics, Google Scholar and MEDLINE databases) on uterine fibroids.

Results: There has been some significant findings that shows racial differences in the prevalence and development of uterine fibroids, with

more dominance among women from Africa, it also showed to the present in young women of fertile ages. Women in the risk group that affect the rate of development includes; Nulliparious women, women with arterial hypertension, obese women, women with a burdened family history, older women and women with late menopause.

Conclusion: The main aim of treatment and management of uterine fibroids is to reduce or stop abnormal uterine bleeding, reducing size of the Leiomyoma and complete treatment of fibroids. For early diagnosis, periodic ultrasound scan for women of reproductive ages.

Various treatments strategies are available depending on the severity of the leiomyoma, if the uterine fibroid is asymptomatic without complication or affecting childbirth it can be left without any treatment, drug therapy involves anti-fibrinolytic agents, non-steroidal anti-inflammatory drugs (NSAIDs), progesterone drugs, hormonal contraceptives, progestin, aromataste inhibitors and gonadotrophin releasing hormone agonists/antagonists with iron supplements for blood loss, minimal invasive interventions that involves radiological procedures like uterine artery embolization, magnetic resonance guided focused radio frequency ablation, surgical procedures includes; myomectomies, hysterectomies, laparoscopic radiofrequency volumetric thermal ablation, and endometrial ablation. Despite the recent advancement and effort to limit uterine damage as little as possible, hysterectomy still remains the treatment of choice for symptomatic and complicated uterine leiomyoma. For the prevention, lifestyle correction, proper diet, normal body mass index, getting enough vitamin D, early treatment of secondary etiology and maintaining hormonal balance.

Keywords: Uterine fibroids, leiomyoma, abnormal uterine bleeding, infertility.

CONGENITAL HEART DISEASE IN CHILDREN

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Background: Congenital heart disease (CHD) is the most common birth defect, affecting 8 to 10 per 1000 newborns in the United States and 17.9 per 1000 newborns worldwide. Fortunately, the mortality rate for CHD has decreased by 34.5% globally between 1990 and 2017 largely due to rapid advances in diagnostic imaging, medications, catheter techniques, and surgical interventions. Recent estimates suggest about 2.4 million adults in the United States and 12 million adults globally are survivors of CHD, 1.2 children with CHD. The pediatric primary care provider and pediatric cardiologist collaborate to identify CHD, monitor for symptoms, counsel

about necessary interventions, and ultimately provide optimal transitions to adult. These children who often have multiple comorbidities receive the best care through a team-based approach coordinated by the primary care physician, establishing a medical home.

Objective: To review the role of the primary care physician in detecting fetuses, infants, and children with possible CHD and discuss common primary care issues arising for patients with CHD, including growth and development, mental illness, dental care, and the transition to adult primary care.

Materials and methods: The material and method for the study was retrospective review of data on numerous medical platforms that included National Library of Medicine (PubMed), Children's Hospital of Philadelphia.

Results: The proportions of all live born infants with congenital anomalies surviving to the end of the first week, and first and fifth year were 94%, 89%, and 88%, respectively. Survival to age 5, the end point of follow up was significantly poorer for infants with chromosomal anomalies (48%) compared to neural tube defects (72%), respiratory system anomalies (74%), congenital heart disease (75%), nervous system anomalies (77%), and Down's syndrome (84%).

Conclusion: Congenital heart problems range from simple to complex. Some heart problems can be watched by your child's cardiologist and managed with medicines, while others will require heart surgery or cardiac catheterization sometimes as soon as in the first few hours after birth. A child may even "grow out" of some of the simpler heart problems, such as patent ductus arteriosus (PDA) or atrial septal defect (ASD). These conditions may simply resolve on their own as the child grows. Other children will have more complex forms of congenital heart disease, or a combination of different types, and require several operations or catheter interventions and ongoing care throughout their lives.

Keywords: Congenital heart disease, children, atrial septal defect, patent ductus arteriosus.

ANEMIA SYNDROME IN PATIENTS WITH CHRONIC HEART FAILURE

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Background: Anemic syndrome in patients with chronic heart failure (CHF) is an urgent problem of modern cardiology, as anemia has been established as a risk factor for poor prognosis in patients with coronary artery disease with CHF. In patients with CHF, anemia is more common than in the general population, and its prevalence ranges from 15 to 61%.

Objective: The aim of the work is to study the prevalence and risk factors for anemia in patients with chronic heart failure.

Material and methods: The study included 147 patients with CAD (50 women and 97 men, mean age 59±6.3 years). Patients with chronic renal failure, malignant neoplasms, peptic ulcer of the stomach and duodenum, acute myocardial infarction were excluded from the study. Inclusion criteria: patients with CHF against the background of stable angina pectoris FCII-III. All patients underwent the following studies: markers of myocardial necrosis, coagulogram, lipidogram, electrocardiography, plain radiography of the chest organs, coronary angiography. For statistical processing of the material, a computer program for statistical analysis "BioStat" was used.

Results: The contingent of the examined patients included 147 patients with CHF against the background of stable exertional angina FCII-III. The average value of hemoglobin (Hb) in the examined patients was 120.5±13.8 g/l. Anemia syndrome was detected in 43 patients (29.2%). 32 patients (75%) were diagnosed with mild anemia (Hb 90-119 g/l), 11 patients (25%) had moderate anemia (Hb 70-89 g/l). Significantly more often anemia was detected in women – in 36% of cases, in men anemia was detected in 25.7% of cases ($p<0.05$). All patients with anemic syndrome had concomitant arterial hypertension (AH); of these, grade I hypertension was observed in 17% of patients, grade II hypertension in 70% of cases, grade III hypertension in 13% of patients. In patients older than 60 years, anemia was significantly more common ($p<0.05$). IHD patients with FC III CHF had significantly lower hemoglobin values in comparison with patients with FC II CHF.

Conclusion: Anemic syndrome often accompanies CHF, prevails in females (36%) and in persons over 60 years of age (67.4%). The main risk factors for anemia in CHF are female gender, advanced age, and diabetes mellitus.

Keywords: Anemia, heart failure, diabetes mellitus, ischemic heart disease, coronary arterial disease.

CALCULATION OF DEFORMATIONS AND EVALUATION OF STATIC STRENGTH OF STRUCTURAL ELEMENTS OF IMPLANT SYSTEMS ON THE EXAMPLE OF DENTAL IMPLANTS LIKO 4x10 OF DIFFERENT DESIGN

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Background: The creation of effective, reliable, safe, technologically advanced and competitive products is the main task of medical device

engineering. The most important requirement to modern medical devices is to guarantee patients' safety during their lifetime. Today the use of modern computer-aided engineering analysis packages is the most effective calculation method for evaluating the strength and reliability of unique medical devices that can lead to serious consequences if their operation is disturbed. One of the most suitable and efficient systems for automated engineering calculations (CAE-system) is the ANSYS software.

Objective: Is the comparative assessment of the elastic and elastoplastic deformation of 4x10 dental implants of different designs on the abutment-pin and screw-body interface, using the computer simulation of the stress-strain state.

Methods and materials: Two kinds of dental implants were chosen for this study: a Liko-M 4x10 implant with the cylindrical body shape and a Liko-M DG 4x10 implant with a tapered body shape. The contact between the abutment and screw as well as the implant body and screw are frictional. The pre-tensioning of the screw from the initial tightening was 400 N. The load was applied to the cylindrical surface of the abutment at a percentage of its height.

Results: Elastic and elastic-plastic calculations of the stress-strain state of Liko-M 4x10 and Liko-M DG 4x10 implants were performed. Besides the results of the main calculations of the stress-strain state of the implants Liko-M 4x10 and Liko-M DG 4x10, necessary to assess their static strength, we have also calculated the strength coefficients of implant bodies. Comparative analysis of the static strength of the Liko-M 4x10 and Liko-M DG 4x10 implants provides conclusions, which are significant for practical application of the implants.

Conclusions: A comparative analysis of the static strength of the Lico-M 4x10 and Lico-M DH 4x10 implant grades led to the following conclusions:

- the loading process of the implant is a two-stage process: the first stage is the pre-tightening of the screw and the second stage is the application of load;
- taking into consideration the high level of loading of the considered implant parts, reduction of the screw pre-tightening can be considered as the way to increase their static durability;
- in comparison of two implant systems according to physico-mechanical properties of their components and the static durability analysis, preference in clinical use is given to the Lico-M DG 4x10 implants due to the peculiarities of their bodies design, lesser screw tightening force application, lower Mises stress values in the screw, almost 20% lower, and higher safety factor, which is confirmed by quantitative data.

Keywords: Strain calculation, stress-strain state, dental implants, static strength.

GENITAL HERPES IN OBSTETRICS AND GYNECOLOGY, THE PROBLEM AND SOLUTIONS

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Background: Herpes Simplex virus infection is one of the most common sexually transmitted infections among women of the reproductive age. It is estimated to affect about 2-3% of pregnant women that makes the problem of intrauterine vertical transmission to the fetus and infection of newborns relevant in the work of an obstetrician-gynecologist.

Objective: To analyze the course of pregnancy of patients with genital herpes and childbirth of children with congenital herpes to identify risk factors for fetal infection. Search for adequate etiotropic antiviral therapy regimens aimed at reducing the frequency of relapses in genital herpes.

Methods and materials: 40 case histories and outpatient charts of pregnant women with a diagnosis of Genital herpes were analyzed.

We analyzed 40 medical histories of pregnant women with a diagnosis of "Genital herpes" and with complaints of itching, burning, pain in the inguinal region, their delivery and fetuses, as well as features of the course of early neonatal adaptation period in newborns.

All the surveyed were divided into 3 groups. Pregnant women of group I (20%) received a complex of basic therapy. Pregnant women of group II (45%) received therapy with valacyclovir (Valvir) at a dose of 500 mg 2 times a day for 5 days. Group III patients (35%) took the acyclovir 200 mg 5 times a day for 5 days.

Conclusions: 1) In the course of the study of specific antiviral drugs acyclovir and valacyclovir (Valvir) in the treatment of recurrent herpes infection, it was found that both medicines equally effectively accelerate the resolution of herpes episodes. After 5 days, the absence of vesicular elements was detected in 35.3% of group II patients and in 30.3% of group III patients. The undoubted advantage of valacyclovir (Valvir) is a smaller multiplicity of its use.

2) In the anamnesis of pregnant women with herpes virus infection who received basic therapy, children infection (chickenpox in 65%) and intercurrent infections (influenza in 80%, ARVI in 45%, tonsillitis in 29%) prevail, as well as extragenital diseases that determine the risk of infectious and inflammatory complications (lung diseases in 13%, kidneys diseases and urinary tract diseases in 29%), which is an indirect evidence of the lack of factors of nonspecific body resistance.

3) The absence of structural changes in the central nervous system in newborns whose mothers underwent immunocorrection with acyclovir and valacyclovir (Valvir), as well as the absence of morphological signs of hematogenic infection in the afterbirth from newborns of this group allows us to conclude that these drugs fully manifest themselves as an antiviral drug.

Results and discussion: The review describes the features of the clinical course of genital herpes, its diagnosis, and complications. Various treatment regimens are presented. The analysis of medical histories and outpatient records, as well as the evaluation of the effectiveness of etiotropic therapy with various drugs is performed.

Keywords: Herpes virus, fetal malformations, genital herpes, pregnancy, valacyclovir.

STUDY OF CLINICAL MANIFESTATIONS AND PREVALENCE OF DENTOALVEOLAR ANOMALIES AND DEFORMITIES IN CHILDREN

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Background: Anomalies and deformities of individual teeth and groups of teeth are a serious problem in orthodontic treatment. When rehabilitating such patients the variety of abnormal positions of one or more teeth causes difficulties in the choice of treatment tactics. The lack of space in the dentition when individual teeth are misaligned requires the orthodontist to increase the size of the jaws or reduce the length of the dentition by extracting individual teeth.

Objective: To study the clinical manifestations and prevalence of dentoalveolar anomalies and deformities in children.

Methods and materials: The study was conducted at the Department of Pediatric Dentistry of StSMU. We analyzed 172 medical records of patients with anomalies and deformities of individual teeth in the orthodontic department at children's dental polyclinic. Among the patients who were and are being treated for individual dental anomalies and deformities there were 97 boys 56% and 75 girls 44%. The mean age was from 4 to 18 years. In the medical records of patients the anomalies of individual teeth and dental rows were noted in 172 children.

Results: Analysis of 172 medical records of patients aged from 4 to 18 years with anomalies and deformities of individual teeth there was determined that there were 97 boys (56%) and 75 girls (44%) regarding treatment of individual dental anomalies and deformities. Anomalies of individual

teeth and dentition were detected in 172 patients. Anomalies of the size and shape of the dental arches were in 93 (54.07%). Anomalies of individual teeth were less common, in 79 (45.93%). Among children with a violation of the number of teeth, adentia-partial or complete adentia was more common in 4 patients 2.33%, supercomplex teeth were less common – only 1.16%. Anomalies in the size and shape of the teeth occurred in 9 patients, which amounted to 5.23%. Anomalies in the position of individual teeth were most common, in 64 patients, which amounted to 37.21% of all the charts studied. Of these, palatal-tongue eruption and supraocclusion had similar rates 5.81%, and tooth transposition 0.58% and fractures between teeth 1.16% were the least common. Among children with abnormalities in the size and shape of the dentition, narrowed dentition was more common in 56 patients (32.56%), and triangular dentition 2.33% and asymmetrical dentition 3.49% were less common.

Conclusion: In the study of clinical manifestations of dentoalveolar anomalies and deformities in children and adolescents, it was determined that anomalies of the size and shape of dental arches were most common, which amounted to 54.1%, less common there were anomalies of individual teeth 45.9%.Among the anomalies of the size and shape of the dental arches, narrowed dentition occurred most frequently in 56 patients 32.56%, less frequently were triangular 2.33% and asymmetrical dentition (3.49%). Among anomalies of individual teeth, adentia-partial or full adentia was more common in 2.33%, palatal-tongue eruption, supraocclusion in 5.81%; overdentures, transposition of teeth and trems between teeth were less common 0.58%.

Keywords: Dentoalveolar anomalies, dental deformities, pediatric dentistry, orthodontist.

THE STATE OF DENTAL HEALTH OF STUDENTS OF STAVROPOL STATE MEDICAL UNIVERSITY

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Background: One of the urgent tasks of dentistry is to study the state of dental health of the population, including students. Dental diseases can and do have a negative impact on the body of people of any age. At the young age of 18 to 30, a variety of diseases, including dental diseases, can arise and become chronic. This occurs due to the change of place of residence for the period of study activities, geographical and climatic characteristics

of residence, chronic lack of sleep, numerous stresses due to high academic loads, irregular and irrational nutrition, the emergence of bad habits, lack of motivation for oral care.

Objective: to evaluate the state of dental health of 4th year students, to identify the data of self-analysis in students about the state of dental health for motivation to limit the consumption of sweets and proper oral hygiene.

Materials and methods: Research was conducted on the basis of the Chair of Organization of Stomatological Care, Management and Prevention of Dental Diseases of StSMU by interrogation and questionnaire study of 29 students of fourth year of the Dentistry faculty (17 girls – 59% and 12 boys – 41%) at the age of 20–23 years. A questionnaire to clarify the dental status of students was developed for the implementation of the study.

Results and discussion: The study showed that the main problem of oral cavity is dental caries and the most problematic in terms of caries lesion – the molars of the lower jaw 36, 37, 46, 47, 48, the upper jaw 16, 18, 21, 26, 27, 26 filled teeth due to caries complications – in frontal (10), chewing (61), extracted (19), not erupted (18 – 17 wisdom teeth and 1 molar of lower jaw). Only 41.4% perform professional oral hygiene regularly. And only three respondents have healthy teeth.

Conclusions: The conducted research showed that the dental health of students is generally satisfactory. They mostly go to the dentist when a problem arises, and for the purpose of observation, consultation and prevention rarely. A significant proportion of respondents (78.5%) believe that oral health and quality of life are interrelated. The results of the survey show that health education among the population, including students, remains a pressing problem.

Keywords: Survey, oral cavity, analysis, oral hygiene.

MITOCHONDRIAL DYSFUNCTION AND OXIDATIVE STRESS IN METABOLIC DISORDERS, MITOCHONDRIA BASED THERAPEUTIC STRATEGIES

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Background: The present report reviews the role of mitochondrial dysfunction in the oxidative stress, which can be one of the most serious and crucial reasons in genesis of a great number of metabolic disorders and diseases. The article analyzes the significance of the mitochondrial oxidative stress in pathogenesis of many difficult to treat diseases and the possible pharmacologic strategies to target this type of dysfunction.

Objective: To assess the importance of the mitochondrial dysfunction and the oxidative stress in the pathogenesis of some diseases and to suggest some therapeutic strategies based on the targeting mitochondrial dysfunction.

Methods and materials: To find out the efficiency of mitochondria targeted antioxidants against metabolic disorders. The commonly used vitamins (vitamin E and C) and other chemical compounds with antioxidant properties such as coenzyme Q, a-lipoic acid, N- acetylcysteine (NAC) have been used to reduce the excess generation of reactive oxygen species in various metabolic conditions.

Results: We found out that the antioxidant compounds incorporating ubiquinone (MitoQ) or vitamin E (MitoVit E) specifically targeted to mitochondria are efficient in the struggle with mitochondrial dysfunctions.

Conclusion: Mitochondria are the cytoplasmic organelles responsible for cell metabolism and cell death. The core function of mitochondria is to 'energize' adenosine triphosphate (ATP) to the cells by metabolizing nutrients and responsible for cellular processes ranging from energy metabolism, generation of reactive oxygen species and Ca2 + homeostasis, cell survival and death. Mitochondrial structural and functional changes are reported to involve in aging, cancer, metabolic syndromes, including stroke, ischemia, pre-diabetes, diabetes, obesity, hypertension, dyslipidemia, heart disease, alcohol injury, and neurodegenerative diseases. Recent researchers revealed that mitochondrial abnormalities, including impaired mitochondrial dynamics, defects in mitochondrial biogenesis, mitochondrial dysfunction, and oxidative stress are primarily involved in metabolic syndromes. The research also revealed that maintaining mitochondrial dynamics (fission-fusion balance) and mitochondrial function are necessary to treat patients with metabolic syndromes. To reduce and/or delay the progression of disease in metabolic syndromes, many therapeutic approaches are useful, including – lifestyle intervention (healthy diet and regular exercises), pharmaceutical strategies, and treating patients with mitochondrial-targeted molecules.

Keywords: Metabolic syndrome, mitochondria, oxidative stress, reactive oxygen species, mitochondria-targeted antioxidants.

HYPOPLASIA SYNDROME OF THE LEFT HEART

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Background: Hypoplasia syndrome of the left heart is a group of morphologically similar pathologies of unknown etiology in the structure of

the heart and blood vessels directly related to it. This is a serious disease that can be stopped only by very complex operational measures.

Objective: To study a specific clinical case of hypoplasia syndrome of the left heart, to describe anatomical changes in this pathology.

Methods and materials: In the course of this work, the medical history of patient R., born with hypoplasia syndrome of the left heart, was studied. Pathological changes detected during diagnosis were described, the features of surgical intervention, clinical manifestations of the disease were announced, and statistics on this syndrome were studied.

Results: Hypoplasia syndrome of the left heart is a severe pathology associated with atresia of the aortic mouth, atresia or mitral valve stenosis, hypoplasia of the left ventricle, single atrium, and dilation of the right ventricular cavity. The diagnosis in the prenatal period is made on the basis of fetal Echo CG, in the neonatal period it was based on obvious clinical manifestations, chest radiography, probing of the heart cavity. A number of complex surgical interventions are performed to treat this syndrome.

Conclusions: To date hypoplasia syndrome of the left heart remains the most serious disease, in which 90% of patients die in the first month of life, and the mortality rate during surgical interventions is 20%. Nevertheless, in recent years, effective ways of relieving this pathology have been created and improved; in which catastrophic consequences for the child can be avoided and in 5 years after the complete correction of the defect 70% of children remain alive.

Keywords: Left heart, hypoplasia, ductus arteriosus, aortic underdevelopment, valve atresia.

LABORATORY-BASED X-RAY NANO CT FOR BIOLOGICAL IMAGING

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Background: In recent years, the field of micro-CT imaging has evolved, striving for higher resolutions below the micrometer range. At synchrotron facilities, the high brilliance of the radiation already allows for resolutions in the nanometer range, while laboratory-based setups have used different approaches to resolve structures smaller than one micrometer. Another technique is based on the combination of mere geometrical magnification and an X-ray source featuring small X-ray focal spots. Until recently, this approach was limited to a maximum resolution of about 400 nm. Despite the lower resolving power, setups using solely geometrical

magnification have proven themselves valuable since they allow larger field of views (FOVs), shorter acquisition times and work with broad energy spectra. We present an innovative desktop setup, which is based on geometrical magnification and consists of a Nano focus X-ray source and a photon-counting detector. The setup achieves routinely resolutions down to 100 nm. This allows non-destructive imaging of inner structures in 3D with very high resolution.

Objective: To explore the potential of our Nano CT setup for the field of biology, we imaged a Zebra fish embryo 48 hours post fertilization.

Methods and materials: For this study, we measured a 2 mm long and 400-µm thick embryo of a Zebra fish 48 hours post fertilization. Prior to analyses, the formalin-fixed sample was stained with phosphotungstic acid and mounted in agarose. 18 datasets were acquired and subsequently combined vertically to the presented volume data. Each dataset of 1599 projections were measured over 360° at an exposure time of the first with an effective voxel size of 800 nm. This results in a total acquisition time of 20 hours. The source was operated at a peak voltage of 60 kV. The sample was reconstructed using the filtered back projection algorithm.

Results: The new setup consists of a Nano-focus X-ray source, an overhead rotation stage and a photon-counting detector. The Nano-focus X-ray tube (Excillum AB, Sweden) provides full control of the spot size. Advanced electron optics in combination with a thin tungsten transmission target enables the source to reach focal spots with FWHM values down to 200 nm in its current state. The X-ray camera is a PILATUS 300K-W detector with a 1.0 mm thick silicon sensor with an image area of 1475 x 195 square pixels with a side length of 172 µm. It is operated in single-photon counting mode, which allows signal acquisition without readout or dark current noise. Thereby, it ensures good image quality even with low X-ray flux. The FOV is specified as 1400 x voxel size in horizontal direction and 190 x voxel size in the vertical direction. The FOV can be extended vertically by combining several CT scans.

Conclusion: The obtained Nano CT data were then compared with SEM data obtained from a 4-day old Zebra fish embryo with an approximate length of 1 cm. The Nano CT data depicts similar surface features as the SEM data. Furthermore, the Nano CT data set provides information about the inner structures of the sample. Especially throughout the head region, various features are visible. Thus, it is possible to track the anatomical components within a biological sample in 3D, which makes it possible to obtain hitherto unknown information about the relationships and functioning of mechanisms within the sample.

Keywords: Nano CT, Nano Focus.

CORRELATION OF COPPER AND ZINC IN SPONTANEOUS ABORTION

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Background: The optimum concentrations of trace metals are essential for favorable pregnancy and pregnancy outcome. Such a pregnancy outcome focused here is spontaneous abortion (SAb). SAb, or miscarriage, is a clinically acknowledged pregnancy loss before the 20th week of gestation. The World Health Organization defines SAb as expulsion or withdrawal of an embryo or fetus weighing 500 g or less, whereas recurrent pregnancy loss is generally defined as 3 consecutive pregnancy losses prior to 20 weeks from the last menstrual period. The decline in vital micronutrients such as Zn, Cu and vitamin E may be associated with recurrent SAb. Both Zn and Cu are essentials to the body but Cu to Zn ratio is clinically more important as compared to the concentration of either element alone. Recently it is reported that trace elements are closely linked with fetal growth and development throughout pregnancy and their shortage can lead to adverse pregnancy outcomes. It is also found that Zn and selenium levels were lowered in pregnant mothers supporting the idea of the need of Zn and selenium supplementation along with iron during pregnancy. Thus, the present study was conducted to understand the role of Zn and Cu with respect to SAb.

Objective: The present study was conducted to assess the role of two trace metals, zinc (Zn) and copper (Cu) in women with history of spontaneous abortion (SAb cases) in comparison to women without such history (controls).

Methods and materials: In this retrospective study, a total of 277 subjects were enrolled from the Obstetrics and Gynecology Department, Civil Hospital, Ahmedabad, India. Personal demographic information, medical history, reproductive history especially details of number of SAb, duration of last SAb, number of children, etc. were recorded using pre-designed and pre-tested proforma. Serum Zn and Cu levels were measured by an atomic absorption spectrophotometer.

Results and discussion: The data indicated that the serum level of Cu ($P < 0.01$) and Zn was lower in SAb cases as compared to controls. Correlation between the number of SAbs and trace metals levels showed a significant negative correlation between Cu and Cu/Zn and the number of SAbs. Cu/Zn was higher in controls and women having at least one child as compared cases and women without a child, respectively. Pregnant women

had higher levels of trace elements as compared to non-pregnant women at the time of enrollment.

Conclusion: The data revealed that trace metals such as Zn and Cu have a positive role in pregnancy outcome and optimum levels of Zn and Cu might be able to decline the chances of SAb occurrence in addition to other factors. The ratio of Cu/Zn has a positive role in reproductive outcomes.

Keywords: Copper, pregnancy outcome, spontaneous abortion, trace elements, zinc.

METABOLIC ASSOCIATED FATTY LIVER DISEASE

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Background: Metabolic associated fatty liver disease (MAFLD) is the leading global cause of liver disease and is fast becoming the most common indication for liver transplantation. The recent change in nomenclature to MAFLD refocuses the conceptualization of this disease entity to its metabolic underpinnings and may help to spur a paradigm shift in the approach to its management, including in the setting of liver transplantation. Patients with MAFLD have significant challenges in the pre- and post-transplant settings, largely due to the presence of medical comorbidities that include obesity, metabolic syndrome and cardiovascular risk factors. As the community prevalence of MAFLD increases concurrently with the obesity epidemic, donor liver steatosis is also a current and future concern. This review outlines current epidemiology, nomenclature, management issues and outcomes of liver transplantation in patients with MAFLD.

Objective: To outline the current epidemiology, nomenclature, management issues and outcomes of liver transplantation in patients with MAFLD.

Methods and materials: Patients of peak age group affected from 45-62 years old, suspected with MAFLD presenting significant challenges in the pre- and post-transplant settings, largely due to the presence of medical comorbidities that include obesity, metabolic syndrome and cardiovascular risk factors.

Results: Metabolic associated fatty liver disease (MAFLD), previously termed non-alcoholic fatty liver disease (NAFLD), has emerged as the most common cause of liver disease globally. With the expanding epidemic of obesity worldwide, MAFLD is becoming an increasingly burdensome condition, both clinically and economically. The global prevalence

of MAFLD was estimated at 25% in 2013, rising to 15% in 2005. Obesity and type 2 diabetes mellitus (T2DM) coexist in 51%-60% and up to 76% of individuals with MAFLD, respectively. The peak age group affected is 45-62, however it is also a disease of the older patient, with over 40% of people over the age of 60 years were affected.

Conclusion: MAFLD is likely to become the leading global indication for liver transplantation within the next decade. This changing epidemiology brings the challenges of managing ageing, comorbid patients on the waiting list, through the transplant period and in the long term. However, post-LT outcomes in MAFLD patients appear similar to non-MAFLD indications which imply that with good recipient selection, the outlook for MAFLD patients undergoing LT is optimistic. The rising prevalence of MAFLD has implication for both living and deceased donor livers, and balancing graft quality with organ demand will be an ongoing issue for transplant programs. As the conceptualization of MAFLD evolves, so will have the ability to better predict disease behavior and progression, to tailor treatment and to observe patterns of outcomes in liver transplantation across the patient spectrum and therefore address the multiple challenges posed by this disease.

Keywords: Fatty liver, metabolic associated fatty liver disease, non-alcoholic fatty liver disease, liver transplantation, cirrhosis, metabolic syndrome.

NANOCAPSULES FOR DRUG DELIVERY

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Background: Nanoparticles are small particles that can be used to deliver drugs to specific cells or tissues. They can be made from a variety of materials, including lipids, polymers, and metals. Nanoparticles can improve the bioavailability of drugs and reduce their toxicity.

Novel drug delivery systems can improve drug efficacy by increasing drug bioavailability and reducing toxicity. Novel drug delivery systems can target specific cells or tissues, which can reduce side effects and improve drug efficacy; can provide controlled drug release, which can improve drug efficacy and reduce toxicity; can improve patient compliance by reducing the frequency of drug administration.

One of the fastest growing fields of modern chemistry is the physical chemistry of carbon nanoclusters – fullerenes and their derivatives. Fullerene is a lipophilic molecule with a high electron-withdrawing activity that

can form a large number of exo- and endohedral derivatives with different properties and activities. The unique biological properties of fullerene are antioxidant, immunoactive, and photosensitizing which make it possible to recommend it for further study and use in medical practice, including as an additive to drugs to optimize therapy.

Objective: Firstly, to conduct a literature search on the physicochemical properties of light C60 and C70 fullerenes and compositions based on them under isothermal conditions. Secondly, to study the composition of fullerenes obtained on the basis of vegetable oil by ultrasonic dispersion.

Methods and materials: A mixture of fullerenes C60 and C70 was provided to us for researches which were provided by the staff of the Medical Faculty of the Ingush State University. The composition of fullerenes based on vegetable oil was obtained by ultrasonic dispersion in an ultrasonic camera (Elmasonic S10H) at a temperature of 50^0C at a frequency of 37 kHz in the range of 15 – 60 min.

Results: According to the results of a study on a stereo microscope (MSP-1, LOMO), an increase in the dispersion time leads to the effective destruction of clusters and the formation of stable microsuspensions with a particle size of up to 500 nm (nanoparticle size meter "Photocor compact Z").

Keywords: Nanoparticles, fullerenes C60 and C70, ultrasonic dispersion.

PREVALENCE OF PCOS IN YOUNG FEMALES AND HOW IT EFFECTS THEIR HEALTH

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Background: In recent years, there has been an increase in the prevalence of (PCOS) Polycystic Ovarian Syndrome, which parallel proceeds in with an increase in the frequency of type 2 diabetes mellitus, obesity, arterial hypertension and other components of the metabolic syndrome (MS) among young fertile age female. Today its cause of concern as one in five fertile age females is suffering the effects of PCOS and its sub-fertility.

Objective: The aim of the research was to study the treatment given by ayurveda which aims to make the balance (in hormonal system) and do some good diet and lifestyle changes which reduces the effect of the disease to great extent also helps to bring system back close to normal and also to conceive in their fertile period.

Methods and materials: Preparation of drugs – All medicines were prepared by 'Natural' Chemicals under supervision of the principle au-

thor. Clinical Study – In the present study, 52 patients of sub-fertility with PCOS were selected and these patients were subjected to detailed clinical examination and investigations specially FSH, LH levels, and its ratio, Testosterone, FBS, Lipid profile, LFT& USG.

Results: Due to Samprapti Vighatana Kriya of this Ayurveda treatment regimen the symptoms of Poly Cystic Ovarian Syndrome get reduced. The effect of therapy shows highly significant result on all above symptoms of Poly Cystic Ovarian Syndrome. When considering irregular menstruation most of the patients had 2 – 4 months' duration. At the end of the treatment irregularity showed only 25% of the patients. At the end of the treatment 57.5% of patients had normal duration of menstrual bleeding, 75% of patients were relieved from Dysmenorrhea and the majority of patients (70%) had average quantity of menstrual blood. When considering skin discoloration, 87.5% of patients were relieved from the symptom.

At the end of the treatment, the majority of patients (85%) had normal BMI levels. But when considering the symptom of excessive and increased body hair, there was no significant relief shown.

In case of subfertility with Poly Cystic Ovarian Syndrome, 85% of patients were successfully cured from Poly Cystic Ovarian Syndrome, while 75% of patients were conceived.

All these patients were followed for the period of one year. During that period uncured patients were treated continuously. After the four month of duration 90% were cured. The pregnant mothers were treated with Prajasthapana drugs during their ante-natal visits to the clinic. All of them delivered healthy babies. At the end of this follow up period 85% from the treated group were conceived.

Conclusion: In conclusion, infertility due to polycystic ovary syndrome can be successfully treated with the aforementioned Ayurvedic treatment regimen.

Keywords: PCOS, infertility, sub-fertility, ayurvedic regimes for PCOS with lifestyle changes.

ESOPHAGEAL RESECTION AND REMODELING

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Background: Esophageal resection and reconstruction is a complicated procedure that involves removing and replacement of a portion of the esophagus. This procedure is used to treat esophageal cancer or other conditions that affect the esophagus, such as severe reflux disease, Barrett's

esophagus. Remodeling is adaptation to compensate for the loss of tissue. This process can take several months to a year and involves changes in the structure and function of the esophagus.

Objective: The aim of esophageal resection and remodeling is to remove and replace a diseased or damaged portion of the esophagus with a reconstructed segment that can function properly.

Methods and materials: The materials used for this study were obtained from SRB's Manual of surgery and online data from scientific research data.

Results: Esophageal cancer is the eighth most common cancer worldwide, with approximately 6000000 new cases every year. Esophagectomy has been found to be the most reliable treatment for esophageal disorders and remodeling by using conduits of gastrointestinal system has shown positive results. Studies have found that life expectancy of patient have been increased with one-year survival rate of 84%, a three-year survival rate of 70%, and a five-year survival rate of 61%.

Conclusion: It is important to note that survival rates can vary depending on the patient's overall health, the stage of the disease, and the surgical technique used. Since prevention is better than cure, healthy lifestyle (devoid of addictions) and proper diet should be maintained.

Keywords: Esophagectomy, esophageal cancer, esophageal damage, esophageal remodeling.

INDEX EVALUATION OF PEREIMPLANT TISSUES

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Background: To date there are many different classifications of periodontal disease, covering many areas and more or less informative. Modern data require adjustments, as well as the use of new survey methods. At the same time, there are not so many classifications for diseases of the tissues surrounding the implant, they are not so broad and are rarely used in clinical practice.

Objective: To introduce a new clinical classification of peri-implant tissues.

Methods and materials: The analyze scientific literature (articles, case series, systematic reviews, meta-analyzes) for the period from 2000 to 2022 according to the state of the tissues surrounding the implant. Retrospective analysis of 2000 clinical cases on implantation.

The selection of scientific literature was carried out according to the database of medical publications PubMed and ResearhGate, Cohrane.

Results: Based on the literature and clinical data we propose our own classification of inflammatory diseases of the tissues surrounding the implant. The classification includes: Bleeding index, probing depth index; Peri-implant mucositis index; Peri-implant index. The condition of the peri-implant tissues is assessed for each existing implant. Each index is rated from 0 to 4, where 0 is the absence of signs of inflammation 4 is the maximum score of inflammation. In doubtful cases, the highest possible rating is given. The decision on the volume of interventions is made on the basis of the average score of 4 indices.

Conclusion: Objective assessment of the tissues surrounding the implant is an integral part of clinical work. The use of a single classification and evaluation criterion allows for the necessary therapy to be carried out in time, as well as to apply objective assessments in different clinical situations.

Keywords: probiotic, S. salivarius, antibacterial therapy, microbiocenosis.

DIAGNOSIS OF HIDDEN ARTERIAL HYPERTENSION IN YOUNG PEOPLE

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Background: Arterial hypertension/prehypertension (AH/PH) is admitted risk factor (RF) of cardio-vascular disease. However, isolated form of AH/PH in the aorta or hidden AH/PH are not detected by traditional method. And it is not yet known how it effects on restructuring of vascular wall.

Objective: Identification of the occurrence of brachial systolic blood pressure (SBP-b) and central systolic blood pressure (SBP-c) in the young people could contribute to their better management by the identification of hidden central arterial hypertension AH/PH and false hypertension AH/PH.

Methods and materials: We found 205 patients over 18 years of age, performed the determination of brachial and central blood pressure measurements allow us to identify four phenotypes: 1) normal SBP-b with high SBP-c, 2) high SBP-b with normal SBP-c, 3) both normal, 4) both high. We carried out study of parameters of SBP-c in comparison with SBP-b using diagnostic complex BPLab Vasotens (Peter Telegin, Russia). Then in carriers of hidden central AH/PH was studied arterial wall using VaSera-1500 device (Fucuda Densia, Japan), which allows to estimate car-

dio-ankle vascular index (CAVI). Data were processed using statistical software package Microsoft Excel 2018.

Results: We got a hidden central AH/PH (normal BP in the periphery and high BP in the aorta) – 18,4%, system AH/PH 44,1%, system normotension – 23,1%, false AH/PH – 14,1%. In persons with hidden AH/PH media indicator CAVI was 6,34±0,52, while in group with normotension figure was 5,14±0,46, that is 23,2% greater ($p < 0.05$).

Conclusion: Screening of RF among young people should be including assessment of CP. In the detection of hidden AH/PH is necessary to perform the determination of vascular stiffness to identify cases of vascular remodeling, despite the normal pressure on the shoulder. This approach will contribute to more effective formation groups of cardiovascular risk for subsequent inclusion carriers of hidden AH/PH in preventive angioprotective programs.

Keywords: hidden arterial hypertension, young people, central blood pressure.

SEPSIS IN BURNS PATIENTS MORE THAN 20% SURFACE INJURY

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Background: Sepsis is a serious medical condition that occurs when the body's response to infection causes inflammation throughout the body, leading to tissue damage, organ failure, and potentially death. Burns are another type of injury that can lead to sepsis if not properly treated. Antibiotics are a key component in the treatment of sepsis and burns, as they can help fight off the infection and prevent it from spreading. The specific antibiotics used for treatment will depend on the type of bacteria causing the infection, as well as the severity of the infection.

Objective: To get a proper diagnosis about sepsis using the Sepsis biomarkers.

Methods and materials: A comparison and choosing of initial management and priority treatment, choosing the most proper antibiotic and other type of therapy (infusion therapy, respiratory support, chemoprophylaxis).

Results: Without proper treatment, shock due to hypovolemia, renal failure, pulmonary edema, (ARDS), infections by gram-positive and gram-negative bacteria, toxic shock syndrome could happen. Most often, even after proper treatment and taking care of the sepsis case, most often these patients will get chronic sepsis.

Conclusion: Burns is one of the most serious emergency statuses that could lead to serious complications; one of them is what we had focused on that is sepsis, which can lead to complication that can reduce the quality of their life, without proper treatment.

Keywords: Burns, sepsis, infections, organ dysfunction, hypovolemia.

PRIMARY IMMUNODEFICIENCES STATE IN CHILDREN

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Background: Primary immunodeficiency states are a group of more than 200 hereditary disorders caused by genetic defects of one or another link of immunity. They are inherited conditions affecting the immune system. These include defects in T cells and B cells affecting cell-mediated and humoral immunity, functions of innate immunity [macrophage, neutrophil, and dendritic cell] or adaptive [B and T lymphocytes] immune system. PID is a disease that is diverse in the nature and severity of immune defects, clinical manifestations and molecular disorders. Depending on the type of severity, the age of onset can be from neonatal period to late childhood. Clinically, this group of disorders can involve any organ of an individual such as respiratory system, gastrointestinal system

Objective: to study the prevalence of PID states from neonatal period to late childhood.

Methods and materials: National Center for Biotechnology Information, WHO, Pedscases, Indian Pediatrics, African Journals online, Volgograd.medsi.ru, European Society for the Study of Immunodeficiencies, reviews on articles concerning primary immunodeficiency states in pediatrics.

Results: The reported prevalence of PIDS varies geographically, ranging from 2.95/100,000 in Russia, 5.9/100,000 in the United Kingdom, 0.81-30.5/100,000 in the Middle East and North Africa region, 126.8/100,000 in the United States. The most common defects in antibody production – 50-60% of cases, combined PID – 10-30%, phagocytosis defects –- 10-20%, complement defects – 1-6%. Most PIDS manifest in early childhood, although some forms of PIDS. Their main manifestations are frequent and severe infections, autoimmune diseases and predisposition to the development of malignant neoplasms. For an early diagnosis of PID, dermatologists often make an important contribution; this is because skin manifestations may be the first clinical presentation of PIDS.

Conclusion: Today even in developed countries with the most advanced healthcare systems, the majority of those living with PIDS remain undiagnosed. PIDS as a group are common and a detailed family history always gives important diagnostic clues. Also, CBC and serum immunoglobulin levels play an important role in diagnosis.

Keywords: PIDS, Cell mediated immunity, humoral immunity, skin manifestations, autoimmune diseases, malignant neoplasms, complement defects, immune defects.

GENOME SURGERY AS A BIOTECHNOLOGY APPROACH

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Background: Genome surgery is a cutting-edge biotechnological approach that aims to modify genetic material at the DNA level. This technique offers the potential for precise gene editing, with applications in medicine, agriculture, and environmental science.

Objective: To develop a reliable and efficient genome surgery technique using CRISPR-Cas9 technology, and to explore the potential applications of this technology in various fields.

Methods and materials: The materials and methods involved in this study included the design and synthesis of guide RNAs and Cas9 protein, transfection of the gene editing complex into cells, and validation of successful gene editing using PCR and sequencing.

Results and discussion: The results demonstrated that the genome surgery technique was highly efficient, with over 90% of the cells showing successful gene editing. The discussion focused on the potential applications of genome surgery in precision medicine, crop improvement, and environmental remediation. The ethical and social implications of genome surgery were also considered, emphasizing the need for responsible use and regulation of the technology.

Conclusion: Genome surgery is a promising biotechnological tool that offers precise gene editing and has the potential to revolutionize the field of genetics. With careful consideration of ethical and safety issues, genome surgery can be used to benefit society in various fields.

Keywords: Genome surgery, CRISPR-Cas9, gene editing, biotechnology, precision medicine, ethical considerations.

NEW BIOMARKERS FOR EARLY DETECTION/SCREENING FOR OVARIAN CANCER

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Background: Ovarian cancer is a group of diseases that originate in the ovaries or in the related areas of the fallopian tubes and the peritoneum. Ovarian cancer remains a commonly fatal gynaecological malignancy. The identification and validation of early detection biomarkers highly specific to ovarian cancer, which would permit the development of minimally invasive screening methods for detecting the early onset of the disease, are urgently needed. Current practices for early detection of ovarian cancer include transvaginal ultrasonography, biomarker analysis, or a combination of both. In this paper, we review recent research on novel and robust biomarkers for early detection of ovarian cancer and provide specific details on their contributions to tumorigenesis. Promising biomarkers for early detection of ovarian cancer include KLK6/7, GSTT1, PRSS8, FOLR1, ALDH1, and miRNAs.

Objective: to study different biomarkers used in the diagnosis of ovarian cancer.

Methods and materials: MEDLINE, EMBASE, the Web of Sciences, Scopus, and Clinical Trial. Gov, OVID, and the Cochrane Library are querying for all articles related to ovarian cancer recurrence and ovarian biomarkers. The selection criteria for this narrative review included randomized clinical trials, non-randomized controlled studies and review articles on the role of ovarian biomarkers in women with ovarian cancer recurrence.

Results and discussion: When ovarian cancer is limited to the ovaries (stage I), current surgery and chemotherapy can cure up to 90% of women. Spread to the pelvis (stage II), 5-year survival can exceed 70%. Spread to the abdominal cavity (stage III) and to liver parenchyma (stage IV), the cure rate slips to 20% or less. In the absence of an effective screening strategy, only 20% of ovarian cancers are diagnosed in their early stages (I–II).

Conclusion: Currently, biomarkers such as CA125 have been used to monitor response to treatment and detect recurrence. Indeed, up to date, the FDA has recently approved only the use of HE4 in OC follow-up together with CA-125, even if few studies are available to date about its use in this setting.

Keywords: KLK6/7, GSTT1, PRSS8, FOLR1, ALDH1, miRNAs, transvaginal ultrasonography, ovarian biomarkers, chemotherapy, minimally invasive, tumorigenesis, ovarian cancer.

SURGICAL REVASCULARIZATION OF THE MYOCARDIUM IN PATIENTS WITH CORONARY ARTERY DISEASE WITH MULTIVESSEL CORONARY ARTERY DISEASE

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Introduction: Surgical myocardial revascularization is a set of surgical operations that permits the restoration of the blood flow to the heart in case of ischemia in the muscles of the heart. Surgical myocardial revascularisation is looked forward to in cases where conservative therapies didn't give a positive outcome and the existing causes are not eliminated. Percutaneous Coronary Intervention (PCI) and Coronary Artery Bypass Grafting (CABG) are now used in the treatment and restoration of blood flow in ischemic heart disease, but the best and outstanding method for the multivessel coronary artery disease MVD patients is highly debated and controversial in our present-day context.

Objective: Analysis of results in revascularisation techniques in patients with coronary artery disease and multivessel coronary artery, with and without Diabetes mellitus.

Methods and materials: The study included 56 patient files from cardiology department No 1 of Stavropol Regional Clinical Hospital named after Semashko (13 patient files with Diabetes milletus Type II) with stable and unstable coronary artery disease and MVD. By March 2023, we retrieved articles from PubMed, Web of Science, EMBASE and Cochrane library databases.

Results: Patients with DM type II more often had a history of myocardial infarction, clinically more severe angina pectoris, hemodynamically significant damage to the brachiocephalic arteries and chronic renal failure. In general, the results of the examination indicated an objectively more severe clinical condition of patients with DM type II.

Conclusion: The most effective and reliable method of treating coronary artery disease is by means of Surgical revascularization of the coronary bed.

The two main methods of doing this surgical revascularization of the coronary patency are CABG and PCI, or stenting of the coronary arteries.

Keywords: ACS, MVD, DM type II, STEMI, coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI), or stenting of the coronary arteries.

PROSTHETICS OVER IMPLANTS AFTER RECONSTRUCTION OF TOTAL AND SUBTOTAL DEFECTS OF UPPER AND LOWER JAWS

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Background: Medical and social rehabilitation of patients with total jaw defects is a topical surgical problem for maxillofacial surgeons. Scar deformities, functional disorders of anatomical structures after resection present a complicated task for reconstructive surgery. It is not possible to achieve positive results without the utilization of digital technologies, both at the diagnostic stage and in the process of operative work.

Objective: To develop of existing and research of new methods of prosthetics over implants for patients with subtotal and total postresectional defects of both jaws (complete or partial absence of maxillary and mandibular bones' fragments); Popularization of "Digital Dentistry" techniques (CAD-CAM modeling and 3D printing).

Methods and materials: The review references examples of complex dental rehabilitation of patients with a detailed description of clinical and laboratorial manipulations, photographs and X-ray studies.

Results: An evident practical example affirms the high value and significant role of computer modeling in the most complex clinical cases and situations, which will make this method essential in the future. The presented technique made it possible to recover previous quality of life for patients, which indicates its high development to date.

Conclusion: Clinical examples referenced in the review affirm the effectiveness of the utilization of digital dentistry techniques, prosthetics over implants in maxillofacial surgical dentistry. In the future, these techniques will be improved by introducing new materials, optimizing the working process and increasing the accuracy of constructions using CAD-CAM technologies and 3D modeling.

Keywords: total jaw defects, subtotal jaw defects, resection prosthesis, stereolithographic template, digital dentistry.

COMPARATIVE ANALYSIS OF GYPSUM PROPERTIES

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Background: In the orthopedic dentist`s practice there is a large selection of materials and technologies for the manufacture of orthopedic structures, which requires packaging materials with certain properties. Gypsum is a useful case in the practice of an orthopedic dentist. The main problem at the stages of laboratory production of orthopedic structures is the ability of gypsum to expand and spread its estimated dimensional value. Its solution can be found in an experimental study in model conditions of various options with justification of abilities plaster to expand.

Objective: The purpose of this study is to compare different types of gypsum considering their expansion coefficient in model conditions of various technological options for casting models and to determine influence of duration and storage conditions on the properties of gypsum.

Methods and materials: The study was conducted at the department of orthopedic dentistry at the dental clinic of StSMU. We used gypsum produced in Voronezh "Celite": α-rock type 3, α-rock type 4 and medical plaster grade G-18, which were kneaded in accordance with the instructions for application. After kneading, the material was poured into a standard rubber mold. The linear expansion index was calculated by the formula:

$$\alpha = \frac{L_n - L0 * 100\%}{L0},$$

where L0 is the initial length of the sample (mm), Ln – is the length of the sample after solidification (mm). Samples were measured after hardening 4 times: 1 – immediately after hardening, 2 – after 2 hours, 3- 24h, 4- 48h.

Results: During the test, 5 models were made from each type of gypsum, as a result all measurements were reduced to the arithmetic mean. For gypsum type G-18, the average linear expansion in width was 0,36% ± 0,01-0,02; for gypsum type α-rock type 3, the average linear expansion in width was 0.21% ± 0.01-0.02; for gypsum type α-rock type – 0.18% ± 0.01-0.02. Expansion of type 4 gypsum, under the conditions of sealed packaging, is significant and significantly less than the expansion of gypsum types 3 and G-18.

As you know, gypsum is able to absorb moisture from the environment, while there is a change in its crystal lattice. After opening the package and improper storage of the material, gypsum absorbs moisture and expands more. As a result of the study, 1 model was taken from each type of gypsum: α-rock type 3, α-rock type 4 and G-18, and 1 model each from the same types of gypsum, but already damp. For the experiment we have cre-

ated unsuitable conditions for the storage of plaster models: temperature ≥ 2ºC and high humidity. Under these conditions, different types of gypsum led themselves differently.

As a result of the study, we made sure that the storage conditions affect the appearance and properties of models, which will subsequently affect the stage the manufacture of orthopedic structures and the entire treatment in general. Gypsum type G-18 changed its properties the most when storage conditions were violated: on the surface models appeared detachments of the material, cracks, changed color. Gypsum α-rock type 3 along with α-rock, type 4 has changed its properties less: the color has changed minimally and strength changed slightly.

Conclusion: The ability of gypsum to expand when set is very important property that must be taken into account in the manufacture of orthopedic structures. This study shows that high-strength gypsum and super-gypsum changes its physical properties much less than medical. Exactly therefore, in the manufacture of orthopedic structures, it is necessary to choose gypsum 3 and 4 classes. Expansion turns out to be a useful property of molding materials, since it helps compensate for the shrinkage of alginate impression materials (1.5%) and shrinkage during metal casting during its cooling (1.25–1.5% – thin-walled products, 2.0–2.3% – thick-walled products).

In case of improper storage of gypsum in a room with high humidity and low temperature, its properties change rapidly. From gypsum hemihydrate can turn into dihydrate and will be unusable. Time is changing setting, hardening and the percentage of linear expansion, which will subsequently affect the quality of the constructed structure. Gypsum must be stored packed in a paper bag at a temperature of +5C to +27C, preferably in a tightly closed container, transport at temperatures from -50C to +40C. Shelf life is 2 years. It is important to observe the storage conditions of finished plaster models. They should be kept in a dry, warm and well ventilated area.

Keywords: Gypsum expansion, plaster models.

EXTENDED 3D- IN THE DIAGNOSTIC PROTOCOL OF QUANTITATIVE ASSESSMENT OF THE CRANIOFACIAL COMPLEX OF PATIENTS WITH PATHOLOGICAL TYPES OF OCCLUSON IN THE SAGITTAL PLANE

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Background: At the moment, digital 3D technologies are taking the lead in prosthetic dentistry and orthodontics when creating diagnostic protocols and treatment plans.

Objective: To study the variability of the morphometric parameters of the craniofacial complex in patients with pathological symptoms of bite in the sagittal back.

Methods and materials: 52 adult patients (100%) with distal occlusion underwent cone-beam computed tomography of the elements of the craniofacial complex in the position of habitual occlusion, followed by 3D cephalometric analysis. Gnathic facial index (GFI) was calculated using the formula: GFI = (zy-A) + (zy-A):(zy-zy). GFI values from 1.69 to 1.81 were interpreted as mesognathia, above and below as dolichognathia and brachygnathia, respectively.

On CBCT reformats, the linear parameters of the dental arches were measured. The archwires, the longitudinal length of which varied from 114 to 118 mm, were classified as normodont, lower and higher, respectively, as microdont and macrodont.

On axial CBCT reformats, the value of the inter-incisal angle was calculated, the range from 124.7° to 144.39° was taken as the norm, and the value of the angle of convergence of the articular heads of the TMJ.

Results: Mesognathia was interpreted in 33 patients (63.47%), brachygnathia in 11 patients (21.15%), and dolichognathia in 8 patients (15.38%).

Normodont archwires were interpreted in 32 patients (61.33%), macrodont in 16 patients (30.67%) and microdont in 4 (8%) patients, respectively.

Interincisal angle values below 124.7° were interpreted as incisor retrusion in 21 patients (40.38%), values above 144.39° as protrusion in 31 patients (59.62%).

The angle of convergence of the articular heads of the right and left TMJ was diagnosed from 130° to 145° in 44 patients (84.62%), from 120° to 129° in 3 patients (5.76%), from 146° to 155° in 5 patients (9.62%).

Conclusion: The analysis of the obtained results of the morphometric parameters of the craniomandibular complex according to 3D cephalometry in patients with pathological types of occlusion in the sagittal plane shows their pronounced variability.

Keywords: Orthodontics, occlusion anomalies, diagnostics, cone-beam computed tomography, cephalometry, craniofacial complex.

CERVICAL CANCER ASSOCIATED WITH HUMAN PAPILLOMAVIRUS

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Background: From many types of human papillomavirus (HPV), more than 30 infect the genital tract. The association between certain oncogenic

(high-risk) strains of HPV and cervical cancer is well established. Based on their association with cervical cancer and precursor lesions, HPVs can also be divided to high-risk and low-risk HPV types. Low-risk HPV types include types 6, 11, 42, 43, and 44. High-risk HPV types include types 16, 18, 31, 33, 34, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, and 70. Early detection and treatment of precancerous lesions can prevent progression to cervical cancer. Identification of precancerous lesions has been primarily by cytological screening of cervical cells.

Objectives: Describing the epidemiology of human papillomavirus as a main cause of cervical cancer.

Methods and materials: The link between genital HPV infections and cervical cancer was firstly demonstrated in the early 1980s by Harold zur Hausen, a German virologist. Since then, the link between HPV and cervical squamous cell carcinoma has become well established. In 1996 the World Health Association together with the European Research Organization on Genital Infection and Neoplasia and the National Institutes of Health Consensus Conference on Cervical Cancer recognized HPV as an important cause of cervical cancer.

Epidemiologic studies clearly indicate that the risk of contracting genital HPV infection and cervical cancer is influenced by sexual activity. An individual is at greater risk of becoming infected with HPV if he or she has had multiple sexual partners at any time. Taking a patient 27 years old with bleeding from genital tract, BMI-24.8, menstrual cycle without features, gynecologic diseases denies, she got 1 time pregnant with abortion, married for one year. On March 2017, her cervical biopsy showed severe dysplasia due to HPV type 16. Her MRI showed squamous cell carcinoma G3, with tumor size 3.7*2.5*2.2, and stromal invasion 12 mm. On physical examination there was cervical cancer 1B1 tumor up to 4cm in diameter with stage T1b1 N0 M0. She insisted on the preservation of reproductive function so that she should undergo 3 courses of polychemotherapy (paclitaxel+cisplatin). On May 2017, her MRI after chemotherapy showed significant decrease on the size of tumor. On June 2017, vaginal assisted radical trachelectomy with pelvic lymphadenectomy occurred.

Results: Early detection of HPV prevents its development to cervical cancer.

Conclusion: HPV virus is the main cause of cervical cancer, early detection and treatment of precancerous lesions can prevent progression to cervical cancer. Identification of precancerous lesions has been primarily by cytologic screening of cervical cells.

Keywords: Human Papillomavirus, trachelectomy, lymphadenectomy, cervical cancer.

DISTRIBUTION OF SOIL TRANSMITTED HELMINTHIC INFECTIONS IN NIGERIA

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Background: Soil Transmitted Helminthic Infections (STH) caused by *Ascaris lumbricoides, Trichuris trichiura* and hook worms are widely distributed in sub-Saharan Africa, America, China and East Asia. Transmission of these parasites is predominant in areas with favorable climatic and environmental conditions, poor access to potable water supply, sanitation and hygiene resources and impoverished health care system. Recent estimates show that more than 5 billion people are at risk, and about a billion people or 24% of the world's population are currently infected. Aside that, about 267 million pre-schoolers (age 2–5 years) and 568 million school-aged children (age 5–14 years) who live in areas where these parasites are intensively transmitted are at risk. These children suffer clinical manifestations such as malnutrition, iron deficiency anemia and show impaired cognitive and physical development. However, in most endemic settings, there is an established morbidity control program targeted at school-aged children due to high worm burden as a result of their frequent contact with contaminated soils, and exposure to poor sanitation and unhygienic conditions. The World Health Organization (WHO) through this program recommends large-scale administration of albendazole, either once a year (annually) when the baseline prevalence of infections is between 20 and 50%, or twice a year (biannually) when the prevalence is above 50%.

Objective: To review the prevalence of STH infection in Nigeria. Give an assessment of the effectiveness of the program large-scale use of albendazole to control the incidence of STH in Nigeria.

Materials and methods: A search WHO statistical data and Nigeria Medical journals published on Research gates in the last few years was performed to find data on helminthes infections.

Results: Statistical data had indicated that 19 of the 20 regions were regularly contracting one or more kind of the three infections, with a total prevalence of 17.2%. Ascariasis was the most frequently observed parasitic infection in 28 communities with a prevalence of 13.6%, followed by hookworm infections with a prevalence of 4.6% while Trichuriasis was the least of the trio with a prevalence of 1.7%.

Conclusion: STH have not been completely eradicated from the system, we know that continual education of the general public on personal

and environmental hygiene, and provision of potable water as well as government strategic intervention through routine anthelminthic drug (albendazole) administration in affected regions and building of standard health care centers will help reduce the risk of infection.

Keywords: Soil transmitted Helminthic infections, large-scale administration of Albendazole.

ABNORMAL DEVELOPMENT OF MUSCLE APPARATUS IN THE HUMAN EYE: STRABISMUS

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Background: We all see the world differently: with different brightness, tones, colours, different colours; different angle of view of people; perception of colours, due to the features, can also be different. The vision of the world may differ in a peculiar way with the abnormal development of the muscular apparatus of the eye. Thus, the strabismus – a severe cosmetic defect associated with the peculiarities of the development of the muscles of the eye, which adversely affects the formation of character of the person. In addition, the strabismus may be accompanied or complicated by impairment of visual functions (amblyopia, lack of normal binocular vision, abnormal retinal correspondence and other), which limits the ability to work in many professions.

Objective: To study the frequency of occurrence of anomalies in the development of the muscular apparatus of the eye, leading to strabismus in the territory of the Russian Federation and in the Izobilnensky urban district.

Methods and materials: Data collection and analysis of disease stories in Russia and Izobilnensky, statistical analysis of interesting clinical cases, induction, observation, photography, interview. The study of literature on the problem of strabismus. Comparison of results obtained from the studies.

Results: Comparing and analyzing the data for Russia and a single district, we found that the Izobilnensky district does not differ in percentage ratios with the country. Approximately 9600 diseases are observed in 150-170 people, of which 50/50 are the sex ratio and the ratio based on type, which corresponds to the percentage Russian Federation (RF) data.

Conclusion: Strabismus is a common disease; it can lead to complications, and can proceed without any special difficulties. To treat or not to treat strabismus, how exactly to treat it, is a personal decision and chal-

lenge to every person who has this disease, but this can be influenced by professionals, doctors, which we are yet to become.

Keywords: Strabismus, amblyopia, muscular apparatus, binocular vision.

ANALYSIS OF ETHNOTERRITORIAL DIFFERENCES IN THE FINGER DERMATOGLYPHICS AND TEMPERAMENT TYPE OF STUDENTS IN MEDICAL UNIVERSITY

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Background: Marker of genetically features of a person is a papillary pattern. There is a relationship between dermatoglyphics and the character of a person, his temperament, mental manifestation of the properties of the nervous system which is necessary for adaptation to professional activities. One of the most difficult types of professions is medicine. Students from different regions of Russia and from other countries study at the Medical University.

Objective: To identify the ethnoterritorial features of papillary drawings and types of temperament of medical university students, representatives of Russia and India.

Methods and materials: The analysis of prints of skin patterns of both hands of 15 Russian and 15 Indian students was carried out. According to the method of A.V. Vlasov (2010) established the types of skin pattern, their ratio on different hands determines the type of temperament. The obtained data were subjected to mathematical processing.

Results: The obtained results showed that in students, representatives of Russia and India, there are differences in papillary patterns on the distal phalanges. In Indian students an extremely rare presence of arcs was revealed, against the background of the predominance of curls and loops. On the right hand there are 47% loops and curls, on the left 51% curls, and 43% loops. Russian students often have loops, 64% on the right hand, 59% on the left, curls and arcs are almost the same. Based on the methodology for determining the type of temperament according to dermatoglyphics, phlegmatic prevails among Russian students, foreigners mostly have sanguine type.

Conclusion: Despite the identified ethnoterritorial differences the students who participated in the study have strong types of the nervous system which is an important feature in their chosen profession.

Keywords: Dermatoglyphics, temperament type, ethnoterritorial differences.

PRINCIPLES OF SELECTION OF RATIONAL METHODS FOR THE TREATMENT OF NEOVASCULAR GLAUCOMA AT VARIOUS STAGES AND THE QUALITY OF TREATMENT OF THE FELLOW EYE

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Background: Neovascular glaucoma is one of the most sever forms of secondary glaucoma due to the sever general background in which it develops, also local changes in the form of newly formed vessels in the iris and the angle of the anterior chamber.The effectiveness of preventing the development of neovascular glaucoma is one of the important and complex problems in ophthalmology. Also continuity in the work of the outpatient and inpatient link determines the quality of life of a patient with neovascular glaucoma.

Objective: To evaluate the quality of treatment of neovascular glaucoma at various stages and the quality of treatment of the fellow eye.

Methods and materials: A retrospective analysis of 63 case histories and protocols of operations of patients with neovascular glaucoma was carried out according to the data of EMSC SSMU for 2020-2021. There were 25 men (40%), women 38 (60%), aged 56-82 years (mean age 65-70 years). Patients underwent a standard ophthalmological examination: visometry, perimetry, biomicroscopy, ophthalmoscopy, tonometry, gonioscopy. Treatment of neovascular glaucoma was carried out both conservatively and surgically. Treatment on the fellow eye: With visual acuity zero, 6 patients received treatment with prostaglandins 38% (24 patients) of patients with a diagnosis of primary open-angle glaucoma stage 3 – 4 with visual acuity zero, as well as 20% (13 patients) with NVG with visual acuity zero received treatment with prostaglandins. It is important to note that 4% of patients with concomitant arrhythmia, namely bradycardia, were treated with Timolol beta blockers. All patients with NVG underwent transscleral Laser cyclocoagulationas an organ-preserving and to reduce pain syndrome.

Results: The results of the postoperative period and data on visual acuity and intra ocular pressure were assessed in the early postoperative period. After 1 month and after 6 months: the state of visual acuity decrease in pain syndrome; decrease in IOP in all cases. Long-term results: after 12

months after surgery, the IOP level decreased to: 18-26 mm Hg in 26 patients (42%), 27 – 29 mm Hg in 37 patients (58%).

Conclusion: The reasons leading to treatment inefficiency should be recognized as follows: insufficient continuity in interdisciplinary work, incorrect treatment of patients with a newly diagnosed condition and the use of the same treatment regimens for fellow eyes with different stages of POAG (NVG), late diagnosis of the disease and factors of social and behavioral compliance.

Keywords: Glaucoma, neovascular, rubeosis, anterior chamber angle, intraocular pressure, visual acuity, optic disc, low vision, blindness.

CHANGES IN INTRAUTERINE MICROBIOTA AS A RISK FACTOR FOR UNSUCCESSFUL ECO-TRIES IN WOMEN WITH CHRONIC ENDOMETRITIS

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Background: At present, chronic endometritis is a common cause of reproductive failure, including unsuccessful IVF cycles.

Objective: To improve the reproductive prognosis in IVF in women with chronic endometritis.

Materials and methods: An analysis of 85 medical records of women of reproductive age with a history of unsuccessful IVF attempts in the period from 01.01.2022 to 30.12.2022 was carried out at the Stavropol CCMPC. The data were analyzed by the electronic program Google Tables.

Results: Chronic endometritis was associated with failure in 56.7% of the 85 patients enrolled in the IVF programme. Hysteroscopy, a biopsy, followed by bacteriological examination, revealed a reduced level of lactobacilli and a predominance of Gram-negative flora (Pseudomonas and others). The pathogenic effect of Gram-negative bacteria on the endometrium was based on their ability to synthesize lipopolysaccharide, which had an immunomodulatory effect. The latter is done through induction of TLR4 expression and an increase in cytokine levels that inhibit successful implantation. All patients received antibiotic therapy, taking into account the sensitivity of the pathogenic microflora. According to the results of follow-up examinations (hysteroscopy, biopsy, culture), the efficacy of treatment was 83.5%. The treatment conducted significantly improved the reproductive prognosis in IVF programmes.

Conclusion: The ability of gram-negative bacterial flora to cause immune imbalance in the endometrium and to disturb the implantation process dictates the need for timely antibiotic therapy. This approach will reduce the number of failed IVF attempts.

Keywords: Chronic endometritis, IVF, antibiotic therapy.

RELATIONSHIP OF CARDIOVASCULAR COMPLICATIONS WITH HEART REMODELING IN PATIENTS WITH RHEUMATIC DISEASES

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Objective: To study heart remodeling and its role in formation of atrial fibrillation, thromboembolism, chronic heart failure in patients with rheumatic malformations.

Methods and materials: 25 patients with chronic rheumatic heart disease aged from 18 to 69 years were examined. Inclusion criterion confirmed diagnosis of chronic rheumatic heart disease. Exclusion criteria: refusal to participate in the study; concomitant cardiovascular pathology (arterial hypertension, coronary heart disease, diabetes mellitus and others). Mitral valve lesion was noted in all patients, aortic valve – in 19. Tricuspid valve insufficiency was detected in 21 cases, and pulmonary artery valve insufficiency was detected in 2 cases. Mitral valve replacement was noted in 8 patients, tricuspid – in 2 and aortic – in 1 patient. Cardiac arrhythmias were detected in 68% of the patients with rheumatic defects. The structure of arrhythmias was dominated by chronic atrial fibrillation. Chronic heart failure of functional class III occurred in 76% of patients, II – in 20% and I – in 4%. An acute violation of cerebral circulation in the anamnesis was noted in 16 % of the examined. All patients underwent standard clinical and laboratory examination, echodopplercardiography, daily ECG monitoring. The obtained results were statistically processed.

Results: 2 groups of patients were formed, comparable in gender and age. Group 1 consisted of 19 people with atrial fibrillation and/or acute cerebrovascular accident in the anamnesis and chronic heart failure of the III functional class. Group 2 consisted of 6 patients without atrial fibrillation, a history of thromboembolism and functional class I-II heart failure. In group of patients with atrial fibrillation, history of acute cerebrovascular accident and functional class III heart failure, involvement of more heart valves in the pathological process were determined. In patients with rheumatic malformations with atrial fibrillation, thromboembolism and chronic

heart failure, the diagnostic value of the following echocardiographic parameters was determined – the size of the left atrium is more than 4.5 cm, the mass of the myocardium of the left ventricle is more than 250 g, and systolic pressure in the pulmonary artery is more than 40 mmHg ($p<0.05$).

Conclusion: Remodeling of the heart in rheumatic malformations complicated by atrial fibrillation, thromboembolism, functional class III heart failure (NYHA) determine the large size of the left atrium, mass of the left ventricular myocardium, size of the right ventricle, pressure in pulmonary artery. Combined damage to the mitral and aortic valves is associated with the development of cardiovascular complications in patients with rheumatic malformations.

Keywords: Concomitant cardiovascular pathology, arterial hypertension, coronary heart disease, diabetes mellitus.

PREVENTIVE IDENTIFICATION OF PREDICTORS OF IMPLANT REJECTION RISK THROUGH MATHEMATICAL MODELLING AND SURVIVAL ANALYSIS

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Background: The modern model of healthcare requires a paradigm shift in the thinking of healthcare managers, doctors and patients. A personalized approach, identification of possible causes of etiopathogenesis of diseases and, finally, prevention of any kind of pathologies are the components of successful and quality healthcare delivery in our country. Dentistry is a field in which 3P-medicine is an integral part of patient care. One of the important tasks of modern, digital dentistry is to find indicators to predict the development of dental implant complications.

Objective: To identify reliably predictors of early (up to 6 months) dental implant rejection by applying hierarchical Bayesian survival analysis models.

Methods and materials: Data collected retrospectively for patients who underwent dental implant placement between 2013 and 2022 were considered as an information base. The data were generated from multicentre surveys obtained from dental implant centers in Stavropol, Moscow and Penza. The total number of observations was 1472 cases.

Results: After collecting all necessary information through retrospective analysis, screening out incomplete and poor quality information, the

total database was 39 variables (factors) for 1472 observations (implants). Multivariate analysis resulted the following predictors of risk of early dental implant rejection: male gender, age at implantation, years, oral hygiene (Silnes-Low index), presence of osteoporosis, bone width, mm, anesthetic type (local), localized periodontitis, low festooned, thick gum biotype.

Conclusions: This study shows the feasibility of developing separate models for dental implant rejection in the early postoperative period (up to 6 months), as risk predictors different from those in the longer term are identified in this period. An adequate model (in terms of quality metrics) can serve to stratify risk prior to surgical intervention and thus form the basis of a decision support system that is patient specific.

Keywords: Preventive personalized medicine, clinical decision support system (CDSS), dental implant rejection, risk predictors, multivariate analysis.

EFFECT OF MELATONIN ON SUCCINATE DEHYDROGENASE ACTIVITY IN ALLOXAN-INDUCED DIABETIC RATS

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Background: One of the pathogenetic factors of the development of DM is hyperactivation of free radical oxidation. Melatonin, which has pronounced antioxidant properties, is able to prevent it. Succinate dehydrogenase plays a central role in energy conversion.

In our opinion, it would be interesting to study the effect of melatonin on succinate dehydrogenase activity in experimental diabetes mellitus.

Objective: To study the activity of succinate dehydrogenase when taking melatonin against the background of alloxan-induced diabetes mellitus.

Methods and materials: The studies were carried out on 30 male Wistar rats weighing 120-150 g. The animals were kept on a standard diet. The animals were divided into equivalent 3 groups. The first group was control animals that were injected with saline solution, the second group – animals with alloxan diabetes. To create an experimental model of diabetes mellitus, we injected a toxin (alloxan) at a dose of 150 mg/kg intraperitoneally. After 15 days, diabetes developed, which was confirmed by hyperglycemia. The third group on the background of alloxan diabetes received melatonin at a dose of 1 mg / kg also intraperitoneally. The dosage was chosen based on previous experimental data conducted in our laboratory.

Results: Intraperitoneal administration of alloxan and melatonin led to a change in the activity of SDH in both the liver and pancreas. The activity

of the enzyme increased in liver homogenate by 1.9 times in comparison with the control group. In the pancreatic tissue, the activity of the enzyme decreased by half.

Conclusion: Under the influence of alloxan, reciprocal relationships arise in the activity of SDH in the liver and pancreas. Alloxan causes a sharp increase in the activity of SDH in the liver and a decrease in the pancreas.

Keywords: Diabetes mellitus, succinate dehydrogenase (SDH), melatonin.

A RESEARCH ON NUTRITION: IRON – DEFICIENCY AND TOXICITY

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Background: Iron is a mineral that the body needs for growth and development. Our body uses iron to make haemoglobin, which is a protein in red blood cells that carries oxygen from the lungs to all parts of our body, and myoglobin, a protein that provides oxygen to muscles. When iron intake is low, stores can become depleted, decreasing haemoglobin levels. Iron Metabolism in humans is the set of chemical reactions that maintain human homeostasis of iron at the systemic and cellular level. Iron is both necessary to the body and potentially toxic. Understanding iron metabolism is also important for understanding diseases of iron overload, and iron deficiency such as anaemia.

Objective: To study the impacts of iron deficiency and toxicity in human beings.

Methods and materials: A survey was conducted on 40 people from different nationalities, different age group from 18 to 62 (mostly 19 to 21) and different genders. All participants were requested to fill a survey list comprising of 12 questions protagonizing around their dietary intake and quality of cognitive intellect.

Result: Among the 40 people, 17 people rarely had trouble in concentrating and having normal sensory perception and intelligence, 16 people had no trouble at all and 7 people have always had troubles. Out of the 35 non-vegetarians 26 people consume less than or equal to 3 meat servings per week and 9 people took more than 3 meat servings. 24 people consumed citrus fruits and 10 people do not consume at all. Out of the 40 people 5 of them took iron supplement tablets. 15 people among the 40 showed symptoms of anaemia and 15 people consume beverages more

than 2 times a day. Among the 23 females 6 showed irregular menstrual cycle and among these 6, 4 of them had incidents of more than one menstruation per month.

Conclusion: This study confirmed people who included essential amount of vitamin C, whole grains, greens and red meat in their diet showed no signs of anemia and people who consume more than the required amount showed troubles in concentrating and females who included proper iron in their diet has less or no trouble in their monthly cycle.

Keywords: Anaemia, myoglobin, homeostasis, toxicity, cognitive intellect.

CLINICAL AND PATHOGENETIC ROLE OF ANTITHROMBIN III AND PLASMINOGEN IN RHEUMATOID ARTHRITIS

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Background: Activation of coagulation hemostasis is played an important role in pathogenesis of rheumatoid arthritis. Component of coagulation system – thrombin influences on inflammatory cascade, destruction of joints and tissue remodeling. The role of antithrombin III and plasminogen are not practically investigated in rheumatoid arthritis.

Objective: To investigate clinical and pathogenetic role of activity of antithrombin III and plasminogen in plasma in patients with rheumatoid arthritis.

Materials and methods: A total of 65 patients (7 men, 58 women) at age 21-62 years with rheumatoid arthritis were examined. The control group formed 30 healthy volunteers comparable on sex and age. Assessment of activity of antithrombin III and plasminogen was carried out before and during treatment by means of kit «Reahrom-At III» and kit «Reahrom-Plasminogen III» (SPU "Renam", Russia). Statistical analysis included the one-factorial dispersive analysis, the Newman-Kejlsa's criteria, and correlation analysis and pair Student t-test.

Results: Activity of antithrombin III in blood was decreased and activity of plasminogen in blood was increased in patients with rheumatoid arthritis. The sex of patients and presence of rheumatoid factors in blood were not influenced on activity of antithrombin III and plasminogen in plasma. Activity of antithrombin III in plasma of patients with rheumatoid arthritis was associated with increasing of severity of clinical stage ($p<0,05$), activity of disease according to index DAS28 ($p<0,05$), number of painful and swelled joints ($p<0,05$) and level of ESR ($p<0,05$).

Activity of plasminogen in plasma of patients with rheumatoid arthritis was associated with increasing of activity of disease according to index DAS28 ($p<0,05$) and number of swelled joints ($p<0,05$). Reduction of activity of antithrombin III and elevation of activity of plasminogen was more pronounced in group of patients with high degree of radiographic stage and functional class of disease. Activity of antithrombin III was negatively correlated with activity of disease according to index DAS28 ($p<0,05$), number of painful and swelled joints ($p<0,05$), general state of health of patient according to visually-analogue scale ($p<0,05$) and radiographic stage of disease ($p<0,05$). Activity of plasminogen was positively correlated with number of swelled joints ($p<0,05$), radiographic stage of disease ($p<0,05$) and functional class ($p<0,05$). Plasma activity of antithrombin III was increased and activity of plasminogen was decreased during therapy of rheumatoid arthritis.

Conclusion: In patients with rheumatoid arthritis the activities of antithrombin III and plasminogen were associated with clinical and radiographic stage, degree of activity, and functional class of disease. Treatment of rheumatoid arthritis promoted positive effect on parameters of antithrombin III and plasminogen.

Keywords: Antithrombin III, plasminogen, rheumatoid arthritis.

CONGENITAL HEART DEFECTS IN CHILDREN

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Background: Congenital heart disease is a general term for a number of birth defects that affect the normal functioning of the heart. Congenital heart defects occur with a frequency of 6-8 cases per thousand births, both in Russia and in India, which is 30% of all malformations. They are rank first in terms of mortality of newborns and children of the first year of life. Prenatal ultrasound diagnosis is one of the important factors in reducing infant mortality from congenital heart defects.

Objective: To compare the incidence of congenital heart defects in children living in Russia and India.

Methods and materials: For India, the data were obtained from the Ministry of Health of India. For Russia, the data were obtained by analyzing the data of children observed by a cardiologist at the Stavropol city polyclinic No. 3.

68 outpatients (35 boys, 33 girls) aged from 1 to 15 years, observed in the children's polyclinic of Stavropol, were examined. The results of the study were compared with data provided by the Indian Ministry of Health. The data were analyzed according to the anamnesis, dispensary observation data.

Results: After comparing the data, the result of the comparison in Russia (Stavropol) was 47% and in India 27% of children with CHD with minor anomalies in the development of the heart (it includes mitral valve prolapse, additional trabecular, abnormal chords in the ventricle of the heart). Of all. CHD in Russia (Stavropol) there were 60.3% and in India 53.8% of children with combined CHD. In Russia (Stavropol) 13% and India 15.2% of children were with atrial septal defect. In Russia (Stavropol) 13.1% and in India 15.3% of children were with ventricular septal defect. In Russia (Stavropol) 5.9% and in India 15% of children were with patent ductus arteriosus. In Russia (Stavropol) 2.7% and in India 3.9% of children were with coarctation of the aorta. In Russia (Stavropol) 2.9% and in India 3.6% of children were with Fallot's tetralogy. In Russia (Stavropol) 1.49% and in India 1.39% of children were with transposition of large vessels.

Conclusion: Modern diagnostic methods make it possible to detect congenital heart defects in a timely manner, as well as to refer children to specialized centers and determine treatment methods for the correction of defects.

Keywords: Congenital heart disease, mitral valve prolapse, atrial septal defect, ventricular septal defect, patent ductus arteriosus, tetralogy of Fallot.

STUDY OF THE LEVEL OF β-DEPHENSINS FOR ARTHROSIS OF VARIOUS GENESIS

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Background: Establishing the clinical diagnosis of ankylosing spondylitis using the generally accepted New York criteria takes an average of 8-11 years from the onset of symptoms. Therefore, the search for new methods of differential diagnosis of arthrosis is an urgent problem in public health.

Objective: To determine the diagnostic significance of β-defensins as proteomic markers of the acute phase of inflammation in arthrosis of various origins.

Methods and materials: 18 patients were selected, of which 10 men and 8 women, the main complaint was inflammatory joint pain. To deter-

mine the maximum concentration of β-defensin in the obtained samples, we used high-performance liquid chromatography on a Lumachrome chromatograph (Russia) at a wavelength of 214 nm.

Results: An analysis of the scientific literature allows us to conclude that a marker with absolute specificity for a particular disease has not been established. In this case, it is necessary to study the properties of β-defensin, which has specificity and is a protein of the acute phase of inflammation. Since most biochemical markers of the acute phase of inflammation are not specific and do not have sufficient differential diagnostic value, determining the concentration of β-defensins makes it possible to identify patients in whom active or previous bacterial inflammation was the cause of inflammatory joint pain. This will reduce the group of patients with undifferentiated diagnosis. The concentration of β-defensin in the leukocyte mass was studied in the group of patients with articular syndrome,

Conclusion: The highest average concentration of β-defensins was found in the group of patients with a clinical diagnosis of undifferentiated spondyloarthropathy. The same group accounted for 50% of all examined. The highest average value of the level of β-defensin was found in the group of patients with undifferentiated spondyloarthropathies, which suggests that they have a bacterial etiology of the disease.

Keywords: β-defensin, antimicrobial peptides, arthrosis, rheumatology, clinical biochemistry.

REVIEW OF CAT SCRATCH DISEASE (FELINOSIS), EPIDEMIOLOGY AND ITS TREATMENT

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Background: Cat scratch disease (Felinosis) is a benign lymphoreticulosis, or feline disease. Scratches are an acute infectious pathology, transmitted from cats and characterized by fever, primary effect on the skin, regional lymphadenitis, hepatosplenomegaly, less often damage the eyes and central nervous system. This complicated with the defeat of other organs, thrombocytopenic may appear purpura, primary SARS, spleen abscess and myocarditis. Asymptomatic, bacteremia cats with Bartonella henselae in their saliva serve as vectors by biting and clawing the skin. Cat fleas are responsible for horizontal transmission of the disease from cat to cat, and on occasion, arthropod vectors (fleas or ticks) may transmit the disease to humans.

Objective: To summarize the etiologies of Cat scratch disease. To describe the epidemiology and its treatment.

Methods and materials: According to the International federation of hospital therapy, and classification system will facilitate the accurate diagnosis and inform treatment options.

Cat-scratch disease is commonly diagnosed in children, but adults can present with it as well. Diagnosis is most often arrived by obtaining a history of exposure to cats and a serologic test with high titers (greater than 1:256) of immunoglobulin G antibody to B. henselae. Treatment and care of patients is hospitalization carried out according to clinical indications. The drugs of antibiotics: doxycycline, erythromycin. Anti-inflammatory and analgesic drugs are used: ibuprofen, diclofenac, mefenamic acid. About 49.2% of patients had a cat scratch, 3.2% had a cat bite, 3.2% had a cat flea bite, and 41.2% had no history of animal bite.

Patient D, 43 years old, has been complaining the pain in the right hypochondria, aggravated in the supine position on the right side, a single rash in the left popliteal cavity, for about a month. He does not follow a diet. Rashes were persisted for about 10 days. A dermatologist consulted him. Herpes was diagnosed. Valacyclovir, combilipen, ibuprofen were prescribed. His objective data: waist 95 cm. height 162, weight 89, BMI 34.2, obesity 1 tbsp. A positive symptom of Ortner. From the anamnesis: Alcohol intake denies. The mother had a cholecystectomy for choletithiasis.

Results: The prognosis for bacterial infection spread by cats (B. henselae). The main goal of evaluation and treatment of Felinosis. Keeping in mind; current and future fertility goals and other comorbid medical conditions that may impact treatment or symptoms.

Conclusion: This is a rare and difficultly diagnosed disease. The treatment must remain individualized and encompass the impact of pressure symptoms. Azithromycin (500 mg once, then 250 once/day for 5 days) treats cat scratch disease, the patient needs till 2-4 months to be cured of this disease.

Keywords: Cat scratch disease (Bartonella henselae and Bartonella Quintana of the rhizobiales family).

POSTCOVID TACHYCARDIA

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Introduction: The COVID-19 virus caused a pandemic that will forever alter our approach to infectious disease and epidemiology. However, it is becoming evident that symptoms may persist longer after the infection; this is now considered a condition known as post COVID-19 syndrome.

These symptoms may include headache, dyspnea, altered mental status, loss of smell and taste, rapid heartbeats, palpitations et al.

Objective: To establish tachycardia and palpitation as a typical and common example of postcovid syndrome. To describe possible pathophysiology behind the phenomenon

Background: Inappropriate sinus tachycardia is defined as an average heart rate exceeding 90 beats per minute on 24-hour ECG monitoring or a resting heart rate >100 beats per minute. Postural orthostatic tachycardia syndrome is an autonomic dysfunction causing a variety of symptoms, including tachycardia following postural change. It has previously been documented that viral infections can trigger postural orthostatic tachycardia syndrome. The pathophysiological mechanism in postural orthostatic tachycardia syndrome remains unknown but there is evidence of autoimmunity. Whether the same mechanisms are responsible for post-acute COVID-19 syndrome-associated postural orthostatic tachycardia syndrome and to what extent they contribute to post-COVID-19 tachycardia syndrome is still unknown.

Methods and materials: 24-hour ambulatory ECG of 19 patients 3 months after COVID to detect arrhythmias, assess average heart rate, detect abnormal pulse reactions and link symptoms to heart rate abnormalities. Blood tests were also taken to evaluate extracardiac causes of tachycardia.

Conclusion: Although it yet to be established the pathophysiology behind post COVID tachycardia, there may be several other factors contributing to the observed heart rate elevation. The virus enters cells by attaching its spike protein to the angiotensin-converting enzyme 2 receptor which may disrupt the renin-angiotensin-aldosterone system. In addition, COVID-19 may damage the cardiovascular system by other mechanisms such as hyperinflammation and hypercoagulability with thrombosis. These factors may contribute to the observed and reported tachycardia in post-acute COVID-19 syndrome.

Keywords: ECG, syndrome, ambulatory, pathology, angiotensin-converting enzyme.

DOPAMINE EFFECT ON DEPRESSION

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Background: Depression is a prevalent mental disorder that affects millions of people worldwide. Dopamine, a neurotransmitter involved in

the brain's reward and pleasure pathways, has been implicated in depression pathphysiology.

Objective: To investigate the effects of dopamine on depression and explore the underlying mechanisms.

Materials and methods: We conducted a systematic review of the literature on dopamine and depression. Our findings indicate that dopaminergic dysfunction may contribute to the development and persistence of depression. Specifically, decreased dopamine transmission in the mesolimbic pathway and increased dopamine activity in the mesocortical pathway have been observed in depression.

Furthermore, we discuss the potential therapeutic effects of dopaminergic drugs in depression treatment. For instance, selective dopamine reuptake inhibitors (DRIs) have shown promise in reducing depression symptoms.

Results: The literature search yielded a total of 50 articles, of which 20 were included in this review. Our analysis suggests that dopaminergic dysfunction may play a crucial role in depression pathophysiology. Specifically, decreased dopamine transmission in the mesolimbic pathway and increased dopamine activity in the mesocortical pathway have been observed in depression. Additionally, dopamine drugs such as DRIs may be a promising treatment option for depression.

Conclusion: Our review highlights the complex role of dopamine in depression and its potential as a target for novel antidepressant therapies.

Keywords: Depression, dopamine effect, antidepressant therapy.

FOREIGN BODIES IN THE GASTROINTESTINAL TRACT: A COMPREHENSIVE REVIEW OF SURGICAL MANAGEMENT

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Background: Foreign Bodies in the Gastrointestinal Tract (GIT) are a common clinical Scenario that can lead to Severe Complications. Endoscopic removal is often the First-line treatment, but surgical intervention may be necessary in some cases. Therefore, understanding the indication, techniques, and outcomes of surgical management of GIT foreign bodies is crucial for optimizing patient care.

Objective: The objective of this paper is to provide a comprehensive review of surgical management options for foreign bodies in the GIT, including indications, techniques and outcomes.

Methods and materials: A thorough search of the literate was conducted using electronic databases such as Pub-med and Google Scholar. Keyword such as “foreign bodies”, “gastrointestinal tract”, and “surgical management” were used to identify relevant articles published between 2010 and 2022.

Result and discussion: Surgical management of foreign bodies in the gastrointestinal tract (GIT) is safe and effective, with a high success rate and low rate of complications. While endoscopic removal is the preferred treatment, surgical intervention may be necessary in some cases, such as failed endoscopic removal, perforation, obstruction, and bleeding. Surgical options include open surgery and laparoscopic surgery.

Conclusion: Surgical management is a safe and effective option for managing GIT foreign bodies when endoscopic removal is not feasible or has failed. This review provides practical recommendations for surgeons to manage GIT foreign bodies based on current literature and clinical experience.

Keywords: Foreign bodies, gastrointestinal tract, surgical management, complications, endoscopic removal.

CREATING EARLY AWARENESSS OF BRUCELLOSIS IN STAVROPOL REGION TO IMPROVE HEALTH AND ANIMAL FOOD PRODUCTION

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Background: Brucellosis is a socially significant problem under the group of focal zoonotic infections in Russia, acquired by direct contact with secretions and excretions of infected animals or ingestion of infected. Stavropol territory is more prone to this disease because of high production of dairy and animal products.

Objective: To create early awareness, making causes and symptoms known to the residents and preventive and management methods.

Methods and materials: The materials for this study were obtained from an online database of the medical records of the Brucellosis department of Stavropol hospital 2 and scientific research data from notable physicians.

Results and discussion: The occurrence of brucellosis in the Stavropol was far higher than that in the Russian Federation as a whole. It was more evident in humans by contact with large and small farm animals in most

cases. The disease mainly affected herd men and normal residents with about 80% of the patients seeking medical advice and almost 78% of at risk based on serological examinations.

Conclusion: The incidence of brucellosis in Stavropol is relatively high. Creating early awareness within the farm workers, traders and vaccination can minimize the occurrence. Timely detection of infection and early diagnosis will significantly help to determine the incidence of brucellosis. Continuity of management provides a reduction in medical and socioeconomic losses associated with this infection.

Keywords: Brucellosis, incidence, timely diagnosis, management.

CLINICAL APPLICATIONS OF ROBOTIC SURGERY FOR MODERN DAY MEDICINE AND ITS CONTRAST TO LAPAROSCOPIC SURGERY

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Background: Robotic surgery also called robotic-assisted surgery, allows doctors to perform many types of complex procedures with more precision, flexibility and control than is possible with conventional techniques. Robotic surgery is usually associated with minimally invasive surgery. Procedures performed through tiny incisions it is also sometimes used in certain traditional open surgical procedures. The most widely used clinical robotic surgical system includes a camera arm and mechanical arms with surgical instruments attached to them and the surgeon control the arms while seated at a computer console near the operating table. While Laparoscopic surgery is a surgical technique in which short, narrow tubes (trochars) are inserted into the abdomen through small (less than one centimeter) incisions through these trochars, long, narrow instruments are inserted. The surgeon uses these instruments to manipulate, cut and sew tissue.

Objective: To show and prove the superiority of applying robotic surgery in modern medicine to laparoscopic surgery which its importance are making healing process faster, safer, and smarter, for caretakers and patients alike.

Methods and materials: With research and inquiries to some robotics technology which encompasses the design, building, implementation and operation of robots. Obtaining post-operative result from botkin hospital and other three healthcare institutions also use Da Vinci suites. A. Loginov Moscow clinical scientific center, Hospital No 31 and Spasokukotsky hospital favors the fast recovering of patients than laparoscopy.

Results and discussion: The observable result obtain from patients and doctors in healthcare centers show that there is less pain during recovering, lower the risk of infection, reduced blood loss, shorter the hospital stay and smaller scars than laparoscopy.

Conclusion: Database has shown that patient preliminary recovery data in Robotic surgery is more favored over manual laparoscopic surgery where there is room for inaccuracies. So based on the evidence included in this technology assessment Robotic surgery may have impact on many clinical outcomes in patients undergoing prostatectomy, partial nephrectomy and other benefits.

Keywords: Robotic, prostatectomy, laparoscopic, nephrectomy and data.

STUDYING THE RELATIONSHIP BETWEEN ORAL AND INTESTINAL MICROBIOMES

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Background: The etiology and pathogenesis of many types of inflammatory dental diseases and inflammatory bowel disease (IBD) are still the subject of debates. Identification in the intestines of people with IBD of an excess amount of bacteria typical of the oral cavity and alien to other parts of the gastrointestinal tract (GIT) may be the result of dental diseases such as chronic recurrent aphthous stomatitis, catarrhal gingivitis, periodontitis and other dental pathologies. Based on the literature data, it has been suggested that dental diseases can influence the occurrence of IBD, as a complication, or be a factor that increases the severity of IBD.

Objective: To identify the relationship between dental diseases and gastrointestinal lesions in patients with inflammatory bowel diseases based on a retrospective analysis of the case histories of patients with IBD.

Methods and materials: The research involved 70 people who were divided into two groups. The first group was 35 people, patients of the coloproctological department of the city hospital № 2 in Stavropol with inflammatory bowel diseases (main group). The second group was 35 people, 3rd and 4th year students of StSMU, without concomitant intestinal pathology (control group). In the study of case histories of patients of the main group, clinical data and laboratory data were studied. All patients in the control group, in order to obtain more accurate results, underwent professional oral hygiene using an ultrasound machine and an Air Flow machine.

Results: The conducted studies showed that among 35 patients of the main group in 23 patients, which accounted for 65.7%, Fusobacterium nucleatum, bacterial strains that usually live in the oral cavity with various dental diseases, were detected in the laboratory analysis. These patients had appropriate subjective and objective signs of dental disease. In all patients of the control group, there were no changes in laboratory tests and dental manifestations.

Conclusion: The study objectively showed the relationship between oral diseases and inflammatory bowel disease, which highlights the need to promote oral health as part of overall health. It also points to the possibility of improving the treatment of IBD by correcting inflammatory processes in the oral cavity, opens up prospects for further study of this issue in order to develop new methods of treating IBD.

Keywords: Inflammatory bowel disease, dental diseases, oral cavity, laboratory tests.

INFLUENCE OF THE CHEMICAL COMPOSITION OF ENERGY DRINKS ON THE STATE OF THE HUMAN BODY

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Background: Energy drinks are drinks that have the ability to stimulate the human central nervous system and have an anti-sedative effect. The use of energy drinks is widespread among young people due to the availability of purchase.

Objective: To study the chemical composition of energy drinks of different price categories and to establish the effect of energy drink on the pH of gastric juice.

Methods and materials: The essence of the method is as follows: to create a drug that is as close as possible in composition and pH value to gastric juice, using hydrochloric acid, distilled water, egg white and acidin-pepsin. Using an electronic laboratory, measure the acidity of each energy drink and "gastric juice", alternately mix each energy drink with the "gastric juice" preparation, while measuring the acidity value. Equipment and reagents: 36% hydrochloric acid, distilled water, acidin-pepsin, egg white, sets of flasks, measuring cups, pipettes; titration unit, electronic laboratory, glass rod, magnetic stirrer, acidity sensor, 3 types of energy drinks of different price categories: FIRE OX, FLASH, ADRENALINE RUSH.

Results: In the course of the experiment, we found that the energy drink of a high price category "Adrenaline Rush" leaves pH within the physio-

logical norm (pH of gastric juice = 1.5-2.5), therefore, it should not have a pronounced damaging effect on the gastric mucosa.Medium price drink "Flash" increases the acidity of the drug "gastric juice" (pH=1.2). The low-price drink "Fire Ox" increases the acidity of the "gastric juice" preparation more than others (pH=1.0). Frequent intake of such drinks can be the cause of the development of hyperacid gastritis. A rare intake of energy drinks, dictated by some need, increases concentration, speeds up the reaction, increases the intensity of perception, increases endurance, prevents drowsiness, improves mood, but these phenomena have a short-term effect.

Conclusion: Abuse of energy drinks leads to health problems, such as an increase in heart rate, the development of arrhythmias; increased blood pressure; depletion of the central nervous system, sleep disturbance and insomnia; hyperglycemia, glycosylation of proteins; increased acidity of gastric juice and the development of hyperacid gastritis. This is mainly due to an excess of caffeine, taurine, a large amount of sugar content, preservatives, dyes, acidity regulators.

Keywords: Energy drinks, chemical composition, central nervous system, gastric juice.

SEASONAL CHANGES IN GASTRIC MUCOSAL FACTORS ASSOCIATED WITH PEPTIC ULCER BLEEDING

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Background: A number of diseases exhibit seasonal patterns in their occurrence. Extreme climates seriously affect health and have resulted in the increased morbidity of a number of diseases, including gastrointestinal bleeding.

Objective: To evaluate the relationship between the gastric acid secretions was significantly higher in the extreme cold climate than that in the extreme hot climate.

Methods and materials: The analysis of literature sources is carried out. Gastric biopsies were collected from the patients with informed consent by endoscopy. Two specimens were collected each from the antrum and the gastric body. At the same time, 10 ml gastric juice was collected and the pH value of the gastric juice was measured precisely on-site. Biopsy specimens were fixed with 10% buffered formalin and embedded in paraffin. Sections (4 μm thick) were cut from the wax blocks. Conventional hematoxylin and eosin staining was used to exclude malignant ulcers. Periodic acid-Schiff staining was used to measure the gastric mucus thickness.

Results and discussions: The pH value of the gastric juice was lower in the high bleeding risk group (1.93±1.04) than that in the low bleeding risk group (2.05±1.27) in the extreme hot climate, but the difference was not statistically significant. This was consistent with the results for the extreme cold climate, in which no significant difference was identified in the pH values of the gastric juice between the high (1.00±0.81) and low (1.35±0.93) bleeding risk groups. In the extreme hot climate, no significant differences were identified in the mucus thickness of the gastric antrum and body between the high and low bleeding risk groups. In the extreme cold climate, the mucus thickness of the gastric antrum was significantly lower in the high bleeding risk group (4.81±1.59 μm) than that in the low bleeding risk group (5.62±1.88 μm). The expression of HSP70 in the high bleeding risk group was significantly lower than that in the low bleeding risk group.

Conclusion: In the present study it was observed that the pH value in the high bleeding risk group was significantly higher in the extreme cold climate than that in the extreme hot climate. This result may explain why there was a higher incidence of peptic ulcers in the cold climate than in the hot climate.

Keywords: Peptic ulcer bleeding, pathogenesis, climate.

DIAGNOSTIC SIGNIFICANCE OF HLA-B27 DETECTION IN ANKYLOSING SPONDYLITIS

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Introduction: Because of studies of the association of HLA antigens with diseases, a new direction in medicine appears, designated as "HLA and diseases". In this regard, science community paid such attention to the problem of seronegative spondyloarthropathies, in which an association with the HLA-B27 antigen is fixed, especially to ankylosing spondylitis (Bekhterev's disease). The incidence of ankylosing spondylitis in the Russian Federation ranges from 1 to 1.5% among the adult population. Ankylosing spondylitis leads to disability, which indicates the relevance of studying this disease and methods for its diagnosis.

Objective: to study the association of genes of the HLA-B27 locus with the diagnosis of ankylosing spondylitis.

Methods and materials: A group of 343 patients with articular syndrome were examined. There were 165 men and 178 women; the average age of patients was 38 years. All patients were analyzed for the determination of the HLA-B27 locus gene by PCR.

Results: It was found that 59% of patients with articular syndrome had the HLA-B27 locus gene. 37% of all patients had diagnosis of ankylosing spondylitis. In the group of patients with ankylosing spondylitis 67.2% of patients had the HLA-B27 gene. All patients were divided by sex, and by age into three age groups. Most patients were observed in the group of men aged 31 to 50 years.

Conclusion: thus, articular syndrome in general and articular pain in the sacral region in more than half of cases is associated with the presence of the HLA-B27 gene. The presence of the HLA-B27 gene is significantly associated with the diagnosis of ankylosing spondylitis, which confirms the diagnostic significance of this analysis in patients with this diagnosis. And also, that this pathology is more typical for males, and manifests itself at a young working age, significantly disrupting the quality of life of patients, which makes the early detection of the presence of the HLA-B27 gene urgent.

Keywords: HLA-B27, rheumatology, ankylosing spondylitis, Bechterew's disease, PCR, clinical biochemistry.

VALIDATION OF THE EFFECTIVENESS OF APPLYING THE SHIMBACHI INDEX AND THE LVI VERTICAL INDEX TO DETERMINE THE HEIGHT OF THE LOWER THIRD OF THE FACE

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Background: In order to optimize methods for determining the height of the lower third of the face, Canadian Dr. Henk Shimbachi conducted an independent research of 400 patients. As a result of the analysis, the researcher concluded that the average distance between the extreme cemento-enamel boundaries of the upper and lower incisors in the central occlusion position was 17 to 21 mm. Later at the Institute of Aesthetic Dentistry, scientists determined the mathematical dependence between the parameters of the central incisor and the vertical index-LVI.

Objectives: 1. To compare the results obtained when measuring the vertical index with those suggested by the authors. 2. To analyse the height of the lower third of the respondents' faces using the Shimbachi Index. 3. To determine the effectiveness of using the Shimbachi index in analyzing the height of the lower third of the face.

Methods and materials: A randomized controlled research was conducted, in which 20 women and 12 men in the age of 18 to 66 years partic-

ipated. A compass and a ruler with a division value of 1 mm were used to obtain measures of tooth width, tooth height, and Shimbachi index.

Results: Data analysis showed that 25% (8 of 32 subjects) had a deviation from the normal Shimbachi index, averaging 6%. Decrease in the height of the lower third of the face associated with physiological abrasion was observed in the 45 years and over age group.

Conclusion: 1. The group with a reduced height of the lower third of the face, which was found while measuring the index, there was a correlation with such features as increased tooth abrasion, deep incisal overlap. Among those with a reduced height of the lower third of the face, 45% had an increased erasability of teeth. Half of this group of subjects is represented by individuals over 45 years of age. 2. The vertical LVI index does not correspond to the tabulated values in 75% of cases, but manifestations of the deviations of the height of the lower third of the face, both functional and aesthetic, are observed only in the group with measurements outside the 17-21 mm range. 3. The vertical Shimbachi index (LVI), in turn, can be used to evaluate the aesthetic criterion.

Keywords: LVI-index, Shimbachi index, the lower third of the face.

DRUG-INDUCED COLOR VISION DISORDERS

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Background: Color blindness, also known as color vision deficiency, is a condition where individuals are unable to perceive certain colors or shades of colors. Acquired color apparition disorders are possibly caused by ocular, neurological or metabolic disorders, but they can also be drug induced.

Objective: This study aims to investigate the incidence and mechanisms of drug-induced color blindness in humans.

Methods and materials: This study included a retrospective analysis of patients who presented with color vision defects after taking drugs for various diseases. Medical records were reviewed to obtain demographic and clinical data. The drugs used by the patients were recorded and relevant literature on drug-induced color blindness was reviewed.

Results and discussion: A total of 25 patients were included in this study. The majority of patients (65%) were male and the mean age was 45 years. The most commonly reported drug was sildenafil (50%) followed by hydroxyl chloroquine (30%) and chloroquine (20%). All patients presented

with color vision defects, with 80% reporting a red-green color vision deficiency. The results of this study confirm that certain drugs can cause color vision defects in humans, likely due to their toxic effects on the retina. The most commonly reported drug was sildenafil which is consistent with previous studies. This study also found that all patients had retinal abnormalities, highlighting the importance of ophthalmological examination in patients taking these drugs.

Conclusion: Drug-induced color blindness is a potential side effect of certain drugs used to treat various diseases. This study found that sildenafil, hydroxyl chloroquine and chloroquine were the most commonly reported drugs associated with color vision defects. Overall, vigilance in monitoring patients for changes in color vision and caution in prescribing medications with potential ocular side effects can help mitigate the risk of drug-induced color blindness in patients.

Keywords: Drug, color blindness, sildenafil, hydroxyl chloroquine, chloroquine, retina.

EVALUATION OF CLINICAL MANIFESTATION, TREATMENT AND PROGNOSIS OF SINGLE VENTRICLE HEART, A FORM OF MAJOR CYANOTIC HEART DISEASE

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Background: Congenital heart defects account for 1/3 out of all congenital malformations and are one of the main causes of infant mortality. With an extensive meta-analysis of world literature data congenital heart defects in both Russia and India ranges from 8 to 10 cases per 1000 live births. Prenatal ultrasound diagnosis is one of the important imaging tool in reducing infant mortality from congenital heart defects. The single ventricle defect of the heart is rare; it accounts for less than 2.5% of all congenital heart defects. The overall incidence is 13 cases per 100000 newborns. This disease refers to critical congenital malformations, manifesting itself soon after birth and is associated with a high risk of death. The prognosis of the natural course is poor: 55-67% of children die without surgery in the first year of life, and up to 90% of children die before the age of 10 years. This explains the great importance of the single ventricle heart in practical cardiology and requires improvement in cardiac surgical care for such patients. According to the pediatrics cardiology department of San Francisco Medical University Clinic, among infants with Hypoplastic Left

Heart Syndrome (n=81) were admitted during the period 1999–2010, 49 (60.5%) were diagnosed antenatally and 32 postnatally. Single ventricle of the heart is a congenital defect in which there is no interventricular septum, where both atria communicate with one ventricle. The disease has multifactorial nature, its connection with genetic abnormalities and the action of teratogenic factors during pregnancy can be traced. The main symptoms of the disease are cyanosis, shortness of breath at rest and during physical exertion, lag in psychomotor development. Echocardiography, ECG, X-ray studies were used for diagnosis. Correction of the defect was carried out surgically in two stages; hence procuring better hemodynamics.

Objective: To consider patients of the same disease from different parts of the world (Russia and India), to analyze the manifestations before and after surgical intervention, prognosis of the disease and quality of social life with regular medical care after operation.

Methods and materials: A comparison of clinical examination and treatment was made involving patients with functional single ventricle heart with doubling of ventricular inlet, with compensatory right ventricle hypertrophy and moderate stenosis of the Sitting astride tricuspid valve of class NK 2 A, FC 2. To obtain data on feasibility of using bidirectional cavopulmonary anastomosis along with ligation of the pulmonary artery and maintaining the atrial communication remains the mainstay treatment which varies case to case. Due to mixture of deoxygenated and oxygenated blood we see moderately severe decrease in SpO2 levels leading to hypoxia, with a coarse murmur on auscultation and cyanotic symptom on physical examination and inspection. From 70 to 80% children suffer from impaired neuropsychiatric functions. Our patients had severe atonic – astatic syndrome, mixed asymmetric hydrocephalus, motor alalia, convulsive syndrome before operation. For acute cerebrovascular accident, thrombolytic therapy was provided to them. The goal was to correct hypoxia in the patient, i.e. SpO2 more than 95% with surgical correction of this defect by divergence of the main vessels from the anatomically right (arterial) ventricle. During the first year of life, narrowing of the pulmonary artery (Muller's operation) was performed along with maintaining the patency of ductus arteriosus, circulation was established. A year later, Bidirectional Cavopulmonary anastomosis was established with the creation of a pulmonary trunk. At the age of, Fontan's operation was performed as a result of which oxygen saturation has reached to 97%.

Results: The presented data demonstrate that patients with single ventricle heart and well-balanced pulmonary perfusion might survive into late adulthood with good quality of life and functional capacity and without major symptoms or depression of cardiac function. The resolution of symptoms of hypoxia like drumstick finger and cyanosis with regaining of

the ability to write were observed whereas in the untreated patients death occur due to dysarhythmia, congestive heart failure and sometimes sudden and unexplainable death.

Conclusion: The most promising survival is seen in surgically treated patients with a single ventricular morphology, transposition of the great arteries without systemic outflow obstruction, an adequately functioning of atrioventricular valve and a moderate pulmonary outflow obstruction. Although most patients will be managed by a staged surgical approach in view of an ultimate Fontan procedure; follow up by dedicated Multidisciplinary teams with expertise in all facets of adult congenital heart disease is essential to the optimal care of these patients.

Keywords: Congenital heart disease, single ventricle, Muller operation, Fontan operation, anastomosis.

OBESITY IN CHILDREN

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Background: Obesity in children is a chronic metabolic disorder, accompanied by excessive deposition of adipose tissue in the body. Obesity in children is manifested by increased body weight and predisposes to the development of arterial hypertension, dyslipidemia, cardiovascular manifestation, arthrosis, flat feet, sleep apnea, bulimia, anorexia, etc. with obesity body mass index ≥30.

Objective: To study the comparative characteristics patterns of obesity in children living in Russia and India.

Methods and materials: For India, the data is obtained from National Family Health Survey-4 done by Ministry of Health in India. For Russia, data is provided by city children's polyclinic No.3.

In Russia the study included 62 patients diagnosed with obesity, including 24 girls (38.7%) and 38 boys (61.3%) aged 5 to 17 years. In India the study included 65 patients diagnosed with obesity, including 33 girls and 32 boys. The control group consisted of 32 children with normal weight (average BMI = 20 kg/m2). The results of the study are compared with the data of Ecg, echo cardiography, lipidogram. The data is analysed by the history, followup data.

Results: After comparison of data, the results are: in Russia there is 15% of children of age 3-6 years, 40% of age 7-11 years, 44% of age 12-18 years are obese. In India 11.5% of age 3-6 years, 16.4% of ages 7-11

years, 24.7% of age 12-18 years are obese. According to gender: in Russia girls (41.7% are predominantly affected by obesity as compare to boys (18%) of age 12-18 years. In India boys (31%) and girls (27%) of age 12-18 years are diagnosed with obesity. In Russia among obese children 28.6% have elevated serum cholesterol level as compare to 6.2% in control group. In India 38% have elevated serum cholesterol level as compare to 16% in control group. In Russia hypertension 1st degree and 2nd degree Is 8% among obese children. In India 12.5% are hypertensive 1st degree, with hypertension 20-40% show left ventricular hypertrophy at the time of diagnosis. By evaluating Ecg data of obese children they show long P-R interval, wider QRS complex, show left shift of P and T wave. Obese children also present high heart rate in both the countries.

Conclusion: In the course of study, there is no direct relationship between severity of dislipidemia and degree of obesity. An increase in blood pressure was noted in more than a third of obese children. 6. 90% of overweight children lead the wrong way of eating, preferring fast food and fast carbohydrates.

Keywords: Obesity, serum cholesterol level, arterial hypertension, Ecg P-R interval prolonger, left ventricular hypertrophy, heart rate.

RISK OF RECURRENT MYOCARDIAL INFARCTION TYPE 1 IN YOUNG MEN

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Background: The contribution of genetic prothrombotic variants to risk of recurrent myocardial infarction (MI) in young patients with MI type 1 and coronary stenting has not been conclusively established.

Objective: To investigate the frequency of recurrent myocardial infarction (MI) type 1 and possible role of genetic prothrombotic variants in the development of recurrent MI in young men.

Methods and materials: The studied group consisted of 98 men aged < 45 years with MI type 1, and the control group consisted of 100 people without MI aged < 45 years. All patients with MI underwent percutaneous coronary intervention and were treated with aspirin and clopidogrel (or tikagrelor). The polymorphisms studied included factor V Leiden (F5: 1691G>A), prothrombin (F2: 20210G>A), beta-fibrinogen (FGB: -455G>A), factor VII of blood clotting (F7: 10976G>A), factor XIII of blood clotting (F13A1: 103G>T), platelet glycoprotein IIIa (ITGB3:

1565T>C), platelet glycoprotein Ia (ITGA2: 807C>T), plasminogen activator inhibitor-1 (PAI-1: -675 5G>4G). We followed patients for the occurrence of MI at 1 year. Statistical analysis was carried out using χ^2 or the exact Fisher criterion (F). The differences were considered significant at $p<0.05$.

Results and discussion: MI type 1 was associated with heterozygous polymorphisms 1691GA of gene F5 (F; p=0.035), 1562TC of gene ITGB3 (χ^2=6.28; p=0.012), and -675 5G/4G of gene PAI-1 (χ^2=7.25; p=0.007). Genetic disorders in hemostasis can be used to prediction of MI type 1 in cohort of young men. The frequency of recurrent MI during 1 year of follow-up was 15%. Depending on the recurrent MI, the patients were divided into 2 groups. Group 1 included 15 patients with recurrent MI. Group 2 consisted of 83 patients without recurrent MI of the annual post-infarction period. There were no initial age differences in patients with MI of the compared groups (40.0 [37.0; 44.0] and 41.0 [39.0; 44.0]) years; p>0.05). There were also no statistically significant differences in the prevalence of the polymorphisms of genes FGB (-455G>A), F2 (20210G>A), F5 (1691G>A), F7 (10976G>A), F13A1 (103G>T), PAI-1 (-675 5G>4G), ITGA2 (807C>T) and ITGB3 (1565T>C) between the recurrent MI group and the MI group without recurrent MI (p>0.05).

Conclusion: The frequency of recurrent MI type 1 in young men during 1 year of follow-up was 15%. Polymorphisms of genes FGB (-455G>A), F2 (20210G>A), F5 (1691G>A), F7 (10976G>A), F13A1 (103G>T), PAI-1 (-675 5G>4G), ITGA2 (807C>T) and ITGB3 (1565T>C) were not associated with increased risk of recurrent MI type 1 in young men treated with dual antiplatelet therapy at 1 year.

Keywords: Myocardial infarction, young men, genetic prothrombotic variants.

REVIEW OF AUB, EPIDEMIOLOGY AND ITS COEXISTENCE WITH FIBROIDS

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Background: Abnormal uterine bleeding (AUB) is a broad term that describes irregularities in the menstrual cycle involving frequency, regularity, duration, and volume of flow outside of pregnancy. Up to one-third of women will experience abnormal uterine bleeding in their life, with irregularities most commonly occurring at the extreme of reproductive life. A normal menstrual cycle has a frequency of 24 to 38 days and lasts 2 to

7, with 5 to 80 milliliters of blood loss. Variations in any of these 4 parameters constitute abnormal uterine bleeding. Reviewing the abnormal uterine bleeding diagnosis and treatment and explains the importance of an approach towards evaluating and treating abnormal uterine bleeding.

Objective: Summarizing the etiologies of abnormal uterine bleeding that can be remembered with the acronym PALM- COEIN classified by FIGO. Specifically, describing the epidemiology of AUB and reviewing the coexistence of fibroids in AUB.

Methods and materials: According to the International federation of Gynecology and obstetrics PALM-COEIN (Polyp, Adenomyosis, Leiomyoma, Malignancy (and hyperplasia), Coagulopathy, Ovulatory disorders, Endometrial, Iatrogenic and Not yet classified) classification system will facilitate the accurate diagnosis and inform treatment options.

The prevalence of abnormal uterine bleeding among reproductive-aged women internationally is estimated to be 3% to 30%. When irregular and intermenstrual bleeding are considered, the prevalence rises to 35% or greater. Taking a patient with complaints of pain in the lower abdomen, copious menstruation with clots for 3 months; started her menstruation at the age of 14, for 5 days, after 28 days. Her sexual life begins after the age of 22 having 2 pregnancies; without any complications. In 2017, she was presented with the above mentioned complaints. Hysteroscopy was performed and diagnosis of an endometrial polyp was made. During ultrasound, fibroids of the uterine body of multiple small sizes were detected. So, followed up ultrasound in dynamics was performed, after hysteroscopy, polypectomy, the drug Yarina was prescribed. Since July 2018 patient developed menorrhagia, dysmenorrhea; ultrasound performed in dynamics. According to ultrasound data in the posterior wall of the uterus, an inhomogeneous myoid formation is visualized interstitially on the right. Here we can presume one of the major role is played by Yarina in the development of leiomyoma. Surgical treatment was recommended; she was examined on an outpatient basis and admitted for surgical treatment. Laparoscopic Hysterectomy was done as the patient completed her family which prevents AUB and further development of any complications on this patient.

Results: The prognosis for abnormal uterine bleeding is favorable in early presentation; but also depends on the etiology. The main goal of evaluation and treatment of chronic AUB is to rule out serious conditions such as malignancy and improve the patient's quality of life, keeping in mind; current and future fertility goals and other comorbid medical conditions that may impact treatment or symptoms.

Conclusion: AUB frequently co-exists with fibroids, but the relationship between the two remains incompletely understood and in many women the identification of fibroids may be incidental to a menstrual bleeding

complaint. Treatment must remain individualized and encompass the impact of pressure symptoms, desire for retention of fertility and contraceptive needs, as well as address the management of AUB in order to achieve improved quality of life.

Keywords: abnormal uterine bleeding (AUB), fibroids, FIGO PALM-COEIN classification of AUB.

REVIEW OF EPIDEMIOLOGY OF MENINGOCOCCAL INFECTIONS IN INDIA AND RUSSIA, PROGNOSIS AND PROPHYLAXIS OF SPECIFIC SEROGROUPS

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Background: Infection with Neisseria meningitis most commonly manifests as asymptomatic colonization in the nasopharynx of healthy adolescents and adults. Invasive disease occurs rarely. In total, 12 capsular groups have been identified (A– C, X–Z, E, W, H–J, and L), but just six of these—A, B, C, X, Y, and W (formerly W135)—account for the majority of cases of invasive disease. Group D is often listed as the thirteenth capsular group but has recently been identified as an unencapsulated variant. The structure of meningococcal populations involved in local and global spread has been studied with multilocus enzyme electrophoresis (MLEE), this technique was replaced by multilocus sequence typing (MLST), in which meningococci are characterized by sequence types, although the numbers have been declining recently as a result of both immunization programs and secular trends. About 10% of affected individuals die. Here , reviewing the prevalence of different serotype in different region of world in past and present.

Objective: To evaluate the epidemiology, prognosis of mengiococcal infection in different parts of the world obtained from some recent studies. Major prophylatic steps taken towards the risk factors in order to decrease the incidence of meningitis.

Methods and materials: Up to 500,000 cases of meningococcal disease are thought to occur worldwide each year. Review of several outbreaks of different serotype of this disease, epidemic, small cluster of cases shows capsular group A outbreaks have been documented over the past 30 years in New Zealand, China, Nepal, Mongolia, India, Pakistan, Poland, and Russia. However, 65% of outbreaks reported in the meningitis belt between 2010 and 2017 were caused by capsular group C and 35% by capsular group W meningococci, following an immunization campaign to control capsular group A outbreaks. In Russia cases of A, B, C serotype while in South East

Asia serotype A is more prevalent. Clusters of cases occur where there is an opportunity for increased transmission, i.e., in closed or semi-closed communities such as schools, colleges, universities, military training centers, and refugee camps. Over the last decade, most industrialized nations have seen a general decrease in meningococcal disease; this decrease is linked to immunization against capsular group C meningococci in Europe, Canada etc. The Glasgow Meningococcal Septicaemia Prognostic Score (GMSPS) performs well and may be clinically useful assessment for severity in meningococcal disease. Factors associated with a poore prognosis are shock; young age (infancy), old age, and adolescence; coma; purpura fulminans, disseminated intravascular coagulation, thrombocytopenia, leukopenia, absence of meningitis, metabolic acidosis etc. The condition of most patients improves rapidly with appropriate antibiotics and supportive therapy. Fulminant meningococcemia is more likely to result in death or ischemic skin loss.

Results: Most cases are sporadic, typically in children < 2 years of age, but outbreaks can occur, primarily in semiclosed communities (e.g, military recruit camps, and dormitories) and often involve patients aged 16 to 23 years. The administration of prophylactic antibiotics to people with close contact. Vaccination like MenACWY-D, MenB-4C etc plays significant role in the chance of prevalence and prognosis.

Conclusion: The mortality rates in meningococcal infection are high. It can lead to some severe life threatening situation like DIC, shock, multiple organ failure. The third generation of cephalosporin can be given and for invasive meningioccocal disease Pencillin G can be used. Immunization is the only rational approach to prevention at a population level. All children should receive a quadrivalent conjugate vaccine at age 11 or 12 years with MenB-4C or MenB-FHbp due to increase risk of group B; otherwise quadrivalent conjugate vaccine MenACWY-D, MenACWY-CRM, and MenACWY-TT that protect against 4 of the 6 common pathogenic serogroups of meningococcus are available.

Keywords: Neisseria meningitides, serogroups, epidemiology, vaccines, MLEE, MLST.

MODERN APPROACH TO THE ANALYSIS OF LEUKOTRIENE STRUCTURES

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Background: The Stavropol Territory is characterized by a fairly high level of allergization, both among the adult population and among chil-

dren. One of the most effective methods used in pharmaceuticals, including for creating more effective anti-allergy drugs, is computer modeling. The analysis of computer models of complex organic molecules that are part of antiallergic drugs makes it possible to analyze their structural links and choose a method of influence, for example, on the process of bronchospasm. Leukotrienes are organic substances of lipid origin, they belong to the class of compounds such as eicosanoids, and they are capable of causing allergic bronchospasm.

Objective: The aim of the study is to computer model the structures of some well-known leukotrienes LTA4, LTB4, LTC4, LTD4 in the ArgusLab 4.0.1 program.

Leukotrienes have certain differences in their structure. In particular, LTA4 contains an epoxy group, LTB4 contains a hydroxyl group, LTC4 contains glutathione, and LTD4 contains glutathione devoid of glutamate, i.e. cysteinylglycine. In this regard, two groups of leukotrienes are distinguished: the first group is peptide or cysteine leukotrienes or cysteinyl leukotrienes (CysLT — LTC4, LTD4, LTE4) and the second group is leukotrienes without peptides (LTA4, LTB4).

Results: In the course of the work, 3D models of several leukotrienes were constructed, their structure was analyzed and it was noted that it is quite possible to attach other amino acids, metal atoms, etc. to twenty-carbon chains with four unsaturated bonds. Currently, work is underway to programmatically predict the mechanisms of radical attachment of active centers of such structures, for example, LTA4, to fullerenes (C60).

Computer modeling will allow us to select the most effective alternative leukotriene inhibitors that can block leukotriene receptors and will be preferable for the pharmaceutical industry.

Keywords: Nanoparticles, leukotrienes, LTA_4, LTB_4, LTC_4, LTD_4, LTE_4, LTF_4, фуллерены С60.

GROUP A STREPTOCOCCUS, ERYSIPELAS

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Background: Erysipelas is a bacterial skin infection caused by Streptococcus pyogenes, which results in a painful, red, and swollen area of skin that can be accompanied by fever and chills. This condition typically affects a face, legs, and arms, and is more common in individuals with weakened immune systems or chronic conditions such as diabetes. Treatment typically involves antibiotics and supportive care to manage symptoms,

although in some cases hospitalization may be necessary. Early diagnosis and prompt treatment are important to prevent complications such as abscess formation or sepsis.

Objective: To know the difference and diagnose the infections after and before the pandemic (Covid-19).

Methods and materials: A comparison between the Pathogenicity of Group A Streptococcus before the pandemic (Covid-19) and how to diagnose and treat it.

Results: In general, with prompt and appropriate treatment, most cases of erysipelas resolve within 7-10 days with no long-term effects. However, if left untreated, erysipelas can lead to serious complications such as abscess formation, sepsis, or cellulitis, and also bolus, erythematous, with haemorrhage, which is a deeper and more extensive infection of the skin and underlying tissue.

Conclusion: Individuals who are at risk of erysipelas, such as those with weakened immune systems or chronic conditions, should take measures to prevent skin injuries and infections. Early diagnosis and prompt treatment are essential for achieving a positive outcome and preventing complications in cases of erysipelas. If you suspect you may have erysipelas, it is important to seek medical attention promptly to ensure appropriate diagnosis and treatment.

Keywords: Erysipelas, GAS, infections, pandemic, diagnosis, treatment.

ABDOMINAL WALL RECONSTRUCTION AND ITS COMPLICATIONS

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Background: The integrity of the abdominal wall is vital as it serves to protect the internal organs, supports the spine and helps to maintain an upright posture. The management of abdominal wall defects is challenging and complex. This activity reviews preoperative optimization, techniques for repair, mesh use, complications of abdominal wall reconstruction.

Objective: To study indications for abdominal wall reconstruction, types of mesh used, placement of mesh, complications of abdominal wall reconstruction.

Materials and methods: The materials used for this study is obtained from SRB's manual and online data from scientific research data and online publications.

Results and discussion: The complications of abdominal wall reconstruction are similar to any other major abdominal surgery. Complications like wound healing problem, Infection of mess, Chornic pain (neuralgia), Adhesion to internal organs, Haematoma, Seroma, Allergic reaction. Around 570 0000 hernia mesh operations have taken place in England over the past six years, figures from NHS Digital show. Leading surgeons think that the complication rate is between 12% and 30%, meaning that between 68 000 and 170 000 patients could have been adversely affected in this period.

Conclusion: Rates of mesh-related complications vary by hernia type. A majority of patients report excellent long-term quality of life, although a relatively large percentage of patients experience severe or disabling symptoms.

Keywords: Reconstruction, mesh, hernia, adhesion, infection, neuralgia.

ECOLOGY AND EPIDEMIOLOGICAL CONSEQUENCES OF FAUNISTIC COMPLEX OF IXODIDAE IN STAVROPOL REGION

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Background: In recent years, in many countries of the world and in the Russian Federation, there has been a significant increase in the incidence of infectious diseases with natural foci, among which infections transmitted by ixodid ticks occupy a special place. In the last decade, due to the increase in private farms, the decrease in anti-tick cultivation of fields, forest belts and pastures, there has been an increase in biotopes favorable for the stay of ixodid ticks. As a result, over the past decade the epidemic situation has worsened for a number of diseases transmitted by ticks, such as Crimean hemorrhagic fever, tick-borne borreliosis.

Objective: To study the faunistic features of the population of ixodid ticks in the Stavropol Territory, the main carriers of CHF and borreliosis.

Methods and materials: The material used for this study is an online data obtained from scientific literature and analyzing the statistical reporting of Rospotrebnadzor of the Stavropol Region.

Results: In 2021, 4,462 people reported being bitten by ticks, including 1,793 children under the age of 14. During the epidemiological season of the current year, 19 cases of CHF disease were registered with an incidence rate of 0.68 cases per 100,000 populations. The peak incidence occurred in May, and most of the cases were among rural residents who became infected while caring for animals and doing agricultural work. The course of the

disease was mostly moderate. 102 people were hospitalized with suspected CHF or tick bites, which is twice as many as last year.

Another tick-borne disease, no less dangerous to humans, is tick-borne borreliosis. Infectious and natural focal disease transmitted by spirochetes. It has a tendency to have a chronic and recurrent course and mainly affects the skin, nervous system, musculoskeletal system, and heart.

In 2021, 16 cases of tick-borne borreliosis were registered in Stavropol region, compared to 6 in 2020, with no seasonal pattern. The incidence rate in 2021 was twice as high as in 2020. The largest number of cases was diagnosed in Stavropol (56.2%) and Kislovodsk (25%). Adults accounted for 75% of cases, and children for 25% of the cases.

Conclusion: The prognosis for the epidemiological situation of CHF and borreliosis in the Stavropol Territory remains unfavorable due to the continuing high abundance of preimaginal phases of H. marginatum on main hosts, and the high level of infection of ticks with CHF and borreliosis viruses.

Keywords: Infectious diseases, Lyme disease, ixodid ticks, tick-borne borreliosis.

SPECIFICS OF VACCINATION AGAINST COVID-19 IN YOUNG ADULTS

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Background: The introduction of vaccines against COVID-19 in Russia only started in December 2020; there has not been enough time to clarify all possible side-effects.

Objective: To identify the side effects of COVID-19 vaccination in young adults.

Methods and materials: We administered a questionnaire to 317 young adults aged 18 to 44 years who were vaccinated against SARS-COVID-19 with Sputnik V and Sputnik Lite. The questionnaire was taken from the ROCCA observational study. It included the analysis of side-effects developed within six months after vaccination. For data collection and analysis we used a Google form and Microsoft Excel – 5.0 programs.

Results: most common local side effects were pain, swelling, redness and swelling at the injection site. Frequent systemic side effects were increased body temperature, headache, weakness, chills, muscle pain and malaise. After the first component of Sputnik V and Sputnik Lite, a combination of general and local side effects was most common. After the second

component of Sputnik V, general complications prevailed. Acute respiratory viral infection symptoms were detected in 35.3% of respondents after vaccination with both vaccines. Every third person after vaccination with both Sputnik V and Sputnik Lite showed symptoms of acute respiratory infections in 72% of cases within one month of vaccination.

After application of Sputnik V, symptoms of confirmed COVID-19 occurred in 16.1% of the vaccinated persons and after application of Sputnik Lite in 20.9%. Both components of Sputnik V were tolerated without symptoms of postvaccination syndrome by 11.3% of those surveyed, while Sputnik Lite was tolerated by 23.3%.

Conclusion: In young adults, Sputnik V and Sputnik Lite vaccines caused mild to moderate side effects. Mild ones resolved on their own within a few days. Moderate side effects occurred within 7-14 days. Vaccines against COVID-19 have shown high efficacy in the prevention of infection and the severe course of COVID-19 in young people. Thus, only 16.7% of those vaccinated showed symptoms of confirmed COVID-19.

Keywords: COVID-19, vaccination, side effects, Sputnik V, Sputnik Lite.

VITAMIN B12 DEFICIENCY POLYNEUROPATHY AND THE PHARMACOTHERAPY

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Background: Vitamin B12, also known as cobalamin, is an essential substance for our body. It plays an important role in RBC formation. B12 is produced by bacteria that colonize the guts of ruminant or the colon of humans. It can be found in animal product, absorption takes place in ileum through intrinsic mediated mechanism. According to studies hematological impairments at early stages and neuro-psychiatric manifestations later on, are associated with B12 insufficiency and if not treated promptly can lead to permanent disability. B12 functions for DNA synthesis of myelin-producing oligodendrocytes and the synthesis of myelin. Myelin is a sheath that surrounds the axons of many nerves as an electrical insulation, thus facilitating a faster conduction of velocity through the nerves. That significantly supports regeneration of nerves after injury. So neurological impairments are usually manifested in the form of paraesthesia, numbness, ataxia, myelopathy, dementia and neuropsychiatric abnormalities.

Objective: To study the occurrence of vitamin B12 deficiency polyneuropathy and the pharmacotherapy in younger patients.

Methods and materials: The materials used for this study are obtained from an online data from the World Health Organization (WHO) and also from the National Library of Medicine.

Results: From a total of 63 patients (52 males) with a mean age of 46.2 years were studied. The mean duration of symptoms at presentation was 10.3 months. Myeloneuropathy (54%) was the commonest neurological manifestation, followed by myeloneuropathy with cognitive dysfunction (34%), and peripheral neuropathy (9%). Neuropsychiatric manifestations and dementia were observed in 38% and 19% of patients respectively. All patients had megaloblastic changes in the bone marrow smear. Eleven (17.5%) patients had both hemoglobin and the mean corpuscular volume (MCV) within the normal range. Follow-up after at least six months of therapy with parenteral B12 showed improvement in 54% patients.

Conclusion: Vitamin B12 deficiency neuropathy is a rare debilitating disease that affects mostly the elderly people. However; young adults with neuropathic symptoms warrant a high index of suspicion. Peripheral blood smears and complete blood counts are sufficiently for diagnosis in resource-limited settings.

Keywords: Vitamin B12 deficiency, neuropathy, young female, resource–limited setting.

COMPLEX INTRA-ARTERIAL THERAPY FOR TROPHIC ULCERS OF DIABETIC FOOT

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Background: Diabetic foot ulcers are among the most common complications of patients who have diabetes mellitus that isn't well controlled. It is usually the result of poor glycemic control, underlying neuropathy, or poor foot hygiene. Any pathology results directly from peripheral artery disease and/or sensory neuropathy affecting the feet in diabetes mellitus. Trophic ulcers occur in 1-2% of adult population of the Russian Federation. They are more common in women than in men. Trophic ulcers with venous etiology accounts for 70% of the total number of diabetic foot ulcers of various origins.

Objective: To develop an effective method of complex treatment of trophic ulcers of diabetic foot. To use an intra-arterial method of drug administration in the complex treatment of trophic ulcers of diabetic foot, Bandage applications in treatment of trophic ulcers of diabetic foot.

Methods and materials: We used Zenkov A.A. and Kosinets A.N. work on Antibacterial therapy in complex treatment of diabetic foot, A.V. Borota and co research on the new methods of intra-arterial in diabetic foots. The methods for course of inpatient treatment and drugs administration, local treatment with possible necrectomy, dressings with ointment were used too.

Results: There was pain reduction in 26 patients (all patients), ulcer closure in 24 of them, accelerating healings of ulcer and elimination of edematous syndrome in all patients in the research.

Conclusion: The best results in the treatment of trophic ulcers of the lower extremities were achieved with the help of the complex treatment, intra-arterial therapy and repeated use of Unna bandage dressing.

Keywords: Neuropathy, intra-arterial, inpatients, necrectomy, complications.

PHYSIOLOGICAL RESEARCH ON CORONARY ARTERY DISEASE

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Background: Coronary Artery Disease (CAD) is a pathophysiological disease which is a common tyrant in the world at large, caused by numerous agents, factors and physiological changes. It has been recognized as a globally occurring disease and studies have been put in place to tackle it and save lives.

Objective: To give a wide and knowledgeable point of view and enlighten us about the causes, effects and remedies of coronary artery disease (CAD). This knowledge also helps in the fight against other related cardiovascular diseases in our society. To enlighten the public on measures to improve the normal working heart conditions of the global society.

Methods and materials: A complete and recent study was carried out in the publication of the relatively occurring cardiovascular diseases (coronary artery disease) and other related diseases and accurate data were analyzed to comprehensively give broad information on the disease case of study, followed by accurate reviews.

Results: The research after been carried out extensively shows the relative occurrence of cardiovascular diseases in specific geographical locations, Russia and America included, causes ranging from dieting, lifestyle, lack of estrogen, gender and age. Adverse effects and possible outcomes and remedies of the disease.

Keywords: Coronary artery disease (CAD), infarction, diabetes, cardiovascular disease, angioplasty.

SCIENTIFIC ABSTRACTS OF CONFERENCE PARTICIPANTS FROM OTHER MEDICAL UNIVERSITIES OF THE RUSSIAN FEDERATION

THE VALUE OF THE COMPLEMENT SYSTEM IN ALLERGIC CONDITIONS

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Objective: To assess the importance of the complement system which plays a major role in the inflammatory response which lead to allergic reaction.

Methods and materials: Complement consists of about 35 proteins, most of which are produced by the liver, and are present in the serum in an inactive form. Of these proteins, 12 are essential proteins, and the rest work to regulate the work of these basic proteins. Essential proteins are named with the letter [C].

Results: In normal healthy tissue there are several types of immune cells such as macrophages which phagocytose pathogens and mast cell which release inflammatory cytokines during allergic reaction in the blood components of the complement system including C1,C3, MBL,Antibodies neutrophils in any case of pathogenic position make activation to classical pathway after that activation of alternative by C3b it will cleaved to generate C3b, C3a. The C3a,C5a which are proinflammatory cytokines produced. C5a is an extremely potent chemoattractant. Macrophage posses C5a receptor can combine C5a which make interactions between PAMPS and PRS this process recognize to C3b which make activation to proinflammatory cytokines Ex..il1 il6 il12 these cytokines increase vascular permeability to allow complement systemand neutrophils to gain access to the site of infection. Mast cells also possess c5a receptorupon binding of c5a mast cells are activated and will releaseplatelet-activating factorhistamineand other pro-inflammatory cytokines [allergic reaction] these molecules will activate endothelial cells mast cells also possess c5a receptor to increase vascular permeabilityallows fluid from blood vessels to enter the site of infection leading to [edema]. And also aids the chemotaxis of immune cells to Chemotaxis of immune cells the site of infection the result of all of these actions is inflammation which cause allergic reaction.

Conclusion: Complement system is a crucial mediator of the innate immune response, contributing to cell homeostasis, tissue development, and repair, reproduction, and cross-talk with other endogenous and cb5 plays an important role in inflammatory and cell killing processes without c5a all of these actions will occur but at a reduced rate.

Keywords: Allergic conditions, complement system, classical pathway, phagocytosis, PAMPS.

HEMORRHAGIC FEVER WITH RENAL SYNDROME IN THE NOVGOROD REGION

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Background: Hantaviruses are the causative agents of two zoonotic diseases: hemorrhagic fever with renal syndrome (HFRS) and Hantavirus cardiopulmonary syndrome (HCPS). The pathogenesis of HFRS is poorly understood.

Objective: The purpose of our study was to study cases of hemorrhagic fever with renal syndrome in the Novgorod region.

Materials and methods: We have studied the report of the Novgorod Region Sanitary Service on the level of infectious diseases for 2018 – 2021.

Results: On the territory of the Novgorod region there are natural foci of tularemia, hemorrhagic fever with renal syndrome (HFRS), leptospirosis, tick-borne viral encephalitis, and systemic tick-borne borreliosis.

In 2018, the incidence of HFRS in the region amounted to 21 cases or 3.46 per 100 thousand population (2017 – 3.27) and was registered in 8 administrative territories.

In 2021, the incidence of HFRS in the Novgorod region was 1.69 per 100 thousand population – 10 cases of diseases were registered (2020 – 2.85) in 6 administrative territories of the region.

The results of laboratory studies of environmental samples, rodents for the presence of pathogens of natural focal infections in 2021 indicate that natural foci of HFRS and tularemia are still active in the Novgorod region, foci of leptospirosis are inactive. Out of 746 rodent samples, Hantavirus was detected in 11 (17.9%).

Conclusion: In 2021, compared with 2018, there was a decrease in the incidence of hemorrhagic fever with renal syndrome by 1.7 times.

Keywords: Hantaviruses, (HFRS), PUUV infection.

THE RESULTS OF THE SURVEY OF ORTHODONTISTS ON THE DIAGNOSIS OF ENT DISEASES

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Background: According to the increasing prevalence of nasal breathing disorders, mouth breathing and adenoid hypertrophy in children, the

issue of cooperation between orthodontists and otorhinolaryngologists is relevant. The successful orthodontic treatment is based on making an accurate diagnosis and developing a treatment plan considering the functional characteristics.

Objective: To conduct a survey of Moscow orthodontists to analyze the level of collaboration with otorhinolaryngologists.

Materials and methods: We have conducted a voluntary anonymous survey of 50 orthodontists. The survey of 50 orthodontists with clinical experience of up to 5 years was conducted using a specially designed questionnaire. This questionnaire contained 10 questions reflecting the level of collaboration between orthodontists and otorhinolaryngologists.

Results: We got the data that 80% of respondents referred children with adenoids in practice consult an ENT doctor before orthodontic treatment. Only 56% of orthodontists assessed the condition of the upper airways, including adenoid hypertrophy in patients. Most orthodontists (48%) preferred lateral cephalography for evaluation of the upper airways. Some doctors use CBCT images (26%) for this goal. To the question whether you have participated in interdisciplinary councils, conferences, etc. together with doctors of other specialization (with ENT doctors) only 44% of respondents answered positively. The question if it is necessary to cooperate ENT doctor and an orthodontist to provide comprehensive medical care for patients 72% of respondents answered positively.

Conclusion: Cooperation between orthodontists and otorhinolaryngologists is not sufficient. It is important for specialists work together to provide high-quality medical care for patients. The results of the survey will be taken into concideration in the formation of new methodological materials for the section "Orthodontics".

Keywords: Orthodontist, otorhinolaryngologist, collaboration, questionnaire, adenoid.

MALARIA IN THE TROPICAL COUNTRIES AND IN RUSSIA: CONDITION FOR DISEASE OCCURING IN ENDEMIC ANDD NON ENDEMIC REGION

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Background: Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects a certain type of mosquito which feeds on humans. People who get malaria are typically very sick with high fevers, shaking chills, and flu-like illness. Although malaria can be a fatal disease,

illness and death from malaria can usually be prevented. About 2000 cases of malaria are diagnosed in the United States each year. The vast majority of cases in the United States are in travelers and immigrants returning from countries where malaria transmission occurs, many from sub-Saharan Africa and South Asia. Where malaria is found depends mainly on climatic factors such as temperature, humidity, and rainfall. Malaria is transmitted in tropical and subtropical areas, where Anopheles mosquitoes can survive and multiply. And malaria parasites can complete their growth cycle in the mosquitoes ("extrinsic incubation period").

Temperature is particularly critical. For example, at temperature below 20°C (68°F), Plasmodium falciparum (which causes severe malaria) cannot complete its growth cycle in the Anopheles mosquito, and thus cannot be transmitted in many temperate areas, such as Western Europe and the United States. That's why in Russia malaria is not too much known nowadays, rare cases were noted in summer but in winter where the temperature is mostly below 0°c Plasmodium falciparum does not survive. Economic development and public health measures have succeeded in eliminating malaria. However, most of these areas have Anopheles mosquitoes that can transmit malaria, and reintroduction of the disease is a constant risk.

Objective: The goal of most current organization National Malaria Control Programs (NMCP) and most malaria activities is to reduce the number of malaria-related cases and deaths.

Methods and materials: Usually people get malaria by being bitten by an infective female Anopheles mosquito. Only Anopheles mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected person. When a mosquito bites an infected person, a small amount of blood is taken which contains microscopic malaria parasites. About 1 week later, when the mosquito takes its next blood meal, these parasites mix with the mosquito's saliva and are injected into the person being bitten. Because the malaria parasite is found in red blood cells of an infected person, malaria can also be transmitted through blood transfusion, organ transplant or the shared use of needles or syringes contaminated with blood. Malaria may also be transmitted from a mother to her unborn infant before or during delivery ("congenital" malaria).

Results: Malaria occurs in more than 100 countries and territories. About half of the world's population is at risk. Large areas of Africa and South Asia and parts of Central and South America, the Caribbean, South East Asia, the Middle East, and Oceania are considered areas where malaria transmission occurs. Yet malaria does not occur in all warm climates. For example, malaria has been eliminated in some countries with warm climates, while a few other countries have no malaria because Anopheles mosquitoes are not found there. Anopheles mosquito is temperature sensitive.

Conclusion: At present, a favorable malaria situation that contributes to the elimination of local vivax malaria transmission has established in Russia by 2010 due to the following factors: 1)A considerable reduction in the number of imported cases of vivax malaria from endemic CIS countries; 2)A low malariogenic potential of the territory of the Moscow region where the basic importation of malaria occurs; 3)A higher awareness about the prevention of malaria in the population; 4)Medical workers' alertness and timely detection of patients with malaria; 5)Failure for sporadic cases of vivax malaria to be rooted in the urban area due to episodic carriage of various pathogenic phenotypes.

Keywords: Malaria, Plasmodium falciparum, high fever, Anopheles, centeral Asia, NMCP.

THE LEVEL OF C-REACTIVE PROTEIN (CRP) IN COVID-19 PATIENTS

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Background: C-reactive protein (CRP) is a protein made by the liver in response to factors released by macrophages and fat cells. It is a member of the pentraxin family of proteins. The level of CRP increases when there's inflammation in the body that eventually increases interleukin-6 secretion by macrophages and T cells. As a result interleukin-6 acts as both a pro-inflammatory cytokine and an anti-inflammatory myokine. Less than 0.3 mg/dL: Normal. 0.3 to 1.0 mg/dL: Normal or minor elevation. The fluctuation of the level of CRP in the body is due to some complications like diseases or any viral or bacterial attack. Substantially raised CRP values are usually found in pneumonia, 3-6 and a high CRP value has been shown to be a strong predictor for this disease in general practice.

Methods and materials: The work was performed at Yaroslav the Wise Novgorod State University (75 patients with mild COVID-19 and 292 patients with diagnosed moderate and severe forms of infection were examined.

Results: One of the objectives of our study was to identify laboratory markers, that is, laboratory indicators that are directly related to the prognosis of patients with COVID-19. Most studies show that the severity of the condition correlates with the level of increase or decrease in these indicators. It is known that in the pathogenesis of COVID-19, a significant role is played by progressive systemic inflammation, accompanied by lymphopenia and neutrophilosis, as well as the degree of the inflammatory

process, the main markers of which are the severity of fever and the magnitude of C-reactive protein.

Table 1

Concentration of C-reactive protein in groups of patients with moderate and severe forms of the disease, mg/l

	Concentration of C-reactive protein, mg/l			
	Moderate form of the disease (M±a)		Severe form of the disease (M±a)	
	M±m	Me	M±m	Me
Without complications	6,65±2,92	2	–	–
Acute bronchitis	2,71±1,01	1,35	–	–
Pneumonia	5,95±1,15	1,8	7,21±2,33	2,1
Pneumonia, ARDS	1,74±0,54	1,2	2,56±0,86	1,3

**- differences in the frequency of occurrence of increased C-reactive protein, $p<0.05$*

Conclusion: If we compare the frequency of elevated C-reactive protein by groups, the difference is significant for all groups, except for pneumonia with ARDS in moderate and severe forms, but this unreliability cannot be considered significant due to the fact that at the moment there are few observations on the moderate form with ARDS (only 5 cases).

Keywords: C-reactive protein (CRP), liver, inflammation, agglutination, bacterial infection, autoimmune disorder.

THE EFFECT OF THE USE OF GRADE 4 PURE TITANIUM IMPLANTS AND TI-6Al-7Nb AND TI-6Al-4V TITANIUM ALLOYS ON THE CONDITION OF BONE TISSUE IN RATS

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Relevance: Dental implantation is a priority task of modern dentistry, giving preference to the use of implants made of titanium and its alloys, which increase the strength. But over time, these alloying elements begin to be released, having a negative effect on the bone tissue and mucosa.

Objective: Experimental study of the condition of bone tissue using Grade 4 pure titanium dental implants and its Ti-6Al-7Nb and Ti-6Al-4V alloys.

Methods and materials: The experiments were carried out on 81 sexually mature laboratory rats of the Wistar line, which, in a state of anesthesia caused by the injection of 0.1 ml/100g of the general anesthetic zoletil (France), two implants of 6.0x1.5 mm in size were installed in the lower jaw (KONMET, Russia). The results obtained in one and two weeks and 30 days after the implant placement were statistically processed using the Student's t-test and taking into account the normality of the data distribution based on the Shapiro-Wilk criterion. Reparative-regenerative features were studied in the bone tissue and mucosa around the implant by such histochemical indicators as the percentages of antigens: CD 45 inflammation, connective tissue activity of macrophages and fibroblasts (Vimentin), proliferative activity of Ki 67 cells and adhesion of endothelial cells from the total area of the CD 31 preparation, as well as the frequency and time of implant rejection, depending on the composition.

Results: In a month after the installation of implants, the inflammatory process in the bone tissue and mucosa, the reaction of the vascular endothelium with the likelihood of adhesion of blood cells with the possibility of blood clots were less pronounced when using pure titanium Grade 4 implants, and most pronounced when using vanadium. The survival rate of the implants was as follows: 16.5% when using those that included vanadium; 45.0% when titanium was fused with niobium and 94.5% with pure titanium.

Conclusion: According to the process of modeling the bone tissue and mucosa around the implants and their survival, the most positive results were obtained when pure titanium implants were used, and the least when vanadium was included in their composition.

Keywords: Titanium implants, Grade 4, Ti-6Al-7Nb, Ti-6Al-4V.

COMPARATIVE ANALYSIS OF ANTIMICROBIAL PROPERTIES OF NATURAL AND SYNTHETIC DRUGS

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Background: Today medicine requires the use of natural remedies for the prevention and treatment of various diseases, which is associated with the development of resistance to synthetic drugs and an increase in the frequency of side effects from them. Syzygium aromaticum, which is widely used in dentistry due to their antimicrobial qualities and activity against pathogenic microflora of the oral cavity and root canals, has been studied as a phytotherapeutic agent.

Objective: To study the antimicrobial qualities of phytotherapeutic agents with an example of essential oil and clove hydrolate experiment in household conditions.

Methods and materials: An experiment was conducted by studying the antimicrobial feature of essential oil and clove hydrolate in a comparative aspect with the broad-spectrum antimicrobial synthetic spray «Comet» which is for domestic use on objects affected by fungal microflora. Simple foods were used as a substrate for the cultivation of fungal flora: white bread and lemon peels. These products were kept under the same and appropriate conditions, therefore the grown food fungus was treated with clove essential oil and «Comet» spray, respectively. The second version of the study was aimed at preventing the formation of pathogenic microflora. For this, food objects were pre-treated with essential oil and clove hydrosol, respectively, and the third sample was left for observation, without any treatment.

Results: As a result of the experiment, strong antifungal qualities of natural products were revealed. The surface of the lemon peel, treated with essential oil, acquired a clean, shiny surface, without traces of fungus. The piece treated with the «Comet» spray was covered with a white thick pellicle, under which a layer of mold remained, but did not show a tendency to grow. The prevention experiment demonstrated resistance from attacking on the pre-treated object, in contrast to the untreated sample, which developed dark gray food fungus foci as early as 5 days later.

Conclusion: The results of a comparative analysis of the antimicrobial qualities of natural and synthetic drugs revealed significant advantages of natural over a synthetic agent, arousing interest and motivating further research in this direction.

Keywords: Essential oil, hydrolate, antimicrobial activity, cloves, fungal microflora.

CRISPR-CAS TECHNOLOGY: REVOLUTIONIZING GENE EDITING

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Background: The CRISPR-Cas gene-editing technology is a powerful tool for precise DNA sequence manipulation in living organisms that has significant implications for basic research and applied areas like biotechnology and medicine. Originally discovered as a mechanism for bacteria's immunity against viral infection, the technology has rapidly expanded over the past decade for genetic engineering and gene editing applications.

Objective: To provide a comprehensive overview of the CRISPR-Cas technology, including its history, mechanisms of action, and potential applications.

Methods and materials: A systematic literature review was conducted to identify relevant research articles, reviews, and other sources on the CRISPR-Cas technology. Searches were conducted in major scientific databases such as PubMed, Web of Science, and Google Scholar. We focused on recent publications from the past five years to ensure that the most current research is included in our analysis.

Results and discussion: The CRISPR-Cas technology has enabled precise manipulation of DNA sequences in living organisms, which has vast potential in various medical fields such as cancer research, genetic diseases, infectious diseases, and regenerative medicine. It has been used to generate animal models for disease research and to modify human embryos for research purposes. The most promising application of CRISPR in medicine is its use in gene therapy, and the FDA approved the first gene therapy using CRISPR technology to treat sickle cell disease. However, concerns about its safety and ethical implications, including off-target effects and the possibility of unintended consequences, need to be carefully evaluated. Efforts are underway to improve the specificity and accuracy of the CRISPR-Cas system and to develop ethical guidelines for its use.

Conclusion: The CRISPR-Cas technology is a powerful tool that has revolutionized the field of genetics. Although it is important to continue researching the safety and efficacy of the technology and develop ethical guidelines for its use, its potential applications are vast and likely to transform many areas of science. Future research may lead to further advances in the CRISPR-Cas system, opening up new possibilities for gene editing and genetic engineering.

Keywords: CRISPR-Cas, gene editing, genome engineering, biotechnology, medicine**.**

THE ADVANTAGE OF THE SCREW FIXATION METHOD FOR ORTHOPEDIC CONSTRUCTIONS SUPPORTED BY IMPLANTS COMPARED TO CEMENT FIXATION METHOD

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Background: Orthopedic dentistry is one of the most important areas of dentistry that deals with restoring the functions of the dental arch and

the dentofacial system of patients who have lost teeth due to injury, disease, or age-related changes. Fixation of orthopedic constructions on teeth and implants is an integral part of such a restorative process. There are two main methods of fixation: cement and screw.

Objective: To compare the effectiveness and reliability of the screw fixation method for orthopedic constructions supported by implants compared to the cement fixation method. The results of this study may help dentists make a more informed choice of the fixation method, taking into account the individual characteristics of each patient and the specific situation.

Methods and materials: The study was conducted at the orthopedic dentistry department of a clinic for a period of 12 months. The study included patients suffering from partial or complete tooth loss and requiring restoration of dental arches using orthopedic constructions on implants. Patients were randomly divided into two groups: a group in which the screw fixation method of orthopedic constructions with support on implants was used and a group in which the cement fixation method was used. Each group had 20 patients. Data was collected during the installation of orthopedic constructions, as well as 3, 6, and 12 months after installation.

In the group that used the screw fixation method of orthopedic constructions, 30 dental implants were installed. In the group that used the cement fixation method, 28 dental implants were installed. Implants from leading manufacturers were used for the installation of orthopedic constructions in this study.

In this study, the following methods were used to collect and analyze data:

1. Patient observation: We monitored the treatment and rehabilitation process of patients with orthopedic constructions on implants fixed with screws, as well as patients with orthopedic constructions fixed using the cement fixation method.

2. Clinical analysis: We analyzed the results of clinical examinations of patients and determined how successfully they coped with chewing function and how they evaluated the comfort of using orthopedic constructions.

3. Dental radiograph analysis: We conducted an analysis of dental and jaw X-rays of patients to assess the quality of fixation of orthopedic constructions and identify any possible problems.

4. Comparative analysis: We compared the results of using the screw fixation method of orthopedic constructions with support on implants with the results of using the cement fixation method.

5. Measurement of indicators: We measured some indicators related to the process of treatment and rehabilitation of patients, such as

the time spent on installing orthopedic constructions, the time of rehabilitation after the procedure, the number of clinic visits to support orthopedic constructions, and other indicators that could be useful in evaluating the effectiveness of different methods of fixation of orthopedic constructions.

Results: The results of our study showed that the use of the screw fixation method for orthopedic constructions with support on implants has several advantages over the cement fixation method.

One of the main advantages of the screw fixation method is the ability to achieve more precise and reliable fixation of orthopedic constructions on implants. This is due to the fact that screws provide a tighter contact between the implant and the orthopedic construction than the cement method, which reduces the likelihood of movement of the construction and damage to surrounding tissues.

In addition, the screw fixation method for orthopedic constructions with support on implants allows for a shorter rehabilitation time after the procedure. This is due to the fact that screws do not require time for the cement to harden and can be used immediately after installation. In contrast to the cement method, which requires additional time for the cement to fully harden and fix the orthopedic construction.

Also, the screw fixation method for orthopedic constructions with support on implants is a more long-term solution than the cement method. This is due to the fact that the cement method can lead to the destruction of cement and damage to surrounding tissues over time, whereas the screw method provides a more reliable fixation of the orthopedic construction on implants.

However, the screw fixation method for orthopedic constructions with support on implants also has some disadvantages. For example, the installation of screws may be a more complex procedure, requiring higher qualifications and experience from the dentist. Also, due to the more precise and reliable fixation, the replacement of the orthopedic construction may be a more complex and expensive procedure than when using the cement method.

Conclusion: The use of the screw fixation method for orthopedic structures with support on implants has its advantages compared to the cement fixation method. This method allows for a more accurate and reliable fixation, as well as reducing the rehabilitation time for patients. However, the choice of fixation method should depend on the individual characteristics of each patient and the specific situation.

Keywords: Screw method, fixation, orthopedic structures, implants, cement method, reliability, rehabilitation.

ANALYSIS OF THE ANTIMICROBIAL AND PHYSICOCHEMICAL PROPERTIES OF PHARMACEUTICALS BASED ON EDTA

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Background: EDTA (ethylene-diamine-tetra-acetic acid) is a chemical compound used in medicine, cosmetology, food industry, and other fields. One of the main effects of EDTA is its antimicrobial activity, which makes it useful in the treatment of various infectious diseases. In this study, we will analyze the antimicrobial and physicochemical properties of different EDTA preparations from various manufacturers.

Methods and materials: For the study, we used five different EDTA preparations from various manufacturers: Merck KGaA (Germany), Sigma-Aldrich (USA), Fluka Analytical (Switzerland), TCI Chemicals (Japan), and Alfa Aesar (USA). The antimicrobial activity of the preparations was determined using the agar diffusion method, using three different types of microorganisms: *Staphylococcus aureus, Escherichia coli,* and *Candida albicans.* The physicochemical properties were analyzed using a pH meter and a spectrophotometer.

Results: As a result of the study, we found that all five EDTA preparations had antimicrobial activity against all three types of microorganisms. However, different preparations had varying degrees of activity. The most effective preparation was EDTA from Sigma-Aldrich, which showed the best activity against all three types of microorganisms. The next most effective were the EDTA preparations from Merck KGaA, followed by Fluka Analytical, TCI Chemicals, and Alfa Aesar.

It was found that the antimicrobial activity of the preparations can be explained by their ability to form complexes with metal ions, such as calcium, magnesium, and zinc, which are necessary for the growth and survival of bacteria and fungi.

The physicochemical properties of the EDTA preparations were also analyzed. We measured pH values and determined the transparency of the solutions. The results showed that all EDTA preparations had similar pH values and solution transparency, indicating similarity in their physicochemical properties.

We also studied the ultraviolet (UV) absorption spectra of the EDTA preparations. The obtained spectra showed that all preparations had characteristic absorption peaks at wavelengths of 190-200 nm and 270-280 nm, indicating their structure and purity.

Conclusion: In this study, we analyzed the antimicrobial and physicochemical properties of five different EDTA preparations from different manufacturers. All preparations showed antimicrobial activity against all three types of microorganisms, but preparations from Sigma-Aldrich and Merck KGaA were found to be the most effective. The physicochemical properties of all preparations were similar, indicating the similarity of their structure and purity.

Thus, our analysis showed that the choice of a specific EDTA preparation may depend on its manufacturer and its antimicrobial activity. The study results also confirm the importance of further research into the properties of EDTA and its applications in medicine and other fields.

Keywords: EDTA, ethylenediaminetetraacetic acid, antimicrobial activity, S*taphylococcus aureus, Escherichia coli, Candida albicans*, Merck KGaA, Sigma-Aldrich, Fluka Analytical, TCI Chemicals, Alfa Aesar.

COMPARATIVE CHARACTERISTICS OF THE EFFECTIVENESS OF LOW-INTENSITY LASER RADIATION EXPOSURE IN PATIENTS WITH CHRONIC GENERALIZED PERIODONTITIS

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Background: The methodological feature of restorative medicine, which consists in the priority of non-drug methods of treatment of common diseases, has already given fruitful results in therapeutic dentistry.

Objective: To evaluate the clinical effectiveness of the combined use of interval hypoxic training and low-energy infrared laser in the treatment of patients with chronic generalized periodontitis.

Methods and materials: The present studies involved 120 patients with chronic generalized periodontitis of mild and moderate severity (including 71 men and 49 women) aged 25 to 60 years.

In total, the study consists of five stages. The 1st stage is the analysis of initial condition of patients. In order to validate changes in various functional systems of the body of patients with CGP reference values were obtained in 20 healthy volunteers (12 men and 8 women); The 2nd stage – a single effect of physical factors on the body of patients with CGP. The 3rd-stage is the course application of various methods of treatment of patients with CGP. The 4th stage is the study of long-term treatment results. The 5th stage is the evaluation of predictors of the effectiveness of new therapeutic methods.

Results: The study of the effects of a single application of LILR and hypoxic exposure showed significant differences in their effect on metabolic indicators and stress indicators.

Conclusions: The addition of the standard treatment regimen for patients with CGP with the course use of LILR (main group I) or IHT (main group II) causes an increase in the positive dynamics of subjective manifestations of the disease by 12-15% and index parameters of dental status by 10-13% compared with the control.

The complex course use of LILR and IHT is accompanied by the achievement of the maximum clinical result in patients with CGP, manifested by a decrease in the frequency of complaints by an average of 60.9+5.48% and a decrease in dental indices by 31+0.97% compared to the baseline level. A combination of local (LILR) and systemotropic (IHT) mechanisms provide the supraadditive (potentiating) nature of the interaction of the sanogenetic potencies of the influencing factors.

Keywords: Chronic generalized periodontitis, interval hypoxic training, low-intensity laser radiation.

THE EFFECT OF ORTHODONTIC TREATMENT ON ALVEOLAR BONE DENSITY IN PATIENTS WITH OSTEOPOROSIS

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Background: Osteoporosis is a common condition in older adults and can lead to significant skeletal complications, including loss of alveolar bone density. There is a growing interest in understanding the effects of orthodontic treatment on bone health in patients with osteoporosis.

Objective: The objective of this study was to evaluate the effect of orthodontic treatment on alveolar bone density in patients with osteoporosis.

Methods and materials: Sixty patients with osteoporosis who required orthodontic treatment were randomly assigned to either the experimental group (orthodontic treatment) or the control group (no orthodontic treatment). Alveolar bone density was measured using cone beam computed tomography (CBCT) at baseline and after 12 months. Changes in alveolar bone density were compared between the two groups using independent t-tests.

Results: The results showed a statistically significant increase in alveolar bone density in the experimental group (mean increase of 16.7 Hounsfield units) compared to the control group (mean decrease of 6.9

Hounsfield units) after 12 months ($p<0.001$). The findings of this trial suggest that orthodontic treatment can have a positive effect on alveolar bone density in patients with osteoporosis. This has important implications for the management of oral health in this patient population.

Keywords: osteoporosis, orthodontic treatment, alveolar bone density, randomized controlled trial, cone beam computed tomography.

OPTIMIZATION OF THE SURFACE OF TITANIUM ALLOYS BY THE METHOD OF-POWER ION BEAMS

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Background: Currently, titanium implants are widely used in dental and orthopedic medicine, as titanium is a biocompatible material. A key role in the osseointegration of titanium implants with bone is played by methods of surface treatment of titanium alloys, which is a whole direction in implantology. A lot of works has been devoted to the development of optimal titanium surface treatment technologies in order to impart osseointegrative potential. The physicochemical properties of a titanium surface made of a VT 1-0 alloy modified with powerful ion beams (PIB) were studied, and studies were also conducted in vitro and in vivo. The modification method proposed by us made it possible, along with the creation of a microrelief, to achieve high purity and strength of the surface, preventing the migration of metal impurities from subsurface layers into surrounding tissues.

Objective: To develop a protocol for creating a developed surface of titanium alloys by processing with powerful ion beams, and to investigate the biocompatibility of the obtained samples.

Methods and materials: Comparative histological studies of the surface of dental implants under in vivo conditions, previously subjected to various variants of mechanical pulse treatment, in vitro conditions for proliferative activity of Balb/NIH 3T3 mouse fibroblasts and cytotoxicity using MTS test, also divided into groups according to the processing methods, were carried out. PIB processing was carried out at the TEMP-4M installation in the laboratory of "Pulse-beam, electric discharge and plasma Technologies" of Tomsk Polytechnic University. The obtained surface was studied on a JEOL 6000 scanning electron microscope, the surface area before and after various types of processing was calculated by the BET (Brauenar-Emmet-Teller) method on the META SORBI-M specific surface analyzer, the roughness of the samples was measured on a non–contact Micro Measure 3D Station profilometer, the microroughness was calculated by atomic force microscopy on the Integra NT-MDT Prima.

Results: After PIB processing, there is a significant smoothing of the relief irregularities, and in the case of pre-machining, PIB processing leads to a significant increase in the specific surface area, both in comparison with the original samples and in comparison with the samples subjected to pre-machining. Disks made of titanium material in direct contact with NIH 3T3 mouse fibroblasts had no negative effect on their adhesion and growth. Histological examination of dental implants revealed good osseointegration with bone tissue. The formation of bone tissue is carried out over its entire surface.

Conclusion: A technique has been developed for producing a titanium alloy V 1-0 with a specific surface area of 0.96 m^2/g. The surface of the modified PIB titanium discs meets the necessary conditions for the cultivation of Balb/NIH-3T3 cells, shows no signs of cytotoxicity, providing conditions for their viability and proliferative activity. Surface treatment of dental implants made of VT 1-0 PIB alloy is a promising, high-tech and safe modification method that allows achieving purity of the titanium surface. Primary osseointegration of dental implants after PIB treatment corresponds to generally recognized indicators.

Keywords: PIB (powerful ion beam), osseointegration, micro-roughness.

STUDY OF THE EATING BEHAVIORS OF FOREIGN STUDENTS

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Background: Identification of eating behavior disorders (EBDs) among students will allow timely correction of this modifiable risk factor for diseases of civilization**.**

Objective: To study the EBDs of foreign students.

Methods and materials: 37 foreign students of Ryazan State Medical University, 10 males and 27 females were surveyed using the Google form. EBDs were identified using The Dutch Eating Behavior Questionnaire (DEBQ). The median age of the respondents was: 22 [22;23] years old, median body mass index (BMI): 21.7 [19.4; 23.8] kg/m^2. In males, 90% were with a normal BMI, 10% – with an excess BMI. Among females, 4 (14.8%) have a body weight deficit, 77.8% have a normal BMI and 7.4% have excess body weight. Statistical data analysis was performed using Statistica 10.0 (StatSoft Inc., USA). The differences were considered statistically significant at $p < 0.05$.

Results: The indicators of the three types of eating behavior in scores did not significantly differ between men and women. Only one student had no EBD. Emotional EBD was detected in 90% of males and 77.7% of women. Restrictive EBD was in 40% of males and 55.5% of females, the frequency of external EBD was comparable (80% and 85,1% in males and females, respectively). One type of EBD (external) was identified by 4 female students, a combination of two EBDs were noted in 60% of males and 51.9% of females, a combination of all three EBDs was in 30% of males and 33.3% of females. Students with restrictive behavior have a significantly higher indicator on the scale of emotional behavior (p=0.04). Females with restrictive behavior have significantly higher BMI (p=0.03). Females with external eating behavior have a lower score on a restrictive scale (p=0.04).

Conclusion: Eating disorders were absent in only one out of 37 students. Restrictive eating behavior was more common in females, and emotional behavior was more common in males. In women, one EBD was more common; in males, a combination of two EBDs was somewhat more common. A third of females and males have been diagnosed with a combination of three EBDs. An increase in BMI contributes to restrictive eating behavior in females. The presence of restrictive eating behavior contributes to the formation of emotional eating behavior in students.

Keywords: Students, eating behavior disorders, body mass index.

INFLAMMATORY PROCESSES IN THE MOUTH AND THEIR CORRECTION WITH NON-PHARMACOLOGICAL MEANS

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Background: The inflammatory process underlies most dental diseases.

Objective: To study the possibility of correcting inflammatory processes in the tissues of the oral cavity with the help of non-pharmacological agents based on herbal medicines.

Methods and materials: The literature was analyzed based on published data and open Internet libraries for 2016-2022 in electronic databases such as: Ceeol, PubMed, Web of Science, Medical-Science, Elibrary and Scopus.

Results: The main medications that stop inflammatory processes in the oral cavity include antibacterial, analgesic, sedative, desensitizing, detoxifying, as well as immunomodulators and vitamins. Drug treatment includes

non-steroidal anti-inflammatory drugs, biostimulants, rheology-improving drugs, tonic, sedative, desensitizing drugs, drugs aimed at the treatment of accompanying illnesses.

However, the availability of a large selection of medicines in the arsenal of a dentist has not led to a final solution to the problem of the prevalence of inflammatory diseases. Along with traditional methods, a non-drug approach in the treatment of inflammatory processes is used both independently and in combination. Herbal remedies are successfully used in combination with therapeutic measures, including the use of antibiotics, sulfonamides, physiotherapy, autohemotherapy, immunomodulatory drugs, and general strengthening procedures.

The use of medicinal plants containing essential oils, anthraglycosides, improves hemodynamics, thereby promoting tissue regeneration.

Conclusion: Thus, given the positive properties that herbal remedies have, it can be argued that their use as an addition or alternative to a conservative type of treatment is possible. Therefore, the issue of the use of herbal medicines for the treatment of patients with inflammatory diseases of the oral mucosa and periodontal tissues is actual and further researches of this topic is required.

Keywords: Phytotherapy, non-pharmacological methods of treatment, inflammation, gingivitis, periodontitis, inflammatory diseases of oral tissues, herbal remedies, herbal medicines.

COMPARATIVE CHARACTERISTICS OF FIBER MATERIALS FOR SPLINTING TEETH WITH PERIODONTITIS OF MODERATE SEVERITY

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Background: Modern dentistry assumes the implementation of innovative materials into clinical practice, simultaneously replacing more traditional and conservative ones, which are inferior in functional and aesthetic aspects. Adhesive technologies have gained high popularity over the last 10 years, which has allowed expanding the choice of material for splinting teeth, replacing metal crowns.

Objective:

1. To compare and conduct a comparative assessment of fibers for splinting teeth with moderate severity of periodontitis.

2. To estimate efficiency of splinting fibers, according to the structure of fibers weaving.

Methods and materials: The study engaged 60 patients, at 60-64 years of age, with medium severity of periodontitis. The surveyed patients were divided into 3 groups, 20 people each, who were splinted with fiber materials with different weaving designs. The first group was splinted with ribbon "Ribbon", the second and third groups were splinted with tape "Connect" and "Caterpillar", respectively. All patients were carried out an index assessment of the periodontal condition in such characteristic as PI, PMA, OHI-S, and the Russell index. Moreover, the assessment of the periodontal condition took into account the degree of mobility of the teeth.

Results and conclusion:

1. The efficiency of splinting teeth is directly related to the area of fixation of the splinting material.

2. The most effective is the method of fixing the splint, in which the fastening of the tape occurs in the upper third of the crown part of the tooth.

3. Comparative characteristics have shown that the most effective in the treatment of teeth for 6 months is the splinting ribbon «Ribbon» with a patented technology of binding (ribbon) weaves. At the same time, remission of the disease was observed in all patients.

Keywords: Splinting of teeth, splinting, weaving design, periodontitis.

STUDY OF THE EFFECT OF A DISINFECTANT SOLUTION OF ELECTROCHEMICALLY ACTIVATED WATER ON THE STRUCTURE OF SILICONE IMPRESSION MATERIALS

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Background: The range of antimicrobial agents for disinfection has significantly expanded in recent years. In Russia, more than 400 disinfectants, pre-sterilization cleaning, and sterilization agents are permitted and practically used, including those for disinfecting impressions. However, there are no universal disinfectants used in orthopedic dentistry, and little is known about the effect of these agents on the dimensions, quality characteristics and chemical composition of impression surfaces after disinfection.

Objective: To investigate the effect of a disinfectant solution of electrochemically activated water on the structure of impression materials using an electron microscope.

Methods and materials: During the experiment 40 impressions were studied (20 from the experimental group and 20 from the control group).

Impressions were obtained from the tested materials “Speedex putty”, “Speedex cream” light body, “Take 1” regular-set, “Take 1 putty”. Three photo images were obtained from each impression at magnifications of 100, 200 and 2000 times. To determine surface roughness, impression surfaces were studied using an electron microscope JEOL JSM 6380 LV and FemtoScan software. Upon visual examination no differences were found between the impression materials of the experimental and control groups, the models had clear boundaries, and their surfaces were smooth and even.

Results: Comparative analysis of the obtained average data of the control group models with the experimental group showed the following: there were no statistically significant differences. The analysis of the obtained data showed that the mean values between the groups were approximately the same.

Conclusion: Measurement of roughness did not reveal any negative effects of the analyte on the quality of the surfaces of experimental and control impressions made from the studied impression materials. Comparison of the obtained results did not show a noticeable change in the roughness indicators of the experimental samples compared to the control samples, indicating the possibility and necessity of its use for disinfecting impressions and the possibility of reducing processing stages compared to known disinfectants in dental practice.

Key words: Impression materials, orthopedics, disinfectants, comparative analysis.

PREVALENCE OF TRAUMATIC LESIONS OF THE MOUTH MUCOSA AT THE APPOINTMENTS

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Background: Malignancy in the oral cavity has a multifactorial etiology. One of the factors is a mechanical trauma by sharp edges of teeth, fillings, prosthesis. Identifying and elimination of traumatic factors plays a key role in prevention of malignization.

Objective: To identify patients with traumatic lesions in the oral cavity at a daily dental appointment, eliminate the traumatic factor and control healing.

Methods and materials: Fifty-eight patients were examined in the study, 20 among them had oral mucosa lesions of different etiologies. Detailed patients’ history and examination of the oral cavity were done for each patient. When a traumatic factor was identified, it was eliminated (sharp edges were polished, defective restorations were replaced). To ac-

celerate healing, depending on the localization, patients were prescribed applications of keratoplastics, as well as healing adhesive films. After two weeks, patients were invited for a check-up for the control of healing.

Results: Among 20 patients with oral mucosa lesions, mechanical trauma was detected in 5 patients (25%), burns with hot food – in one patient (5%), recurrent aphthous stomatitis – in two patients (20%). After elimination of the traumatic factor, the patients were prescribed local anti-inflammatory therapy. It was revealed that when lesions are localized on the cheek and lip mucosa, the adhesive films are well fixed, last for a long time, do not cause discomfort to patients, on the contrary, they bring pain relief. When the lesions are localized on the lateral surfaces of the tongue and in the floor of the mouth, the films are poorly fixed and bring discomfort to the patient; with such localization, it is advisable to prescribe applications of fluid keratoplastics or adhesive pastes.

Conclusions: It is necessary to identify and eliminate traumatic factors, as well as apply the full range of therapeutic agents, namely, applications of keratoplastic preparations, adhesive pastes and films to accelerate the healing of already formed traumatic lesions.

Keywords: Traumatic lesion, oral mucosa, oral cavity, traumatic factors.

THE EFFECTIVENESS IN A TREATMENT OF HYPERTROPHIC GINGIVITIS ON PATIENTS WITH DIFFERENT BRACES SYSTEM

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Background: Hypertrophic gingivitis is a common problem in orthodontic patients and is characterized by an enlargement of the gingival tissues due to inflammation. The use of bracket systems in orthodontic treatment can exacerbate this condition, leading to a higher risk of periodontal disease and tooth loss. Therefore, effective management of hypertrophic gingivitis is crucial for the success of orthodontic treatment.

Objective: The objective of this study is to evaluate the effectiveness of bracket systems in the treatment of hypertrophic gingivitis.

Methods and materials: This study was conducted on 32 patients with hypertrophic gingivitis who underwent orthodontic treatment with bracket systems. The patients were divided into two groups: group A received conventional bracket systems while group B received self-ligating bracket systems. The treatment was conducted over a period of six months. The

patients were evaluated at baseline, 3 months, and 6 months using clinical parameters such as gingival index, plaque index, and probing depth.

Results: The results of this study showed that both conventional and self-ligating bracket systems were effective in the treatment of hypertrophic gingivitis. However, the self-ligating bracket system showed better results in terms of reducing the gingival index, plaque index, and probing depth. Furthermore, the self-ligating bracket system showed a significant reduction in the incidence of gingival bleeding. The use of bracket systems in orthodontic treatment can be an effective treatment option for hypertrophic gingivitis. Self-ligating bracket systems are more effective in reducing the severity of hypertrophic gingivitis, plaque accumulation, and gingival bleeding compared to conventional bracket systems.

Keywords: Hypertrophic gingivitis, bracket system, self-ligating, orthodontic treatment.

OSTEOGENIC TRIPLE NANOCOMPOSITE BASED ON BIOACTIVE PARTICLES AS AN INNOVATIVE TOOTHPASTE ADDITIVE

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Background: Nowadays, the most important task of the perfume and cosmetic industry has become the innovative product development of oral care products with improved properties. Modified agents with biologically active substances (BAS) are suitable for solving this problem. Thus, the introduction of BAS into toothpastes, which include Zn, Si, P, Mg and Ca nanoparticles, allows the formation of a secondary source of mineral elements that are necessary for the teeth strengthening.

Objective: Thus, the aim of the work is to develop an osteogenic triple nanocomposite based on essential macro- and micro elements, as an innovative supplement for toothpastes.

Methods and materials: Osteogenic triple nanocomposite (OTN) was obtained by chemical precipitation in aqueous solutions. Calcium acetate, zinc acetate, and magnesium nitrate were used as metal-containing precursors; potassium orthophosphate, sodium metasilicate, and ammonium carbonate were precipitants; and distilled water was the solvent.

Results and conclusion: Microstructure and elemental analysis of the obtained OTN samples were studied by raster electron microscopy on a MIRA3-LMH instrument with a prefix for determining the elemental composition of AZtec Energy Standard/X-max 20. The obtained data showed

that the surface of OTN is represented mostly by large aggregates, which consist of microspheres of silicates, carbonates and phosphates of zinc, calcium and magnesium. The size of the obtained microspheres lies in the range from 50 to 100 nm. Also, the results obtained showed that the composition of OTN includes elements such as magnesium, calcium, zinc, silicon phosphorus and oxygen. Next, the phase composition of the obtained samples was studied by X-ray phase analysis on an Empyrean diffractometer. Analysis of the PFA results showed that in the diffractogram of the osteogenic triple nanocomposite contains low-intensity broad bands, which characterize the amorphous state of the sample.

In the future, it is planned to develop toothpastes modified with the developed OTN, as well as to study the medical and biological properties of the resulting product.

Keywords: Osteogenic triple nanocomposite, essential macro- and microelements.

THE USE OF MEDICINAL COMPOSITIONS BASED ON A SERIES OF BIDENS FRONDOSA IN AN EXPERIMENTAL MODEL OF PERIODONTITIS

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Background: Periodontal diseases are among the most common pathologies of the maxillofacial region. For their relief, there are various conservative and surgical methods that undergo constant modification. To date, clinicians have tested and implemented hundreds of medications used to relieve inflammatory phenomena. At the same time, the dynamically developing pharmacological market is accompanied by research and newly developed drugs with specified, purposeful properties.

Objective: To develop and test a medicinal composition based on an extract of a series of medicinal herbs in an experiment.

Methods and materials: Based on the vivarium of the PMFI – branch of the Volgograd State Medical University of the Ministry of Health of the Russian Federation, experimental effects on damaged periodontal tissues with medical compositions were carried out on 18 rats. The animals participating in the experiment were divided into 3 groups of 6 mice, each of which used the appropriate drug compositions. For the 1st (control) group, a gel without the content of medical additives was used, the 2nd group (main) gel – Solcoseryl, the 3rd group (main) a medical composition based on a series of bidens frondosa. Exposure using medical compositions was carried out for 14 days. Dynamic monitoring was carried out daily with an assessment of

the local status, on the 3rd, 7th and 14th days, a general blood test was also performed, which allowed to assess the severity of the inflammatory process.

Results: In the control group, the dynamics of the inflammatory process in periodontal tissues was negative. By the 5th day, there was a purulent discharge in the projection of the periodontal pocket, with the exposure of the crown part of the tooth by 1/3. By the 7th day the exposure reached 2/3, according to the leukocyte formula, the leukocyte level averaged 28.3 109 g/l, to On the 14th day without positive dynamics, leukocytes averaged 28.1 109 g/l. In the 2nd group, by the 5th day, a periodontal pocket was formed with the presence of serous discharge persisting for 2 days, by the 7th day, leukocytes were 24.2 109 g/l, by the 14th day, the tooth root was exposed by no more than ½, there was no discharge, the leukocyte index was 20.5 109 g/l. In the 3rd group, the discharge was not visualized at the stages of dynamic observation, there was no exposure of the root part of the tooth, local inflammatory signs – pain, swelling, hyperemia were noted during the first 5 days, on the 3rd day the leukocyte index was 18.4 109g/l, on the 7th and 14th days within the reference values, with an average of 12.0 109g/l. The data obtained testified to the effectiveness of the drug composition used in comparison with Solcoseril gel, which have antiseptic and anti-inflammatory activity equal to it.

Conclusion: The use of medical compositions based on bidens frondosa is characterized by high regenerative activity. Their effectiveness is due to the absence of signs of progress of inflammation, a decrease in inflammation indicators, in particular accelerated rehabilitation according to the leukocyte formula. The introduction of preparations based on plant raw materials is aimed at the prevention of inflammatory periodontal diseases. The low cost of the medical composition used, with wide possibilities, indicates their high demand from the end user.

Keywords: Periodontitis, medical compositions, animals participating in the experiment.

COMPARATIVE ANALYSIS OF ACCESSES TO FRACTURES OF THE LOWER WALL OF THE ORBIT

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Background: Among the diseases of the maxillofacial region, fractures of the bones of the facial skeleton remain in 2nd place in frequency of occurrence, giving way only to purulent-inflammatory diseases. Damage to the middle part of the facial skeleton occurs in 60% of cases, of which 30-40%

involve the walls of the orbit. Traumatic damage to the walls of the orbit in the prevailing majority of cases is characterized by unsatisfactory aesthetic component, functional disorders of the oculomotor apparatus. The existing surgical approaches and methods of reposition and fixation do not have a single use regulation. Over the past decade, endoscopic (nasal) methods of repositioning the bones of the nose and the medial wall of the orbit have been actively introduced into clinical practice. Positive criteria for its use are characterized primarily by the absence of scars, minimal intraoperative risks of damage to oculomotor structures. In addition, small invasion and atraumatism allow it to be used in patients with TBI. Given the variety of damages, the need to find and create minimally invasive methods for repositioning the lower wall of the orbit in this case does not lose its relevance.

Objective: Comparative analysis of accesses to the walls of the orbit.

Methods and materials: On the basis of GBUZ SC "SKKB" from 2018 to 2022, 160 patients underwent surgical intervention in the volume of reposition of fragments of the lower wall of the orbit, according to Hooper classification, 2004 the fracture corresponded to type 1, with a displacement of the central fragment. Patients were divided into 2 groups of 80 people, in the main surgical access – infra-orbital, in the control – minimally invasive. Surgical intervention was performed in all patients after performing MS CT. Control MS CT was performed on the 3rd day after surgery, as well as after 6 months. Control examinations by a neuro-ophthalmologist on the 10th, 14th day, after 1, 3 and 6 months.

Results: In the main group of patients, on the 3rd day of postoperative control, according to MS CT, bone fragments were repositioned into an anatomical position. Peri-orbital edema, hematomas of the upper and lower eyelids, hemorrhagic discharge in minimal volume were clinically determined, oculomotor function corresponded to preoperative data. In patients of the control group, edema of the periorbital region was visualized in 65 patients, hematomas of the lower eyelid in 70 patients, according to MS CT, the position of bone fragments is anatomical. On the 10th day, all patients underwent suture removal. Surgical wounds were consistent, while in 60 patients of the main group, the phenomena of peri-orbital edema persisted, 15 patients complained of a lack of sensitivity in the suborbital region. Patients in the control group had no complaints of swelling of the peri-orbital region. Lack of sensitivity was recorded in 10 patients, restoration of oculomotor function in full. On the 14th day, there were no complaints in the control group of patients. In the main group, 60 patients retained periorbital edema, bringing aesthetic dissatisfaction, 2 patients complained of dryness of the eyeball, periodic pulling pains in the projection of the surgical wound. 1 month after surgery, there were no complaints in the control group. In the main group, 38 patients retained periorbital edema, the 1st visualized a fistula in the projection of the lac-

rimal sac, 10 patients complained of dissatisfaction with the aesthetic appearance. 3 months after surgery, there were no complaints in the control group. In the main group, 35 patients had lymphostasis phenomena in the projection of the lower eyelid, 3 patients in the entire periorbital region, the 1st visualized a fistula in the projection of the lacrimal sac, continuing to function despite conservative therapy, after fistulography, the patient was recommended surgery. 10 patients complained of dissatisfaction with the aesthetic appearance. 6 months after surgery, according to MS CT, bone fragments are in anatomically correct position. The patients of the control group did not complain. In the main group, in 38 patients, the phenomena of lymphostasis in the projection of the lower eyelid persisted, 10 patients complained of dissatisfaction with the aesthetic appearance.

Conclusion: Infraorbital access to fragments of the lower wall of the orbit has the main advantage – sufficient visualization of the surgical field, but a high percentage of postoperative complications in the form of lymphostasis, lacrimal duct damage, lacrimal sac strictures, scar deformities indicate the need to give preference to minimally invasive surgical approaches.

Keywords: Oculomotor apparatus, fracture of the lower wall of the orbit, MSCT.

RESTORATION OF THE ALVEOLAR RIDGE DEFECT WITH A VASCULARIZED MUCO-PERIOSTEAL FLAP

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Background: Restoration of functional balance in the dental system often occurs through prosthetics on dental implants, the installation of which requires compliance with a number of conditions. To achieve them, various methods of bone and soft tissue augmentation are being developed and implemented. They make it possible to obtain optimal indicators in the projection of the recipient bed. The currently existing methods of reconstruction of soft-tissue structures of the alveolar ridge fit into the framework of the use of free full-layer and (or) split muco-periosteal flaps. A significant number of cases are characterized by unsatisfactory results, due to a high degree of shrinkage, as well as insufficient volume of donor structures. The use of a vascularized palatine flap is limited in some cases, in particular by the presence of dental anomalies. At the same time, according to a number of researchers, its morphofunctional capabilities are characterized as the most optimal for eliminating soft tissue defects covering the alveolar ridge.

Objective: To justify the vascularized palatine muco-periosteal flap to eliminate the defect of the alveolar ridge by clinical approbation.

Methods and materials: 42 patients were operated based on GBUZ SC "SKKB" from 2020 to 2022, for the reconstruction of the alveolar ridge using a vascularized palatine muco-periosteal flap. According to the methods of additional visual studies and clinical examination, patients had subtotal defects of the mandible, extending from 2 to 5 teeth in the lateral segment of the mandible with a deficiency of connective tissue structures. 31 patients, were underwent previously surgical interventions with the use of free palatal autografts in other institutions, which did not bring the proper result. The tested method was carried out under anesthesia, the restoration of the volume of soft tissue structures was performed in 3 stages with the displacement and fixation of the flap both along the top of the alveolar ridge and from the vestibular and lingual sides.

Results: In the early postoperative period, on the 12th day, the restoration of soft-tissue structures is in a volume of at least 2 cm, along the top of the alveolar ridge, the height is at least 16 mm, in a thickness of at least 20 mm. One month after surgery, the height is not less than 15 mm, the thickness is not less than 20 mm, the volume is about 2 $cm^2$$cm^2$. were observed. By the end of the 3rd month, the indicators remained stable and corresponded to the previous figures, which indicates the absence of a shrinkage mechanism and the stability of soft-woven structures. 31 patients, who previously underwent augmentation using free grafts, noted a significant difference in the volume of the performed intervention, and its effectiveness in comparison with the previous one.

Conclusion: The use of a vascularized palatine muco-periosteal flap is justified by its incomparable capabilities. When it is taken, it is possible to restore soft tissues with an area of 3.5 $cm^2$$cm^2$ or more. Due to adequate blood supply, the risk of postoperative shrinkage is minimal,. Identical morphological characteristics of the oral mucosa are fundamental in solving aesthetic issues in dental implantation.

Keywords: Vascularized flap, bone augmentation, dental implantation.

RHINOGENIC INTRACRANIAL COMPLICATIONS AS UNSOLVED INTERDISCIPLINARY PROBLEM

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Background: Rhinogenic intracranial complications remain an extremely severe and dangerous pathology for the life of the patient to date.

Objective: Analysis of the prevalence of intracranial complications of a rhinogenic nature in the Republic of Dagestan for the period from 2010 to 2020.

Material and methods: Based on the materials of the ENT clinic of the Republican Clinical Hospital of Makhachkala, we analyzed the incidence of rhinogenic intracranial complications in adults over 11 years, from 2010 to 2020.

Results: During this period, the clinic treated 24,517 patients, including 12 patients with intracranial complications, which amounted 0.05%. Of these, 3 cases ended in death, which is 25%. The age of patients is from 18 to 57 years. Men – 7 (58.3%), women – 5 (41.7%). The admission of patients by months of the year was uneven; mainly, patients were admitted in the summer months, during the period of sea bathing. Bacteriological examination of the contents from the inflamed paranasal sinuses revealed coccal microflora in 66.7% of cases. Structure of intracranial complications is meningoencephalitis and brain abscess in 5 patients, meningitis and brain abscess in 3 patients, meningitis + subdural empyema in 3 patients, purulent meningitis + cavernous sinus thrombosis in 1 patient. The following specialists were involved in the treatment of patients: a neurosurgeon, an intensive care specialist, a neuropathologist, a clinical pharmacologist. An otorhinolaryngologist performed operations to sanitize a focus of chronic infection. As for intracranial complications, the neurosurgeon performed various options for osteoplastic trepanation of the skull with the removal of volumetric formations (abscess, empyema).

Conclusion: When choosing the tactics of surgical treatment of patients with rhinogenic intracranial complications, one should take into account the severity of the patient's condition and, in accordance with this, plan the volume of surgical intervention together with the neurosurgeon.

Keywords: Rhinogenic complications, intracranial complications.

THE EFFECT OF VITAMIN D SUPPLEMENTATION ON HEALING AND INFLAMMATORY MARKERS IN PATIENTS UNDERGOING SURGICAL DENTAL PROCEDURES

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Background: Vitamin D is known to have anti-inflammatory properties and plays a role in bone health. The aim of this randomized controlled

trial was to investigate the effect of vitamin D supplementation on healing and inflammatory markers in patients undergoing surgical dental procedures. Vitamin D deficiency has been associated with delayed healing and increased inflammation in various medical conditions. However, there is limited research on the effect of vitamin D on healing and inflammation in patients undergoing surgical dental procedures.

Objective: To investigate the effect of vitamin D supplementation on healing and inflammatory markers in patients undergoing surgical dental procedures.

Methods and materials: This randomized controlled trial included 28 patients undergoing surgical dental procedures. Patients were randomized to receive either a high dose of vitamin D (4000 IU/day) or placebo for 4 weeks before and 4 weeks after the surgical procedure. The primary outcome was the level of inflammatory markers (C-reactive protein and interleukin-6) and the secondary outcome was the healing score (using a visual analog scale).

Results: The level of inflammatory markers was significantly lower in the vitamin D group compared to the placebo group at 4 weeks post-surgery ($p<0.05$). The healing score was also significantly higher in the vitamin D group compared to the placebo group at 4 weeks post-surgery ($p<0.05$). Vitamin D supplementation may have a beneficial effect on the healing and inflammatory markers in patients undergoing surgical dental procedures.

Keywords: Vitamin D, dental surgery, healing, inflammation, randomized controlled trial.

ANTIBIOTICS AND PROBIOTICS AS FACTORS IN THE DEVELOPMENT OF DENTAL CARIES DUE TO DISRUPTION OF THE BIOGENERIC CYCLE IN THE ORAL CAVITY

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Background: Dental caries is one of the most common oral diseases in the world. This process occurs as a result of the destruction of the hard tissues of the teeth under the influence of acidic metabolic products of bacteria that inhabit the oral cavity. Antibiotics and probiotics are two groups of drugs that can affect the microflora of the oral cavity and, therefore, the frequency of occurrence of caries. Several studies have been conducted on humans to investigate the effects of antibiotics and probiotics on the microflora of the oral cavity and their impact on the frequency of occurrence of caries.

Objective: The aim of this study is to investigate the effect of antibiotics and probiotics on the oral microbiota and the possibility of increasing or decreasing the frequency of caries development.

Methods and materials: For this study, 100 individuals were selected and randomly divided into four groups. Group 1 received the antibiotic amoxicillin for 7 days, group 2 received the probiotic lactobacilli for 7 days, group 3 received a combination of antibiotic and probiotic for 7 days, and group 4 was a control group and did not receive any medication. Standard tests were conducted for all participants, including a clinical evaluation of their teeth and measurement of the acidity level in the oral cavity.

Results: After 7 days of treatment, follow-up investigations were conducted on all participants. The group that received only antibiotics showed a significant decrease in acidity in the oral cavity and a reduction in the number of microorganisms that cause tooth decay. The group that received only probiotics showed an increase in the number of beneficial microorganisms in the oral cavity, but did not have a significant impact on the body as a whole.

Interestingly, probiotics can also have a positive impact on oral health and prevent the development of cavities. They can be included in food supplements or found in natural products such as yogurt or kefir.

Studies show that consuming probiotics can reduce the number of bacteria causing cavities in the oral cavity and improve the quality of the oral mucosa and tooth enamel. For example, a study published in the "International Journal of Dentistry" showed that consuming probiotics helps reduce the number of cariogenic microorganisms in saliva.

Studies have also been conducted on humans, which have shown that the use of probiotic toothpaste can lead to a reduction in the risk of developing cavities in children and adolescents. This is because probiotic toothpaste contains live bacteria that improve the oral microbiota and reduce the risk of cavities.

However, it should be noted that the effects of antibiotics and probiotics on the oral microbiota can be individual and depend on many factors, such as age, immune system status, diet, and other factors.

Studies have also been conducted on humans, which have shown that the use of probiotic toothpaste can lead to a reduction in the risk of developing cavities in children and adolescents.

Conclusion: Thus, studies show that antibiotics and probiotics can influence the oral microbiota and the frequency of caries development. Antibiotics can disrupt the balance of microbiota and increase the risk of caries, while probiotics can improve microbiota and reduce the caries process.

The study findings are important for clinical practice, as they can help in selecting the most effective method for caries prevention in patients, especially those who are at risk of developing caries. Furthermore, understanding the impact of antibiotics and probiotics on oral microbiota can lead to the development of new treatment and prevention strategies for oral cavity diseases.

Keywords: Antibiotics, probiotics, microbiota, caries, oral cavity.

EMERGING PLATFORM TECHNOLOGIES FOR DRUG DELIVERY

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Background: Fast development in the pharmacological biotechnology led to new innovative drugs delivery systems. They capable on controlled release of therapeutic agents that make the therapy of patients in-need more efficient and decrease the period of treatment. The field of regenerative medicine presents promising direction in cell therapy and delivery of the active drug substances. For these purposes were fabricated controlled delivery systems which protect the active ingredients against proteolytic degradation in the human or animal body.

Objective: This study aimed to investigate the current controlled delivery systems used in the field of regenerative medicine and discussed new opportunities.

Materials and methods: A systematic search in PubMed, Web of Science, IBSS, Cochrane library and Google Scholar was conducted and 10 articles in English were included.

Results and discussion: Three-dimensional (3D) bioprinting is a method for the creation of biomaterials and biomolecules. This allows delivering drugs and cells through different routes that provide flexible dosing and ease of administration. The electrospinning technique provides the fabricating scaffolds with controlled release properties. The extracellular vesicles present by themselves are nanoscale lipid-bound structures secreted into the extracellular space. They play important role in providing of high drug concentration at the target site that improves the therapeutic effect. Using of the liposomes decreases the toxicity of biomolecules such as drugs and proteins. In this context, liposomes could be used as a carrier of some genes for tissue engineering. Polymeric micelles are ideal for drug delivery because of biocompatibility and storage stability.

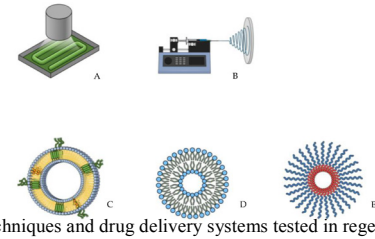

Figure. Examples of techniques and drug delivery systems tested in regenerative medicine:
(A) 3D Bioprinting, (B) Electrospinning, (C) Extracellular vesicles, (D) Liposome, (E) Polymeric micelles
(illustrated from Mansour et al., 2023).

Conclusion: The widespread application of these nanotechnologies and nanocarriers in biomedicine results in maximize the therapeutic efficacy of the delivered drugs and in minimize the side effects from bioactive agents.

Keywords: Nanocarriers, nano-drug delivery, controlled release dosage forms.

SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANOPARTICLES STABILIZED WITH BIOPOLYMERS FOR APPLICATION IN WOUND-HEALING MIXED GELS

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Background: ZnO is a biosafety material with many functions, including photo-oxidative and photocatalytic effects. In addition, its UV-blocking activity causes its use in sunscreen preparations. Zinc oxide nanoparticles are currently spreading rapidly in dermatology due to their antimicrobial activity against both gram-negative and gram-positive bacteria.

Objective: The aim of this work is the synthesis of ZnO nanoparticles stabilized with various polysaccharides and the study of their wound healing properties.

Methods and materials: The synthesis of ZnO nanoparticles was performed by the sol-gel method. Zinc acetate acted as a precursor. Amylopectin, agar-agar, methylcellulose, hydroxyethylcellulose and maltodextrin acted as stabilizers. The microstructure of the samples was studied by scanning electron microscopy on the MIRA-LMH device. The rheological properties of the samples were also studied using an improved rotary viscometer IKA ROTAVISC me-vi.

Results: Analysis of the SEM micrography of ZnO nanoparticles showed that the samples of ZnO nanoparticle gels consist of irregularly shaped aggregates. In the agar-agar stabilized sample, the aggregates have

a lamellar shape. In turn, the surface of ZnO nanoparticles stabilized with methyl cellulose and hydroxyethyl cellulose consists of clusters with a size range from 150 to 1400 nm. In addition, the microstructure of samples with maltodextrin and amylopectin is represented by spherical particles whose diameter ranges from 30 to 70 nm.

It was also found that the addition of polysaccharides to samples of ZnO gels significantly affects their rheological properties. Analysis of the data obtained showed that the optimal polysaccharide for the synthesis of ZnO nanoparticle gels is hydroxyethyl cellulose, which forms a gel with an ordered structure.

Conclusion: In the future, it is planned to study the biomedical properties of the samples in vivo and in vitro.

Keywords: Wound healing, nanotechnology, ZnO, polysaccharides, dermatology.

ELIMINATION OF SOFT TISSUE DEFICIENCY OF THE ALVEOLAR PROCESS BY A VASCULARIZED FLAP

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Background: Dental implantation in the lateral segment of the upper jaw is the most effective in restoring the continuity of the dentition. Despite the number of interventions performed in this series, there are a number of requirements for the recipient's bed, in particular, the consistency of soft-tissue structures.

Objective: Elimination of soft tissue deficiency of the alveolar process by a split vascularized flap.

Methods and materials: Before testing the method, the study was carried out on cadaveric material and biological animal dummies. 190 patients were operated on the basis of the GBUZ SC "SKKB", of which 140 were the control group who underwent classical interventions with free palatine grafts, 50 were the main group with split vascularized flaps from the hard palate.

Results: By the 21st day, after the surgical intervention in the main group, the pain index did not exceed 5 points, social, physical functioning 95-100 points. In the control group, pain reached 30 points; overall health was estimated at 75 points, which correlated with the clinical picture, which correlated with the corresponding clinical picture. In the main group, the flap is fully integrated; the structures being restored are at least

1.5 cm2. In the control group, the flap necrotized in 12 patients, the volume of regenerated tissues in the rest did not exceed 0.3 cm2.

Conclusion: It has been established that the total area of the split muco-periosteal flap exceeded at least 3 times the area of free flaps and 1.5 times the full-layer flaps on the feeding leg. A distinctive feature of the flap was the possibility of simultaneous restoration of soft tissue deficiency with an area of 4-5 cm2.

Keywords: Vascularized flap, dental implantation, quality of life criteria.

MODERNIZATION OF DIAGNOSTIC METHODS AND PRIMARY PREVENTION OF MI IN PATIENTS WITH OSAS

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Background: OSAS can cause arterial hypertension, myocardial infarction, stroke and their complications. This article focuses on the effect of nighttime apnea on the course of myocardial infarction.

Objective: To improve the diagnostic methods and primary prevention of MI in patients with OSAS.

Methods and materials: 35 patients were examined on the basis of RD "RCB SMP": 21 patients diagnosed with ACS with ST-segment elevation, 14 patients diagnosed with ACS without ST-segment elevation. Also, we used Berlin questionnaire, Holter ECG and computerized pulse oximetry. It should be noted that 70% of patients suffered from diabetes and 65% were obese.

Results: The Berlin questionnaire revealed that changes in breathing were noted in 10 patients, 8 of them being male. All of them were diagnosed with ACS. Patients with mild to moderate sleep apnea on Holter showed the first-degree AV blockade in 40% of cases and the second-degree AV blockade in 10%. Single and multiple ventricular extrasystoles were recorded in half of the patients, and supraventricular ectopic activity was observed in 30%. Bradyarrhythmia's occurred in 40% of cases. ST-segment elevations at rest, CA-blockades and PNPG blockades were observed occasionally.

Conclusion: Since the earliest observations, OSAS has been regarded as a cause of sleep arrhythmias. Bradyarrhythmia is thought to occur due to an increase in parasympathetic activity during REM sleep (REM-phase

sleep). Some population studies have reported increased ventricular tachycardia and extrasystoles in patients with moderate to severe OSAS compared to controls. This hypothesis is also reflected in our study. Research in this area will assist in the early diagnosis and more effective treatment of patients with these abnormalities.

Keywords: Obstructive sleep apnea syndrome, myocardial infarction, complications, disorders of cardiac rhythm and conduction.

EVALUATION OF THE EFFICACY OF THE ORGANOMETALLIC ZINC COMPLEX IN CONDITIONS OF ENDODONTO-PERIODONTAL LESIONS IN RATS

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Background: Endodontic periodontal lesions (EPLs) are one of the serious problems in dentistry, because endodontic (pulp) and periodontal tissues are involved in the destructive process. The issues of choosing the optimal medicines (drugs) remain open, and therefore the development of new means of conservative therapy for EPLs remain relevant at the present stage of development of dental science.

Objective: to increase the effectiveness of endodontic periodontal lesions treatment by using zinc metal complex derivative of N-isopropenylimidazole under the laboratory code Pilim-1.

Materials and methods: Under telazol-meditine anesthesia in rats, an experimental model (EM) of EPL was created. A "mixed" method of endodontal damage was used. For the pathology of periodontal tissues, a "ligature" method was used. Inoculation of the root canal system and periodontal tissues occurred within 30 days.

Animals (rats) were randomized into 5 groups of 10 individuals. Group 1 is intact. Rats in groups 2-5 were reproduced with EM EPL. Treatment of the 2nd group was not carried out. Group 3 irrigated the canals and periodontal pockets with a 0.05% solution of chlorhexidine bigluconate (CB), as well as the introduction of Metrogyl Denta® (M-D) into the root canals and periodontal pockets of the lower incisors. In the 4th group – irrigation of channels and periodontal pockets with a solution of m CB, and also injected the compound of the zinc metal complex under the laboratory code Pylim-1 in the form of a 1% hydrogel into the root canals and periodontal

pockets. Group 5 – irrigation of the channels and periodontal pockets of CB, as well as the introduction of M-D and Pilim-1 is similar to the rats of the 4th group. The course of treatment was 14 days.

Conclusion: in the conditions of EM EPL in rats, the use of 1% Pylim-1 gel contributed to a decrease in inflammation, normalization of the gum mucosa and endodontist condition. The Schiller-Pisarev test returned to normal, the level of toxic effects of periodontopathogenic microflora on the peripheral microvasculature network of exchange capillaries was leveled, which caused a decrease in the generation and amount of gingival fluid in the sulcular section of the gingival sulcus in the 4th group by 3.3, and in the 5th by 3.6 times.

Keywords: Experimental model of endodonto-periodontal lesion, zinc metal complex derivative of N-isopropenylimidazole under the code Pilim-1.

EXPERIMENTAL TREATMENT OF PERIODONTITIS USING MEDICAL DRESSINGS BASED ON VACCINIUM MYTILLUS EXTRACT

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Background: Treatment of inflammatory periodontal diseases includes a complex of therapeutic and surgical manipulations aimed at eliminating the etio-pathogenetic factor of the disease. The polypragmatic effect of drugs cannot be excluded, in view of the wide range of effects required, in particular: antibacterial, anti-inflammatory, angioprotective, keratoplastic, immunostimulating and others. Against the background of the use of such a number of drugs, not only the cost of treatment increases, but also the risks of harm to health, in view of the reactions that occur among them. The development and implementation of a single-component drug composition allows minimizing financial costs and eliminating polypragmatic action.

Objective: Experimental approbation of a medicinal composition based on vaccinium mytillus extract.

Materials and methods: On the basis of the PMFI vivarium, 30 laboratory mice were subjected to modeling of inflammatory periodontal disease. Observation was carried out for 14 days, for which a local inflammatory process was determined, with the formation of a periodontal pocket in the projection of the injury inflicted. Purulent discharge was visualized, exposing the root of the tooth by 1/3-1/2 height. After visualization of the characteristic pathological symptoms for the next 2 weeks, a medicinal composition based on vaccinium mytillus extract was applied to the ani-

mals once a day in the projection of the pathological process.

The control of the therapeutic effect was carried out by monitoring the indicators of the leukocyte formula, on the 14th day from the simulation of the process, then on the 3rd day from the start of therapy, on the 10th, on the 14th.

Results and discussion: In 26 animals participating in the experiment, leukocyte counts exceeded 28.5 ± 0.5 g/l 10^9, in 4 animals above 36 ± 0.5 g/l 10^9. On the 3rd day from the start of therapy in 20 animals participating in the experiment, leukocytes underwent positive dynamic changes, not exceeding 22 ± 0.5 g /l 10^9, in 10 animals the indicator remained unchanged at 28.5 ± 0.5 g/l 10^9, which correlated with the preservation of purulent discharge in the projection of the periodontal pocket. By the 10th day, the pathological process regressed in all animals, the periodontal pocket was reduced in length, there was no discharge, and leukocytes did not exceed 14 ± 0.5 g/l 10^9. On the 14th day, inflammatory phenomena persisted in the form of mucosal hyperemia in the projection of injury, the periodontal pocket did not exceed a depth of 1 mm, there was no discharge, and leukocytes averaged 10 ± 0.5 g /l 10^9, which corresponds to the reference value.

Conclusion: The use of a medicinal composition based on vaccinium mytillus extract makes it possible to optimize the treatment of inflammatory periodontal disease due to its pharmacological activity and focus on restoring optimal angiogenesis, antimicrobial, anti-inflammatory and keratoplastic effects. The absence of toxic effects, the convenience of the frequency of use is also the advantages of the tested drug composition.

Keywords: Vaccinium mytillus extract, medicinal compositions, periodontitis.

ANALYSIS OF QUALITY OF LIFE INDICATORS IN PATIENTS AFTER SUBTOTAL RESECTIONS OF JAW BONES

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Background: Volumetric resections of the jaw bones lead to biomechanical disorders of the maxillary system, which obviously significantly reduces the quality of life. The need for an aggressive approach requires a number of diseases of the maxillofacial region, in particular bisphosphonate-induced osteonecrosis of the jaw bones. Methods of access to the affected fragments play a decisive role in the outcome of surgery and require comparative analysis.

Objective: To compare the quality of life in patients with subtotal mandibular resections.

Methods and materials: 140 patients, divided into two groups, were operated on the basis of GBUZ IC "SKKB" from 2011 to 2022. The first group of 90 patients was those to whom subtotal resection was performed by extraoral access, in another 50 patients resection was performed by intraoral access while preserving the integrity of the masticatory muscle and installing a device that eliminates biomechanical disorders. The quality of life was assessed according to the items-MOS-36 questionnaire modified by the authors, according to the following indicators: pain, social and physical functioning, viability on the 10th postoperative day, after 1 and 6 months.

Results and discussion: In the second group, on the 10^{th} day, the pain index was 85±5 points, social functioning was 15±5 points, physical functioning was 15±5 points, and viability was 10±5 points. In the first group: pain 70 ± 5 points, social and physical functioning 30 ± 5 points, vitality 45 ± 5 points. By the end of the first month of postoperative observations in group 2: pain was 15 ± 5 points, social and physical functioning 85 ± 5 points, viability 90 ± 5 points. In group 1, pain was 60±5 points, social functioning 35±5 points, physical functioning 45±5 points, vitality 50± 5 points. By the end of 6 months of postoperative observations in group 2: pain was 15 ±5 points, social and physical functioning 85 ± 5 points, viability 90± 5 points. In group 1, pain was 45±5 points, social functioning 35±5 points, physical functioning 45±5 points, vitality 50± 5 points.

Conclusions: Extraoral access with a violation of the integrity of the masticatory muscle is a factor of persistent progressive violations of biomechanical functioning, which requires repeated surgical procedures before the upcoming reconstructive surgery. In a comparative aspect, by the first month in patients of group 2 with the positioning of fragments by the proposed device, the quality of life is 1.5-2 times higher than in the first one.

Keywords: Biomechanical disorders, quality of life, subtotal resection, positioning device.

ASIA SYNDROME IN DENTISTRY: CLINICAL CHARACTERISTICS AND MANAGMENT

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Background: The prevalence of ASIA syndrome in dentistry is not well established, as it is a relatively new concept. Autoimmune Syndrome In-

duced by Adjuvants (ASIA) is a newly recognized syndrome that has been associated with exposure to various adjuvants, including vaccines, silicone implants, and dental materials. The clinical manifestations of ASIA are diverse and can affect multiple systems in the body, including the musculoskeletal, neurological, and immune systems. While the diagnosis of ASIA syndrome remains challenging, it is essential for healthcare providers to be aware of this syndrome and its potential implications for patient care.

Objective: The aim of this study was to investigate the clinical characteristics and management of ASIA syndrome in dental patients.

Methods and materials: A total of 50 patients with suspected ASIA syndrome were recruited for the study. All patients underwent a thorough clinical evaluation, including a medical history, physical examination, and laboratory testing. The diagnosis of ASIA syndrome was made based on the ASIA diagnostic criteria, which include the presence of clinical manifestations and the identification of adjuvant materials in the patient's body. The clinical characteristics of the patients, including the duration and severity of symptoms, were analyzed. Appropriate management strategies were developed based on individual patient`s approach, including the removal of adjuvant materials, immunomodulatory therapy, and supportive care.

Results: ASIA syndrome is a rare but potentially severe condition that may be associated with dental procedures and materials. Dentists and other healthcare providers should be aware of this condition and its potential complications, and a high level of clinical suspicion should be maintained in patients who present with unexplained autoimmune or inflammatory symptoms following dental procedures. Further research is necessary to establish the exact cause, pathogenesis, and optimal management strategies for ASIA syndrome in dentistry. Appropriate management strategies, including the removal of adjuvant materials and immunomodulatory therapy, can result in significant improvement in symptoms in patients with ASIA syndrome.

Keywords: ASIA syndrome, adjuvants, dental materials, clinical characteristics, management.

EVALUATION OF THE PHYSIOLOGICAL INFLUENCE OF FAST-FOOD ON THE HEALTH OF STUDENTS

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Background: Balanced diet is an important component of a healthy lifestyle. Modern young people prefer fast-food as the basis of their diet.

However, numerous researches have proved that qualitative composition of such products and their frequent use cause irreparable harm to the health of people.

Objective: To identify the degree of students' commitment to nutrition of fast-food and to evaluate the influence of refusing harmful food on the general health indicates of the participants of the experiment.

Methods and materials: The research work was conducted in two stages: a survey and a forming experiment. The survey involved 37 second-year students who were asked questions in order to determine student`s commitment to eating fast-food, the frequency of using harmful food and evaluate the impact of such food on their general well-being of the participants. Participants of the experiment were asked to refuse from eating fast-food during 30 days, to increase the level of physical activity by means of performing a gymnastics complex and hiking in the fresh air.

Results: After the finishing of established period it was compared the indicates of participants, the presence of pathological symptoms of various body systems at the beginning of the experiments and at the end of experiment. The indicates of (BMI) in the norm at the beginning of the experiment was recorded in 10 persons, preobesity was in 13 persons, 2 students had the obesity of first degree, and 2 students had the obesity of second degree. After the experiment the norm of (BMI) was fixed in 19 young persons, preobesity had 6 persons, with obesity of 1 and 2 degreses, 1 person remained.

Conclusion: The results of research work show that the refusing from eating fast-food and an adequate exercise allows to keep weight under control, to get rid of dyspeptic symptoms, skin rashes and normalize bowel function and increase the overall tone of the body.

Keywords: Fast-food, body mass index (BMI), formative, experiment.

DENTAL STATUS OF PATIENTS WITH NEW CORONAVIRUS INFECTION COVID-19

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Background: The data available in the available literature on clinical symptoms in patients with a new coronavirus infection, including in the oral cavity, are scattered and contradictory. This fact dictates the need for further regional studies aimed at studying the prevalence of manifestations and features of the effect of COVID-19 disease on the human body. The

aim of the study was to clarify the features of clinical symptoms in patients with a new coronavirus infection COVID-19.

Objective: The aim of the investigation was to specify the peculiarities of clinical symptoms in patients with new coronavirus infection COVID-19.

Methods and materials: A total of 156 patients undergoing treatment in covid-hospitals were examined.

Results: In the structure of general symptoms, complaints of hyperthermia, general weakness and cough (more often dry) played a leading role, which were noted by the overwhelming majority of the examined patients. Two-thirds of the patients reported body pain. Anosmia (68.6%) and sweating (64.1%) were also the leading symptoms. More than half of the patients complained of shortness of breath (60.2%), difficulty in nasal breathing (55.1%), a feeling of tickling in the throat (58.3%) and sore throat (60.2%). Among dental pathology, loss of taste (57.5%) and hyposalivation (38.5%) were the most common in patients. Bleeding of gums was observed in 22.4% of the examined patients, which is most likely associated with the disorders of rheological properties of blood and changes in the hemodynamic provision of the periodontium available at COVID-19.

Conclusion: Hemostasis disorders characteristic of the new COVID-19 coronavirus infection certainly have an impact on the state of dental status, further destroying periodontal tissues.

Clinical manifestations of pathological effects may not occur immediately, but in the form of remote complications. In this regard, it seems necessary to dynamically monitor the condition of patients who have undergone COVID-19 in different time periods.

Keywords: New coronoviras infection COVID-19, dental status, salivary PH, hyposalivation, bleeding gums, anosmia.

COMPARISON OF THE STATE OF ORAL HYGIENE IN THE TREATMENT OF BRACES AND ALIGNERS

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Background: The choice of orthodontic treatment method should depend on the hygienic status of the patient, which should be determined at the first consultation of an orthodontist. If the level of oral hygiene is unsatisfactory before the start of orthodontic treatment, then during treatment, for example, on a fixed device, hygiene may deteriorate.

Objective: The purpose of this study is to compare the state of oral hygiene in orthodontic treatment with removable and non-removable devices.

Methods and materials: The study was conducted on 106 patients in the age group from 14 to 25 years. The patients were divided into two groups. In the first group, treatment was carried out on a fixed technique (bracket system), and in the second – on a removable one (aligners). The duration of the study was 18 months. Oral hygiene was assessed after 1 month, 6 months and 12 months from the start of treatment using the Green-Vermillion Hygiene Index. To determine the index, 6 teeth were examined: 16, 11, 26, 31 – vestibular surfaces and 36, 46 – lingual. Tooth surfaces were stained with Schiller-Pisarev solution.

Results: After 1 month from the start of treatment, there was no significant difference between the two study groups. But after 6 and after 12 months, the hygiene index was significantly lower in patients who were treated with aligners – 0.2-0.6, which indicates a good level of hygiene compared to the treatment group on the bracket system, which had a hygiene index of 1.9-3.0.

Conclusion: Based on this study, it can be concluded that the incidence of plaque is higher in patients with a bracket system. Non-removable equipment complicates individual oral hygiene and requires more frequent professional oral hygiene. Despite this conclusion, it cannot be said that the treatment on the bracket system is worse, but on aligners it is better. The choice of equipment depends on the tasks of treatment and on the initial level of hygiene of the patient before treatment.

Keywords: Aligners, oral hygiene index, braces, dental plaque, professional oral hygiene.

EVALUATION OF THE EFFECTIVENESS OF REHABILITATION METHODS FOR STROKE PATIENTS

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Background: Stroke is the most important medico-social problem both in the world and in the Russian Federation. Morbidity and mortality from stroke in our country hold on the highest position in the world: more than 450 thousand people suffer from stroke every year, 70-80% patients become disabled and need help constantly. Nowadays all global medical community is actively constructing new forms of rehabilitation for people

who suffer after acute cerebrovascular accident by which it is possible to tremendously increase of health conditions of people.

Objective: to evaluate effectiveness of modern methods of rehabilitations after stroke.

Methods and materials: The research was carrying out by questionnaire form of 30 patients, who had suffered a stroke at different times. Based on obtained data an analytical report was made in which the ratio of stroke patients by age and gender, the time for seeking medical help was determined and we also evaluated effectiveness of rehabilitation methods that were currently used.

Results: According to the data we collected during the research it was determined that the most effective methods of rehabilitation are medical massage, physiotherapy and physical therapy. Howerver, the highest positive dynamic of rehabilitation demonstrates the complex of these methods in combination with supportive drug therapy. It should be noted that stroke patients need not only medical help but also psychosocial rehabilitation: the help of a defectologist, a psychologist, social workers. That's why it is extremely important to pay attention to the need of connection a rehabilitologist with other specialists in the process of creating adapted individual program of rehabilitation.

Conclusion: The obtained results demonstrate that effective rehabilitation for stroke patients should contain the complex application of medical, psychological and social measures. This treatment should be aimed to recovery functions that were lost due to stroke and social adaptation.

Keywords: Stroke, acute cerebrovascular accident, rehabilitation.

MEASUREMENT OF THE DENSITY OF DENTAL TISSUES FOR THE ASSESSMENT OF THE EFFECTIVENESS OF DEFECT TREATMENT AFTER COVID

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Background: After a viral infection of COVID-19, patients may experience a deterioration in bone tissue density, which can lead to a number of serious health problems. The study discusses various methods for measuring bone tissue density and mechanisms that can explain the link between COVID-19 and a deterioration in bone tissue density, as well as possible the strategies for treating and preventing such problems.

Objective: Our study aims to evaluate the influence of COVID-19 on the density of tissues in dental arches and the effectiveness of methods for measuring tissue density in the treatment of defects after the infection.

Materials and methods: The study was conducted on 20 patients with defects in dental arches who were divided into 2 groups, with Group 1 consisting of patients who had recovered from COVID-19 and Group 2 consisting of patients who had not been infected. Hounsfield units were used to measure tissue density on X-ray images, and CT numbers were used to measure tissue density on computed tomography.

Results: Patients who had recovered from COVID-19 may have problems with tissue density in dental arches. This can lead to additional dental health problems, and we also found a decrease in bone tissue density in patients who had recovered from COVID-19. The mean bone tissue density value for these patients was 250 Hounsfield units, which was 100 HU lower than that of patients without the disease. Further research is needed to understand better the mechanisms underlying this effect and to develop effective treatments.

Conclusion: The study showed that measuring tissue density during the treatment of defects in dental arches is an important tool for accurately determining the level of tissue damage and assessing treatment effectiveness. This method can help dentists to carry out defect treatment more accurately and to prevent additional tissue damage. In the future, this method can be used in clinical practice for more accurate diagnosis and treatment of defects in the dentition.

Keywords: Bone tissue density, COVID-19, inflammation, osteoporosis, measurement methods.

THE USE OF 3D PRINTING TECHNOLOGIES IN DENTISTRY: CURRENT STATE, PROBLEMS AND PROSPECTS OF DEVELOPMENT

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Background: The uses of 3D printing technologies in dentistry are the most relevant areas of development of this field of medicine. This technology allows you to create individual models of teeth and jaws, which contributes to more accurate and effective treatment of patients.

Objective: To review the current state of the use of 3D printing technologies in dentistry, as well as to analyze existing problems and prospects for the development in this field.

Materials and methods: The study used data obtained from the patients who were treated using 3D-printed materials. In the course of the research, experimental studies of the mechanical and physico-chemical properties of 3D materials were carried out, as well as an assessment of the accuracy of 3D models and their compliance with the original.

Results: Studies have shown that the use of 3D-printed technologies in dentistry allows you to create more accurate and customized models, which improves the quality of patient treatment. However, there are problems related to the quality and accuracy of the manufactured models, which limits their application in practice. In future, it is necessary to continue research and development of new materials and methods in order to improve the quality of manufactured models and increase their accuracy. It is also important to develop software and scanners to create more accurate 3D models. In general, the use of 3D printing in dentistry has great potential to improve the quality of treatment and meet the needs of patients, and the development of this technology will continue in the future.

Conclusion: Thus, the study used data from patients to consider modern research methods, including analysis of mechanical and physico-chemical properties of materials, as well as assessment of the accuracy of 3D models and their compliance with the original. The potential of 3D printing technologies in dentistry indicates the need for further research and development to improve the quality of manufactured models and increase their accuracy. This will make it possible to achieve more effective and accurate treatment of patients and improve their quality of life.

Keywords: 3D printing, dentistry, individual models, accuracy, scanners, mechanical properties, physico-chemical properties, developments.

THE EFFICACY OF DIFFERENT TREATMENT MODALITIES FOR GLANDULAR CHEILITIS: A COMPARATIVE STUDY ON PATIENTS

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Background: Glandular cheilitis is a rare condition that affects the lower lip, characterized by inflammation and enlargement of the minor salivary glands. The etiology of this condition is not well understood, but it is believed to be multifactorial, involving local and systemic factors. Glandular cheilitis can be a source of aesthetic concern and functional im-

pairment, as well as being associated with pain and discomfort. Several treatment options have been described in the literature, but the optimal approach remains unclear. In this study, we aimed to evaluate the efficacy of different treatment modalities for glandular cheilitis.

Objective: The objective of this study was to evaluate the effectiveness of different treatments for glandular cheilitis in patients.

Methods and materials: This study included 20 patients diagnosed with glandular cheilitis. The patients were randomly assigned to two treatment groups: group 1 received topical corticosteroids, while group 2 received intralesional corticosteroids. The treatment duration was four weeks. The severity of symptoms, such as swelling, pain, and redness, were evaluated at baseline and after treatment.

Results: Both treatment groups showed a significant improvement in symptoms after four weeks of treatment. However, the intralesional corticosteroid group showed a statistically significant greater improvement compared to the topical corticosteroid group in terms of swelling (p=0.02), pain (p=0.01), and redness (p=0.01).

Keywords: Glandular cheilitis, corticosteroids, topical, intralesional, treatment.

PLASTY OF POST-RESECTION DEFECTS OF THE UPPER JAW WITH INDIVIDUAL TITANIUM PLATES

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Background: Post-resection defects of the upper jaw are one of the most difficult problems in surgery. They can occur after removal of tumors, trauma or infection, and can cause various functional and aesthetic problems in patients. Surgical reconstruction of the maxilla may require the use of bone grafts or implants, but these may be ineffective or cause complications.

Modified Customized Plates is a new reconstruction method that uses computer modeling and 3D printing of custom-made plates for each patient. These plates can be used to create a bone structure that accurately matches the anatomical shape and dimensions of the defect. In this study, we will consider the surgical aspects of maxillary bone grafting using modified custom plates.

Objective: To assess the efficacy and safety of surgical reconstruction of the maxilla using modified individual plates.

Materials and methods: The study was conducted among 35 patients with post-resection defects of the upper jaw. All patients underwent surgical reconstruction using modified individual plates. Computer simulations were carried out using software for printing 3D plates, which were made from titanium alloys. Evaluation of the effectiveness of the reconstruction was carried out on the basis of clinical and radiographic data collected within 12 months after surgery. After completion of the surgical procedure, patients were followed up for a period of 6 months to 2 years. During the follow-up period, patients were evaluated for any complications or side effects associated with the operation. Postoperative computed tomography (CT) images were obtained to assess the position and stability of the bone grafts and the stability of the modified individual plates.

Results: The use of modified individual plates for bone grafting of the upper jaw made it possible to achieve higher accuracy and accuracy of bone tissue formation. The use of modified individual plates for bone grafting of the upper jaw in the elimination of post-resection defects is an effective technique to restore the structure and function of the upper jaw. Despite the fact that the results of studies indicate the high efficiency of this technique, further study of its capabilities and limitations in various clinical situations is required.

All patients had successful bone graft integration and satisfactory facial symmetry and occlusion. None of the patients experienced any major complications such as infection, plate exposure, or implant failure during the follow-up period. Postoperative computed tomography showed good position and stability of the bone graft, as well as the stability of the modified individual plates.

Conclusion: Reconstruction of maxillofacial defects remains a complex surgical procedure. The use of bone grafts and modified individual plates has been shown to be a reliable and effective method for the reconstruction of maxillofacial defects. In this study, we demonstrated the effectiveness of this method in the reconstruction of maxillofacial defects resulting from tumor resection.

The use of modified individual plates made it possible to ensure accurate and stable fixation of bone grafts, which contributed to the successful integration of the bone graft and maintaining the symmetry of the face and bite. In addition, the use of this method minimized the risk of complications such as plate exposure and implant failure.

Keywords: Bone grafting, upper jaw, individual plates, post-resection defects.

THE RELEVANCE OF IMPORT SUBSTITUTION OF STANDARD THIN-WALL STAINLESS STEEL CROWNS FOR THE TREATMENT OF CARIES OF MILK TEETH

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Background: Decay in milk teeth is a common problem among children, especially in developing countries. Treatment of caries in milk teeth is an important aspect of maintaining dental health and the overall health of the child as a whole. One of the methods of treatment of caries of milk teeth is the installation of crowns on the affected teeth. There are many types of crowns, of which thin-walled stainless steel crowns are the most common. Recently, however, alternative materials such as composites and ceramics have begun to emerge that can be used as crown materials. The purpose of this study is to study the relevance of import substitution of standard thin-walled stainless steel crowns for the treatment of caries in milk teeth.

Objective: To assess the relevance of import substitution of standard thin-walled stainless steel crowns for the treatment of caries in milk teeth in Russia.

Methods and materials: To conduct the study, we analyzed the data of medical records of 200 patients who were treated for caries of milk teeth in a dental clinic based on PMFI. The gender and age composition of the patients was as follows: 100 boys aged 5 to 10 years and 100 girls aged 4 to 9 years. All patients were randomly divided into two groups. The first group received standard thin-walled stainless steel crowns, while the second group received alternative caries treatments.

Results: An analysis of literature sources has shown that standard thin-walled stainless steel crowns are a widely used material for the manufacture of crowns in Russia. However, their availability and cost can be a problem for many patients, especially in low-income regions. Possible alternative materials such as polymers and ceramics have been considered that can be used to fabricate crowns. The study showed that alternative methods of treating deciduous teeth, such as the use of children's plastic crowns, have a comparable effectiveness compared to standard thin-walled stainless steel crowns. Moreover, the use of alternative methods of caries treatment reduces the economic costs of importing standard thin-walled stainless steel crowns. Also during the study, we found that

import substitution of standard thin-walled stainless steel crowns for the treatment of caries in milk teeth is quite possible. To do this, it is necessary to increase the volume of production of crowns made of ceramics and other materials in Russia, as well as to improve their quality and accessibility to consumers.

Conclusion: In conclusion, it can be noted that the import substitution in Russia of standard thin-walled stainless steel crowns for the treatment of caries in milk teeth is an urgent topic for further research and development. This will improve the quality of medical care, reduce the cost of obtaining it, and also contribute to the development of national industry.

Keywords: Thin-walled crowns, stainless steel, milk teeth caries, import substitution.

SCIENTIFIC ABSTRACTS OF CONFERENCE PARTICIPANTS FROM THE UNIVERSITIES OF THE FOREIGN COUNTRIES

CLINICAL AND PROGNOSTIC SIGNIFICANCE OF PNEUMONIA-RELATED EKG ABNORMALITIES IN INFANTS: A COHORT STUDY

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Background: This study aimed to investigate the clinical and prognostic significance of EKG abnormalities in 250 infants with pneumonia. 40.8% had EKG abnormalities on admission, with the most common being sinus tachycardia. Infants with EKG abnormalities had more severe illness and longer hospital stays, but there was no significant difference in mortality between the two groups. These findings suggest that EKG abnormalities may serve as a useful marker for predicting clinical outcomes in infants with pneumonia.

Objective: This study aimed to investigate the clinical and prognostic significance of EKG abnormalities in infants with pneumonia.

Methods and materials: We conducted a cohort study of infants aged 0-12 months admitted with pneumonia to ARCMMC (Andijan regional children's multidisciplinary medical center) between January 1, 2018, and December 31, 2020. We included infants with confirmed pneumonia and available EKG data on admission. We excluded infants with preexisting cardiac abnormalities, congenital heart disease, or other co morbidities that could affect EKG readings. We recorded demographic and clinical data, including EKG findings, chest X-ray results, blood gas analysis, and laboratory parameters. We compared the clinical characteristics and outcomes of infants with and without EKG abnormalities.

Results: We identified 250 infants with pneumonia who met the inclusion criteria, of whom 102 (40.8%) had EKG abnormalities on admission. The most common EKG abnormalities were sinus tachycardia (54.9%), followed by ST-T changes (19.6%), premature atrial contractions (13.7%), and premature ventricular contractions (7.8%). Infants with EKG abnormalities were more likely to have lower oxygen saturation levels ($p < 0.001$), higher respiratory rates ($p = 0.003$), and longer hospital stays ($p = 0.019$) compared to those without EKG abnormalities. The incidence of complications, such as respiratory failure, sepsis, and shock, was higher in the EKG abnormality group ($p = 0.008$). However, there was no significant difference in mortality between the two groups.

Conclusion: EKG abnormalities are common in infants with pneumonia and are associated with more severe illness and longer hospital stays. These findings suggest that EKG abnormalities may serve as a useful marker for predicting clinical outcomes in infants with pneumonia. Fur-

ther studies are needed to investigate the mechanisms underlying pneumonia-related EKG changes and their potential role in the management of pneumonia in infants.

Keywords: EKG, pneumonia, stationary, tachycardia.

CYTOCHEMICAL CHARACTERISTICS OF PERIPHERAL BLOOD MONOCYTES OF COMMUNITY-ACQUIRED PNEUMONIA IN INFANTS WITH CONGENITAL ANOMALIES OF CLEFT LIP AND PALATE

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Background: Acute pneumonia in children remains a significant cause of morbidity and mortality, despite the introduction of potent broad-spectrum antimicrobials, the availability of complex supportive treatment regimens and preventive measures.

Objective: Is to analyze the clinical and biochemical features of the course of severe pneumonia in infants with congenital anomalies of the cleft lip and palate.

Methods and materials: 60 children aged from 3 months to 3 years were examined, including 30 children with only pneumonia, 30 – with pneumonia with congenital anomalies of the cleft lip and palate, and 20 – with purulent-destructive pneumonia. The control group consisted of 22 healthy children of the same age. In all patients, except for general clinical, x-ray studies, the activity of myeloperoxidase, acid phosphatase, succinate dehydrogenase of peripheral blood monocytes was determined at admission, during the acute period, improvement in the general condition and recovery periods of the disease.

Results: The frequency of individual toxic syndromes aggravating the manifestation of pneumonia in the main group was as follows: obstructive 22 (0.24), cardiorespiratory 5 (0.05), dyscirculatory 8 (0.1), DIC – syndrome 2 (0.02), exicosis 1 (0.01). In the comparison group, these syndromes had a different frequency of severity: obstructive 16 (0.23), cardiorespiratory 23 (0.32), neurotoxic 17 (0.03), circulatory 6 (0.084), DIC – syndrome 2 (0.03).

The clinical and biochemical features of the course of severe pneumonia in infants with congenital anomalies of the cleft lip and palate were determined. Cytochemical changes in sick children were revealed.

Conclusion: The results of our studies showed that acute pneumonia with congenital anomalies of the cleft lip and palate differs with a severe course. Cytochemical changes in monocytes in peripheral blood showed that the inflammatory process with acute pneumonia developed on the background of pathology depends on the degree of its severity and causes changes at the level of the body, organ tissue, cells.

Keywords: Pneumonia, cytochemic, cleft lip, monocytes

FEATURES OF CLINICAL MANIFESTATIONS OF GIARDIASIS IN CHILDREN

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Background: Giardiasis is a very urgent problem of pediatrics due to the high prevalence in the world, especially among children under the age of 14 years. The disease develops in the most important period of formation and physical development for the child's body, diverting the child's strength to fight the infection.

Objective: To study the features of clinical manifestations of giardiasis in children.

Methods and materials: Under our supervision there were 36 children with latent, 78 children with subclinical and 62 with clinical form of giardiasis. Children were examined in a multidisciplinary children's medical center in Samarkand. The age of the children ranged from 3 to 15 years. Diagnosis of giardiasis was based on complaints, anamnesis, clinical manifestations of giardiasis, as well as on an extended coprogram, using the method of approximate calculation of the intensity of giardia excretion.

Results: Based on the severity of clinical manifestations, we identified latent, subclinical and clinical forms of giardiasis. Among the various forms of giardia invasion, its asymptomatic form occupies a special place. We observed 36 children with a latent form at the age of 3 to 14 years. The physical development of patients corresponded to their age. In the subclinical form of giardiasis – 78 children aged 3 to 15 years, mild abdominal pain was most often observed (in 66 out of 78-84.6%), "intestinal" syndrome (in 52-66.7%) and less often "gastric" (in 25-32.1%) dyspepsia. Such symptoms, in general, are typical for giardiasis and are explained by the fact that it leads to the development of duodenitis and enteritis. This is evidenced by the peculiarities of the localization of pain in the abdomen during palpation.

In the subclinical form of giardiasis, abdominal pain on palpation was mainly localized in the pyloroduodenal (35.8%) and pit + pyloroduodenal zones (24.3%), which is typical of duodenitis.

Conclusion: Thus, giardiasis in children is clinically manifested by a variety of symptoms – from pure giardia carriers to severe forms. It is clinically expedient to distinguish the latent, subclinical and clinical form of giardiasis.

Keywords: Giardiasis, clinical manifestations, children, abdominal pain.

EPIDEMIOLOGICAL ASPECTS OF MATHEMATICAL MODELING OF THE COVID-19 INFECTIOUS PROCESS

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Background: Coronavirus infection (COVID-19) is the most pressing problem of modern medicine and for more than 2 years has attracted the attention of the entire world community. Most people infected with the virus will have mild to moderate respiratory illness and recover without requiring special treatment. However, someone will become seriously ill and require medical attention. Older adults and people with comorbidities such as cardiovascular disease, diabetes, chronic respiratory disease or cancer are more likely to develop serious illnesses. Anyone can get COVID-19 and become seriously ill or die at any age.

Objective: To compare the predictive value mathematical models of the infectious process of coronavirus infection COVID-19 in different strains.

Methods and materials: To assess the predictive value of mathematical models we applied the SIR mathematical model (S-susceptible, I-infected, R-recovered) to estimate the recovery rate and further evaluation effectiveness of preventive measures.

Results: The coefficient of recovery Υ=dR/dt/I was calculated taking into account the data on the incidence of coronavirus infection in the city of Samarkand during the periods 06/20-20/07/2020, 06/10/21-07/10/21, in which the Delta strain was detected and 06/20-10/07, in which the Omicron strain was detected. Given data on the incidence of coronavirus infection available from the open press [https://gazeta.uz/coronavirus-stat]: the recovery coefficient Υ was according to the data 2020 0.01, and according to 2021 0.014 with the Delta strain and according to 2022 0.04 with the Omicron strain.

Conclusion: Application of the mathematical model of SIR coronavirus infection allows to evaluate indirectly the effectiveness of preventive measures. And it can also be considered that the treatment measures for the new Omicron strain are more effective.

Keywords: Coronavirus infection, mathematical models, recovery, preventive measures, Delta strain, Omicron strain.

TITLE-SCREENING FOR NON-COMMUNICABLE DISEASE RISK FACTORS AMONG COOKING STAFFS OF MIDDAY MEAL IN SCHOOLS OF VIJAYAPURA DISTRICT: A CROSS-SECTIONAL STUDY

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Background: Non-communicable diseases (NCDs) are considered lifestyle diseases. As per the WHO estimates, NCDs account for over 60% of total deaths in India. The study emphasizes a detailed assessment of prevalence, dietary habit, physical inactivity and habits like Tobacco consumption in the cooking staff of mid-day meals and in determining their overall knowledge, perception, and practices with respect to common NCDs like Hypertension & Diabetes.

Objectives: To estimate the prevalence of non-communicable disease (NCD) risk factors among school mid-day meal cooking staff.

Material & methods: After obtaining ethical clearance from the Institution. A cross-sectional study was conducted among 290 cooking staff from schools in the Vijayapura district. The participants were enrolled in the study from May 2022 to July 2022. Data from the participants were collected regarding socio-demographic profile, diet, physical activity, BP & anthropometric measurements using a pre-structured questionnaire. Statistical analysis will be performed using a statistical package for the social sciences (Version 20).

Results: Majority (41.4%) of the study participants were in the age group 30 to 40yrs. Overall overweight and obesity was among 38.3% and 24.1% respectively. Hypertension was seen among 32.4% and 10.7% were pre hypertensive. Diabetes was seen among 3.4% and 13.4% were pre-diabetic.

Conclusion: Poor dietary habits, suboptimal blood pressure & physical inactivity was identified as the most common modifiable NCD risk factors in this occupational group. Knowledge of NCD can be used to implement health promotion programmes among cooking staff of midday meals in schools as a means of reducing NCD- related economic and social burdens.

Keywords: Non-communicable disease, Prevalence, Risk factors, cooking staff.

FAMILY – LINK APP "OKID-S"

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Background: According to data from numerous sources kids brush their teeth on the average only about 30-60 seconds. It is well known that it takes at least 2 minutes to clean all tooth surfaces thoroughly and to remove dental plaque. Mobile app «OKID-S» promotes motivation to perform oral hygiene regularly and consistently for kids, so that will be helpful to control it by parents. It also demonstrates the quality of oral hygiene.

Objective: To create the family-link app to control children's oral hygiene level.

Methods and materials: The mobile application was created according to the technical task developed by ourselves. The software includes three modes of using: children's, parent's and doctor's app. «OKID-S» is a unique project, which has no any analogues on the Russian-language apps market. It will help parents to control oral hygiene of their children by special tracker and will give the opportunity to communicate with the dentist right in it. Child can choose the best character for it and after the month of using the app it will generate video from the photos witch child could make everyday while brushing. It'll show the progress and give extra motivation. Also it should hold the phone in front of its face to make the mask work while brushing. It'll concentrate it on process.

Results: Mobile app «OKID-S» contains «message» button where dentist could communicate with parents and don't mix personal chats with working dialogues. There will be the possibility to add information about professional competitions in the dentist's profile.

Conclusion: OKID-S is universal helper to control the procedure of kid's oral hygiene. It'll show all the information to correct and teach children how to brush their teeth properly. It's also a great way to communicate with dentist**.**

Keywords: Mobile app, «OKID-S», kid's, family-link, oral hygiene, brushing.

MORPHOCHARACTERISTICS OF BRONCHIECTASIS

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Background: Congenital anomalies in the development of the bronchopulmonary system are detected in 8-10% of patients with chronic inflammatory lung diseases.

Objective: To identify the morphological signs of bronchiectasis.

Methods and materials: Lobes or fragments of lungs removed during surgery for bronchiectasis in 22 children aged 5 to 12 years were studied. The sections were stained with hematoxylin and eosin, according to Van Gieson, resorcinol-fuchsin according to Weigert. To identify the endocrine structures of the bronchi (apudocytes), the sections were impregnated with silver nitrate according to the Grimelius method (double impregnation).

Results: The formation of mucociliary insufficiency is due to an active inflammatory process in the bronchi, a violation of the structure of the bronchial mucosa, an increase in the viscosity of bronchial secretions and a decrease in the frequency of beating cilia of the ciliated epithelium. With chronic obstruction of the process, desquamation of the epithelium, squamous metaplasia, loss of cilia by ciliated cells are observed.

With an exacerbation of obstruction, the migration of leukocytes into the thickness of the epithelium and into the lamina propria of the bronchial mucosa predominates, and in bronchioles with a diameter of less than 4 mm, infiltration of the entire wall is observed. Due to the absence of the adventitial membrane in the bronchioles, inflammation can freely pass to the lung tissue with the development, as a rule, of X-ray negative micropneumonia.

The accumulation of inflammatory cells contributes to an increase in the thickness of the walls of small airways in patients with pathology and structural changes such as epithelial metaplasia, an increase in the smooth muscles of the airways, goblet cells, hyperplasia and hypertrophy of the submucosal glands and other components of this thickening. Evaluation of small airways in lung tissue samples showed that epithelial thickness increased by approximately 100%, and the volume of the lamina propria, smooth muscle, and adventitia increased together by 50% in stage III and stage IV compared to stage 0.

The adipose tissue around the large bronchi testifies to the congenitality of this pathology. In addition, the presence of irregular cartilage is noteworthy, which is also considered as a congenital malformation. The underdevelopment of the bronchial tree is manifested in the fact that a large

number of small bronchial tubes are located on the territory of the large bronchi. In these areas of the lung parenchyma, elastic fibers are not found. Along with this, the preparations also contain formed pulmonary acini. Congenital structures should also include the constant detection of cells of the APUD system – apudocytes, both single and small groups of 2-5 cells.

Conclusion: Consequently, the study made it possible to establish the presence of morphological structures that characterize various manifestations of pathology in bronchiectasis. At the same time, the preservation of the structure of the bronchial epithelium provides the afferent phase of the immune response of the mucous membrane during inflammatory processes. Also, in inflammatory processes in the lungs associated with bronchiectasis, there is an interaction of immune and endocrine structures in the epithelium.

Keywords: Children, bronchiectasis, morphological features.

DIGITALIZATION FEATURES OF THE UZBEK HEALTH CARE

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Background: Digitalization is one of the top priorities on Uzbekistan's reform agenda. As a part of the national strategy "Digital Uzbekistan-2030" digital technologies are widely introduced in all sectors of the economy and spheres of public life. According to this document approaches to improvement, including in the healthcare sector of the republic, are changing. To date Uzbekistan has adopted a number of legal documents regulating the development of digital health. In this regard, it is necessary to strengthen the development and implementation of digital technologies in the healthcare of Uzbekistan, which will also take into account the role of medical personnel.

Objective: to study and present the trends in the development of the digitalization of the healthcare system of the Republic of Uzbekistan.

Methods and materials: the analysis of legal documents of the Republic of Uzbekistan in the field of healthcare reform and digitalization, the study of scientific literature, reports, and other publications on the subject under study.

Results: A significant role is played by the automation of the process of diagnosis and treatment, as well as the introduction of ICT, medical information systems, telemedicine, electronic medical records and prescriptions. Particular attention is paid to digitalization issues by the Uzbek government, where all the necessary regulatory and legal documents have

been prepared and work has been completed to create the necessary infrastructure for the effective implementation of the health digitalization. Thanks to the implementation of extensive state health programs in Uzbekistan the health care system has been almost completely overhauled. The country has taken steps to create an Integrated National Health Information System. In addition, the process of informatization still faces many difficulties and proceeds unevenly. The success of healthcare informatization in Uzbekistan at this stage depends on the solution of organizational and technical issues.

Conclusion: The experience of developed countries indicating the feasibility and effectiveness of the implementation of national strategic and program documents on the digital transformation of health systems may be relevant for the development of these documents in Uzbekistan. To implement these strategies and coordinate interactions, separate agencies or institutions have been established in many countries Uzbekistan follows this paradigm, as evidenced by the creation of the Unified Medical System, on the basis of which additional digital services are being developed.

Keywords: Digitalisation of health, Uzbekistan public health, health systems, public health.

FEATURES OF THE ANATOMICAL STRUCTURE OF EXTRAHEPATIC BILE DUCTS IN MALE RABBITS

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Background: Recently, it can be noticed that surgical intervention in animals have become more frequent, in order to study and develop medicine. This thesis is devoted to researches conducted to study the anatomical structure of extrahepatic bile ducts in male rabbits in more details.

Objective: To differentiate the specific anatomical structure of extrahepatic bile ducts in male rabbits.

Methods and materials: The extrahepatic bile ducts in 30 male rabbits weighing from 2.3 kg to 3 kg were studied by micro-preparation methods under a binocular magnifier MBS-2 (oc.8, ob.2). Morphometric data on the length and diameter of extrahepatic bile ducts in male rabbits were studied using an ocular ruler. The length of the left hepatic duct averaged 3.9+0.07mm. The longest duct was 7.65mm, the average diameter of the left hepatic duct was 1.0+0.02mm, the largest diameter was 1.6mm, while the duct was short 3.91mm. The length of the right hepatic duct averaged 4.8±0.1mm, and the diameter was 1.1± 0.03mm, the longest duct was

amounted to 6.80mm, and the diameter was 1.3mm. The largest diameter of the right hepatic duct was 1.7mm, and its length was 5.95mm. The length of the common hepatic duct averaged 11.5+0.3mm, and the diameter was 1.4±0.3mm. In male rabbits, the common bile duct averaged 21.0±0.3mm, the diameter was 1.6±0.04mm, the largest length of this duct was 28.9mm, while its diameter was 1.1mm, the smallest length was 13.6mm, the diameter was 1.60mm, and the largest diameter of the common hepatic duct was 2.4mm. The length of this duct was equal to 21.76mm. The length of the cystic duct averaged 12.0±0.3mm, and the diameter 1.0±0.02mm. The largest diameter of the cystic duct was 1.3mm. The weight of the liver in male rabbits on average was 45.0-0.2 g. The ratio of the average length and diameter of the total hepatic duct the duct to the weight of the liver was 0.25 in length; 0.03 in diameter.

Results: It can be observed that the results were complied by overall average size (based on investigation and calculation of wide range of extrahepatic bile ducts' sizes)

Conclusion: Based on the analysis of follow-up data, it can be concluded that the longer the bile ducts, the narrower their diameter and vice versa. (It depends on the rabbits' size at all).

Keywords: Extrahepatic bile ducts, male rabbits, diameter, size, weight, ratio.

A COMPARISON OF THE INCIDENCE AND SEVERITY OF PNEUMONIA BETWEEN BREASTFED AND ARTIFICIALLY FED INFANTS IN THE FIRST YEAR OF LIFE

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Background: This study compares the incidence and severity of pediatric pneumonia in breastfed and artificially fed infants during the first year of life. A meta-analysis and multiple studies show that breastfed infants have a lower incidence of pneumonia and milder clinical signs compared to artificially fed infants. Breastfeeding has also been associated with a reduced severity of pneumonia and a shorter duration of hospitalization. Clinicians should promote breastfeeding to reduce the risk of pneumonia in infants.

Objective: In this study, we aimed to compare the incidence and severity of pediatric pneumonia in breastfed and artificially fed infants during the first year of life.

Methods and materials: Study design: A meta-analysis of studies comparing the incidence and severity of pediatric pneumonia in breastfed

and artificially fed infants during the first year of life. Literature search: A comprehensive literature search will be conducted using electronic databases, such as PubMed, Embase, and Cochrane Library, from inception to the present. The search terms will include "breastfeeding", "artificial feeding", "infant", "pneumonia", and related terms.

This research reports the incidence and severity of pediatric pneumonia in breastfed and artificially fed infants during the first year of life.

Results: Artificially Fed Infants Numerous studies have demonstrated a lower incidence of pneumonia in breastfed infants compared to artificially fed infants. A meta-analysis of 14 studies involving over 30,000 infants found that breastfed infants had a 27% lower risk of pneumonia compared to artificially fed infants. Another large study conducted in Brazil involving over 2,000 infants found that exclusive breastfeeding for at least four months reduced the risk of pneumonia by 63%.

Severity of Pediatric Pneumonia in Breastfed and Artificially Fed Infants Breastfeeding has also been associated with a reduced severity of pneumonia in infants. A study conducted in India found that breastfed infants had a lower incidence of severe pneumonia and a shorter duration of hospitalization compared to artificially fed infants. Similarly, a study conducted in Peru found that breastfed infants had a lower risk of severe pneumonia and a lower mortality rate compared to artificially fed infants.

Conclusion: Breastfeeding is associated with a lower incidence and severity of pediatric pneumonia in infants during the first year of life. Breastfeeding may also result in milder clinical signs of pneumonia in infants. Clinicians should promote breastfeeding as a strategy to reduce the risk of pneumonia in infants.

Keywords: breastfeeding, artificial, pneumonia, infants.

EFFECTIVENESS OF IMMUNOMODULATING THERAPY FOR ACUTE OBSTRUCTIVE BRONCHITIS IN CHILDREN

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Background: Among respiratory diseases, acute obstructive bronchitis (AOB) is widespread, leading to frequent relapses and severe complications. Obstructive forms of bronchitis occupy one of the leading places in the structure of childhood morbidity and mortality. Analysis of risk factors in predicting the likelihood of AHB formation in children is essential for modern pulmonology.

Objective: To evaluate the effectiveness of immunomodulatory therapy in children with acute obstructive bronchitis.

Methods and materials: 65 patients with AOB aged 6 months and older were examined. After 3 years, 39 (60%) were boys, 26 (40%) were girls. The number of T-lymphocytes, T-helpers, T-suppressors, and B-lymphocytes was determined. The 1st group of patients received traditional treatment with the inclusion of T-activin, and the 2nd group of children received only traditional treatment.

Results: It has been established that in most children the disease occurs between the ages of 3 months and 1 year. 32% of patients were born from related marriages, in 46.5% of children, relatives suffered from allergic diseases. An analysis of the premorbid background showed that in children with AOD, allergic diathesis was observed in 54.9%, anemia in 81.9%, rickets in 51.0%, paratrophy in 12.5%, protein-energy deficiency in 48.7% of patients.

The main changes in cellular immunity were expressed in a decrease in the number of T-lymphocytes by 45.2±0.8 compared to the control group by 57.3±0.9% ($p<0.01$). There was an increase in the content of B-lymphocytes in patients with AR 18.1±0.3 ($p<0.01$), which is significantly higher than in the control group ($p<0.01$). In order to correct immunological parameters, patients with AOB were prescribed T-activin subcutaneously at the rate of 2 μg/kg of body weight daily for 5 days and the sixth injection a week after the injections.

Conclusion: The inclusion of T-activin in the complex therapy of children with acute obstructive bronchitis increases the effectiveness of treatment and prevents the development of relapses of the disease.

Keywords: Acute obstructive bronchitis, patients, immune status, immunomodulatory therapy.

THE SIGNIFICANCE OF ACKNOWLEDGING SOCIAL PROBLEMS ASSOCIATED WITH DIABETES MELLITUS

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Background: Currently, diabetes mellitus (DM) is a primary problem worldwide. According to the definition of the World Health Organization (WHO), DM is a syndrome of chronic hyperglycemia and glycosuria caused by absolute or relative insulin insufficiency, leading to metabolic disorders, vascular damage, neuropathy and pathological changes in various organs and tissues. According to the International Diabetes Federation (IDF), today about 420 million people in the world suffer from diabetes, which is 6.030% of the total population of the planet. In terms of preva-

lence, DM ranks 3rd after cardiovascular and oncological diseases and is one of the urgent medical and social problems of our time, belonging to the priority areas of national health systems in almost all countries of the world and in our country.

Objective: To assess the incidence of diabetes mellitus in children and adults in the Samarkand region of the Republic of Uzbekistan.

Methods and materials: Information materials were taken from the outpatient card of 115 children and 380 adults suffering from diabetes who are registered at the "Samarkand Regional Endocrinological Dispensary". A total of 1,256 case histories of patients in the intensive care unit for the period 2018-2022 were studied. In order to identify insulin-dependent diabetes, laboratory methods include the study of glucose in blood and urine, the determination of glycated hemoglobin, and if necessary, a glucose tolerance test.

Results: The global incidence of diabetes mellitus among people over the age of 18 has increased from 5% in 2018 to 10.5% in 2022. In the overall structure of the incidence of diabetes mellitus, type 1 diabetes accounts for no more than 9-14% and is observed among children under 16 years of age. Patients with type 2 diabetes aged 25 to 40 years account for 15 to 32%. The actual prevalence of type 2 diabetes is 3-5 times higher than the registered morbidity. In half of cases, type 2 diabetes is detected at 5-7 years from the onset of the disease, therefore, 20-30% of patients at the time of diabetes detection have specific difficulties such as nephropathy, retinopathy, diabetic foot, cardiovascular disease, polyneuropathy. Early diagnosis of diabetic complexions and their timely treatment allowed improving the indicators of metabolic control in patients with diabetes.

Conclusion: The medical and social significance of DM, characterized by increasing levels of labor losses and economic damage as a result of morbidity, disability and mortality of the population, state and society expenditures aimed at treating the disease and its complications, requiring improvement and efficiency of the system of specialized, qualified care.

Keywords: Diabetes mellitus, medical and social problem, Republic of Uzbekistan, prevalence of diabetes mellitus, complication, World Health Organization, International Diabetes Federation

WHAT IS A PUBLIC HEALTH ISSUE?

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Introduction and background: Public health issues include diseases and conditions that impact entire populations. These diseases may chronic diseases such as Type 2 diabetes, asthma or heart diseases such as COVID

19, measles, tuberculosis or influenza; diseases spread through unsanitary conditions, such as cholera or typhus; or conditions such as cancer or mental health disorders.

Material and method: new public health issues include the following:

- Behaviors, such as drug, alcohol and tobacco use, that impact wellness and raise mortality rates, among other outcomes.
- Environmental conditions that impact health, such as poor air, water and food quality
- Low immunization rates, possibly leading to diseases being spread to vulnerable populations.
- Safety concerns, such as unsafe workplaces or infrastructure.
- Climate concerns, such as high temperatures and violent weather.

Some public health threats will require immediate action. COVID-19 mutations, for example, require health officials to constantly update their responses. Other health programs have long-term goals. For example, programs that educate people about the risk of colon cancer and the need for colonoscopies are ongoing.

Public health officials identify which issues to tackle based on different criteria. They will then determine the necessary response, which will vary depending on the data and as conditions change. The early pandemic response is an example: In early 2020 centre of disease control and prevention opposed mask wearing but by spring had changed its guidance.

Because resources are always limited, public health professionals use many factors to determine whether a health matter rises to the level of a public health concern.

Results: In our study in spite of this progress, the communicable diseases are expected to continue to remain a major public health problem in the coming decades posing a threat to both national and international health security. Besides endemic diseases such as human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS), tuberculosis (TB), malaria, and neglected tropical diseases, the communicable disease outbreaks will continue to challenge public health, requiring high level of readiness in terms of early detection and rapid response. In this regard, vector-borne diseases, such as dengue and acute encephalitis syndrome, are of particular concern. Antimicrobial resistance is one of the biggest health challenges facing humanity that must be tackled with all seriousness.

In addition, non-communicable diseases or NCDs are now the leading cause of death in the country, contributing to 60% of deaths. Four diseases namely heart disease, cancer, diabetes, and chronic pulmonary diseases contribute nearly 80% of all deaths due to NCDs and they share four common risk factors namely tobacco use, harmful use of alcohol, unhealthy diet, and lack of physical activities.

Conclusion: The object of public health, like that of clinical medicine, is better health for the individual and for society. Public health works to achieve this through indirect methods, such as by improving the environment, or through direct means such as preventive care for mothers and infants or other at-risk groups.

CLINICAL CHARACTERISTICS NONSPECIFIC INTERSTITIAL PNEUMONIA

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Background: According to the latest WHO data, in many countries there is an increase in diseases of the respiratory system, which leads to an increase not only in disability, but also in mortality.

Objective: To study the clinical signs of nonspecific interstitial pneumonia.

Methods and materials: As a material, we conducted a survey of 140 patients with nonspecific interstitial pneumonia those who were in hospital in the Pulmonology department of the Samarkand city medical Hospital. All patients underwent the required examination using generally accepted methods.

Results: The obtained results indicate that patients with nonspecific interstitial pneumonia accounted for about 25% of all patients with pulmonary pathology of all hospitalized. The clinical picture proceeded differently: under the "mask" of acute respiratory infections – 8%, under the "mask" of acute bronchitis – 13%, under the "mask" of chronic bronchitis – 23%, under the "mask" of sluggish pneumonia – 27%, under the "mask" of acute pneumonia – 29%. The main clinical manifestations were cough with unproductive sputum – 86%, shortness of breath, with little physical exertion – 78%, subfebrile temperature – 41%, auscultatory data are scarce. Enhanced bronchial respiration was noted – 75%, weakened vesicular respiration – 64%. Crepitant rales – 67%, moist small and medium bubbling rales – 41%.

Laboratory data: complete blood count – the presence of leukocytosis 9-10 (10 * 9 / l), stab shift to the left 15-16%, ESR acceleration – 14-17 mm / hour. An immunological study of the qualitative composition of T- and B-lymphocytes shows an inhibition of a decrease in the subpopulation of lymphocytes – 17-18%. The X-ray picture was expressed as follows: obstructive bronchitis – 47%, radical pneumonia – 35%, bilateral pneumonia – 18%. Computed tomography revealed: phenomena of deforming

bronchitis with pneumofibrosis – 31%, changes in the type of ground glass – 37%, a picture of peribronchial infiltration with focal compaction of the lung tissue – 32%.

Conclusion: Thus, the data obtained indicate an increase in patients with interstitial lung diseases, with a predominance of shortness of breath, weakness, cough, etc. Clinically manifested a diverse course of the disease with frequent relapses.

Keywords: Nonspecific interstitial pneumonia, clinic, signs.

CONDITION OF THE ORAL MUCOSA WITH NONSPECIFIC INTERSTITIAL PNEUMONIA

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Background: Nonspecific interstitial pneumonia occurs both due to direct infection and the immune response of the body, with damage to the oral mucosa.

Objective: To identify changes in the oral mucosa in nonspecific interstitial pneumonia.

Methods and materials: 24 patients (16 women and 8 men) who had undergone nonspecific interstitial pneumonia, aged 38 to 63 years with pathology of the oral mucosa, were examined with the involvement of a dentist and laboratory tests (bacterial culture of plaque of the oral mucosa, cytological examination of smears of prints from the bottom of the erosion).

Results: The observed patients complained of various rashes, defects, appearance of plaques, cracks in the oral cavity. Most patients (86%), in the first place, noted bad breath, probably due to impaired taste and olfactory sensitivity. Almost every second patient (46%) noted the appearance of ulcers on the cheeks, pain when eating, talking, chewing and swallowing.

Candidiasis was diagnosed in 64% of patients after bacteriological examination. On examination, the papillae of the tongue are smoothed; the area on the back of the tongue is slightly painful. Some patients have pseudomembranous plaque on the tongue in the form of white plaques. The mucous membrane of the hard palate is partially hyperemic, enanthems are noted. Petechial changes occurred in 17.4% of patients. Localization of enanthems was noted only on the hard palate.

Erythematous rash in patients varied in appearance. On the hard palate, millimeter-sized petechiae were noted without erythema against the background of a non-inflamed mucosa. Depending on the age of the patient, the severity of the transferred pneumonia, the phenomena of chronic recurrent

aphthous stomatitis were noted periodontal disease, gingivitis and periodontitis. Oral hygiene was unsatisfactory, copious amounts of soft plaque, supra- and subgingival tartar.

Conclusion: Therefore, the results of examination of the oral cavity in patients with nonspecific interstitial pneumonia demonstrate a variety of dental manifestations in the form of chronic recurrent aphthous stomatitis, periodontal disease, gingivitis and periodontitis.

Keywords: nonspecific interstitial pneumonia, oral mucosa, changes.

MORPHOMETRIC INDICATORS OF THE CEREBELLAR CORTUE ON TEACHING MATERIALS

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Background: The cerebellum is the part of the brain of vertebrates that is responsible for the coordination of movements, the regulation of balance and muscle tone. The purpose of the study was the comparison of microscopic features of the structure of normal cells in the preparations.

Objective: To identify the morphometric parameters of the layers of the cerebellar cortex of the dog on teaching preparations.

Methods and materials: Morphometric study subjected training preparations of the cerebellum of the dog. The preparations were impregnated with silver nitrate according to R.Campos. Morphometry was carried out using an ocular ruler with a microscope magnification of about. 10, ok.9. Measurements of the layers of the cerebellum were carried out in 10 fields of view, in total preparations of 3 animals were studied. After an appropriate recalculation, the results are obtained in μm. For mathematical data processing, the Student's method was used with the determination of the arithmetic mean M, the average error of the relative values of the coefficient of reliability of the difference, the applied subprograms of the Microsoft Excel 97 software product were used in the section of descriptive statistics, determination of standard deviations and comparison of samples.

Results: On the teaching preparations of the cerebellum, its furrows and convolutions are determined. Silver nitrate impregnation of the central part of the organ reveals argyrophilic nerve fibers of the white matter. Surrounding these fibers is the cerebellar cortex. On the preparation of the first animal, the molecular layer is 121.5 ± 6.5 μm, the ganglionic granular layer is 46.5 ± 4.15 751 4.47 μm. In the second animal, all layers of the cortex are thicker than in the first, especially the molecular layer, its thickness is significantly larger and equal to 211.5 ± 10.11 μm ($P<0.05$).Although the

thickness of the ganglionic layer is also greater than in the first case, it is 55.5 ± 3.2 μm, but the differences are not significant. The granular layer in the second animal is also significantly thicker (120±11.4 μm, P<0.05). Measurements made in the third animal showed that the same changes in the dimensions of the layers as in the second animal, compared with the first one, are observed. The molecular layer is 196.5 ± 15.88 μm (P<0.05), the ganglionic layer is 48.5 ± 3.5 (P>05), the granular layer is 115.5 ± 12.26 μm (P<0.05). Comparison of the parameters of the layers of the cerebellar cortex of the third animal with the second did not reveal significant differences between them.

Conclusions: Different animals differ in the thickness of the molecular and granular of the cerebellar cortex layers. At the same time, the thickness of the ganglionic layer, represented by pear-shaped Purkinje neurons, does not differ. Such changes may be due to age-related changes.

Keywords: Layers of cerebellar, Silver nitrate, Purkinje neurons, R. Campos.

RESULTS OF IMMUNOLOGICAL STATUS BEFORE AND AFTER ENDOSCOPIC SURGERY IN PATIENTS WITH CHRONIC RHINOSINUSITIS

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Background: Rhinosinusitis is an inflammatory disease of the mucous membranes of the nose and nasal cavities, usually caused by secretory stagnation and impaired aeration of the nasal cavities. Inflammation of the nasal cavities is one of the most common pathologies among the ENT organs. In the last decade, the incidence of rhinosinusitis has increased almost 3 times. According to epidemiological studies, 15% of the adult population and 5% of children suffer from inflammatory diseases of the nasal cavities. The incidence of chronic inflammatory diseases of the nasal cavities remains high and still does not have a declining principle. Consequently, there has been a recent increase in morbidity by 1.5–2.0%

Objective: To study the immunological status of patients with chronic rhinosinusitis before and after endoscopic surgery, as well as to evaluate the results.

Methods and materials: After endoscopic surgery, patients in the main group were treated with LILT on a Mustang 2000 device. In the postoperative period, the use of LILT is performed in order to enhance the immune system, improve local blood circulation and improve the quality of wound healing.

Results: Based on the obtained data, we concluded that the application of LILT with infrared rays with a power of 5 mW, wavelength 0.89 μm, separately for each nasal cavity. For 2-3 minutes once a day for 5-7 days once a day for 5-7 days continuously, leads to a rapid restoration of the functional state of the cavity.

Evaluation of the endoscopic picture performed in the dynamics showed that statistically reliable recovery of nasal functional status and immunologically normal blood and nasal secretions was faster in the main group of patients undergoing LILT in the postoperative period, without any additional physiotherapeutic treatment, compared with the control group.

Conclusion: Based on this study, it can be concluded that the success of treatment of patients with proliferative form of chronic rhinosinusitis depends not only on the quality of the surgical performed intervention, but also on the accuracy of the postoperative period, aimed at restoring the nasal mucosa and its functions.

Based on the obtained results, it can be concluded that after the endoscopic surgery and the course of LILT, the condition of the nasal mucosa in patients and almost rapid recovery of the body's immunological parameters are observed.

Keywords: Rhinosinusitis, low intensity latex therapy, endoscopic surgery, ENT.

EFFECTIVENESS OF TEMPERATURE MONITORING IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

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Background: This study investigated the impact of temperature monitoring in children with community-acquired pneumonia (CAP). The intervention group had their temperature measured every four hours, while the control group hadn't. Results showed that temperature monitoring significantly reduced hospital stay, duration of fever, and cough. This simple intervention can also have helped to detect early complications and adjust therapy.

Methods and materials: This parallel-group clinical trial included 100 children aged between 1 and 12 years with CAP. The participants were divided into two groups; the intervention group (n=50) and the control group (n=50). Both groups received standard treatment for CAP, which included antibiotics and supportive care. The intervention group had their tempera-

ture measured every four hours and recorded in a chart, while the control group had their temperature measured but not recorded.

Results: The mean length of hospital stay for the intervention group was 5.2 days, while that of the control group was 6.8 days ($p<0.05$). The duration of fever was shorter in the intervention group (2.7 days) compared to the control group (3.9 days) ($p<0.05$). Similarly, the duration of cough was shorter in the intervention group (4.3 days) compared to the control group (5.8 days) ($p<0.05$). The intervention group also had lower rates of tachypnea, oxygen desaturation, and respiratory distress compared to the control group. There were no adverse events reported in both groups during the study period.

Discussion: The findings of this study suggest that temperature measurement and registration in children with CAP can significantly reduce the length of hospital stay, duration of fever, and cough. These results are consistent with previous studies that have shown the importance of fever monitoring in the management of CAP. The regular recording of temperature allows for early detection of complications such as sepsis, and the timely adjustment of therapy.

Conclusion: In conclusion, temperature measurement and registration in children with CAP can significantly reduce the length of hospital stay, duration of fever, and cough. This simple intervention can also help to identify early complications and adjust therapy in a timely manner. Larger studies are needed to validate these findings and explore the impact of temperature monitoring on long-term outcomes.

Keywords: Community-acquired pneumonia, to validate, a sepsis.

THE IMPACT OF PROBIOTICS ON THE MICROBIOME AND CLINICAL OUTCOMESIN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

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Background: Community-acquired pneumonia (CAP) is a common cause of morbidity and mortality in children worldwide. Probiotics, which are live microorganisms that confer health benefits on the host when administered in adequate amounts, have been proposed as a potential therapeutic intervention for CAP. Probiotics have been shown to improve clinical outcomes and reduce the duration of illness in adults with respiratory infections. However, the impact of probiotics on the microbiome and clinical outcomes in children with CAP remains unclear.

Objective: In this study, we aimed to investigate the impact of probiotics on the microbiome and clinical outcomes in children with CAP, with the Andijan Regional Children Multicenter Medical Center as the performed center.

Methods and materials: This study is a randomized, placebo-controlled trial involving children aged 6 months to 12 years with CAP. The study performed at the Andijan Regional Children Multicenter Medical Center in Andijan, Uzbekistan. A total of 120 children were enrolled in the study, with 60 children randomized to receive the probiotic supplement and 60 children randomized to receive the placebo. The two groups were similar in terms of demographic characteristics, clinical features, and severity of illness at baseline. The participants randomly assigned to receive either a probiotic supplement or a placebo for 14 days. The probiotic supplement contains a combination of Lactobacillus acidophilus, Bifidobacterium lactis, and Streptococcus thermophilus, while the placebo is an identical-looking capsule containing microcrystalline cellulose. The study participants followed up for a period of 30 days.

Results: The primary outcome of the study was the impact of probiotics on the microbiome of children with CAP. Analysis of the stool samples collected from the participants at baseline, day 7, and day 14 showed that there was a significant increase in the relative abundance of Lactobacillus and Bifidobacterium in the probiotic group compared to the placebo group. This suggests that the probiotic supplement was able to modify the gut microbiota of the children with CAP. In addition, there was a significant increase in alpha diversity in the probiotic group at day 14 compared to baseline, indicating a more diverse gut microbiota.

The secondary outcomes of the study included clinical outcomes such as the duration of illness, hospital length of stay, and the need for antibiotics. The duration of illness was similar in both groups, with a median duration of 7 days in the probiotic group and 8 days in the placebo group ($p=0.24$). The length of hospital stay was also similar in both groups, with a median length of stay of 5 days in the probiotic group and 6 days in the placebo group ($p=0.37$). There was no significant difference between the two groups in terms of the need for antibiotics, with 42 (70%) children in the probiotic group and 45 (75%) children in the placebo group receiving antibiotics ($p=0.54$).

Conclusion: In this study, we found that a probiotic supplement containing Lactobacillus acidophilus, Bifidobacterium lactis, and Streptococcus thermophiles was able to modify the gut microbiota of children with CAP. Although there was no significant difference between the probiotic and placebo groups in terms of the duration of illness, length of hospital stay, or the need for antibiotics, the probiotic group had a lower frequency

of persistent fever and diarrhea. These results suggest that probiotics may have a beneficial impact on the clinical outcomes of children with CAP. Further studies are needed to confirm these findings and to determine the optimal probiotic regimen for the management of CAP in children.

Keywords: Probitoics, microbiom, gut, children, pneumonia.

THE STATE OF APUDOCYTES IN BRONCHIECTASIS

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Background: Currently, bronchiectasis is a multietiological pathology, the pathogenesis of which involves a complex interaction between the body, respiratory pathogens and environmental factors.

Objective: To establish the state of apudocytes in bronchiectasis in children.

Methods and materials: Lobes or fragments of lungs removed during surgery for bronchiectasis in 22 children aged 5 to 12 years were studied. The sections were stained with hematoxylin and eosin, according to Van-Gieson, resorcinol-fuchsine according to Weigert. To identify the endocrine structures of the bronchi (apudocytes), the sections were impregnated with silver nitrate according to the Grimelius method (double impregnation).

Results: The study of the presence of apudocytes in the lungs with bronchiectasis made it possible to detect them only in the multilayered epithelium. These cells are of the open type, have a spindle shape. The apical process is long, tortuous; it reaches the lumen of the bronchus and ends in a small club-shaped thickening. The basal part of the apudocytes is weakly impregnated, which is a sign of secretion.

The mucous membrane contains papillary growths, peribronchial sclerosis is noted. In the lumen of the bronchi is exudate with leukocytes. The respiratory area is represented by both emphysematous enlarged alveoli and areas of atelectasis. The alveoli contain serous fluid. In the interstitium is noted lymphoplasmacytic infiltration in the lumen of some alveoli – alveolar macrophages.

Weakening of protective mechanisms leads to restructuring of the epithelium, hyperplasia of goblet cells and bronchial glands, discoordination of secretion and mucociliary transport. The secretion of viscous sputum increases, swelling of the bronchial wall occurs. Then inflammatory changes join with infiltration of the bronchial wall with lymphocytes, macrophages and other cellular elements. Granulation tissue, hypertrophy of muscle

bundles, perivascular sclerosis gradually increase, and later fibrosis of the muscular layer of the bronchus.

The role of cells of the APUD system is known in the development of the lung and postnatal rearrangement of blood circulation in fetuses and newborns. Under experimental conditions, apudocytes release secretory granules under the influence of acute or chronic hypoxia, hypercapnia, irritation with nitric oxide and various drugs and drugs (nicotine, reserpine, and calcium iontophoresis). Apudocytes are also involved in the pathogenesis of diseases. Their hyperplasia is noted in patients with acute pneumonitis, chronic obstructive pulmonary disease, in heavy smokers, in patients with non-immune bronchial asthma, in children with bronchodysplasia.

Conclusion: Thus, the results of the study indicate that apudocytes are also involved in the pathogenesis of diseases. Morphological changes – hyperplasia of goblet cells and bronchial glands, discoordination of secretion and mucociliary transport characterize various manifestations of pathology in bronchiectasis.

Keywords: Children, bronchiectasis, condition of apudocytes.

INCREASING THE EFFICIENCY OF TREATMENT IN PATIENTS WITH CHRONIC DACRYOCYSTITIS IN THE POSTOPERATIVE PERIOD

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Background: Regardless of the type of injury and the degree of tissue damage, each injury process takes place in three physiological stages at the cellular and tissue level, corresponding to morphological changes. At the time, N.I. Pirogov also distinguished 3 stages. Today, M.I Kuzin approach is widely used. Thus, in the exudation stage, all physiological processes are now focused on isolating the damaged tissue, which is irreversible and serves as a potential source for the development of infection and intoxication.

Objective: To assess the effectiveness of treatment of patients with chronic dacryocystitis in the postoperative period.

Methods and materials: In the department of our clinic, we examined 50 patients aged 18 to 50 years who complained of dacryocystitis. In order to assess the progress of reparative processes in the surgical wound after endonasal endoscopic dacryocystorinostomy, the cytological composition of the smears prepared on the subject glass was examined using a cotton swab under the control of a 0 ° endoscope from the nasal mucosa in the operated area. The surface of the subject glass was wiped with 90 ° alcohol

to degrease. The drugs were stained by the Romanovsky-Gimza method, and then the cell elements were counted in a 5-dimensional field of view. The results were calculated in percentages. The process of recording the results and taking microphotos was carried out using a Leica microscope (Austria) and a camera "Zenit-ET" with a special photo pole.

Patients were divided into two groups. In the main group (25 patients) immediately after the installation of an additional hole and for 20 days after surgery through the tear ducts (along the stent-drainage) antiadgesin drug in the form of gel every 2 hours was itroduced, in the second, the comparison group (25 patients) no anti-scar drug was used in the postoperative period. We used an antiadgesin drug in gel form. The effectiveness of the antiadgesin drug is due to the formation of a temporary artificial barrier between the damaged tissues and its bacteriostatic effect, which ensures the separation of surfaces during repair.

Conclusion: Thus, an assessment of increased postoperative treatment efficacy in patients with chronic dacryocystitis showed that the use of antiadgesin in the main group of patients resulted in better wound healing and epithelialization in 7 days, compared with only 21 days in the comparative group. The antiadgesinic property of the drug reduces the permeability of the wound parts to large molecules, protects tissues from toxins and prevents the entry of microbes (bacteria, simple animals and fungi), rapid cleansing of wounds from enzymatic catalysis products and strong epithelialization of collagen and rough scar development.

Keywords: Dacryocystitis, endonasal endoscopic dacryocystorinostomy, bacteriostatic effect, antiadgesin drug, post-operative period.

PROGNOSTIC VALUE OF THE SPECTRUM OF SALIVA CYTOKINES AND THEIR CHANGES IN ACUTE AND CHRONIC RELAPSING STOMATITIS IN CHILDREN

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Background: The concentration of cytokines in saliva depends on the form of stomatitis, which is confirmed by the presence of a relationship between the concentrations of TNFa and IL – 1ß, and this dependence is direct and varies depending on the form of stomatitis, which indicates a violation of immunoregulatory mechanisms in chronic recurrent forms of stomatitis. The study of the role of cytokines of oral secretions in children with acute and chronic recurrent stomatitis is one of the fundamental points for understanding the pathogenesis of bacterial and viral infections.

For clinical practice, the study of the cytokine status of oral secretions is difficult to overestimate, since it reflects an individual primary reaction to a bacterial and viral agent, allows to assess the nature of the course of the process, predict the outcome of the disease in many bacterial and viral infections of the oral cavity, and also allows you to assess objectively the effectiveness of treatment. The clinical study of the level of cytokines in the oral cavity has been devoted to single works related to the pathology of the oral mucosa.

Objective: In this regard, the purpose of our study was to study the spectrum of cytokines of oral secretions in children and their prognostic value in the pathogenesis of acute and chronic recurrent stomatitis.

Methods and materials: The study is based on a clinical and laboratory examination of 74 children with acute and chronic recurrent stomatitis who applied to a dental clinic. All examined children were divided into 2 groups according to the forms of stomatitis. I group – 52 children with acute stomatitis and II group – 22 children with chronic recurrent stomatitis, 20 healthy children of comparable age made up the control group. The cytokine profile of oral secretions was studied in all children. The content of three cytokines – IL – 1β TNFa and IL – 4 in the projection and severity and phase of the disease was analyzed. They were selected as likely markers of common (IL – 4, TNFa) and allergen (IgE)-dependent phlogogenicity (IL -4).

Results: In the group of healthy children, the content of IL – 1ß in saliva was 21.8±1.80 pg/ml. The following results were obtained for groups of patients: group 2 196.0±20.76 pg/ml, group 1 128.0±14.04 pg/ml (for all indicators $p<0.001$). The differences between the groups are significant ($p<0.001$). In the control group, the TNFa content in saliva was 27.3±2.55 pg/ml. The following results were obtained for groups of patients: group 2 – 95.7±9.16 pg/ml, group 1 – 54.6±4.56 pg/ml, (for all indicators $P<0.001$). In healthy children, the content of IL – 4 in saliva was 6.2±0.41 pg/ml. By patient groups the following results were obtained: group 2 – 19.5±1.79 pg/ml, group 1 – 12.7±1.02 pg/ml (for all indicators $p<0.001$). The data obtained develop the idea that the state of real homeostasis can be an indicator of distant pathological processes, including allergic inflammation. In the present study, this was manifested in the study of the cytokine profile (IL1ß, TNFa and IL – 4) oral secretions in children with stomatitis. It was found that in the acute phase of the disease, the content of all three cytokines increased significantly. The most significant and constant increase was noted for IL – 1ß. In patients with severe course, the indicators were higher than in moderate and mild forms of the disease; no significant differences were found for the last two groups. This was observed for all three

cytokines. The difference is that mild forms of the disease usually do not cause an increase in serum levels of IL – 1a and TNFa.

Conclusion: 1. The results obtained by us show a reliable dependence of the concentration of cytokines in saliva on the form of stomatitis.

2. The results of the study confirm the existence of a relationship between the concentrations of TNFa and IL – 1ß, and this relationship is direct and varies depending on the form of stomatitis, which indicates a violation of immunoregulatory mechanisms in chronic recurrent forms of stomatitis.

Keywords: Acute and chronic recurrent stomatitis, children, cytokines, immunoregulatory mechanisms.

CLINICAL ASPECTS OF SOCIAL FUNCTIONING IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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Background: The study of the patterns of mental development is one of the priority areas of research in recent years. Studies that consistently develop this area have shown that the characteristic developmental disorders of all mental functions in childhood autism are associated with primary deficits in the affective sphere.

Objective: studying the clinical aspects of social functioning in children with ASD.

Methods and material: Clinical-psychopathological, clinical-catamnestic research methods were used in the study. An adapted questionnaire for parents of children with autistic disorders was used to assess the signs of autism.

Results: An analysis of the clinical and dynamic characteristics of autistic disorders showed gender and age patterns in the development of the process and made it possible to identify common and distinctive features according to the main diagnostic criteria. The most variable diagnostic criterion from this group – the possibility of establishing eye contact – occurs in all children under 5 years old, and by the age of 12 years it is violated in 75%. Violation of communication with others, manifested by the impossibility of establishing a dialogue and difficulties in the formation of role-playing games, occurs in all children. Speech formation delay is observed in children with autism under 5 years old in 85.7% of cases. By the age of 12, unformed speech remains pronounced in half of the children.

At the age of 12 years, speech stereotypes are detected in 71.4% of children. In autistic disorders in children, a non-progredient course prevails – 63.3%. Continuously sluggish course of the process was registered in 24.6% of cases.

Conclusion: Analyzing the data obtained we can conclude that the level of social functioning of children with autism is low, which requires the organization of treatment and rehabilitation recommendations.

Keywords: autism, disorders, disontogenesis, emotional and social development, adaptation mechanisms.

PECULIARITIES OF DEVELOPMENT AND HEALTH OF EARLY CHILDREN WITH PERINATAL DAMAGE OF THE CENTRAL NERVOUS SYSTEM

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Background: With perinatal damage to the central nervous system, there are somatic disorders that persist for a long time. The leading mechanism for the formation of somatic pathology is a violation of the autonomic regulation of organs and systems. The causes of vegetative dysfunctions are not only in the primary lesion of the cerebral vegetative formations, but also in the secondary dysontogenesis of neurovegetative functions. Vegetative dysfunction leads to a decrease in the adaptive capacity of the body in preschool and school age, which manifests itself in tension and even disruption of adaptation mechanisms. Chronic disadaptation syndrome contributes to the early onset and severe course of the pathology of the cardiovascular, respiratory, digestive systems.

Objective: to improve the diagnosis and treatment of somatic health disorders in young children who have undergone perinatal hypoxia, through in-depth examination and dynamic monitoring.

Methods and materials: We examined 120 children under the age of 1 year. All children were divided into 2 groups: group 1 – a retrospective analysis of 60 children with perinatal CNS lesions without correction of somatic pathology; group 2 – 60 children with perinatal CNS lesions on modified treatment.

Clinical monitoring of sick children will be carried out in the pediatric and neurological departments of the Multidisciplinary Clinic of the Samara State Medical University. Vitamin D concentration will be determined by ELISA (MINDRAY 96).

Determination of the level of trace elements in the hair by instrumental neutron activation analysis (INAA) in the activation analysis laboratory of the Institute of Nuclear Physics of the Republic of Uzbekistan (INP RUz). Laboratory research: clinical blood test, urinalysis, biochemical blood test. Also, all patients will undergo neurosonography, ECG, ultrasound of internal organs.

Results: The frequency of somatic pathology in children retrospective analysis with perinatal CNS lesions without correction of somatic pathology: anemia 36.1±4.2, diseases of the digestive system 3.2±1.8, diseases of the circulatory system 7.5±2.3, diseases of the kidneys 4.7± 1.7. Perinatal lesions of the CNS on modified treatment: anemia 57.7±3.1, diseases of the digestive system 12.5±3.7, diseases of the circulatory system 31.5±4.07, diseases of the kidneys 37.0±4.2.

According to our data, this pathological condition occurs in 16.0% of children with perinatal CNS lesions, in the control group this number was 2.0% ($p < 0.05$). In the structure of kidney diseases 37.0% of children with perinatal CNS lesions had pyelonephritis, pathology of the ENT organs (24.6%), which repeatedly worsened during the course of the study.

Conclusions: Unfavorable factors of the perinatal period determine the high level of tension of regulatory systems at an early age. With age in the implementation of maladaptive manifestations increases the role of macrosocial conditions and features of individual child lifestyle. It has been shown that in children who have had perinatal CNS damage, there are features of the formation of indicators of physical and neuropsychic development, represented by a low assessment and disharmony of development. Peak neurological and behavioral disorders account for preschool period.

Keywords: CNS, behavioral disorders, perinatal period, perinatal hypoxia.

IMMUNOLOGICAL STATUS OF ACUTE PNEUMONIA IN CHILDREN UNDER 2 YEARS OLD WITH ATOPIC DERMATITIS: A PARALLEL GROUP CLINICAL TRIAL

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Background: This study aimed to compare the immunological status and clinical outcomes of children under 2 years old with acute pneumonia

who had a history of atopic dermatitis (AD) to those without AD. Serum cytokine levels and hospital outcomes were measured. Results showed that children with AD had significantly higher levels of IL-4, IL-5, and IL-6 and experienced a longer hospital stay and a higher need for oxygen therapy compared to children without AD. These findings suggest that children with AD may have a dysregulated immune response that predisposes them to more severe infections.

Objective: This study aimed to investigate the immune response of children under 2 years old with AD who develop acute pneumonia and compare it with children without AD who develop acute pneumonia.

Methods and materials: The study included children under 2 years old hospitalized with a diagnosis of acute pneumonia. Participants were divided into two groups: Group A included children with AD who developed acute pneumonia, and Group B included children without AD who developed acute pneumonia. The diagnosis of AD was made based on the criteria established by the American Academy of Dermatology. The diagnosis of acute pneumonia was made based on clinical signs and symptoms, as well as radiographic evidence of pulmonary infiltrates.

Results: The levels of serum cytokines on admission to the hospital were compared between the two groups. Group A (AD + pneumonia) had significantly higher levels of IL-4 (mean = 23.6 pg/mL, SD = 10.1) compared to Group B (No AD + pneumonia) (mean = 17.2 pg/mL, SD = 8.3; $p = 0.03$). Group A also had significantly higher levels of IL-5 (mean = 17.8 pg/mL, SD = 6.2) compared to Group B (mean = 12.9 pg/mL, SD = 5.8; $p = 0.02$). Additionally, Group A had significantly higher levels of IL-6 (mean = 54.1 pg/mL, SD = 18.7) compared to Group B (mean = 42.6 pg/mL, SD = 16.2; $p = 0.01$). However, there was no significant difference between the two groups in the levels of IL-8 (mean = 129.4 pg/mL, SD = 34.5 for Group A; mean = 126.5 pg/mL, SD = 38.1 for Group B; $p = 0.77$) or IFN-gamma (mean = 12.3 pg/mL, SD = 3.8 for Group A; mean = 11.9 pg/mL, SD = 3.5 for Group B; $p = 0.67$).

The length of hospital stay and the need for oxygen therapy were compared between the two groups. Group A had a longer length of hospital stay (mean = 7.6 days, SD = 1.9) compared to Group B (mean = 5.8 days, SD = 2.2; $p < 0.001$). Additionally, a higher proportion of participants in Group A required oxygen therapy during their hospital stay (84%) compared to Group B (52%; $p = 0.01$).

Conclusion: In this parallel group clinical trial, we found that children under 2 years old with AD who develop acute pneumonia have a different immunological status than children without AD who are under 2 years

old and who develop acute pneumonia. Specifically, children with AD had higher levels of IL-4, IL-5, and IL-6

Keywords: Pneumonia, early age, atopic dermatitis, interleukin.

THE STATE OF LIPID METABOLISM IN INSULIN RESISTANCE

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Background: It is known that diabetes mellitus develops against the background of obesity, since overweight contributes to insulin resistance. Central obesity was recognized as an independent risk factor for cardiometabolic diseases and a better predictor of cardiometabolic risk than general obesity.

Objective: to study the relationship of insulin resistance with impaired fat metabolism in women.

Methods and materials: The study included 14 women with diabetes mellitus. Their average age was 42.7±1.4 years. The control group consisted of 12 practically healthy women. Their average age was 39.1±0.8 years.

The body mass index was evaluated. The state of carbohydrate metabolism was assessed by indicators of glycemia in the plasma of venous blood on an empty stomach. The lipid spectrum of blood serum was determined by spectrophotometric method, the level of immunoreactive insulin was studied by enzyme immunoassay. Insulin resistance was assessed by HOMA-IR (immunoreactive insulin×fasting glycemia/22.5).

Results and discussion: The women of the main group had a higher body mass index (29.03±0.7 kg/m2) ($p<0.001$). The fasting glycemia level for the main group was 5.37±1.2, for the control group 4.04±1.3 mmol/l. Significantly higher levels of triglycerides (139.7±5.7 mmol/l) and low levels of high–density lipoproteins (37.8±0.5 mmol/l) in women with diabetes mellitus ($p<0.05$). The insulin level (14.52±1.24 mEd/L) and the insulin resistance index (3.91±0.39) were higher than in the control group ($p<0.001$).

Conclusion: Visceral obesity was found in women with diabetes mellitus, which was accompanied by insulin resistance and compensatory hyperinsulinemia. Patients with diabetes mellitus are characterized by atherogenic dyslipidemia. Both weight loss and exercise can improve insulin resistance and related dyslipidemia.

Keywords: Diabetes mellitus, insulin resistance, obesity.

FEATURES OF CLINICAL COURSE OF RHEUMATOID ARTHRITIS IN PATIENTS WITH THYROID PATHOLOGY

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Background: Rheumatoid arthritis (RA) is a widespread (1% of the world's population) autoimmune disease characterized by symmetrical erosive arthritis (synovitis) and damage to organs other than the joints. It was reported that goiter, hypothyroidism, chronic adrenal insufficiency and other pathologies of the endocrine glands are more common in patients with RA. Thyroid hormones increase the activity of metabolic processes, enhance lipogenesis, increase glucose uptake by adipose and muscle tissue, and activate gluconeogenesis and glycogenolysis.

Objective: Comprehensive study of clinical and laboratory parameters in RA patients with autoimmune thyroiditis to improve the effectiveness of early and differential diagnosis and timely treatment.

Materials and methods: The examination was carried out in the cardiorheumatology department of SamSMU. The features of the articular syndrom, development, clinic and course of rheumatoid arthritis in 54 patients with rheumatoid arthritis with autoimmune thyroiditis were studied. The median age is 25-75 years. The average length of the RA is 6 years.

Results of the study: All patients, depending on the functional state of the thyroid gland, were divided into two groups. 16 (27%) patients with RA were diagnosed with hypothyroidism (1st group.) The main cause of hypothyroidism in all of them was autoimmune thyroiditis. In the 2nd group, 38 patients were involved without impaired thyroid function In the 1st group, the number of patients with systemic manifestations of RA was statistically higherthan in the second. With a detailed analysis of the main systemic manifestations of RA and its complications, statistically significant differences between the groups were revealed only in the frequency of occurrence myocardial dystrophy and anemia.The study showed that RA patients with hypothyroidism had a higher clinical and laboratory activity of the disease. In this group, the ESR and the number of swollen joints were significantly higher compared to patients without impaired thyroid function.

Conclusion: In patients with RA in combination with hypothyroidism, systemic manifestations and high activity of the articular process are more often observed, compared in patients with RA without thyroid pathology.

Keywords: Thyroid gland, rheumatoid arthritis, hypothyroidism.

TREATMENT OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Today, thanks to the emergence of effective drugs for the treatment of RA and the introduction of the "Treat to target" strategy into practice, it has become possible to significantly improve the results of therapy – to control the course of RA and to keep patients working.

Objective: To study the tactics of treatment of patients with rheumatoid arthritis.

Methods and materials: 80 patients were examined, including 66 (82.5%) women and 14 (17.5%) men who were treated with a diagnosis of RA in the cardio-rheumatological department of the Samarkand City Medical Association in 2021-2022. The mean age of the patients was 43.3±9.4 years, the duration of RA was 11.2±6.4 years. When assessing the severity of RA, the need for the use of non-steroidal anti-inflammatory drugs (NSAIDs) and glucocorticosteroids (GCC), the number of hospitalizations during the year due to exacerbations of RA was taken into account.

Results: 30% of patients received corticosteroids, 77.5% of them received NSAIDs. 14 (13.2%) patients with RA were treated with genetically engineered biological drugs (GEBD), which were represented by an inhibitor of TNF-α. The duration of treatment without basic therapy was 4.2 ± 4.4 years; the duration of basic therapy was 4.8 ± 2.4 years. Of the main basic drugs, 28 (35%) patients received methotrexate; sulfasalazine, hydroxychloroquine, leflunomide they were received by 32 (40%) patients. The average duration of taking basic drugs was 6.2±5.3 years; the average dose of methotrexate was 15.4±4.3 mg per week. However, it should be noted that 49.3% of patients received the drug at a relatively low dose (from 7.5 to 12.5 mg per week). 34 (42.5%) patients received corticosteroids. The mean duration of corticosteroid treatment was 4.7±7.9 years, and the mean dose was 6.3±4.1 mg/day. In 61 (76.25%) patients with RA, pathologies of various organs were diagnosed, 37 (46.25%) of them had several comorbid conditions, which creates additional difficulties in choosing therapy, often causes polypharmacy and increases the risk of adverse reactions.

Conclusion: For effective treatment of patients with rheumatoid arthritis in clinical practice, early treatment is necessary, taking into account comorbid conditions that cause additional difficulties in early diagnosis and treatment of the disease.

Keywords: Basic therapy, NSAIDs, comorbid conditions.

MODERN APPROACHES TO SECONDARY PREVENTION OF RHEUMATIC FEVER IN CHILDREN

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Background: Chronic tonsillitis is one of the most common diseases of the upper respiratory tract, as it occurs in 12-15% of children. Infection in the palatine tonsils is often a trigger for pathological changes in the cardiovascular system, kidneys, connective tissue, and endocrine organs. Treatment of chronic tonsillitis presents certain difficulties. Antibiotics, antiseptics, sulfonamides, analgesics, non-steroidal anti-inflammatory drugs and many others are used to treat chronic tonsillitis. The choice of treatment method largely depends on its effectiveness.

Objective: To study the effectiveness of Phagyo preparations in children with chronic tonsillitis and acute rheumatic fever in order to improve the results of prevention.

Material and methods: We examined a total of 104 children, 54 of them with chronic tonsillitis and 50 children with acute rheumatic fever aged 7 to 14 years. In the study, children were taken who had an exacerbation of the disease, and streptococcus was sown during bacterial inoculation of a swab from the pharynx. The children of the first and second groups, along with standard treatment, received Phagyo preparations, and the third group received only standard treatment. To assess the effectiveness of the drug in children with chronic tonsillitis, a visual 5-point system of the dynamics of subjective and objective data was used. The absence of this symptom was taken as 0 points, its maximum manifestation as 5 points. The effectiveness of treatment was also determined by the reduction of microbial contamination of the tonsils before and after treatment (on the 10th day).

Results: Phagyo preparations show a high therapeutic potential against pathogenic and opportunistic microorganisms. Side effects of the use of the drug were not observed. The effectiveness of the drug in children with acute rheumatic fever was assessed by the frequency of exacerbations during the year and the reduction of microbial contamination of the tonsilitis. Before treatment, hyperemia and infiltration of the mucous membrane of the palatine arches in the first and second groups amounted to 4.80 ± 0.37 points, in the third control – 4.70 ± 0.35 points. On the 5th day, in 56 (87.5%) children of the first and second groups, it decreased to 2.10 ± 0.44 points and in 12 (60%) children of the control group – to 2.90 ± 0.38 points. After 10 days, in 60 (93.75%) children of the first and second groups, this

indicator was 0.8 ± 0.5 points, in 16 (80%) people in the control group – up to 1.30 ± 0.41 points ($p < 0.05$). Follow-up observations of the analysis of exacerbations of acute rheumatic fever revealed that in children receiving Phagyo, an exacerbation of the disease during the year was observed only in 4 (4.8%) patients, while in the control group, exacerbations were observed in 12 (14.3%) children.

Conclusion: Thus, the use of Phagyo in children with chronic tonsillitis allows achieving a pronounced, stable clinical effect, and in children with acute rheumatic fever, to reduce the number of exacerbations, which allows us to recommend this drug for practical use in complex treatment in this category of children.

Keywords: Children, acute rheumatic fever, chronic tonsillitis, secondary prevention.

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**SCIENTIFIC ABSTRACTS OF CONFERENCE PATICIPANTS
FROM THE UNIVERSITIES OF THE FOREIGN COUNTRIES**

FOR NOTES

THE INTERNATIONAL SCIENTIFIC CONFERENCE FOR STUDENTS AND YOUNG RESEARCHERS IN ENGLISH «TOPICAL ISSUES OF MEDICINE» DEVOTED TO THE 85TH ANNIVERSARY OF STAVROPOL STATE MEDICAL UNIVERSITY (ABSTRACTS)

МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ СТУДЕНТОВ И МОЛОДЫХ УЧЕНЫХ НА АНГЛИЙСКОМ ЯЗЫКЕ«АКТУАЛЬНЫЕ ВОПРОСЫ МЕДИЦИНЫ», ПОСВЯЩЕННАЯ 85-Й ГОДОВЩИНЕ СТАВРОПОЛЬСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО УНИВЕРСИТЕТА (СБОРНИК ТЕЗИСОВ)

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