
This book includes abstracts of authors from Russian and foreign educational institutions for the International Scientific Conference for Students and Young Researchers on topical issues of theoretical, practical medicine and medical biological sciences in English.

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МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ
СТУДЕНТОВ И МОЛОДЫХ УЧЁНЫХ
НА АНГЛИЙСКОМ ЯЗЫКЕ
«АКТУАЛЬНЫЕ ВОПРОСЫ МЕДИЦИНЫ»

Сборник тезисов

Ставрополь – 2019


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 медику-биологических наук на английском языке.

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О. С. Шибова – д. филол. н., профессор, заведующая кафедрой иностранных языков для гуманитарных и естественнонаучных специальностей Гуманитарного института Северо-Кавказского федерального университета Минобрнауки России.

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Dear Participants of the Conference!

It’s a matter of great pride and privilege to organize the International Scientific Conference for Students and Young Researchers in English «Topical Issues of Medicine» at Stavropol State Medical University.

The Conference became a good tradition for the past eleven years. It brings together young people who are engaged in research work from both Russian and foreign universities. Research work of young people is one of the most important means of improving the quality of training of specialists with higher education; it is an effective method of formation and development of students’ motivation to creativity, responsibility and independence, as well as a way to realize individual approach in teaching and education of students.

The problems raised in the research of students, graduate students, young scientists demonstrate the diversity of scientific interests of modern youth, give reason to say that medical science has a future, that a worthy change to today’s scientists and practitioners is growing.

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. Today scientific events are very popular and in demand. To learn about innovative projects, large-scale scientific developments, it is possible to learn about new research from their colleagues at various forums, in particular, at scientific conferences, which are held to generalize the experience of developers.

I hope the Conference will contribute to the creative activity of students, graduate students, young scientists and their involvement in solving the urgent problems of modern medical science.

I wish fruitful work, constructive dialogue and effective cooperation to all participants and organizers of the Conference!

Koshel Vladimir Ivanovich,
Doctor of Medical Sciences, Professor,
Rector of Stavropol State Medical University, Russia
SCIENTIFIC ABSTRACTS
OF STAVROPOL STATE MEDICAL
UNIVERSITY STUDENTS
AND YOUNG RESEARCHERS,
RUSSIA
COMPARATIVE EVALUATION OF TREATING PATIENTS WITH OBSTRUCTIVE JAUNDICE USING MINIMALLY INVASIVE METHODS

Adzege Faeren M., Iyalomhe Oshozimhede E.
Stavropol State Medical University, Stavropol, Russia
Department of Hospital Surgery
Scientific supervisor: Assoc. Professor E.V. Mashurova

Introduction: According to scientific forecasting, the incidence of organs of the biliary system will increase in the next 15 years in the world by 30-50%, which is explained by lifestyle and dietary patterns, hereditary factors (I. Grigorieva, 2010; E.I. Halperin, P.S. Vetshev, 2011).

Objective: To compare minimally invasive treatment methods in patients with obstructive jaundice.

Material and methods: Between 2016 and 2018, case histories of patients treated in the Stavropol regional hospital were analyzed in the surgical-thoracic department. The age of patients ranged from 23 to 86 years, with more than 70% of patients within old age, burdened by comorbidities and a high degree of operational risk. Men were 86 (35.8%), women – 154 (64.2%). The instrumental methods used for research included ultrasound of the abdominal cavity, multispiral computed tomography, MR-cholangiography, laboratory studies. The obtained results were processed using the computer program “Excel”.

Results and discussion: The causes of obstructive jaundice are choledocholithiasis (50.72%), malignant diseases (24.63%), pancreatitis (13.04%) and choledochal stricture (8.69%). Endoscopic retrograde cholangiopancreatography (ERCP) with endoscopic papillosphincterotomy (EPST) was performed in 135 patients (56.25%), and percutaneous transhepatic cholangiography (PTHC) with percutaneous transhepatic cholangiostomy (PTCG) performed in 105 patients (43.75%). Complications after PTCG occurred in 4 patients (3.81%): drainage dislocation with bile-excretion in 3 patients (of which 1 was fatal) and bleeding in 1 patient. 4 patients (2.96%) treated with ERCP and EPST suffered bleeding from the PST area, post-manipulation pancreatitis
A COMPARETIVE STUDY OF AUTO-AGGRESSION IN FEMALE ADOLESCENTS WITH VARIOUS FORMS OF MALADAPTIVE BEHAVIOR

Adzege Faeren M., Iyalomhe Oshozimhede E.
Stavropol State Medical University, Stavropol, Russia
Department of Psychiatry
Scientific supervisor: Assoc. Professor Y.M. Shikin

Introduction: Auto aggression (self-harm/injury) is one of the leading problems among teenagers and young adults. This is done as a coping mechanism. Self-harm has been linked to various maladaptation such as family problems, issues with school/education, peer pressure and inferiority complex – problems that are mainly experienced by teenagers and young adults.

Objective: To analyze the leading cause of auto-aggression and origin (where the idea comes from) in female teenagers and young adults living in the Stavropol region.

Materials and methods: A survey was carried out between February 2018 and February 2019 in the “Stavropol Regional Psychiatric Hospital Number 1”, on 60 patients – all female, aged 13-19 years, who had at least an episode of self-injury. The patients answered a questionnaire prepared according to the GAF, ISAS-measure and NSSI-AT standard of questioning patients suffering auto aggression. The questionnaire was divided into two major groups: a) Cause (divided into five sub groups) – family, school, abuse, social life/relationship, culture/religion, b) Where the idea came from (divided into five sub groups) – hereditary, social media (the internet, movies), society (peers), psychiatric hospital, idiopathic. The obtained results were processed using the computer program “Excel”.

in 2 patients (1.48%), cholangitis in 1 patient (0.74%), fatal perforation in 1 patient (0.74%) and jamming of the Dormia basket in 3 patients (2.22%).

Conclusion: According to our data, there is a significant number of complications after ERCP and EPST, as compared to PTHC and PTCG.

Keywords: invasive treatment, surgical-thoracic department, multispiral, cholangiopancreatography.
Results and discussion:

a.) Cause

<table>
<thead>
<tr>
<th>Cause</th>
<th>Family</th>
<th>School</th>
<th>Abuse</th>
<th>Social life / Relationships</th>
<th>Culture/Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>31</td>
<td>7</td>
<td>9</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Percentage</td>
<td>51.67%</td>
<td>11.67%</td>
<td>15%</td>
<td>16.67%</td>
<td>5%</td>
</tr>
</tbody>
</table>

b.) Origin

<table>
<thead>
<tr>
<th>Where from</th>
<th>Hereditary</th>
<th>Social media</th>
<th>Society</th>
<th>Psychiatric Hospital</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patient</td>
<td>9</td>
<td>27</td>
<td>10</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Percentage</td>
<td>15%</td>
<td>45%</td>
<td>16.67%</td>
<td>10%</td>
<td>13.33%</td>
</tr>
</tbody>
</table>

Conclusion: In Stavropol region, auto-aggression in teenagers and young adults (female) is mainly caused by maladaptation to family problems. The idea to harm one’s self stems majorly from similar behaviours portrayed/learned on social media.

EMERGING STRATEGIES FOR ELIMINATING PREVALANCE OF HUMAN AFRICAN TRYPANOSOMIASIS AN EPIDEMIC IN NIGERIA

Akinyemi Olamide Ifeoluwa, Foka Tagheu Joel
Stavropol State Medical University, Stavropol, Russia
Biology Department
Scientific supervisors: C.M.Sc., Assoc. Professor E.N. Makarenko, C.M.Sc. M.V. Pokhodenko, Assistant N.V. Erina

Introduction: Trypanosomiasis has been recognized as a scourge in sub Saharan Africa for centuries, the disease caused by protozoan parasites of the *Trypanosoma* genus, is a major cause of mortality and morbidity in animals and man. Control efforts have considerably reduced the prevalence of human African trypanosomiasis (HAT), with new antibody based rapid diagnostic tests suites for mass screening.

Objective: To show the impact that HAT has had on sub Saharan Africa and the historical decline dating to present time with the help of different strategies in reducing the epidemic over the years.
**Background:** Human African trypanosomiasis or sleeping sickness is a tropical disease that affects a mass population in Sub Saharan Africa. It is caused by flagellate protozoan (*Trypanosoma brucei*) which exists in the following two morphologically identical subspecies:

- *T. brucei rhodesiense* (East African or Rhodesian African trypanosomiasis)
- *T. brucei gambiense* (West African or Gambian African trypanosomiasis)

Both are transmitted to humans by bites of infected tsetse flies (*Glossina palpalis* for *T. brucei gambiense*) and (*Glossina morsitans* for *T. brucei rhodesiense*) the following are only found in Africa.

**Materials and methods:** The following materials used in this study is obtained from data made available by the WHO online explaining the vast contrast on screening operations over a period of 1995-2018, specifically regions that are chronically affected and measures taken to curb this critical epidemic.

**Discussion:** A critical examination at the statistical record shows the vast progress on the reduction of HAT. It further proves the efficiency and effectiveness of various control measures been taken, with much credit been accredited to WHO.

**Conclusion:** As indicated above, WHO has recently set on a number of guidelines to tackle the elimination of HAT, focusing mainly on *T. brucei gambiense* or WAT form of the disease. Taken that here the human reservoir currently makes up the bulk of infection transmissions, this might be seen as a reasonable first priority. However, as already outlined above as well addressing the zoonotic nature of the disease will have to be an integral part of a long term solution, and reaching effective total eradication of HAT in that sense appears to be a much more difficult target. Indeed in order to guarantee HAT elimination, one should have access to a strategy that eliminates all human infective trypanosomes from the entire mammal (livestock and game animals) of the African continent. In the absence of a dear strategy for total effective eradication of human trypanosomes, the need for new diagnostics tools, new treatment modalities and preferentially a vaccine strategy have to remain on the agenda.
COMPARATIVE ANALYSIS OF PREVALENCE OF AMOEBIASIS IN NIGERIA AND GAMBIA
Akpabio Eno-Obong Udo
Stavropol State Medical University, Stavropol, Russia
Biology Department
Scientific supervisors: C.M.Sc., Assoc. Professor E.N. Makarenko,
C.M.Sc. M.V. Pokhodenko, Assistant N.V. Erina

**Background:** Entamoeba comprises six species that inhabit human intestinal lumen of which only *E. histolytica* is positively shown to be pathogenic. It has been reported to cause a high morbidity and mortality rate. In developed regions, infection occurs among travelers, recent immigrants from endemic regions, homosexual males and in less developed regions it occurs more commonly in areas of low socio economic status, poor sanitation and nutrition.

**Objective:** To compare the prevalence of *E. histolytica* in different states of Nigeria and Gambia.

**Materials and methods:** The materials used for this study is obtained from an online data from the World Health Organization (WHO) and also from the Centre For Disease Control and Prevention (CDC), that helps in tracking and investigating public health trends. Materials used in this study were obtained from Ahmadu Bello University Teaching Hospital, Zaria (Nigeria).

**Results and discussion:** From the data above, *E. histolytica* has the highest prevalence in Niamina (Gambia) with 42.1% compared to other states in Nigeria. This is due to the climatic/tropical/ rural factors affecting the population. Whilst that of Kaduna State, Northern Nigeria is reported to be 23.4% is majorly influenced by the level of sanitation.

**Conclusion:** Amoebiasis remains one of the most significant diseases worldwide. However, the findings of the study reveal *Entamoeba histolytica* as a major health problem in North-Western Nigeria. Prevention remains challenging, highlighting the need for improved awareness of this infection and preventive strategies in reported areas.

**Keywords:** Entamoeba histolytica, prevalence, children, Nigeria, Gambia, hygiene.
CASE STUDY OF THE PHYSIOTHERAPY TREATMENT OF A PATIENT AFTER STROKE
Ataye Khatima
Stavropol State Medical University, Stavropol, Russia
Department of Neurology, Neurosurgery and Medical Genetics
Scientific supervisor: D.M.Sc., Professor S.M. Karpov

Introduction: In the world more than 6 million people suffer from stroke each year, and approximately two-thirds of these individuals survive and require rehabilitation. The goals of rehabilitation are to help survivors become as independent as possible and to attain the best possible quality of life. Even though rehabilitation does not «cure» the effects of stroke in that it does not reverse brain damage, rehabilitation can substantially help people achieve the best possible long-term outcome.

Objective: Theoretical and practical analysis of post stroke and the development of physiotherapy treatment of a patient post stroke.

Methods: The practical part was done with patients consist within an uninterrupted practice at City Clinical Emergency Hospital Stavropol. The practice was held from March 1st to March 20th. The thesis consists of two main parts. In the general section is researched theoretical background for status post stroke. The following chapters solve the comprehensive rehabilitative care for patients after stroke, including a description of special appropriate physiotherapy techniques. The special part is about a case study of the physiotherapy care of the patient after stroke. This part contains the after stroke patients case study, the review of proposed therapy and the therapy effect evaluation.

Results: The patient’s condition evolved during the treatment. The patient developed better muscular strength and joint movement, the swelling was reduced, right side of his body and limbs was strengthened and his overall stability and gait was improved. The improvement was indicated by functional scale tests as well.

Conclusion: The aims of physiotherapy techniques used for the treatment of spasticity are to favour sensor motor recovery and gesture relearning and to lead to an optimal independence in daily life activities. For stroke and head injury patients, these are several techniques sometimes based on opposing principles. The goal of exercise is to strengthen the spastic paralysis and the associated
reactions to enable the upright position and walking as soon as possible. Electrical stimulation is not used routinely by rehabilitation teams. It allows to reduce the spasticity of antagonist muscles working against stimulated muscles. It participates in improving the strength of contraction of weak muscles notably in subjects with incomplete paraplegia. Finally, it can be used to improve or replace a functional command (lifting the foot during walking, for example). Nevertheless, electrical stimulation cannot replace basic rehabilitation exercises.

**Keywords:** stroke, rehabilitation after stroke, hemiparesis.

**DYNAMICS OF TRICHOCEPHALOSIS IN DIFFERENT STATES OF INDIA AND SOME OTHER COUNTRIES**

*Ayushi Paliwal, Pranav Kumar*

Stavropol State Medical University, Stavropol, Russia

Biology Department


**Introduction:** Understanding the prevalence of soil-transmitted helminth infections is necessary to plan control strategies and focus on highly endemic regions for preventive chemotherapy and improved sanitation facilities. India is known to be endemic for soil-transmitted helminth infections. *T. trichiurus* is one of the four most transmitted soil helminth.

**Objective:** We aim to perform a systematic review of available studies prevalence of STH infection, namely *Trichuris trichiura* (TT) in India for the period 2008 to 2015, and describe the estimates for different parts of the country. Understanding prevalence pattern of STH diseases would aid in planning intervention strategies and monitor reduction in the burden of STH adopting the strategy.

**Materials and methods:** The materials used for this study are obtained from an online data from the World Health Organization (WHO) and also from the Centre For Disease Control and Prevention (CDC), that helps in tracking and investigating public health trends.

**Results and discussion:** This nematode thrives chiefly in warm, moist tropical countries, but is found throughout the world. It had
been previously estimated in that 227 million persons were infected in Asia, 27 million in Russia, 34 million in Europe, 28 million in Africa, and 38 million in the tropical areas of the Americas. The WHO-World Health Report, states the number of infected persons to be one billion. In the United States, where 2 to 3 million persons are infected, trichuriasis has a spotty distribution, being prevalent chiefly in the southern Appalachian Mountains and in rural Louisiana, where fecal pollution, dense shade near the house, and heavy rainfall favor its propagation. In Brazil, it is the commonest parasite in the large cities (with an incidence of up to 40%). In Costa Rica, it is found in 25% of persons without diarrhea and in 50% of patients with acute diarrhea, but in those with chronic diarrhea the incidence is almost 100%. This does not necessarily indicate a causative role. Trichuris infection is found throughout India. The prevalence of *Trichocephalus trichiurus* in these studies was in range between 0.3 to 29.57%. Most studies employed WHO-recommended Kato-Katz technique. Northern region – 1.4-26.42%, Southern region – 1.1-10.8%, Eastern region – 2.6-11%, Western region – 1.5-29.57%, Central region – no case, North-East region – 1.7-19%. In the northern region, five studies were performed which included states of Jammu & Kashmir (2 studies, 11.1%) and Delhi (2 studies, 11.1%) whereas state has not been mentioned in one study. In the southern region, five studies were performed, which included states of Tamil Nadu (3 studies, 16.7%), Pondicherry (1 study, 5.5%) and Andhra Pradesh (1 study, 5.5%). In east region, three studies were carried out, which included states of Bihar (1 study, 5.5%), Odisha (1 study, 5.5%) and West Bengal (1 study, 5.5%). In western region, three studies were performed which included states of Maharashtra (2 studies, 11.1%) and Rajasthan (1 study, 5.5%). In north-east region, one study (5.5%) was performed in Assam. In central region, one study (5.5%) was performed in Madhya Pradesh.

**Conclusion:** The prevalence of STH continues to be high in this country and requires systemic implementation of STH control activities to reduce the intestinal helminthic burden. The present study reveals high prevalence of intestinal worms in the study population and calls for long term control measures to improve their sanitary and living conditions, including treatment of infected individuals and provision of potable water.
FEATURES OF THE DESIGN OF CIRCUMFLEX BRANCH OF LEFT CORONARY ARTERY

Ayushi Paliwal, Priyanka Singh, Eno Obong-Udoakpabio
Stavropol State Medical University, Stavropol, Russia
Anatomy Department
Scientist supervisor: C.M.Sc., Assoc. Professor O.Yu. Lezhnina

Background: In Russia, during 2014 coronary artery disease caused 52.3% of the total number of death associated with pathology and circulatory system. Therefore, the study of the design of coronary bed heart remains relevant.

Objective: To present the features of the design of circumflex branch (CB) of left coronary artery in elderly people with different variants of branching of the coronary arteries without disturbing the coronary blood flow.

Materials and method: Anatomical, morphological, pathological and radiological methods are used to study 9 hearts and 15 coronaroangiograms with left (LVVVA), right (RVVVA) and uniform (UVVVA) variants of coronary arteries. Morphometric measurements were carried out by special computer programs.

Results and discussion: It was established that in all topographic regions of CB the average distance between the branchings (D) was the largest on the hearts with UVVVA, the smallest value on the LVVVA and the minimum index with RVVVA. D was 71.28±0.71 mm with UVVVA in the initial third of the left half coronary sulcus (LHCS) and its value at LVVVA and RVVVA which amounted 64.82±0.67 mm (p>0.05) and 50.02±0.58 mm (p<0.05), respectively. In the middle third of LHCS D with UVVVA (94.19±0.92 mm) is also 1.6 times as large as its value for LVVVA (57.10±0.63 mm, p<0.05) and RVVVA (53.33±0.59 mm, p<0.05). In the final third the LHCS has more long D with UVVVA, this parameter is shorter on the objects with LVVVA and less long than at RVVVA accounting for respectively 99.82±0.94 mm, 97.32±0.93 mm (p>0.05) and 88.51±0.81 mm (p<0.05). The maximum values of D (99.81±0.95 mm) are set throughout LHCS and in its final third with UVVVA, while the smallest value (50.02±0.58 mm, p<0.05) was detected in the initial third with RVVVA.

Conclusion: The obtained value of the average distance between branching of CB demonstrate the features of the design of heart arterial
bed of the elderly peoples in normal at different variants of branching of the coronary arteries.

**Keywords:** coronary arteries, elderly age, the average distance between the branchings, variant of branching of the coronary arteries.

**ACROMEGALY AS A CONSEQUENCE OF A HEAD INJURY**

*V.Y. Bukhonskaia, Ravi Vikram*

Stavropol State Medical University, Stavropol, Russia

Anatomy Department

Scientific supervisor: C.M.Sc., Senior Lecturer **O.N. Mingalieva**

**Background:** The brain is the highest section of the central nervous system that controls human behavior, feelings, functions of the inner organs.

**Objective:** In our work, we set a goal to consider the specific example of the consequence of head injury: the occurrence of pituitary adenoma, acromegaly syndrome and the impact of these conditions on the life quality after the treatment.

**Material and method:** During the study we will use the following methods: analysis of medical literature, generalization and systematization, interview, search method.

**Results:** In order to achieve the set goal, we met with a patient who had an operation of removing the meningioma, pituitary adenoma and also cured of acromegaly. We received this medical history and the permission to use it. A woman, born in 1953, led an active life, often being on business trips. Returning from one of the trips, she had an accident. After some time she began to notice frequent dizziness, choking, her wedding ring appeared to become too small for her. At the doctors consultation it was decided to send the woman to the Academician Burdenko Research Institute of Neurosurgery of the Russian Academy of Medical Sciences. On January 14, 2004 the first successful operation took place in the Academician Burdenko Research Institute of Neurosurgery of the Russian Academy of Medical Sciences. In accordance with the course of treatment on July 22, 2008, there was endonasal removal of a hypophysis tumor. In the postoperative period, the appearance of light insufficiency of the abducent nerve on the left was noted. The visual acuity and field of view are at the preoperative level. The woman was discharged in a satisfactory condition. Almost a year later, on April 14, 2009, a control MRI of the brain and hypophysis was performed, no signs of continued tumor growth were found.
Conclusion: During the study, we found out the mechanism of acromegaly and the role of somatotropin in the processes trigging the mechanism of the disease. In the described case history acromegaly was a consequence of a head trauma. Despite the survived illness, the patient is having a full-fledged lifestyle, still works as a chief accountant, in spite of being in the retirement age.

Keywords: acromegaly, meningioma, pituitary adenoma, head injury, Academician Burdenko Research Institute of Neurosurgery of the Russian Academy of Medical Sciences.

INDICATORS OF HEALTH
IN FOREIGN STUDENTS OF THE MEDICAL UNIVERSITY
Chehaitli Ali
Stavropol State Medical University, Stavropol, Russia
Department of Psychiatry
Scientific Supervisor: Assistant I. L. Kozlova

Background: Mental health is one of the most important factors in the quality of life that we all have. In order to be able to study well, work, and feel self-worth there should be a specific resilience.

Objective: To study the indicators of mental health in foreign students of Stavropol State Medical University.

Materials and method: We asked 50 fifth-year students and 50 first-year students (divided 25 males and 25 females in each course) to answer two questioners: one questioner was Zung test and the other was Spilberg-Hanin test. In addition to that the students answered the following questions: how many children are there in his/her house, what is his order among his/her siblings, does he/she have Russian speaking friends and how long did it take him/her to adapt? After that we compared the results between the fifth and first courses.

Results: Mental health of the foreign students in Stavropol State Medical University is in the borders of the norm. But as for adaptation, almost every third or fourth are having problems to adapt.

Conclusion: According to the students that were asked the best way to improve adaptation is to introduce street slangs during Russian lessons and be a member of the English lovers club.

Keywords: Mental health indicators, adaptation, Zung test, Spilberg-Hanin test.
CHRONIC HEART FAILURE
AND CHRONIC KIDNEY DISEASE

Chehaitli Ali
Stavropol State Medical University, Stavropol, Russia
Department of Faculty Therapy
Scientific supervisors: D.M.Sc, Professor M.E. Evsevyeva,
C.M.Sc., Assistant E.N. Fursova

Background: Chronic heart failure and its correlation with chronic kidney disease is considered one of the most actual medical conditions in the era of modern medicine. Since cardiac diseases and their effect on other organs (especially the kidneys) is at all-time high.

Objective: to study the correlation of CHF and CKD and its predisposition according to sex.

Methods and procedure: Examining 250 patients with CHF that developed CKD without any prior renal related diseases, patients that developed chronic renal disease/failure showed worsening of their overall health and most notably a huge decrease in their expected life span in 90% of the cases to less than one year. In 93 of the 125 studied males we saw the signs of CKD while in female patients that showed signs of CKD were 34/125. Studying the pathophysiological development of the disease step by step showed that the same system that is supposed to protect the human body is the first reason for the high mortality rate in those patients. After examining the microcirculation in the kidneys they showed chronic adaptive changes in the blood vessels especially in the arterioles between the pyramids of the kidney which lead to CKD.

Results: The heart and kidneys are connected to each other through the cardiac-renal continuum, in addition to that they both share several etiological factors and the death risk increases exponentially when those two organs are affected together, and this is shown in the decreased estimated life span that the subjects showed. Even though kidneys are considered as a gland in urology, males are more disposed to CKD than females.

Conclusion: The clear correlation between CHD and CKD is undeniable and had been documented in several cases and literature including this case. This is not only caused by the pathophysiology of both diseases but also they share some of the risk factors, one of the major factors in this case is sex.

Keywords: Chronic heart failure, chronic kidney disease, correlation, pathophysiology, adaptive changes.
ANALYSIS OF OPTICAL PATHOLOGIES IN PATIENTS WITH CARDIOVASCULAR DISEASES

Chehaitli Ali

Stavropol State Medical University, Stavropol, Russia
Department of Ophthalmology
Scientific supervisor: C.M.Sc., Associate Professor G. V. Korenyak

Introduction: Vision is the most important sensory organ in the human body, with the increased percentage of cardiovascular diseases and with the eyes being one of the organs that are directly affected by cardiovascular diseases.

Objective: analysis of optical pathologies in patients with cardiovascular diseases

Materials and methods: We studied the case histories from the microsurgery of eyes in Stavropol of the last five years, we especially concentrated on patients that have pathologies of the eyes as a result of cardiovascular diseases after that we studied the prognosis of those patients and got the ideal methods as much as the results allowed us.

Results: The most ideal method was a combination of efforts between cardiologists/therapist and ophthalmologists.

Keywords: vision, cardiovascular diseases.

CLINICAL MISTAKES AT THE BIOMATERIAL INTAKE: RISKS AND PREVENTION

K. I. Eliseev

Essentuki Branch of Stavropol State Medical University,
Essentuki, Russia
Scientific supervisor: E.V. Pomazanova

Introduction. The correct organization of laboratory inspection of the patient – an obligatory component of uniform process of rendering high-quality medical care. Nurses possess the major role in ensuring this process.

Objective: studying of professional activity of the nurse in prevention of clinical mistakes at a biomaterial intake.

Materials and methods:
– studying of specialized medical literature, statistical data, analysis of standard legal documentation;
monitoring of activity of nurses (questioning and supervision).

**Results and discussion.** Poll of nurses showed that training of the patient for biomaterial delivery isn’t always carried out, the nurse doesn’t ask on existence of addictions, a psychological and physical overstrain, reception of medicines now, the last meal though it directly conducts to distortion of the received results.

**Conclusions.** During research the following clinical mistakes in practice of the nurse of a procedural office were recorded:
- violation of the rules of training of the patient for a biomaterial intake;
- mistakes at identification of the patient;
- a capture and transfusion of a sample with a syringe under excessive pressure;
- incorrect ratio blood/anticoagulant (incomplete filling of a test tube);
- violation of the rules of transportation of tests in KDL.

**Keywords:** the medical sister, preanalytical stage, clinical mistakes, a biochemical blood test.

**PREVALENCE OF FASCIOLIASIS IN SUB-SAHARAN AFRICAN COUNTRIES**

_Eze Maryann Chioma_

Stavropol State Medical University, Stavropol, Russia

Department of Biology

Scientific supervisors: C.M.Sc., Assoc. Professor E.N. Makarenko, C.M.Sc. M.V. Pokhodenko, Assistant N.V. Erina

**Introduction:** Fascioliasis is caused by two species of parasitic flatworms or trematodes that mainly affect the liver which is _Fasciola gigantica_ and _Fasciola hepatica_. The disease belongs to a plant-borne trematode infections and is a zoonosis, meaning an animal infection that may be transmitted to humans. Also, it is classified as a neglected tropical disease. In Sub-Saharan African countries including Nigeria, human fascioliasis has been an important public health problem. Studies have shown that human fascioliasis has increased significantly in 51 countries of the world since 1980 with several geographical area being highly endemic with the disease.

**Objective:** To determine the prevalence of human fascioliasis in Sub-Saharan African countries.
**Background:** Human fascioliasis over the recent years in Sub-Saharan African countries has increased. Human cases of fascioliasis are often linked to cases among livestock in the area concerned. Humans are infected by eating watergrown plants that contains adolescariae, or by drinking contaminated water. Human fascioliasis infection is determined by the prescence of the intermediate snail hosts, domestic herbivorous animals, climatic conditions and the dietary habits of man.

**Materials and methods:** The materials used for this study is obtained from an online data from the World Health Organization (WHO) and also from the Centre For Disease Control and Prevention (CDC), that helps in tracking and investigating public health trends.

**Discussion and results:** This study has demonstrated that the public health importance of human fascioliasis has however increased in recent years as shown by the high number of human cases and also statistical records over the period 1970-1990. From 1990s, many new concepts have been developed regarding human fascioliasis. In 2004 the WHO considered fascioliasis as one of the most important helminth diseases, which also has a significant impact on human development. Using report from 2015 to date, human fascioliasis has been identified in the Middle East and North African region particularly in Egypt and Saudi Arabia. Also, it has been considered as a secondary disease which has been changed significantly in recent years, when the WHO became aware of reports from different countries indicating fascioliasis infections in humans was probably more frequent than previously accepted in Africa and some other countries.

**Conclusions:** Respectively, WHO has laid some measures in reducing fascioliasis in humans. Preventive measures must be taken by boiling of contaminated water and the avoidance of eating raw water plants in order not to pose risks to our health. *Fascioliasis* is now recongized as an emerging human disease: the WHO has estimated that 2.4 million people are infected with *Fasciola*, and a further 180 million are at a risk of infection.

**Keywords:** fascioliasis, Fasciola gigatica, Fasciola hepatica, Nigeria, trematodes, cercariae
Background: In modern society, the main cause of death is considered to be cardiovascular diseases, the leading role among which is coronary heart disease. Mortality from it in Russia exceeds that in developed countries by 3-9 times.

Objective: To present the features of the morphofunctional organization of the coronary arteries in the elderly in the case of the right-crown variant of the branching of the coronary arteries with myocardial infarction on the sternum-rib surface of the heart.

Materials and methods: The anatomical, X-ray and histological methods studied the branching of the coronary arteries of 10 hearts, and also studied the data of 12 intravital coronar angiography of elderly people. The analysis of morphofunctional parameters of the coronary bed of the heart with the right-crown variant of coronary artery branching in case of myocardial infarction with a decrease in blood flow in the anterior interventricular branch (LAD) of the left coronary artery was performed. To determine the morphofunctional parameters, special and original computer programs were used (Video Test Morphology, 5.0; Makhoan).

Results and discussions: On the hearts with myocardial infarction, an insignificant decrease in the total lumen of the HMLV derivatives in the initial unaccessions of the upper third of the PML was determined, followed by a maximum increase in its middle sections to 24.6 +/- 1.0 mm². In the lower sections of the upper third of the PFB.

A 21.0 +/- 1.1 mm long section was established with a pronounced decrease in the total arterial lumen depth 2.5 times compared with the upper sections. In the middle third of the PWMB, the total cross-sectional area of the branches of the PFWH abruptly increases. However, the lower third of the PFB is characterized by a gradual decrease in the total lumen of the PFGT derivatives before immersion in the myocardium.

The total lumen of the initial OB section of the elderly people with myocardial infarction is 15.9 +/- 1.3 mm², then gradually decreases by 0.69 +/- 0.21mm². In the middle third of the left half of the coronary
sulcus (XB), the increase in the total lumen of the branches of the OM is determined to 20.53 +/- 1.8 mm². The largest total cross-sectional area of derivatives of the OM (27.22 +/- 2.0 mm²) is set on the left lateral surface of the heart, which, apparently, is connected with the branching of the left marginal branch.

**Conclusion:** Thus, the data obtained reflect the anatomical features of the organization of the coronary bed in various topographic parts of the organ in the coronary arteries during myocardial infarction on the sternum-rib surface of the heart.

**COMPARATIVE CHARACTERISTICS OF MALARIA IN SUB SAHARA AFRICA**

*Fadahunsi Samson Ayomikun*

Stavropol State Medical University, Stavropol, Russia

Biology Department


**Introduction:** Malaria is an infectious disease caused by protozoan of the Genus Plasmodium, where the vector is the Female *Anopheles* mosquitoes. It’s a worldwide public health problem. In 2010 according to the World Wide Organization (WHO) approximately 24 million cases were diagnosed with positive incidence of this disease. A total of 106 endemic areas were identified and African was the most affected continent.

**Background:** It’s common knowledge that malaria is caused by different species of Plasmodium: *P. vivax*, *P. falciparum*, *P. malaria*, *P. ovale*. The species *P. falciparum* and *P. vivax* are responsible for 95% of cases reported worldwide. Malaria is very strongly related to remote area such as Africa. A system of automatic diagnosis and low cost should become a basic tool if we really want to control it. Malarial parasites is found in all countries, extending from 40°S to 60°N which is mostly countries with hot climates, e.g. Nigeria.

**Objective:** To compare prevalence of malaria in Sub-Saharan Africa.

**Materials and methods:** The materials used for this study are obtained from an online data from the World Health Organization (WHO) and also from the Centre for Disease Control and Prevention
(CDC), which helps in tracking and investigating public health trends.

**Conclusion:** Cases of malaria in different regions in the world, Sub-Saharan Africa were analyzed. In 2016 there’s an estimate on malaria conducted by the World Health Organization: Africa has the highest number of malaria cases – 194 million; in South-East Asia – 146 million. World Health Organization also conducted the countries with the highest death rate from malaria. Africa results in 407,000 of mortality from malaria. Malaria is a widespread disease affecting many people daily. So everyone needs to protect himself. Malaria occurs frequently in high temperate regions. The mainstay of malaria diagnosis is microscopic examination of blood; urine and saliva tests should also be used.

**Keywords:** Malaria, Female Anopheles Mosquitoes, World Health Organisation (WHO), endemic, hot climate, Plasmodium, Sub-Saharan, temperate region

**FEATURES OF SCHOOL MEALS. THE ROLE OF FAMILY AND SCHOOL IN FORMING PROPER NUTRITION HABITS**

*N.Yu. Fadeev*

Essentuki Branch of Stavropol State Medical University, Essentuki, Russia

Scientific supervisor: **E.V. Pomazanova**

**Background:** One of the important factors of successful schooling and resistance to unfavourable environment is a balanced diet. In order to preserve and strengthen the health of children, nutrition must satisfy the physiological needs of a child both at home and at school. Parents and medical workers at school play the most important role in forming students’ proper nutrition.

**Objective:** To study and evaluate the interaction and role of the family and the educational institution in forming students’ proper nutrition.

**Materials and methods:** The analysis of medical literature, statistical data and regulatory documents; school meal monitoring, questioning of parents and students of educational institutions in Essentuki.

**Results:** In the course of the study, it was revealed: an unsatisfactory
food supply; insufficient number of seats in school canteens; unbalanced range of food in school buffets; insufficient coverage of hot meals; students’ excessive consumption of foods high in fat, sugar and salt; the intake of dyes, preservatives, synthetic flavors and food additives; deficiency of protein, fiber, vitamins and microelements in the diet of schoolchildren.

**Conclusion:** School meals should satisfy the main principles: to match the energy consumption of students during the day, to provide the body with all the necessary nutrients, to be safe and varied, to cause positive emotions. Coordinated interaction between family and school plays an important role in forming healthy eating habits.

**Keywords:** nutrition, school meals, proper nutrition, diet, healthy habits.

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**“BISPHOSPHONATE THERAPY” AN EFFECTIVE APPROACH TO CURING OSETOGENESIS IMPERFECTA**

*Feyisetan O.Ojoge-Daniel, Velmurugan Rajamani, Abdul Latif El Ejel Basil*

Stavropol State Medical University, Stavropol, Russia
Department of Anatomy
Scientific supervisor: C.M.Sc., Senior Lecturer *N. V. Baranova*

**Introduction:** Osteogenesis imperfecta (OI) comprises a group of disorders principally affecting type I collagen which result in increased bone fragility. Children with severe OI suffer recurrent fractures, resulting in severe deformity and growth stunting in many cases, with loss of independent ambulation by the teenage years in over 50% of cases. Recently, cyclical intravenous treatment with pamidronate has proven of benefit to children with severe forms of OI. This article aims to describe clinical features and laboratory manifestations of patient with OI and evaluate outcome of bisphosphonate therapy.

**Objectives:**
1. To study the history of ostogenesis imperfecta.
2. To study the cause of osteogenisis imperfecta.
3. To study the effect of osteogenesis imperfecta.
4. To consider clinical significance of the disorder.
5. To create awareness for osteogenesis imperfecta.
6. To understand the process involved in bisphosphonate therapy.

**Materials and methods:**
1. Search Method.
3. Research articles.

**Discussion:** Osteogenesis imperfecta (OI) or Brittle Bone Disease is a complicated, variable and rare disorder. Its major feature is a fragile skeleton, but many other body systems are also affected. OI is caused by a mutation (change) in a gene that affects bone formation, bone strength and the structure of other tissues. It is a life-long disorder. OI occurs equally among males and females and in all racial groups. With good medical management and supportive care, the majority of people who have OI will lead healthy, productive lives and can expect an average life span. People with OI experience frequent broken bones from infancy through puberty. The frequency typically decreases in the young adult years but may increase again later in life.

**Conclusion:** OI has seriously affected the life of the patients and bisphosphonate therapy has shown some real long-term promise in the treatment of young patients with OI. No significant side effects have been noted which is of the utmost importance in therapy destined for children.

**Keywords:** bisphosphonate, brittle bone disorder, therapy.

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**ALGORITHM FOR COMPLEX REHABILITATION OF PATIENTS WITH OCCLUSION PATHOLOGY, CONDITIONED BY ADENTIA AND RETENTION**

*M.P. Grigorenko*

Stavropol State Medical University, Stavropol, Russia
Department of Prosthetic Dentistry

Scientific supervisor: D.M.Sc., Professor **E.A. Vakushina**

**Background:** The use of new medical technologies in everyday clinical practice allows to expand the indications for the comprehensive treatment of occlusion anomalies and to improve the effectiveness of postdischarge adjustment.

**Objective:** To improve the diagnosis and treatment efficiency of abnormal occlusion associated with violation of the integrity of the dentition congenital etiopathogenesis.
Research objectives: To suggest the procedure of the complex patients treatment with abnormal occlusion associated with violation of the integrity of the dentition congenital etiopathogenesis.

Materials and methods: During the research a set of diagnostic methods was used: clinical, radiological, cephalometric, biometrics, mathematical, statistical and software. 31 people were involved for the treatment. The procedure includes 3 stages: 1-conservative; 2 orthodontic and surgical; 3-orthopedic.

Results of the research:
1. Patients with abnormal occlusion associated with violation of the dentition integrity of congenital etiology and pathogenesis, diagnostic methods defined sequence, which included: clinical, biometric, X-ray, cephalometric, mathematical and software tools.
2. The complex treatment algorithm has shown high clinical efficiency of the proposed methods.

Conclusions: As a result of 31 patients complex treatment, normalization of the shape and size of the dental arches in the horizontal and sagittal planes was achieved, and the indicators of cephalometric analysis were also improved. The shape of the dental arches in all patients after orthodontic correction corresponded to the age norm, while there was an increase in the average premolar width of the subgroup by 3.58 ± 0.29 mm and a molar width to 4.69 ± 0.44 mm. By the end of orthodontic treatment, an increase in lateral segments occurred, which reached equality and symmetry by the beginning of the retention period.

Keywords: adentia, occlusion anomalies, interdisciplinary approach.

DISBALANCE IN CELLULAR COMPONENTS OF BLOOD IN PATIENTS WITH RHEUMATOID ARTHRITIS – ANALYSIS IN RELATION WITH CLINICAL VARIANTS OF DISEASE
Kamatham Sai Shashank Reddy, Agrahara Sathyanarayana Vanitha
Stavropol State Medical University, Stavropol, Russia
Department of Hospital Therapy
Scientific supervisors: D.M.Sc., Professor P.V. Koroy., Assistant V.J. Sarithala

Background: Rheumatoid arthritis is a chronic systemic autoimmune disease with the involvement of joint and destruction
of synovial tissue, formation of systemic complications leading to development of clinical syndromes in patients. Anemia and thrombocytosis in rheumatoid arthritis result from redistribution of iron in the organism and also from hyper expression of adhesion molecules and interleukins.

**Objective:** To study the disbalance in cellular components of blood in patients with rheumatoid arthritis.

**Materials and methods:** 134 patients with RA (30 male, 104 female) from 20 to 66 years old were examined. Mean age of patients was 50,08±0,97 years. Duration of disease more than 10 years was observed in 47,76% of patients. All the patients had undergone complex clinical, functional, imaging, laboratory and immunological examinations. Statistical analysis of the obtained results was done using two-sample Student’s T-criteria and $\chi^2$ criteria. Results were considered significant with the difference of $p\leq 0,05$.

**Results and discussion:** According to our research, anemia in rheumatoid arthritis is associated with sex and frequently observed in female population, but thrombocytosis had no significant correlation with gender of the patients. Age of patients, duration of disease, presence of rheumatoid factor and antibody to cyclic citrullinated peptide, x-ray stage of the disease were not correlated with the presence of anemia or thrombocytosis in patients. High activity of the disease was associated with increased probability of developing anemia and thrombocytosis in patients. Thrombocytosis is also associated with functional class of the disease, whereas functional class of disease had no significance on anemia.

**Conclusion:** Anemia is registered in 35,8 % of patients with rheumatoid arthritis and thrombocytosis – in 14,18% of cases. Risk factors for developing anemia in RA are: female sex, high activity of disease and increased levels of ESR and C-reactive protein, and for the manifestation of thrombocytosis are high activity of the disease, III functional class of disease and high level of ESR and C-reactive protein.

**Keywords:** Rheumatoid arthritis, anemia, thrombocytosis.
MODERN METHODS OF LOCAL ANESTHESIA IN DENTISTRY: PLUSES AND MINUSES

M.A. Kamyshan, S.N. Krazhan
Stavropol State Medical University, Stavropol, Russia
Department of Maxillofacial Surgery
Scientific supervisor: C.M.Sc., Assoc. Professor N.N. Pismenova

Introduction: In the last decade, the development of local anesthesia in dentistry goes in two main areas:
1) Improving the quality of anesthetics
2) Improving injecting equipment
Currently, the most well-known: the needleless injector INJECT 30 and the electronic syringe STA.

Many doctors point out certain difficulties associated with the introduction of an intraligamentary anesthesia with a traditional carpool syringe. Such problems include the correct positioning of the needle, control over the position of the needle during the introduction of the anesthetic, and the pain experienced by the patients as a result of the injection of the anesthetic solution under high pressure and the resulting tissue damage. In addition, there is no consensus among doctors about the required amount of anesthetic injected, the duration of the local anesthetic effect and the type of drug administered.

The use of a needleless injector is limited to infiltration anesthesia, but the electronic syringe has several serious advantages over other injectors: it is able to precisely control the amount and speed of anesthetic injection, the intensity of the pressure of the anesthetic jet on the tissue depending on their density, and is able to automatically conduct an aspiration test. The design of the device does not look frightening. The function of the doctor is to insert the needle into the tissue and press the pedal.

At the same time, there are complaints from dental surgeons that not all types of anesthesia are conveniently performed using an electronic syringe.

Objective: Evaluation of the effectiveness of STA-modified intraligamentary and mandibular anesthesia, including parameters such as the duration of anesthesia and discomfort during and after the injection process, in comparison with intraligamentary and mandibular anesthesia performed with a standard carpool syringe.

Material and methods. The work was carried out at the clinical
The study involved 40 patients aged from 20 to 50 years, both sexes (17 and 23), who performed local anesthesia for the removal or treatment of teeth. All of them were divided into 2 groups: the control group (20 people), who underwent anesthesia with a carpool syringe and the main one (20 people), with which anesthesia was performed with an electronic syringe. In each group 2 subgroups were allocated, depending on the type of anesthesia used. After that, a blind EDI-study of the teeth was carried out in 10-minute cycles for 60 minutes. An indicator of the successful onset of anesthesia was considered to be the lack of response to the maximum effect of the device for electrical donation (80 conventional units).

1 subgroup (10 people) – mandibular anesthesia
2 subgroup (10 people) – intraligamentary anesthesia

Evaluation of the syringe was carried out on the effectiveness of anesthesia, painlessness, ease of implementation, the speed of onset of pain.

<table>
<thead>
<tr>
<th>Types of anesthesia</th>
<th>Anesthesia effectiveness</th>
<th>Painless anesthesia</th>
<th>Ease of performance</th>
<th>Speed of onset of anesthesia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 group</td>
<td>2 group (STA)</td>
<td>1 gr.</td>
<td>2 gr.</td>
<td>1 gr.</td>
</tr>
<tr>
<td>Abs. count</td>
<td>%</td>
<td>Abs. count</td>
<td>%</td>
<td>Abs. count</td>
</tr>
<tr>
<td>Mandibular</td>
<td>10</td>
<td>100</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>Intraligamentary</td>
<td>6</td>
<td>60</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Calculate the effectiveness of differences between groups.

Parameter 1. The effectiveness of anesthesia.

\[ t = \frac{p_1 - p_2}{\sqrt{m_1^2 + m_2^2}} \]

\[ m = \sqrt{\frac{pq}{n}} \]

- \( m_1 \) – the effectiveness of mandibular anesthesia in group 1 (carpool syringe),
- \( m_2 \) – effectiveness of mandibular anesthesia in group 2 (STA).
The effectiveness of intraligamentary anesthesia in group 1 (carpool syringe),
and the effectiveness of intraligamentary anesthesia in Group 2 (STA) – the difference between the effectiveness of intraligamentary anesthesia performed in groups 1 and 2 is significant.

Parameter 2. Painlessness of anesthesia.

- \( m_1 \) – painlessness of mandibular anesthesia in group 1 (carpool syringe),
- \( m_2 \) – painless mandibular anesthesia in group 2 (STA)

\[
m_1 = \sqrt{\frac{60(100 - 60)}{6}} = \sqrt{400} = 20
\]

\[
m_2 = \sqrt{\frac{100(100 - 100)}{10}} = 0
\]

\[
t = \frac{100 - 60}{\sqrt{0^2 + 20^2}} = \frac{40}{20} = 2
\]

The difference is significant.

Parameter 3. Ease of execution.

- \( m_1 \) – convenience of performing mandibular anesthesia in group 1 (carpool syringe),
- \( m_2 \) – convenience of performing mandibular anesthesia in group 2 (STA)

\[
m_1 = \sqrt{\frac{60(100 - 60)}{6}} = \sqrt{400} = 20
\]

\[
m_2 = \sqrt{\frac{100(100 - 100)}{10}} = 0
\]

\[
t = \frac{100 - 60}{\sqrt{0^2 + 20^2}} = \frac{40}{20} = 2
\]

The difference is significant.
\[ t = \frac{100 - 20}{\sqrt{0^2 + \sqrt{800}^2}} = \frac{80}{\sqrt{800}} \approx 2.827 \]  

- the difference is significant.

\[ m_1 - \text{convenience of performing intraligamentary anesthesia in group 1 (carpool syringe),} \]

\[ m_2 - \text{convenience of performing intraligamentary anesthesia in group 2 (STA)} \]

\[ t = 0 \]  

- there is no difference.

**Results and discussions:** As can be seen from the table, the holding of mandibular anesthesia with an electronic syringe is less convenient, since a very thin needle bends in the tissues and does not feel the touch of the bone. This leads to a decrease in the effectiveness of anesthesia, although the needle injection itself is less painful than when working with a carpool and a conventional syringe.

The best results of using an electronic syringe were obtained by performing an intraligamentary anesthesia on all criteria.

The STA system provides continuous, real-time dynamic control of the drug pressure at all stages of the injection. It is able to limit the maximum applied pressure, as well as to determine the decrease in pressure due to leaks in the system during the injection process. Moreover, when performing intraligamentary anesthesia using the STA system, a larger amount of the drug can be injected than when using a traditional syringe.

**Conclusion.** Within this study, the STA system provided more predictable, reliable, and comfortable intra-anesthesia than carpal analgesia. Conduct anesthesia is more convenient to carry out with a syringe.

**Keywords:** needleless injector, electronic syringe STA, mandibular anesthesia, intraligamentary anesthesia
ANALYSIS OF THE EFFECTIVENESS OF CARIES PREVENTION IN PRIMARY SCHOOL CHILDREN IN ESSENTUKI

E.Yu. Khudikova

Essentuki Branch of Stavropol State Medical University,
Essentuki, Russia
Scientific supervisor: G.V. Lysenko

Background: Caries of teeth is among the social significant diseases. The low level of dental health is one of the reasons which influences for the deterioration of physical, somatic and reproductive health of the population.

Objective: To find out the effective measures for the prevention of caries in children of primary school age.

Materials and methods: thirty children at age of 9-11 years took part in the study, parents gave the permission for it. After the dentist’s examination all participants were divided into 2 groups. In the first group, the participants lived usual life, they observed minimal rules of oral cavity hygiene.

The participants of the second group ate products with limited amount of sugar and observed the hygienic rules. The instructions of using dental floss and mouth rinsing were explained.

During 6 month the dynamic observation of 2 groups were conducted.

Results: After the set time in the first group, where the preventive measures were not conducted the condition of the teeth remained at the same level or become worse. But in the second group the condition of the teeth in participants become better as a result of strict compliance with all restrictions and recommendations.

Conclusions: Analysis of the study results showed that preventive measures helped to preserve and strengthen healthy teeth, and decreased the intensity of caries progress in children.

Keywords: preventive measures, caries, teeth, study groups, oral cavity.
Background: Every year in winter and in autumn seasons the flu morbidity and acute respiratory diseases increase. Pupils of primary school age are particularly susceptible to these infections. That is why at the beginning of the autumn season the mass influenza vaccination is organized. The vaccination is made only to healthy children with the permission of their parents and the absence of contraindications.

Objective: The main aim of the study is to analyze the efficiency of seasonal vaccination of children in school №10 in Essentuki.

Materials and methods: The research was conducted among pupils aged 7-8 years. The participants were 20 children. During the study the data of vaccinated children by vaccine «Grippol» and the level of morbidity of these children by acute respiratory diseases were analyzed as research methods data copying conversation, survey of teacher’s talk with parents, nurse were used.

Results: All received data show that most children (70%) were vaccinated by influenza vaccine. These children didn’t get the influenza during this period and only light catarrhal symptoms were seen and they disappeared in 3 days. Children, who were not vaccinated, consulted a doctor about flu and the disease proceeded in severe form and with different complications.

Conclusion: The results of the study show that with strict observance of rules of vaccination, the vaccine «Grippol» protects children from viral infection. The effectiveness of seasonal preventive vaccination against influenza is justified and proved.

Keywords: seasonal vaccination, influenza, vaccine «Grippol», effectiveness.
COMPARATIVE CHARACTERISTIC
OF PREVALENCE OF SICKLE CELL ANEMIA
IN LEBANON AND AFRICAN COUNTRIES

Lima Najib Hammad and Nidal Yasser Faour
Stavropol State Medical University, Stavropol, Russia
Biology Department
Scientific supervisors: C.M.Sc., Assoc. Professor E.N. Makarenko,
C.M.Sc. M.V. Pokhodenko, Assistant N.V. Erina

Background: Sickle cell anemia is an inherited autosomal recessive
disease, which is characterized by the transformation of Biconcave
shaped red blood cells into sickle-shaped cells. It is the most common
among people of Europe, North America, Middle East, and India.

Objective: To determine the percentage of sickle cell disease in
Africa, to study the statistics of sickle cell disease in Lebanon and to
make comparison between prevalence of disease in male and female
through years.

Materials and methods: Sickle cell disease is found throughout
the world. Africa is the most highly affected continent with 200,000
newborn affected by sickle cell disease per year. In the United States,
sickle cell disease affects about 72,000 people. According to WHO
studies, scientists expected that the annual global number of newborns
with sickle cell disease will increase from 305,800 patients in 2010 to
404,200 patients in 2050.

Results and discussion: In Africa, Nigeria is the most populated
black nation that has the largest number of sickle cell anemia (SCA)
patients in the world. Bomo and Yobe states have the largest number
of sickle cell trait in Nigeria, with prevalence of 27.9% and 32.6%,
respectively. Sickle cell anemia survival in adulthood in Africa was
reported to be 10-15% in the first decade of life, with death rate of about
5% during subsequent decade. Large number that died have shown no
overt chronic organ failure, but died during acute episodes of pain,
infection and acute chest syndrome, stroke, and anaemic crises.

In Lebanon, among newborns, 0.1% were found to have sickle cell
disease, and 2.1% were found to have an abnormal Hb variant with
HbS being the most common which were distributed in all the regions.
The carrier rate of Hb varied among regions, between 5-7 years old
children, 50.2% being the highest in Northern Lebanon, whereas it is
13.2% in Beirut.
Moreover, in Lebanon, female were found to have higher prevalence of sickle cell disease than male. In a study for prevalence percentage between male and female, it is found that between 2002 and 2009, the prevalence percentage of sickle cell disease in male decreased from 0.54% to 0.15%, and then this value increased from 0.35% to 0.45%, between 2010 and 2014, with highest point 0.55% in 2012. Whereas in female, the percentage decreased from 0.96% to 0.46% between 2002 and 2004, then it increased from 0.46% to 0.72% between 2004 and 2014 with highest point was 0.76% in 2012 and lowest point was 0.45% in 2008.

**Conclusion:** The study shows that the percentage of prevalence of sickle cell disease increases with time, so that it is urgently need to find methods of treatment for this disease and early detection using latest methods to reduce its spread in the world.

**Keywords:** Sickle cell anemia, sickle cell disease, red blood cells, patients, prevalence, methods of treatment.

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**EVALUATION OF THE EFFICIENCY TEMPERING AS A METHOD OF RESPIRATORY DISEASES PREVENTION IN DIFFERENT AGE GROUPS**

_A. A. Mahova_

Essentuki Branch, Stavropol State Medical University, Essentuki, Russia

Scientific supervisor: _N.N. Glukhova_

**Introduction:** Nowadays preventative medicine is a priority of the health care system. A large number of health-saving programs developing and implementing in different age groups by health workers must include the hardening procedures.

**Objective:** Hardening efficiency estimation as one of the prevention methods of respiratory diseases.

**Materials and methods:** The research includes: health cards comparative analysis of children from two senior groups in two preschool institutions (40 children), secondary school students survey (50 students), adults survey (30 adults) at sport grounds territory in Yessentuki city.

**Results and discussion:** A comparative analysis of the preschoolers health cards of two control groups showed that in the first kindergarten,
where the material and technical base allows for complex hardening of children (infrared sauna, swimming pool, aeronarium, appoint sport), frequency index of eventuate respiratory diseases is lower than in the second where is technic underway. Questionnaire survey for school student allows concluding about low awareness students of hardening efficiency. Sixty percent of respondents have never performed tempering procedures, 55 percent of them noted that they have acute respiratory infections and colds more than 4 times a year. Adult survey revealed a responsible attitude to their own health: 70% respondents systematically tempered and noted a decrease in the incidence of respiratory diseases and their complications.

**Conclusion:** The research proves the high efficiency of hardening as one of the methods to strengthen and maintain health. It is important to carry out hardening procedures systematically. You can start at any age with no contraindications and under the supervision of a specialist. All research participants were offered recommendations on the method of conducting basic tempering procedures.

**Keywords:** prevention, tempering, health protection.

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**CARDIOMYOPATHY IN ALCOHOLICS**

*Manikandan Nandhini, Olanrewaju Olusegun Abiola*

Stavropol State Medical University, Stavropol, Russia

Department of Pathological Anatomy

Scientific supervisor: C.M.Sc., Assistant. **G.D. Dzhikaev**

**Introduction:** The problem of alcohol consumption grows in the population, especially with the increase in the level of production of its surrogates and virtually all human organs suffer from the regular intake of ethanol. Alcoholic heart disease accounts for about 3% of all diseases. The direct toxic effect of ethyl alcohol and its metabolite acetaldehyde on cardiomyocytes and metabolic processes in the myocardium is the trigger for the development of ACMP. Permanent hyper function of the heart cells in terms of systemic intoxication and hypoxia also contribute to increasing exhaustion of reserves of the myocardium and the onset of sudden death from heart failure. The relevance of this topic is that in alcoholism, the largest number of fatal cases falls on the most productive ages from 30-60 years and 30% is the cause of sudden cardiac death.

**Objective:** Macroscopically, the heart with ACMP is flabby, with a rounded tip, with the deposition of fatty tissues under epicardium,
Moderately increased (heart weighs from 380 – 450 grams but can reach and exceed 600 grams) due to dilation of the right parts, especially atrium, with moderate hypertrophy of its walls. Thromboembolism complicates alcoholic cardiomyopathy is 33 – 40% of cases, although in our practice we have not encountered this pathology.

Microscopically, fragmentation of myocytes, a combination of atrophy, dystrophy and hypertrophy of heart tissue. As an important sign of degenerative obesity in the form of focal and diffuse fatty infiltration due to, development of adipose tissue at the site of progressive atrophy of muscle givers.

**Background:** There is a widespread debate among people ranging from health professionals and novices about benefits and detriments of alcohol whether moderate or heavy to the heart. Many have used this to justify their dependence on alcohol and many still are oblivious to the risk but use alcohol because of its “described” heart benefits. As professionals it is important to understand what is best for the heart regarding the heart

**Materials and methods:** Autopsy of 1 incident of death by suicide with normal heart is compared with the morphological changes observed in the autopsy of 2 incident of death due to alcoholic induced cardiomyopathy.

**Conclusion:** Although it can be argued that slight consumption of alcohol has its benefits on the heart and cardiovascular system the overall effect when alcohol consumption becomes excessive makes the benefits inconsequential. It is also important to note that there are no parameters to measure level of alcohol intake by patients when it is being consumed so the term moderate or slight intake can quickly become excessive and chronic

**Keywords:** cardiomyopathy, pathology, morphological, myocardium

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**MORPHO-FUNCTIONAL INDICATORS OF ARTERIAL BRANCHES OF VENOUS ARTERIES IN ELDERLY AND SENILE AGE PEOPLE**

*Mehar Prasad Satsangi*

Stavropol State Medical University, Stavropol, Russia
Anatomy Department
Scientific supervisor: E.I. Scorobogach

**Background:** Cardiovascular pathology maintains a leading position in the information of structure of mortality and disability of
elderly and senile age people. Therefore, the study of the features of the structural and functional organization of the arteries of the heart channel is very important.

**Objective**: To establish the features of the vascular branching and of the right coronary arteries in the elderly and senile age people with no different variants of the branching of the coronary arteries. The study was performed at the Department of the Anatomy of the Stavropol State Medical University, the material of 15 hearts of elderly or senile age people were autopsy (from 56 to 90 age group).

**Material and method**: In the comprehensive study, the arterial branching of the coronary arteries was used anatomically, in radiological examinations, morphologically, in morphometric moods and in task computer programs that take part into specific accounting and re-metric of graphic objects (video-test-morpho, 2006). The obtained database which is processed by the variation of one hundred, using a standard software package.

**Results**: Arterial branchings of the hearts were studied with three extreme variant of the branching of the coronary arteries, left coronary, right of the curvature and uniformity in elderly and senile age people in vascular ramifications. The left coronary artery in all variants of branching of the coronary arteries, the length of the right daughter branch (57.8%) compared with the predominance of the length of the left daughter branch over the right daughter branch (42.2%). In most of the branches of the right coronary artery, the length of the right daughter branch prevails over the left daughter branch (47.8%) and the left daughter branch is (52.2%) of the length of the right daughter branch, branching out the total number of vascular branches of the right arches with angles of 45-90 which prevails over the number of branches with the angle that is greater than 90 and less than 45, respectively 54.2%, 24.3%, 21.5%. Most of the branches of the left coronary artery with angles 45-90 are 52.4% more then 90-24.4% and less than 45-23.2% as per observations, the number of branches of the right coronary artery with angles of 45-90 is set at 56.5% which is more than 90 and at 24.2% and which is less than 45 in 19.3% of cases.

**Conclusion**: In people with senile age who have the vascular ramifications of the left coronary artery, in which the right branch dominates over the left, and in branches of the right coronary artery on the contrary, the left branch dominates over the right and the branch angle is 45-90 which is predominant as compared to the angles which is less the 45 and more than 90.
Keywords: arteries, coronary, branching, senile age, vascular, length, ramification

COMPARITIVE ANALYSIS OF ALLERGIC DISEASES
IN CHILDREN OF DIFFERENT REGIONS OF RUSSIA
Murugesan Suresh, Burra Divya Sunitha Raj,
Kamatham Sai Shashank Reddy
Stavropol State Medical University, Stavropol, Russia.
Department of Polyclinic Pediatrics
Scientific supervisor: D.M.Sc., Professor N.A. Fedko

Background: In the recent years there is an increase in the frequency of allergic diseases in children. In children, bronchial asthma, allergic rhinitis and atopic dermatitis is seen as the most common allergic diseases. According to the recent findings of WHO, these three diseases are in the first place among chronic diseases among children. There are statistical evidences of increasing in the frequency of these diseases by thrice among children in the recent years. Epidemiological data from of International Study of Asthma and Allergy in childhood renders analysis of epidemy of these diseases among children. Study of these data is important in formation of risk groups among children and in stratification of treatment measures among these children.

Objective: The aim of the research is to compare and analyze retrospectively, data of bronchial asthma, allergic rhinitis and allergic dermatitis in children living in northern and southern regions of Russia.

Materials and methods: Retrospective analysis of data of 60 children (36 {18 boys, 18 girls} from northern region, 24 {11 boys and 13 girls} from the southern region) of Russia in between ages 10-14 years were studied. Mean age of the children was 11.34±0.98 years. Frequency of development of allergic diseases in these children was studied according to the data of International Study of Asthma and Allergy in childhood. Statistical analysis of the obtained results was done using two-sample Student’s T-criteria and X^2 criteria. Results were considered significant with the difference of p≤0,05.

Results and discussion: Frequency of bronchial asthma in children of northern and southern regions were of 3.2% and 22.5% respectively, and that of allergic rhinitis is 30.5% and 36.3% of children respectively, but atopic dermatitis was reveled in 7.5% of children from northern
region and 6.2% of the children from southern region, which are statistically significant (p<0.05).

**Conclusion:** In children living in southern regions of Russia, bronchial asthma was found 1.5 times frequently, and allergic dermatitis 1.7 times frequently than that of northern region. Allergic dermatitis in children from northern region was found frequently by twice that of southern region, which requires additional researches for evaluating its genesis in that regions.

**Keywords:** Bronchial asthma, allergic rhinitis, atopic dermatitis, allergic diseases in children.

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**CLINICAL AND PHYSIOLOGICAL FEATURES OF FIBRINOLYSIS**

*Muskhan Kaur Ajmani, Srujan Dandwate, Shubav Gaikwad*

Stavropol State Medical University, Stavropol, Russia
The Department of Normal Physiology
Scientific supervisors: D.M.Sc., Professor L.D. Tsaturian, Assistant D.A. Androsova

**Introduction:** The process of blood clotting is opposed by a complex process that leads to fibrinolysis-dissolution of the formed fibrin. In the body, there is a constant formation of small amounts of fibrin, which are removed by constantly going fibrinolysis. In case of damage, when the coagulation system is activated, its formation and blood clotting occurs mainly at the site of damage. Active plasmin arises from an inactive plasminogen as a result of the action of blood and tissue activators. Plasmin, a protease of the blood serum inhibit the coagulation and has fibrinolytic action. Fibrinolysis process is quite diverse and mysterious due to the variety of chemicals and biochemical reactions that accompany it.

**Objective:** Based on the above, we have studied in detail the theoretical aspects of the physiological characteristics of the fibrinolytic blood system and their use in the clinic In connection with this goal, the object of our study were the components of the regulation of fibrinolysis in the body and in the clinic. Based on this goal, the object of the study were the factors that regulate the process of hemolysis.

**Materials and methods:** The most important factor of blood plasminogen is Hageman factor. He releases from prekallikrein kallikrein,
which converts the plasminogen to plasmin. The tissue activator of plasminogen released by macrophages promotes local stabilization of fibrin and provides these prerequisites for further tissue healing. The epithelium of the urinary tract forms another tissue activator of plasmin-urokinase. Both plasmin and plasminogen activators have high affinity to polymerized fibrin. The formation of plasmin is inhibited due to the fact that the resulting products of fibrin cleavage inhibit the activity of thrombin. Important fibrinolysis inhibitor is α2-macroglobulin.

**Results:** To dissolve a fresh blood clot, the fibrinolysis system can be activated therapeutically. Fibrinolytic agents can be divided into substances of direct and indirect action. Fibrinolysin itself acts on the fibrin part of clot. Streptokinase activates both free and fibrin-bound plasminogen, whereas staphylokinase selectively binds to fibrin and as a result can dissolve small blood clots.

**Conclusion:** Thus, the fibrinolytic system of blood is controlled by a negative feedback loop in vivo. Regulation of fibrinolysis from the outside is real when exposed directly to the fibrin thrombus, as well as plasminogen activators. This knowledge can be used in the clinic when considering the processes of regulation of not only the fibrinolytic system, but also hemostasis.

**Keywords:** hemostasis, fibrinolysis, plasminogen, fibrinogen.

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**MORPHOLOGY OF FEATURE OF HASHIMOTO THYROIDITIS (DISEASE) OF THYROID GLAND**

*Muskhan Kaur Ajmani, Wahab Louis*

Stavropol State Medical University, Stavropol, Russia
Department of Pathological Anatomy.
Scientific supervisor: C.M.Sc., Assistant G.D Dzhikaev

**Background:** Hashimoto thyroiditis is an autoimmune disorder that results in destruction of the thyroid gland and the gradual and progressive thyroid failure of the thyroid gland.

**Objective:** The aim of our research is to understand the morphological and histological features of hashimoto thyroiditis of thyroid gland.

**Materials and methods:** Hashimoto disease is two times more common in women than men. Although the disease may occur often in teen or young women it often appears more in people aged between
40-60 years. Among the 33 patients with hashimoto thyroiditis disease, 22 females and 11 males aged 4.9 – 19 years and most of them were euthyroid clinically. Hashimoto thyroiditis is associated with type 1 diabetes and other autoimmune disorders. Girls with turner syndrome may develop hashimoto thyroiditis. Patient with hashimoto thyroiditis (+ve) antigen may have thyroglobulin in blood.

**Results and discussion:** As most of the patients are euthyroid clinically, according to research abnormal ultra sound patterns appears in the patients with hashimoto thyroiditis disease as Hypo echogenicity and pseudo nodules. L-thyroxine therapy is indicated in hashimoto thyroiditis disease with hypothyroidism but periodic re-evaluation is required because hashimoto thyroiditis disease may be a self-limited disorder in some of the cases also.

**Conclusions:** In the observed cases according to the morphological study was found that the thyroid gland was usually diffusely enlarged, although more localised enlargements were seen in some cases. The capsule is intact and the gland seen is well demarcated from the adjacent structures. The cut surface is seen to be pale yellow tan, firm and somewhat nodular. According to the microscopic examination it was found that there is extensive infiltration of the parenchyma by a mono nuclear inflammatory infiltrate containing small lymphocytes, plasma cells and well developed germinal centres. The thyroid follicles are atrophic and are lined in many areas of the epithelial cells distinguished by the presence of abundance eosinophilic, granular cytoplasm which is also known as Hurtle cells. Interstitial connective tissue is increased in a large number and the fibrosis does not extend beyond the capsule of the gland.

**Keywords:** autoimmune disease, hashimoto thyroiditis, hurtle cells, thyroid gland, interstitial tissue, hypothyroidism.

**POST-OPERATIVE COMPLICATIONS OF COLORECTAL CANCER**

*Nana Ama Pokoo-Sonny, Girisha Kumari*

Stavropol State Medical University, Stavropol, Russia

Department of General Surgery

Scientific supervisor: D.M.Sc., Associate Professor **O.V. Vladimirova**

**Background:** Worldwide, colorectal cancer is the third most common cause of cancer related mortality. There is also significant
morbidity associated with treatment for colorectal cancer with post-operative complication rates ranging from 18% to 38%.

**Objective:** To compare the post-operative complications: surgical site infection and bowel obstruction in colorectal cancer patients.

**Materials and methods:** We did a statistical analysis on 30 patients, and compared the complications amongst them, as to which complication had a higher chance of occurrence and mortality.

**Results:** Out of the cases received, 15% to 30% had surgical site infection whereas postoperative bowel obstruction lies in a range of 12.5% to 14%.

**Conclusion:** In terms of postoperative complications of colorectal cancer surgical site infection is much more common than bowel obstruction. Moreover, the need to avoid these complications is a must and prophylaxes should be carried out with the help of a timely treatment and a proper follow up like colonoscopy and laboratorial investigations.

**FREQUENCY OF OCCURRENCE OF DENTITION ANOMALIES AMONG STUDENTS**

*A.A. Naukhatko*

Stavropol State Medical University, Stavropol, Russia
Orthopedic Dentistry Department
Scientific supervisor: C.M.Sc., Assistant *E.K. Chvalun*

**Background:** Smile is the part of the appearance and the impression that we make on others. Being a special form of non-verbal communication, it demonstrates a positive attitude and disposition. But for most people, a “beautiful smile” is a vague concept. In the representation of the dentist, aesthetics of a smile consists of the harmony of the shape, position, size and color of teeth, their proportions and symmetry with respect to each other and facial components.

Often the patient turns to the dentist with the aim of solving aesthetic problems, unaware of the need for additional treatment, including the elimination of various dental anomalies. The analysis of smile parameters is an essential stage in diagnosis, which is necessary for objective treatment planning. It is important for a dentist and you need to know the norms of proportionality of a smile, be able to determine aesthetic indices and skillfully use this knowledge to achieve a highly aesthetic result of complex treatment.

**Introduction:** The study was carried out the frequency of occurrence
of dentition anomalies of occlusion among 3rd-year students of the Faculty of Dentistry who did not undergo early orthodontic treatment, based on the smile aesthetics index. The index was developed at the Center for Dentistry and Maxillofacial Surgery of the Moscow State Medical and Stomatological University named after A.I. Evdokimov of the Ministry of Health of Russia and the Department of Orthodontics (protocol of the Ministry of Health of the Russian Federation of September 1, 2017).

**Objectives:**
1. To conduct a photostatic study of the participants of the first period of mature age (21-35 years)
2. To carry out photometric measurements of the participants to determine the frequency of occurrence of dental anomalies.

**Materials and methods.** A photometric survey of 36 participants was conducted, among which 18 men and 18 women, aged from 21 to 24 years old, included in the group of the first adult period (21-35 years).

Photographing was carried out according to the method of Tikhonov A.V. (Spb, 2013). For this purpose we used a digital camera and a tripod and from a distance of 1.5m took a photo of the participants natural smile full face.

To assess the degree of aesthetic disturbances in the smile zone, the parameters of the dental aesthetic index were measured from a full face photography using the proposed calculation method and then assigning each characteristic a specific score in the range from 0 to 2

**Measured parameters:**
1. Measurement of buccal corridors:
   – the calculation was made according to the formula for the ratio of the size of the buccal corridors to the width of a smile and was evaluated according to the presented values.
2. Level of lip position:
   – expressed in points depending on the degree of visualization of the crowns of the teeth and gums while smiling: The upper lip covers 2/3 of the tooth crowns – 1 point, 1/2 of the crown – 1 point, the entire tooth crown is visualized – 0 points
3. Asymmetry of lips:
   – the ratio of one half of the lip to the other. The ratio of the size of the lips 1: 2/3: 4
4. Asymmetry of the aesthetic center:
   – expressed in points: there is no offset of the cosmetic center – 0 points, offset of the cosmetic center by ½ – 1 point, offset of the cosmetic center by more than ½ – 2 points
5. Upper lip thickness:  
– the ratio of interpupillary distance to the thickness of the red border of the upper lip.
6. Lower lip thickness:
7. Smile width:  
– the ratio of the size of a smile to the interpupillary distance
8. Smile curve
9. Tremas in smile area
10. Angulation of incisors
10. Measurement of black triangles

A total of 21 parameters of the SAI smile aesthetics index were evaluated.

After conducting photometric measurements and assigning a certain number of points to each parameter, we summarized all the values and evaluated the severity of the dental anomalies by the following indicators:

• Index less than 12 points – normal
• Index from 13 to 16 – mild severity of the dental anomalies
• Index from 17 to 21 – the average severity of the dental anomalies
• Index 22 or more – severe severity of the dental anomalies

**Results.** After completion of the study, the following results were obtained:

In 6 out of the 36 surveyed, the smile aesthetics index was within the normal range (18%), 18 people have a mild dentition anomalies (49%), in 9 of the surveyed was revealed the average severity of the dental anomalies (24%) and 3 people were with severe degree (9%).

According to the obtained results, the following recommendations were given: 18% of our participants had not indications for orthodontic treatment, because their index value is within the normal range, 82% have indications for orthodontic treatment.

**Conclusions:** Thus, the definition of the aesthetics index makes it possible to comprehensively evaluate the parameters of a smile, identify the presence and severity of the dental anomalies or its absence, motivates patients for orthodontic treatment and allows to objectively draw up a plan for dental care.

**Keywords:** dentition anomalies, smile, aesthetics index, a photometric survey, measured parameters, calculation, orthodontic treatment.
EFFECT OF RELAXATION ACCORDING TO THE METHOD OF W.H. BATES ON IMPROVING STUDENTS’ CENTRAL VISION

Z.I. Panchenko, S.A. Zatsepilina, L.M. Amaliyeva
Stavropol State Medical University, Stavropol, Russia
Department of Ophthalmology
Scientific supervisor: C.M.Sc., Assistant O.A. Panchenko

Introduction: Excessive visual loads are known to have a bad effect on vision. Currently, there are many methods to preserve vision, including relaxation. One of them is palming, developed by the American ophthalmologist W.H. Bates.

Objective: To determinate the effect of palming according to the W.H. Bates method on the improvement of visual functions in students of Stavropol State Medical University.

Materials and methods: We studied 120 students of the 5th course during 12 practical classes of 4 academic hours each. The function of central vision was estimated 3 times during the lesson. To study the function of central vision, we used individual tables for checking eyesight at close range, corresponding to the standard. We offered students to read the texts on the table, which are clearly visible to each of them individually.

As the result of the final determination of visual acuity at close range in the studied students, it was revealed that visual acuity equals 0.4-0.5% remained only in 5% of people. While normal visual acuity, corresponding to a healthy standard, appeared in 24.4%, which is as much as 2 times more than at the beginning of the study and 3 times more than in the middle of a lesson (before the start of palming). We also revealed that a group of students with visual acuity of 60-80% remained within 70.8%. In addition, asthenic manifestations of visual fatigue disappeared as a result of the application of the method of palming in all students without exception.

Conclusion:
1. The study found that the main factor in the deterioration of visual function and the appearance of asthenopia is intense visual work.
2. The method of palming according to the W.H. Bates method really contributes to the normalization of the function of central vision.
3. This technique could be recommended to students and all groups...
of people associated with prolonged visual stress as a prevention of visual impairment.

**Keywords:** Palming, asthenopia, W.H. Bates, visual impairment, visual loads, visual fatigue.

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**INFLUENCE OF GADGETS ON CHILDREN’S HEALTH**

*N.N. Popova*

Essentuki Branch of Stavropol State Medical University, Essentuki, Russia

Scientific supervisor: *E.Yu. Padyukova*

**Introduction:** For last decade various gadgets have become an integral part of modern man including children. Most of all they use mobile phones, headphones, computers, tablets, which, of course, make their life easier, but at the same time they have a negative impact on health. With prolonged use of gadgets, visual and hearing changes, damage to the musculoskeletal system, and neurological disorders may occur.

**Objective:** Evaluation of the negative impact of gadgets on children’s health.

**Materials and research methods:** The research base is school No.10 and kindergarten No.12 in Essentuki. A survey of 50 respondents was conducted: parents of preschool children and high school students. The main research methods: the study of statistical data, questioning, analysis and summarize.

**Results and discussion.** Analysis of the survey results showed that preschool children use gadgets mainly for entertainment on average for 30-60 minutes under parental control. The risk group includes schoolchildren who spend more than 3 hours on the Internet receiving the necessary information, communicating and playing. Parental control is weakening, which leads to unlimited use of gadgets, and it negatively affects children’s health: 90% of respondents said that they quickly get tired, 60% indicated that they become overly irritable, 30% complained of headaches, 15% during a medical examination revealed a decrease in visual acuity and in 10% of the posture. These figures clearly demonstrate the negative impact of modern computer technology on the mental, physical and mental health of the younger generation.

**Conclusion:** Today’s children cannot imagine their lives without
smartphones, tablets, laptops. Inactive lifestyle, lack of motor activity in the fresh air lead to disruption of important organs and systems. The abundance of contradictory and aggressive information that children and teenagers receive from the global network often provokes mental disorders. In order to prevent the negative consequences of long-term interaction with computer devices, we held a conversation with the participants of the study and distributed them information booklets with the recommendations of experts on the rational use of gadgets.

**Keywords:** gadgets, negative impact, compliance with recommendations, prevention.

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**PREVALENCE AND RISK FACTORS OF SURGICAL SITE INFECTIONS IN GENERAL SURGERY IN INDIAN HOSPITALS**

*S.S. Rajkamal, Bini Konikkara*

Stavropol State Medical University, Stavropol, Russia

Department of General Surgery

Scientific supervisor: C.M.Sc, Associate Professor O.V. Vladimirova

**Background:** Surgical site infection (SSI) can be defined as an infection that may be present up to 30 days after a surgical procedure if no implants are placed and up to one year if an implantable device was placed to the patient. SSI is a significant problem associated with major surgeries and is the third most frequently reported nosocomial infection.

**Objective:** This study aims to reveal the prevalence and risk factors of SSI and to recommend preventive measures for SSI in the Department of General Surgery, India.

**Methods:** A retrospective study was undertaken at the Department of General Surgery for a period of one year. Retrospective chart review was conducted from the hospital database. The rate of SSI was studied in relation to its type, the type of surgical procedure and elective vs. emergency surgeries.

**Results:** The present study revealed 12.5% prevalence of SSI in Department of General Surgery. Among the 3 types, superficial incision SSI was most prevalent followed by deep incisional SSI and finally by organ/space SSI. The surgical procedure most commonly associated with SSI was exploratory laparotomy. An alarming 17.7% of SSI was associated with emergency surgeries as compared to 12.5% of elective surgeries. Present study provides information on risk factors for SSI
such as increasing age of the patient, contaminated wound, prolonged duration of surgery, absence of prophylactic antibiotics, use of drains and prolonged hospital stay which are associated with increased incidence of SSI. From this study, the following steps emerged as priorities to set in the near future: definition of the antibiotic prophylaxis policy; decrease of length of staying; and decrease of the length of procedures through adequate training of the staff on proper surgical manipulations. It was also recommended the judicious use of drains and extra care must be taken in case of emergency surgeries to lower the overall SSI incidence rates.

Conclusions: The consequences of SSIs greatly impact patients and the healthcare system. Prevention of SSI requires a multifaceted approach targeting on pre-, intra-, and postoperative factors. It is recommended to provide the foundation required to generate a culture of patient safety in our health care system.

Keywords: general surgery, nosocomial infection, SSI, surgical site infection.

CONCENTRATIONS OF OSTEOCALCIN IN PATIENTS WITH RHEUMATOID ARTHRITIS AND OSTEOARTHRITIS – COMPARITIVE ANALYSIS

Ravichandran Raviraghul, Selva Dhas Berbin Joe
Stavropol State Medical University, Stavropol, Russia.
Department of Hospital Therapy
Scientific supervisors: D.M.Sc., Professor P.V. Koroy,, Assistant Sarithala V.J.

Background: Osteocalcin is a non-collagenous bone matrix protein, which is considered as a bone regeneration marker. In the basis of development of osteoporosis lies cytokine induced bone resorption, hyperactivation of osteoclasts. As a result of which there will be a decrease in the level of osteocalcin. The mechanism of development and extent of these deviations in patients with rheumatoid arthritis and osteoarthrosis are not clearly known.

Objective: The aim of the research was to comparatively study osteocalcin levels in patients with rheumatoid arthritis and osteoarthrosis, its relation with stage of diseases.

Materials and methods: 74 women with rheumatoid arthritis (mean age of patients 51,03±1,25 years) and 72 women with primary
osteoarthrosis (mean age of patients 55.26±2.78 years) who were under observation and treatment in rheumatology department of Stavropol regional clinical hospital were examined. Control group constituted of 19 healthy individuals. Serum levels of osteocalcin in patients was studied by ELISA method. All the patients had undergone clinical, functional, laboratory, imaging and immunological analysis.

**Results and discussion:** Serum concentrations of osteocalcin in patients with rheumatoid arthritis and osteoarthrosis were significantly decreased (p<0.05) in comparison with control group. While comparing within the groups, levels of osteocalcin was significantly low (p<0.05) in group with rheumatoid arthritis than in osteoarthrosis. Levels of serum osteocalcin were decreased prominently on patients with high activity of rheumatoid arthritis (p<0.05), whereas such relation with inflammatory markers had not found in patents with osteoarthrosis. Functional class of rheumatoid arthritis had a significant correlation with levels of osteocalcin (p<0.05) with decreased levels of osteocalcin in III functional class.

**Conclusion:** Significantly decreased serum levels of osteocalcin were found in patients with rheumatoid arthritis and osteoarthrosis in comparison to control group. Serum levels of osteocalcin was correlated with high activity and functional class of rheumatoid arthritis, whereas such association with stage of disease with osteocalcin levels was not observed in osteoarthrosis. Decreased concentrations of osteocalcin imply the insufficiency in process of bone formation as a result of activation of reabsorption in these patients.

**Keywords:** Rheumatoid arthritis, osteoarthrosis, osteocalcin, high activity, functional class.

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**TYPES OF LEFT VENTRICULAR REMODELING IN HYPERTENSIVE PATIENTS WITH RENAL ADDITIONAL ARTERIES**

**J. P. Red’ko**

Stavropol Region Clinical Hospital
Stavropol State Medical University, Stavropol, Russia
Department of Hospital Therapy
Scientific supervisor: D.M.Sc., Professor **N.N. Gladkikh**

**Introduction.** The course of arterial hypertension (AH) is characterized not only by increased blood pressure, but also the
development of left ventricular hypertrophy. The left ventricular hypertrophy increases the risk of sudden death, ventricular arrhythmias and congestive heart failure in patients with hypertension.

**Objective.** To determine the frequency and types of left ventricular remodeling in hypertensive patients with renal additional arteries.

**Material and methods.** 40 patients (33 men and 7 women, aged 27.05±0.92 years) with grade 1-2 of AH and renal additional arteries were examined. AH was established in accordance to clinical recommendations. Renal additional arteries were verified by multispiral computed tomography and aortography. The type of left ventricular remodeling was determined by left ventricular mass index (LVMI) and relative wall thickness (RWT). In normal LVMI and RWT <0.43 were determined the normal geometry of left ventricle, in increased LVMI and RWT >0.43 – concentric hypertrophy, in normal LVMI and RWT ≥0.43 – concentric remodeling, and in increased LVMI and RWT <0.43 – eccentric hypertrophy. Descriptive statistics was used.

**Results and discussion.** Normal left ventricular geometry was established in 55% of hypertensive patients with renal additional arteries. Pathological remodeling of left ventricle was determined in 18 (45 %) hypertensive patients with renal additional arteries. Eccentric hypertrophy was verified in 27.5 % of cases, concentric remodeling – in 17.5 %. Concentric hypertrophy of left ventricle was not verified. However, according to literature, in patients with primary AH and in patients with refractory hypertension of the 3rd degree associated with renal additional arteries the characteristic geometric model of ventricle is concentric hypertrophy of left ventricle (Gurgenyan S.V. et al., 2013; Gapon L.I. et al., 2006). Our findings in the distribution of remodeling types are probably due to the 1-2 degrees of blood pressure and young age of patients included in present study.

**Conclusion.** Left ventricular remodeling in form of concentric remodeling and eccentric hypertrophy was determined in 45% of young patients with arterial hypertension and renal additional arteries. This fact indicates the absence of sufficient compensation for increased load on heart.

**Keywords:** left ventricle remodeling, arterial hypertension, renal additional arteries.
SIGNIFICANCE OF VASCULAR STIFFNESS AS DIAGNOSTIC CRITERION OF CARDIOVASCULAR HEALTH IN YOUNG PEOPLE

A.S. Roy
Stavropol State Medical University, Stavropol, Russia
Department of Faculty Therapy
Scientific supervisor: D.M.Sc., Professor M. E. Evseyeva

Introduction: Due to the wide spread of premature aging of the artery wall, occurring without clinical manifestations, it is now necessary to justify the use of modern diagnostic technologies that can provide a wide angiological screening among different groups of the population.

Objective: To determine the statistical parameters of mass assessment of vascular rigidity in students in the framework of the University preventive project.

Materials and methods: In the framework of the project “Healthy University” in the recreation center of Stavropol State Medical University 224 students were investigated. The device “VaSera VS-1500” (“Fakuda Denshi”, Japan) was used. This allows us to estimate the vascular rigidity index, such as the left and right cardiovascular index (CAVI) (L/R). The device also gives a conclusion about the vascular age of the subjects and allows to identify the so-called EVA syndrome. Groups formed on the basis of gender. Descriptive statistics and quartile analysis were carried out. The data were analyzed using Statistica 10.0 statistical application package (StatSoft Inc, USA).

Results: It was found that the signs of EVA syndrome (early vascular aging) are fixed in 12.7% of young male students and 7.8% of female students. The average value of R-CAVI & L-CAVI for male students is 5.80±0.09 and 6.01±0.09 and 5.58±0.06, 5.90±0.05 for female students. The most significant differences between the left and right extremities were recorded in women. 25.4% of R-CAVI and 23.9% of L-CAVI students were in the upper quartile in men and 19.6% and 17% respectively in women, which is less than the previous one-third. The coverage of knowledge about the principles of healthy lifestyles in the school of health of students is much higher among those surveyed.

Conclusion: Every 9-10-th person among medical students has a syndrome of early aging of blood vessels. Preliminary assessment of vascular age increases the involvement of students in the educational
process at the school of health. The obtained data should be taken into account in the formation of groups of increased cardiovascular risk in students in the course of its clinical examination in order to further develop more individualized programs of preventive intervention for each young person.

**Keywords:** vascular rigidity, vascular stiffness, young people, students, SSMU

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**THE QUESTION OF THE QUALITY OF LIFE OF SURGICAL PATIENTS**

*A. M. Shahnazaryan, N. G. Shahnazaryan*

Stavropol State Medical University, Stavropol, Russia
Department of Surgery and Endosurgery with a Course of Vascular Surgery and Angiology

**Introduction:** Currently, the problem of assessing the quality of life after surgical treatment by the patient himself remains relevant and acute. The effectiveness of surgical or any other type of treatment is based on the changes in clinical and biochemical data. In abdominal surgery it is the presence or absence of complaints, General and specific symptoms, changes in biochemical data. It is important to understand that all the mentioned parameters do not allow to assess the health of the patient and his functioning, as well as the degree of adaptation in everyday life.

**Objective:** The use of general questionnaires in patients after surgery.

**Materials and methods:** General questionnaires are used to study the quality of life regardless of nosology, the severity of the disease and the method of treatment and they are multifunctional, covering several areas. Most often they use such indicators as physical, social, emotional functioning, perception of somebody's own health and life satisfaction. The following general questionnaires are generally accepted: Euro Qol (EQ-5D); MOS SF-36 and its modifications (SF-22, SF-20, SF-12); Quality of Well-Being Index; Sickness Impact Profile; Nottingham Health Profile; Quality of Life Index. The questionnaire MOS SF-36, which belongs to the General, is the most common and widely used both in population studies and in special studies of quality of life, including surgery.
**Results and discussions:** According to some authors, the use of general questionnaires for a comparative study of the quality of life of a patient with different clinical forms of the same disease is impractical. This is due to the low sensitivity in the differentiation of different degrees of severity of the disease, especially in the mild and moderate course of the disease and to the specific problems of certain groups of patients; high sensitivity of the general questionnaires more to deterioration than to the improvement of the patient’s condition.

**Conclusion:** General questionnaires allow to solve a wide range of tasks to assess the quality of life in various diseases of surgical patients, but have low sensitivity to specific problems of certain groups of patients.

**Keywords:** quality of life, general questionnaires, surgical patients.

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**THE USE OF SPECIAL QUESTIONNAIRES FOR ASSESSMENT OF QUALITY OF LIFE OF PATIENTS WITH ABDOMINAL**

*A. M. Shahnazaryan, N. G. Shahnazaryan*

Stavropol State Medical University, Stavropol, Russia
Department of Surgery and Endosurgery with a Course of Vascular Surgery and Angiology

**Introduction:** Currently, the problem of quality of life in patients with diseases of the gastrointestinal tract is very relevant for modern surgery. In abdominal surgery, both general and special questionnaires are used.

**Objective:** To use the special questionnaires in patients with abdominal diseases after surgery.

**Materials and methods:** General questionnaires are used to study the quality of life independently of nosology, severity of the disease, method of treatment and are multifunctional, covering several areas. General questionnaires in surgery have low sensitivity in distinguishing different degrees of severity of the disease and high sensitivity of general questionnaires to the deterioration of the patients’ state. All of the above mentioned shortcomings of the general questionnaires encourage the creation of specialized scales for assessing the quality of life for certain nosologies.

**Results and discussions:** Today, as the examples of special
questionnaires that are used in abdominal surgery, are the following: Irritable Bowel Syndrom Quality of Life (IBS-QoL); in-inflammatory Bowel Disease Quality of Life (IBDQ); Quality of duodenal Ulcer Patients (QLDUP); Quality of life Reflux and Dyspepsia (QOLRAD); Gastrointestinal Quality of Life Indexy (GIQLI); gastrointestinal symptom rating scale (GSRS). The scale of evaluation of gastrointestinal symptoms (GSRS), which was originally proposed to assess the severity of clinical manifestations of not only peptic ulcer, but also irritable bowel syndrome, received a certain distribution in abdominal surgery. In the literature its low sensitivity to non-specific effects is marked.

**Conclusion:** Thus, special questionnaires in abdominal surgery are focused on specific nosology and its treatment, allow to catch changes in the quality of patient/s life in a short time and are used to assess the effectiveness of a particular method of management of the disease. The complexity of processing and insensitivity to nonspecific effects are the main disadvantages of special questionnaires.

**Key words:** quality of life, general and special questionnaires, abdominal patients.

MODERN TRENDS IN THE PREVALENCE OF THE DISEASES OF ORGANS OF BILIOPANCREATODUODENAL ZONE

_A. M. Shahnazaryan, N. G. Shahnazaryan_

Stavropol State Medical University, Stavropol, Russia

Department of Surgery and Endosurgery with a Course of Vascular Surgery and Angiology

**Introduction:** Over the past fifteen years, there has been a marked increase in the incidence of cholelithiasis and tumors of the biliopancreatoduodenal zone, complicated by jaundice. The proportion of patients with obstructive jaundice is up to 18% of the total number of surgical patients with diseases of the biliopancreatoduodenal zone, and the detection of this pathology is about 5 cases per 1000 people.

**Objective:** To study the changes in the incidence of mechanical jaundice syndrome over the past 9 years at the basis of Stavropol Regional Clinical Hospital.

**Material and methods:** The work is based on the results of examination and treatment of 1116 patients with mechanical jaundice
Results and discussion: In 2018, the incidence of mechanical jaundice syndrome disease is decreased by 18 patients compared with 2011. Significant increases in the incidence of subhepatic cholestasis syndrome were registered in 2011, 2014-2015. The largest proportion of patients (26-32%) were persons in the age group of 60-69 years. Patients aged 70-79 years (24-27%) were on the second place in morbidity. It is important to note that among patients suffering from mechanical jaundice, about 40% of patients were of working age up to 60 years. The growth of working population by 1.2% is observed. In the institution, it can be noted the prevalence of mechanical jaundice of benign genesis over malignant, and since 2016 there has been an increase in non-tumor jaundice.

Conclusion: During the nine-year period (2011-2018) there was a decrease in the total number of patients with diseases of the biliopancreaticoduodenal zone, complicated by mechanical jaundice. There have been significant changes in the composition of jaundice patients: the proportion of patients of working age has increased, which is an important medical and social problem not only in Russia but also in the whole world.

Keywords: mechanical jaundice, organs of biliopancreaticoduodenal zone, morbidity.

STAGED TREATMENT OF PATIENTS WITH MECHANICAL JAUNDICE

N. G. Shahnazaryan, M. A. Shahnazaryan, A. O. Gradinar
Stavropol Regional Clinical Oncology Center, Stavropol, Russia

Introduction: In order to prevent postoperative complications and reduce mortality with the existing variety of types of the treatment tactics of mechanical jaundice, it is necessary to adhere to the principle of reducing bilirubinemia before surgery. The key to solving of the problem is a two-stage treatment strategy (the first stage – conservative measures with biliary decompression are carried out, at the second – radical or palliative surgery), which allows to reduce the frequency of postoperative complications by 17%, and lethality-up to 2.8%
Objective: To analyze the two-stage treatment of patients with mechanical jaundice in the Thoracoabdominal Department of Stavropol Regional Clinical Hospital.

Material and methods: The study is based on the results of a complex examination and treatment of 1116 patients with mechanical jaundice for the period 2011-2018. Among the patients, Women (58.6%) prevailed among the patients, the average age was 67.4±2 years. Mechanical jaundice of tumor origin was detected in 249 (22.3%) patients, non – tumor-in 867 (77.7%) patients.

Results and discussion: Two-stage treatment tactics was used in 293 (25.9%) patients. When patients were admitted to the first stage of treatment. The average value of blood bilirubin was 395.75 µmol/l, the severity of mechanical jaundice according to E. I. Galperin – an average of 11.2 points (severe). Biliary decompression was performed in all patients, after which the blood bilirubin index decreased to an average of 267.86 µmol/l, and the severity of jaundice to 8.8 points (average). On the day of discharging from the hospital, the average value of blood bilirubin was 99.32 µmol/l, the severity was 6.8 points (average). For the 2nd stage of treatment, patients were admitted (an average of 3-4 weeks) with a blood bilirubin index of 60.12 µmol/l, they were carried out various surgical interventions.

Conclusion: With a variety of types for the treatment of mechanical jaundice tactics, it is necessary to adhere to the principle of reducing bilirubinemia before surgery, which can be achieved with the help of two-stage tactics, that especially helps at high rates of bilirubin upon admission.

Key words: bilirubin, mechanical jaundice, two-stage treatment tactics.

CONSERVATIVE TREATMENT OF PATIENTS WITH OBSTRUCTIVE JAUNDICE

N. G. Shahnazaryan, M. A. Shahnazaryan, A. O. Gradinar
Stavropol Regional Clinical Oncology Center, Stavropol, Russia

Introduction: The main principles of conservative treatment of obstructive jaundice syndrome are: the elimination of cholestasis consequences; detoxificative therapy; anesthesia; prevention and treatment of hepatic and renal failure; prevention and treatment of erosions and acute ulcers of the gastrointestinal tract; the treatment of cholangitis.

Objective: To analyze a conservative treatment of patients with
obstructive jaundice of various genesis for the period 2011-2018 on the basis of Stavropol regional clinical hospital.

**Material and methods:** The study included 1116 patients with obstructive jaundice for a 9-year period. Among the patients, women (58.6%) prevailed, the average age was 67.4±2 years. Obstructive jaundice of malignant etiology was revealed in 22.3% of patients, benign – in 77.7%.

**Results and discussion:** All patients were prescribed a diet 5A, and nutritional support was in 23.4% of patients. Detoxification therapy consisted in parenteral introduction of fluid in the amount of 1.5-2 l/day (20-40 ml/kg/day) while maintaining a diuresis of 1.5-2 l/day. To eliminate the pain syndrome, the control of pain syndrome and spasm of smooth muscles of the gastrointestinal tract and biliary tract was carried out. The combination of obstructive jaundice with purulent cholangitis was noted in 25-30% of cases. When choosing antimicrobial agents, it is recommended to take into account the pharmacokinetics and pharmacodynamics, the local level of microbial flora resistance, the results of the use of antimicrobials in this patient, kidney and liver functions, as well as the presence of allergies and other adverse events. Hepatoprotectors were used in 78.2% of patients to restore and protect liver cells.

**Conclusion:** With the existing variety of options for the treatment of obstructive jaundice tactics, it is necessary to adhere to the principle of reducing bilirubinemia before surgery. In addition to biliary decompression, the first stage of treatment of patients with obstructive jaundice should be complex, including adequate conservative therapy.

**Key words:** obstructive jaundice, conservative treatment, detoxicative therapy, antibiotic therapy, hepatoprotectors.

**HAEMOSTASIS AND COAGULATION OF BLOOD (FIBRINOLYSIS)**

*Shubham Gaikwad, Srujan Dandwate, Muskan Kaur Ajmani*

Stavropol State Medical University, Russia

Department of Normal Physiology

Scientific supervisor: C.M.Sc., Associate Professor E.V. Eliseeva

**Background:** Fibrinolysis is the process that prevents blood clots from growing and becoming problematic. Contains two types: primary and secondary fibrinolysis.
Objective: The aim of our research is to understand the process of fibrinolysis and haemostasis in blood coagulation.

Materials and methods: We analyzed the relationship between coagulation/fibrinolytic parameters and age. Changes in blood coagulation and fibrinolysis in female are of great interest because there may be the connection between use of oral contraceptives and Thrombo-embolic diseases. We have investigated changes in coagulation and fibrinolysis which occur after moderate physical exercise in young normal males, aged normal male and male patients with complications of some diseases.

Results and discussion: However, acquired disturbance of the fibrinolysis is not common. Many trauma patients suffer from an overwhelming activation of the tissue factor and thus massive fibrinolysis. Patients with this disorder are closely linked to the inflammation. Its main enzyme plasmin cuts the fibrin mash at various places, leading to production of circulating fragments that are cleared by other proteases or by the kidney and liver.

Conclusion: Blood coagulation is the major component of haemostasis. Increase coagulation factors levels in pregnancy is meant to minimize the blood loss at the time of delivery. This haemostatic mechanism could fail risking patients life. Some inhibitors of the fibrinolysis such as aminocaproic acid’s application may be beneficial in patients with hyperfibrinolysis.

Keywords: fibrinolysis, contraceptives, thrombo-embolic diseases, plasmin, hyper-fibrinolysis, trauma, inflammation etc.

GANGLIONITIS AND ITS MODERN TREATMENT
Shubham Chhokar, Sharma Jitendra
Stavropol State Medical University, Stavropol, Russia
Department of Neurology, Neurosurgery & Medical Genetics
Scientific Supervisor: C.M.Sc., Associate Professor Shevchenko P. P.

Background: Ganglionitis (new lat. ganglionitis; other – Greek: ganglio – a node + a suffix – itis) is a disease connected with inflammation of one of the nodes of a sympathetic trunk. It is shown by vasculomotor, secretory, pilomotor and trophic frustration in the corresponding zones, leading to dysfunction of internals, decrease in painful sensitivity, the hyperpathia phenomena, decrease in tendon jerks, emotional irritation. The main reasons are considered to be infections (flu, malaria, pneumonia,
Objective: To determine the reasons of ganglionitis and how it is related to other diseases. The main causal factor is the acute infection, flu, malaria, typhus, dysentery, pneumonia, influenza, sore throat, malaria, brucellosis, rheumatism, syphilis; less frequently: intoxication, trauma, tumors. Ganglionitis sometimes is a complication of inflammatory diseases of the female genital organs, osteochondrosis of the spine. Mental injury, weather and climate factors, sleep deprivation, overwork, stressful situations, alcohol intake, and loud noise can provoke and aggravate the disease.

Materials and Methods: The study is based on blood analysis, tests for HIV, tuberculosis, syphilis, herpes, that is the IF-analysis of a blood on antibodies to virus. Instrumental diagnostics is used to determine the exact localization of the inflammatory process, to evaluate its distribution to vegetative nerve fibers and to differentiate pathology: X-ray of the spine, ECG, ultrasound, CT or MRI (thoracic and abdominal cavity, pelvis, skull), electromyography and others.

Results and Discussion: We investigate how several factors or some diseases can provoke and complicate ganglionitis and the ways of inspection and examination of this disease by different laboratory and instrumental analysis. We discussed the preventive measures and treatment which depends on symptomatic therapy, pathogenic therapy and conservative therapy.

Conclusion: We can offer proper prophylaxis for the disease which can decrease the chances of ganglionitis occurrence.

Keywords: Ganglionitis, treatment, infections, diagnosis.

BURN CARE & HYDROTHERAPY

Sindhya Mansi
Stavropol State Medical University, Stavropol, Russia
Department of General Surgery
Scientific supervisor: C.M.Sc., Assoc. Professor O.V. Vladimirova

Background: Caring for the patient before and after the surgery is equally important to the surgery itself. Care of burn-injured patients requires knowledge of the path physiologic changes affecting virtually all organs from the onset of injury until wounds are healed. Infection
in the burn patient is a leading cause of morbidity and mortality and remains one of the most challenging concerns for the burn team. The importance of preventing infection has been recognized in organized burn care since its inception and has followed recurring themes through the years. Hydrotherapy as an evolving method.

Objective: In this research, we would particularly draw attention to the various steps followed by the hospital in order to prepare the patient for the surgery. Also, emphasizing the importance of post-surgical steps such as strict aseptic technique, use of sterile gloves and dressing materials, wearing masks for dressing changes, and spatial separation of patients, either using private rooms or cubicles to avoid infectious trauma. Role and techniques in hydrotherapy for recovering burn patients

Results: Apart from surgical procedures the peculiarities in the care of the patient is of immense importance. Emergence of new methods and ongoing practices need a proper validation time and again, as the infection evolves with time too. Hydrotherapy is the new light to post-surgical care with its own pros and cons.

Conclusion: Many questions have yet to be answered for the burn patient related to appropriate management of infection control issues. Investigation of the role of hydrotherapy in the care of the burn patient, including identification of appropriate patients and standards for use, is needed to prevent infectious complications, which often accompany this form of therapy. The use of invasive devices, in particular central venous catheters, should be re-evaluated in light of the new catheter technologies and improved wound management techniques.

Keywords: burn, surgery, per and post-operative care, hydrotherapy

STATISTICAL ANALYSIS OF HEART RATE VARIABILITY AMONG MEDICAL STUDENTS
L.O. Anufrienko, V.M. Avanisyan, Manikandan Nandhinee
Stavropol State Medical University, Stavropol, Russia
Department of Normal Physiology
Scientific supervisor: D.M.Sc., Professor Head of Normal Physiology Department  L.D. Tsaturyan

Introduction: Adaptive reactions of the human body are provided by the transition of its physiological systems to the required level of functioning, accompanied by stress regulation mechanisms.
Objective: The aim of our study was to conduct a statistical analysis of heart rate variability (HRV) among medical students.

Materials and methods: We conducted statistical analysis (RMSDD, SDNN, pNN50) of heart rate variability (HRV) and a stress index (SI) using the hardware and software “Varikard 2.5”. The study involved 150 young men – medical students of the 2nd course of General Medicine (GM), Pediatric and Dental faculties. Taking into account SI, surveyed students were divided into three groups: the 1st group of SI < 50 (n = 39), the 2nd group SI = 50-200 (n = 81), the 3rd group SI> 200 (n = 30). The t-Student criterion was used for statistical data processing, the indicators were considered significant at a confidence level of p <0.05.

Results and discussion: In the 3rd group, the RMSDD indicator was the lowest (44.2 ± 3.6 ms.), and the maximum values were set at students of the 1st group (48.8 ± 3.7 ms.), which indicates the stability of the heart rate in this group of students.

Indicator SDNN characterizes a more strong effect of the parasympathetic division of the autonomic nervous system (65.2 ± 2.6 ms) in 1st group, while the 3rd student’s group have low values of the studied parameters (52, 6 ± 4, 5 ms), indicating a high voltage level. Analysis of pNN50 index in the studied groups of students allowed establishing similar trends to low values in the 3rd group students and higher in the 1st group (30.4 ± 2, 6 %).

Later, the tested students were divided in accordance with their studying in different faculties: the 1st group (n = 55) – GM faculty, the II-nd group (n = 31) – Pediatric faculty and the 3 rd group (n = 64) – Dental faculty. RMSDD indicators, SDNN and pNN50 were significantly lower in the 2nd group of students. The highest values of these indicators were found in students of the 3rd group (RMSDD – 53.3 ± 2, 9 ms, pNN50 – 26.5 ± 2, 2 %, SDNN – 60 ± 2, 8 ms). The highest value of SI (205.4 ± 32.8 units) are typical for students of the 2nd group, while the lowest value was observed in the 3rd group (117.7 ± 13.6 units).

Conclusion: The data statistical analysis of HRV indicate polyspectrality, providing the required level of the functional state of the organism, as well as the different effects of the sympathetic division of the autonomic nervous system on the heart rate.

Keywords: statistical analysis, heart rate variability, autonomic nervous system.
MORPHOLOGICAL CHANGES OF RESPIRATORY DISTRESS SYNDROME: MACRO AND MICROSCOPICAL PRESENTATIONS

Udeh Chiamaka Victoria, Akinkunmi Taiwo, Ibezim Franklein
Stavropol State Medical University, Stavropol, Russia
Department of Pathological Anatomy
Scientific supervisor: C.M.Sc., Assistant G.D. Dzhikaev

Introduction: The respiratory distress syndrome (RDS) is a disease entity of newborn, predominantly premature infants which has been diagnosed at autopsy by microscopic findings of hyaline membranes in the lungs.

Objective: To describe the morphological changes of respiratory distress syndrome.

Background: Under macroscopic study, the lungs are of normal size, but dense, airless, red-purple, usually impregnated with liquid and resembles liver tissue. Microscopic examination shows that poorly developed lung tissue contains most of the collapsed alveoli. If the child dies in the first few hours after birth, only the remains of necrotic cells are in terminal bronchioles and alveolar passage. Necrotic material is organized into eosinophilic hyaline membranes that line the alveoli, clog respiratory bronchioles and alveolar passage. Formed hyaline membranes are mainly composed of fibrin mixed with cellular detritus, which is formed by the decay of the necrotic alveoli type 2.

Materials and methods: Materials used in this study are obtained from data made available by the publications online from research work by medical experts.

Conclusion: It should be emphasized that hyaline membranes are never observed in stillborn children. If the child lives for more than 48hrs, there are reparative changes in the lungs. Alveolar epithelium proliferates under the surface of the membrane, while it can be displaced into the air space where partial cleavage or phagocytosis alveolar macrophages can occur.

Keywords: alveoli, detritus, phagocytosis.
EFFECTS OF STRESS ON STUDENTS DURING EXAMINATION PERIOD

Udeh Chiamaka Victoria, Olarenwaju Olusegun Abiola, Jamal Asif Ansari
Stavropol State Medical University, Stavropol, Russia
Department of Normal Physiology
Scientific supervisor: C.M.Sc., Assoc. Professor. E.V. Eliseeva

Introduction: A Stressor is the stimulus that causes stress e.g. exam. Sudden and severe stress generally produce an increase in blood pressure, heart rate, respiratory rate, and sleep changes. When faced with a situation of stress, the nervous system (NS) causes the body to release stress hormones like cortisol, adrenaline and noradrenaline into the blood for flight or fight response.

Objective: To estimate the changes of blood pressure, heart rate, respiratory rate and sleep cycle in medical students of various courses and different nationality on the day of examination and one week after exam compared to study motivation.

Inclusion criteria: 30 students (19 males and 11 females) of Stavropol State Medical University aged 18-26.

Materials and methods: We took the measurements of blood pressure, respiratory rate, heart rate and we also asked how long they sleep during exam periods in 30 students (7 first year Uzbeks, 17 second year Indians, 1 second year Nigerian, 1 third year Ghanaian and 4 fifth year Nigerians) on the day of their exam and one week after exam.

We measured blood pressure, heart rate, respiratory rate by usual methodics and we also asked students how long they sleep during exam periods. Physiological question like “what is their motive, inspiration or purpose for studying” where asked.

Results and discussion: Out of 30 students, examined 26 students (80.67%) had an increase in blood pressure, 27 students (90%) had an increase in heart rate, 25 students (83%) had an increase in respiratory rate on exam day and 17 students (56.6%) slept less during the exam period. In all students who had an increase, all parameters returned to normal when it was measured again after one week.

Based on the physiological questions we asked, 80% study to gain the respect of their parents and sponsors, 85% study to be professional medical doctors after medical school, 60% study to get red diploma. All these details affected the increase in the parameters measured.
Conclusion: According to this research, we discovered that there is a noticeable increase in all parameters (blood pressure, heart rate, respiratory rate) due to examination stress and less sleep during examination period had an obvious effect on results.

Sleep cycle in relation to result

<table>
<thead>
<tr>
<th>Comparison of sleep cycle pattern</th>
<th>Total number of students</th>
<th>Results (grades)</th>
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<tbody>
<tr>
<td></td>
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<td>2</td>
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<tr>
<td>Slept more during exam</td>
<td>1</td>
<td>-</td>
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<tr>
<td>No difference in sleep cycle during and after exam</td>
<td>12</td>
<td>2</td>
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<tr>
<td>Slept less during exams</td>
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<tr>
<td>Total number of students</td>
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</tbody>
</table>

Keywords: stress, motives, blood pressure, respiratory rate, heart rate.

FEATURES OF THE COURSE OF ISCHEMIC DISEASE IN YOUNG PEOPLE

D.M. Vasyanina
Stavropol State Medical University, Stavropol, Russia
Scientific supervisors: D.M.Sc., Professor, Head of the Hospital Therapy Department
M.E. Evseyeva, Head of Department of the Regional Hospital E.N. Danilova

Introduction: Statistics show that the age of patients with ischemic disease (ID) is steadily getting younger. The purpose of the investigation is to study the representation of young people among inpatients with ID enrolled in interventional treatment, and to show the clinical course of this pathology in a young patient using a case study.

Material and methods: indicators of annual reports of the cardiology department №1 of the regional clinical hospital for the
period from 2009 to 2018 were studied. It was analyzed data from the medical history of one of the young patients of the specified department. The obtained data were processed by using statistical software package Statistics 8.0.

**Results:** It has been established that the maximum number of patients admitted per year during the specified period was almost one and a half thousand people and in the course of the last three years this indicator fluctuated at the level of 1300-1350 people per year. Of this number of sick persons under the age of 45, there were an average of 120-125, that is, almost every tenth. Among these young patients was a 35-year-old male who was diagnosed with myocardial infarction of the inferior-lateral area of the left ventricle, an angina variant. According to coronary angiography, occlusion of the right coronary artery was detected, as well as stenosis of the left coronary artery up to 20%, anterior interventricular artery up to 70%, bending artery up to 40%, intermediate artery up to 50%. Balloon angioplasty was performed with stents inserted into the right coronary artery. Before admission to the hospital, this patient did not seek medical help, but had such risk factors as smoking, dyslipidemia, increased blood pressure.

**Conclusion:** The obtained regional data confirm, on the one hand, the high occurrence of young people among those with myocardial infarction. And, on the other hand, they point to the frequent presence of traditional risk factors in them, which in itself dictates the need to optimize the system of predictive diagnostics and personalized prevention among the young contingent from groups of the corresponding risk.

**Key words:** ischemic disease, representation, anterior interventricular artery.
SCIENTIFIC ABSTRACTS
OF CONFERENCE PARTICIPANTS
FROM OTHER MEDICAL
UNIVERSITIES
OF THE RUSSIAN FEDERATION
THE MORPHOLOGICAL CHANGES
OF ORAL MUCOSA IN THE AGED LABORATORY RATS
Ahmed Samy Hameed, Bushra Amasri,
Mina Ashra, Fatma Mohamed
Pyatigorsk Medical Pharmaceutical Institute of Volgograd
Medical State University of the Ministry
of Health Care of Russia, Pyatigorsk, Russia
Department of Morphology
Scientific supervisor: Ph. D, Associate Professor A.A. Nesterova

Background: In recent decades, medical science has been actively seeking ways for the early diagnosis of pathological conditions and their effective correction. For this purpose, a search for biomarkers reflecting the level of functioning of various organs and systems is of a current interest. One of the critical requirements for biomarker is its availability for non-invasive detection and monitoring. From this point of view, a detailed and in-depth study of the oral mucous membrane seems to be to us very promising. But the general global tendency to the population ageing in developed countries dictates the medical society to focus on searching for biomarkers that reflect the grade of age-related changes and reveal a tendency to pathological ageing.

Objective: To make a microscopic study of the tongue mucosa in old laboratory rats.

Materials and methods: The study was performed on 6 white laboratory rats (Wistar strain), males at the age of 3 years. The control group included 6 animals of the same sex at the age of 8 months. The animals’ material was subjected to standard histological tissue processing: fixation with 10% formalin, dehydration, and paraffin embedding. The sections were stained with hematoxylin and eosin. The histological slides were examined under the Microscope (Leica DM 1000) with the lens magnification 40.

Results and discussion: Microscopically, the thinning of the epithelial layer, smoothing of the papillae due to the partial atrophy of the epithelium and lamina propria were found in the sections of tongue. In all animals of the experimental group, a decrease in the number of mitoses in the basal layer of the papillary epithelium, not prominent lymphocytic infiltration of the lamina propria, expansion of the area of excessive keratinization on the dorsal surface of the tongue were
detected in comparison to the controls. A similar manifestation of keratinization of dorsal tongue has been described by the authors in both, healthy individuals over the age of 70 and in patients of the same age group with various pathological conditions of the oral mucosa and gastrointestinal tract.

**Conclusion:** Thus, the microscopic examination of the tongue mucosa of aged animals revealed the microstructural features that could be considered as mucosa age-related changes. Manifestation of keratinization on the dorsal surface of the tongue can serve as an accessible bioindicator reflecting the activity of ageing.

**Keywords:** ageing, biomarker, oral mucosa

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**LIPIDOGRAM FEATURES OF PATIENTS WITH MYOCARDIUM INFARCTION**

*K.A. Alyukov, M.S. Kleimanov, E.A. Pridatko*

Chita State Medical Academy, Chita, Russia

Scientific supervisors: C.M.Sc., Associate Professor **N.V. Solovyova**, C.Phil.Sc., Associate Professor **T.L. Zenkova**

**Introduction:** According to the Ministry of Health of Russia in the period from 2000 to 2018 there has been a significant increase of registered patients firstly diagnosed with circulatory disorders. It is known that the main cause of cardiomyopathies such as myocardial infarction, coronary syndrome and coronary heart disease is atherosclerosis.

**Objective.** To identify the dependency between lipid profiles in various age groups of patients with acute myocardial infarction in Chita and Ulan-Ude cities.

**Materials and methods.** The study of the lipidogram values of patients with acute myocardial infarction was based on the archival data from the Regional Clinical Hospital in Chita and N.A. Semashko Republic Hospital in Ulan-Ude. 637 lipid spectra were analyzed; the latter includes not only total cholesterol indicators, but also its content in various lipoprotein fractions, namely high-density lipoprotein cholesterol (HDL cholesterol), low-density lipoprotein cholesterol (LDL cholesterol) and also atherogenic index. Patients from both hospitals were divided into 4 age groups: 1st group – 6.1% (from 41 to 50 years); 2nd group – 22.4% (from 51-60 years); 3rd group – 33%
(from 61 to 70 years); 4th group – 38.5% (over 70 years). Statistical analysis of the obtained data was carried out using the variation statistics and the Microsoft Excel program. Quantitative indicators are presented in the form of a median (50 percentile). The reliability of differences (p) between the indicators was determined by the Student t-criterion, reliable values were counted at p <0.05.

Results. In the first age group of patients from Ulan-Ude hypercholesterolemia was observed – 5.44 mmol / l (p <0.3) and in other patients the cholesterol level was lower on average by 9.6% and was within the reference values. While comparing all patients from Chita normocholesterolemia was detected – less than 4.59 mmol / l (p <0.1) and normo-alpha-cholesterolemia – more than 0.99 mmol / l (p <0.007). In persons of all age groups from Ulan-Ude the level of HDL cholesterol was at least 1.08 mmol / l (p <0.04) therefore it was higher than minimal value of the norm. In the age group from 41 to 50 years LDL cholesterol was increased by 8.6%. The same parameter was less than 3.47 mmol / l (p <0.001) in patients aged 51 and older. Thus it was within the age norm. However in Chita patients of the 1st, 3rd, 4th groups an increase (5.7%) of LDL cholesterol was observed and accordingly was more than 3.65 mmol / l (p <0.01) but in persons from 51 to 60 years this indicator was in reference values. It was established that only in the 2nd group of patients with acute myocardial infarction from Ulan-Ude the value of the atherogenic index was within acceptable limits, and in patients older than 60 years the increase in its values higher than 2.5 was recorded (p <0.006). As for patients of the Chita hospital in all age groups this parameter was higher than 3.22 (p <0.01) of the acceptable level by an average of 30%.

Conclusion. As a result of a comparative analysis of the lipid spectrum of patients with acute myocardial infarction from hospitals in the Chita and Ulan-Ude cities it was found out that in most of them the total cholesterol level was within the normal limits, but atherogenic index values increased due to a lower content of LDL cholesterol and high values of HDL cholesterol. A significant increase in the atherogenic index was recorded in patients in the 3rd, 4th groups. It is necessary to carry out preventive measures and regular diagnostic observations.

Keywords: lipidogram features, LDL cholesterol, HDL cholesterol, myocardial infarction.
Introduction: According to research, conjugative hyperbilirubinemia leads in the structure of neonatal jaundice. In the neonatal period, metabolic disturbance associated with an increase of total bilirubin and its fractions in serum is most frequently observed. According to literary data, the bilirubin reaches its maximum level in blood serum by 3-5 days of a newborn. Therefore, if the child is in the hospital less than 48 hours a control of the course of jaundice and medical care are significantly complicated. With a high level of direct bilirubin in the serum there is a threat of bilirubin encephalopathy (nuclear jaundice) which occurs only in the neonatal period.

Objective: To study an assessment of diagnostically significant indicators of bilirubin metabolism in newborns.

Materials and methods: From the archival data of the Regional Children’s Clinical Hospital for the first half of 2018, a selection of case histories from 2 neonatal departments was made. 91 case histories were analyzed. Patients were classified into 2 groups. Each one them was divided into 2 subgroups – A and B. The first group of newborns was divided depending on age into following neonatal periods: A—early (0-7 days of life) and B—late (8-28 days of life). The second group of children was divided by gender into subgroups: A – boys and B – girls. We carried out a comparative analysis of the blood test counting the number of erythrocytes and hemoglobin, as well as total and direct bilirubin. Statistical data processing was performed with the STATISTICA 6.1 software system. The reliability of various quantitative indicators between two independent groups was estimated by Student’s criterion. The critical level of significance in conducting static hypotheses was 0.05.

Results. In patients of the first group (subgroup A) the level of total bilirubin in serum was 214.06 μmol / l, in subgroup B – 169.82 μmol / l (21% it is lower than that of subgroup A). Indicators of direct bilirubin in children of the early neonatal period were a bit higher than in
children of the late period, the difference between them was 1.06 µmol / l (p = 0.93 and p = 0.54, respectively). The hemoglobin content in the blood of the newborn subgroup A was slightly increased (by 3%) compared with subgroup B. The number of erythrocytes in children of the first seven days of life was 1.07 times less than in newborns from 8 to 28 days of life (p = 0.09 and p = 0.16, respectively). It was caused by increased hemolysis of red blood cells in the early neonatal period due to the replacement of fetal hemoglobin to adult hemoglobin. In newborns of both life periods (boys and girls). There was no significant difference in the values of total bilirubin: A – 196.91 µmol / l (p = 0.07) and B – 196.84 µmol / l (p = 0.27). However in girls the concentration of direct bilirubin was increased by 4.5%. The hemoglobin content in the blood of newborn girls was increased by 4.7% (p = 0.48, p = 0.87, respectively). The increase of this indicator in girls explains by the growth of erythrocytes by 9.8% compared with boys, which is due probably to sexual characteristics and stimulation of hemopoiesis.

**Conclusion:** Thus the analysis of red blood cell count, hemoglobin content, total and direct serum bilirubin in the serum of newborns with hyperbilirubinemia of the early and late neonatal periods taking into account gender characteristics, increases the possibility of obtaining information about the state of severity of the child and can predict the course of the disease.

**Keywords:** bilirubin metabolism, hemoglobin, neonatal period, newborn.

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**ETIOLOGY OF GASTRIC CANCER**

*Cheerangan Mohamed Waseem, Kottakkaran Mohamed Musthafa*

North Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia

Department of Propaedeutics of Internal Medicine

Scientific supervisors: **S.M. Kotelevets, V.J. Sarithala**

**Background:** This review highlights the unusual finding of low prevalence of gastric cancer despite high prevalence of *Helicobacter pylori* in and its probable causes including diet and genetic variations as seen in patients.

**Objective:** To determine the cause of Gastric cancer in the field of Human genome and due to causative *H. pylori* bacteria.
Result: There are major 2 main results: 1. Human genome-genetic, 2. Helicobactor pylori bacteria. Now days full genome sequencing allows achieving revolutionary progress in the modern medicine. As a result obtained that single nucleotide polymorphisms is the major reason for majority of non-communicable diseases. H. pylori are a gastric pathogen that colonizes approximately 50%-60% of world population. Studies in Asian countries such as Thailand, India, Bangladesh, Pakistan, Iran, Saudi Arabia and Malaysia have reported a high frequency of H. pylori infection co-existing with low incidence of gastric cancer.

Gastric cancer is 3rd most common cancer in India and second leading site of cancer occurrence worldwide. Gastric cancer is 4 times higher in south India than north India by understanding of molecular mechanism of gastric carcinogenesis and its relationship to H. pylori improved in the last decade. A prospective study report association of microsomal epoxide hydrolase exon 3Tyr113His and exon 4 His139 Arg Polymorphism with gastric cancer in India and 113 Tyr-139 Arg was associated with GC in the presence of H. pylori. Exon 3113 His was associated with GC even in absence H. pylori infection. Role of cytochrome P450 a polymorphic carcinogenic-activity enzyme, CYP2E1, CYP1A2 (rs 762551) and CYP1A1 (rs4646903) polymorphism in associated with H. pylori infection in gastric carcinogenesis was studied.

Conclusion: Based on studies the incidence of gastric cancer in Indian continent cannot be attributed to infection by H. pylori only, other factor such as diet, tobacco and socioeconomic status may also have a role and 2nd factor it will be possible to establish which single nucleotide polymorphism can cause mild, moderate, and severe mucosal atrophy in the antrum and body of stomach.

THE STUDY OF THE MECHANICAL PROPERTIES OF THE RETRACTION THREAD
E. K. Chikareva, S. A. Gontarenko
Belgorod State National Research University, Belgorod, Russia
Department of Orthopedic Dentistry
Scientist supervisor: Professor I. P. Ryzhova

Introduction: To achieve high aesthetic performance in the practice of the dentist is necessary to ensure complete isolation of the
tooth and prevent bleeding. This problem is solved by introducing into the dentogingival sulcus means providing retraction of the gums. Retraction of the gums is one of the techniques that allows to expose the subgingival part of the tooth. This paper reflects the results of experimental studies of new domestic retraction threads “Record” of “VladMiVa”, Russia.

**Objective:** To analyze laboratory of these retraction filaments.

**Materials and methods:** Three types of threads “Record” of the company “VladMiVa”, Russia: white twisted, blue braided, mottled with polyester fiber are accepted for research. Each of the species is represented by three sizes (1, 2, 3). The average diameter of the filaments was determined using a micrometer MK 0-25 0.01 (“Chelyabinsk tool plant”, Russia). The diameter of each sample was calculated after 20 measurements at different points of the test thread. A total of 180 measurements were made. The breaking load was determined by an Electromechanical breaking machine type R 2163 R-50. The total number of breaks is 20 (for each type of thread). Fixation of results, their processing.

**Results and discussion:** Actual breaking load was measured in Newton (H). White twisted: №1= 26.4±4.2; №2=33.3±7.4; №3=28±5.6 blue braided: №1=32.9±6.1 №2=43.2±5.4 №3=42.4±6.6 Variegated impregnated with aluminum chloride with p / e fiber: №1=17.5±4.5 №2=34.8±7.4 №3=35±4.4

The diameter of the filaments was measured in millimeters (mm) of white twisted: №1=0.215±0.017; №2=0.282±0.03; №3=0.363±0.038; blue braided: №1=0.217±0.02; №2=0.313±0.035; №3=0.389±0.04; Variegated impregnated with aluminum chloride with p / e fiber: №1=0.209±0.01 №2=0.314±0.033; №3=0.353±0.041;

**Conclusions:** the studied characteristics of the threads correspond to the declared manufacturer. It should be noted that the thread with polyester fiber is not exposed to fiber. The blue thread contrasts with the surrounding tissues, which will contribute to the careful work of the doctor.

**Keywords:** gingival retraction, retraction threads, dentistry.
**LEVODOPA IN PARKINSON’S DISEASES**

*Deepika Muthukrishnan*

North Caucasian State Humanitarian and Technological Academy, Cherkessk Department of Pharmacology

Scientific supervisor: Z. N. Izhaeva, A. N. Dzhanibekova, Sh. M. Khubiev

**Background:** The Parkinson’s disease affects nerve cell in Brain that produce dopamine. Long term degenerative disorder of central nerve system that mainly affect the motor system. Some of the symptom of this disease slow voluntary movement, decreased facial expression, muscle rigidity, stiffness when the arm, leg or neck moved back and forth, tremor, bradykinesia, postural instability.

**Objective:** To evaluate the outcomes of treatment of Parkinson’s disease.

**Method:** Approximately 523000 people in Russia suffer from Parkinson’s disease, a debilitating condition in which part of the Brain slowly become more damage over many years. Which is caused by loss of nerve cell in a part of Brain called Substantia Nigra. This in turn led to reduction of dopamine in Brain which regulates movement Parkinson’s disease can’t be cured with medicine today. Medicine can’t slow the progression of disease. All anti Parkinson drug are aimed at one thing to remove the symptom and improve the quality of life of the patient.

**Result:** The clinical success was achieved in most patients. L-dopa is cornerstone of Parkinson’s drug therapy. It helps to replenish the brains supply of dopamine, reducing the tremors, other motor symptoms of Parkinson’s disease. It typically helps most with bradykinesia and rigidity but not balances problem.

**Conclusion:** Based on the result of our experience this medicine is more effective for removing side effect.

**Key words:** Parkinson’s disease, Dopamine, Levodopa
FUNCTIONAL MORPHOLOGY OF GUM TISSUES IN PARADONTITISIS IN THE BACKGROUND OF EXPERIMENTAL DIABETES

D.S. Dyukov, Libo Yu. M.
Yaroslav-the-Wise Novgorod State University” (NovSU)
School of Medical Education, Veliky Novgorod, the Russian Federation
Scientific supervisor: D.M.Sc., Professor L. G. Proshina

Introduction: Recently, there has been a progressive increase in the incidence of diabetes is observed. Among patients with diabetes, inflammatory periodontal diseases are common. It has been established that people with diabetes have the most intense periodontal lesion. However, the functional morphology of periodontal tissues in diabetes mellitus is still little studied.

Objective: To investigate the state of gum tissues in experimental periodontitis and the Streptozotocin-Induce Diabetes.

Material and methods: Morphological analysis of gum tissues was observed in male Wistar rats. Periodontitis was caused by the imposition of ligatures around the neck of the lower incisors under intraperitoneal anesthesia. The Streptozotocin-Induced Diabetes was caused by a single injection through the tail vein of a freshly prepared solution of streptozotocin at a dose of 50 mg / kg in 10 mmol citrate buffer (pH 4.5), the injection volume was 0.2-0.25 ml. which controlled the served rats that were in normal conditions in the vivarium. They were as a control sample.

Results and discussions: Experimental periodontitis caused the development of the inflammatory process: there were swelling and hyperemia of gum tissues. The morphological picture of the wing gums was highlighted as a result of destructive changes in the epitheliolytic spine located at a considerable distance from each other. There was edema of the perivascular space, disorganization of bundles of collagen fibers in interstitial, thinning of the endothelium of the blood and lymphatic capillaries, and erythrocyte stasis in the micro-vessels. The content of mast cells in the areas of their degranulation along the vessels increased abruptly. Diabetes exacerbated the morphological picture of gum tissues restructuring, there were marked circulatory disorders, desquamation of the epithelium, ingrowth of epithelial processes into its own plate, a large number of inflammatory infiltrates appeared.
Experimental groups of animals with periodontitis and diabetes caused an increase in lipid peroxidation.

**Conclusion:** This research has suggested that there were destructive changes in the tissues of the gums during experimental periodontitis. The work makes it possible to note the obviousness of the pathogenetic rationale for the use of antioxidants in the complex treatment of periodontitis and diabetes mellitus.

**Keywords:** functional morphology, periodontitis, diabetes mellitus.

**INFLUENCE OF REDUCED SALT CONTENT IN THE FOOD RATION ON THE BLOOD PRESSURE OF STUDENTS**

*D.A. Filippova, E.V. Zaiceva*

Tver State Medical University, Tver, Russia
Department of General Surgery
Scientific supervisor: Assistant A.M. Morozov

**Introduction:** High blood pressure (BP) is one of the leading risk factors for the development of coronary heart disease, strokes and terminal kidney damage.

**Objective:** To study the effect of the amount of salt in the diet on students’ blood pressure in order to confirm the theory that a low salt diet is an effective method for lowering blood pressure.

**Materials and methods:** A study in which participated 6 men and 13 women aged from 18 to 30 years.

**Results and discussion:** All participants had normal blood pressure at the beginning of the test. While the experiment, during the month all participants consumed from 5 grams and more of salt per day. In the second month, the subjects completely abandoned the use of salt. Some tried to find a substitute for salt: various salt-free seasonings, red and black pepper, and lemon juice were used.

At the end of the second week there were no changes in the pressure values either. In three of the 19 subjects, the pressure decreased during this week, but it is not possible to associate this fact with the exclusion of salt from the diet.

At the end of the third week, positive dynamics was observed: in 5 subjects, blood pressure dropped by three to four points compared with the results of three weeks ago, that is, compared with the data obtained in the first month of the study.
On the fourth week of the low-salt diet, it was found that in 4 of the 19 subjects tested, the pressure for the month without salt dropped more than the rest of the experiment participants. In 15 people, the pressure changed insignificantly during the month. A group of people whose pressure has hardly changed can be divided into two small subgroups: in the first subgroup there were people whose refusal of salt did not affect blood pressure reduction. The second subgroup – people with minor changes in pressure.

In the course of the experiment, we could not prove the direct effect of salt in the diet on blood pressure. The most likely theory seems to us about individual sensitivity to salt. However, the question of the rationality of prescribing a low-salt diet is still open.

**Conclusions:** 1/5 of the participants in our experiment turned out to be salt-sensitive, which means that a low-salt diet will be effective if they develop hypertension, the rest of the subjects will not be affected by a low-salt diet. Thus, the definition of salt sensitivity in a patient will optimize individual antihypertensive therapy.

**Keywords:** high blood pressure, salt.

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**SURGICAL TREATMENT OPTIONS FOR CONGENITAL HIP DYSPLASIA**

*A.V. Golushko*

Yaroslav-the-Wise Novgorod State University,
Veliky Novgorod, Russia

Department of Human Morphology

Scientific supervisor: D.M.Sc., Associate Professor *M.D. Kashaeva*

**Introduction:** According to the WHO, 3% of children with hip joint dysplasia are born every year in the world, in Russia there are 4 cases per 1000 newborns. The number of relapses after primary operations is 60%.

**Objective:** To improve the outcomes of hip dysplasia by selecting the most appropriate treatment approach.

**Materials and methods:** The results of the treatment of hip dysplasia in patients aged 3 months to 12 years for the years 2014-2017 are analyzed. 32 patients at the Regional Children’s Clinical Hospital in Veliky Novgorod (A) and 78 patients at the Institute of Mother and Child Health Care in Chisinau (B).
The patients were divided into three groups according to the degree of hip dysplasia. Group 1: children aged 3 months to 2.5 years (grade I dysplasia): 22 patients in Novgorod and 45 patients in Chisinau. Conservative treatment: the Pavlik harness was used from 1 month of age and was removed at the age of 6 months. This was followed by Schede traction procedure for 7-14 days. Group 2: children aged 2.5 to 5 years (grade II dysplasia): 7 patients in Novgorod and 23 patients in Chisinau. Group 3: children aged 5 to 12 years (grade III dysplasia): 3 patients in Novgorod and 10 patients in Chisinau.

Results and discussions. Group 1. The hip repositioned spontaneously in 12 (A1) and 25 (B1) patients. In the remaining patients, a plaster bandage was applied with full abduction of the hip for 3 months. The pathology was eliminated in 8 (A1) and 15 (B1) patients. In 2 (A1) and 15 (B1) patients, the femoral head was repositioned under anesthesia with subsequent application of Vilensky abduction splint for 3 months. Group 2. 7 (A2) patients underwent semicircular acetabuloplasty in combination with corrective shortening Dega osteotomy. 2 patients had relapses due to damaged growth plate. The recovery time was 10 months. Open reduction with Salter’s osteotomy and femoral corrective shortening osteotomy was performed in 23 (B2) patients. The deformity relapsed in 6 patients due to acetabulum fragment effusion. The recovery time was 8 months. Group 3. 3 (A3) patients underwent femoral support abduction osteotomy. 2 patients had relapses due to aseptic necrosis of the femoral head. The recovery time was 15 months. 10 (B3) patients underwent triple pelvic osteotomy in combination with femoral corrective shortening osteotomy. 4 patients had relapses due to aseptic necrosis of the femoral head. The recovery time was 12 months.

Conclusions. The treatment of hip dysplasia should be started as early as possible and should involve combination therapy. The recovery time and rate of relapses with mild to moderate hip joint deformities were equal in both groups. In case of severe deformities, the optimum method of palliative treatment is triple pelvic osteotomy in combination with femoral corrective shortening osteotomy (used in Chisinau) which results in reduced rate of relapses and shorter recovery time.

Keywords: dysplasia, hip, deformity.
THE ASSESSMENT OF DENTAL HEALTH OF STUDENTS
BY THE METHOD OF QUESTIONING

S.A. Gontarenko, E.K. Chikareva
Federal State Autonomous Educational Institution of Higher Education “Belgorod National Research University”, Belgorod, Russia
Department of Orthopedic Dentistry
Scientific supervisor: D.M.Sc., Professor Ryzhova I.P.

Introduction: Among the younger generation, students represent a special social group characterized by specific living conditions. Therefore, we can suggest that dental diseases are widespread among students.

Objective: Check out the dental health of BSU students and analyze the results.

Materials and methods: 120 students answered 40 questions from a questionnaire about their dental health. The results of questionnaire presented as diagrams and tables.

Results of research. 41% of respondents rate the condition of the oral cavity by 3 points on a scale from 0 to 5. 46.7% of students go to the dentist for preventive purposes, while 26% come because of acute pain. 59% believe that they do not know enough about oral care, 23% consider their knowledge sufficient. The preventive measures aimed at preventing the occurrence of caries resorted to the majority of respondents – 83%. 60.8% of respondents – do not smoke, 22.5% smoke daily, the rest either smoke several times a month, or use electronic cigarettes. They consume alcohol 2-3 times a week – 6.7%, once a month – 28.3%, and 25% less often than once every six months, or not at all.

Conclusions. The health of the teeth and oral cavity are important components of human health. That analysis show us the importance of hygiene education of our patients.

Keywords: Prevention, students, questioning, youth, smoking, alcohol, hygiene, teeth, dentistry.
LONG-TERM RESULTS OF ELECTROMYOGRAPHIC RESEARCH DATA IN PATIENTS WITH FULL REMOVABLE PROSTHESES
S.D. Grishechkin, K.G. Seferyan, M.S. Grishechkin, E.V. Izhnina
Kuban State Medical University, Krasnodar, Russia

Introduction: According to the observation of the treatment results of patients with a complete absence of teeth, it is known that optimal restoration of the chewing function is achieved with careful observance of the requirements for the manufacture of full dental prostheses. At the same time, prostheses acquire good stability in the prosthetic bed, which leads to a decrease in the time of one chewing movement, a decrease in the number of chewing movements and, as a result, a reduction in the time of the entire chewing period.

Objective: The analysis of patients electromyography data with full dental prostheses made 3 years ago according to the generally accepted and developed method.

Materials and methods: For the study of electromyography data, two groups of patients with full dental prostheses made 3-4 years ago were formed. The control group for 13 people consisted of people with prostheses made according to standard methods. The main group of the examined patients consisted of 17 patients whose prostheses were made according to the proposed method. The average age of patients in both groups was 63 ± 2.5 years.

Results and discussion: Long-term (3-4 years) results of research data in patients with adverse clinical conditions of prostheses using full dentures showed that the contractile ability (Aszh) of the chewing muscles proper is higher in patients using full prostheses made according to the proposed methods, compared with patients to whom prostheses were made by the conventional method, and is equal to 204.00 ± 10.2 μV in patients of the main group and 200.00 ± 10.2 μV in patients of the control group. A similar trend was observed in the study of the temporal muscles, where the AJ in the main group of patients was 178 ± 9.13 μV and 175.00 ± 9.9 μV in the control group. In addition to the increase in aszh, the chewing amplitude of the chewing muscles proper increased to 167.00 ± 10.10 μV and 160.00 ± 8.60 μV, respectively.

Analysis of electromyographic activity indicators revealed that in both main and control groups the time of bioelectric activity is longer than the time of bioelectric “rest”. This had a direct impact on the value of the “K” coefficient, which in patients of the control group was 1.25±0.03
seconds and 1.08±0.04 seconds. During the observation, it was revealed that in the control group patients the tendency to normalization of the inhibitory and excitatory processes occurred 2 times faster than in the main patient. It was noted that patients of the main group, the value of the coefficient “K” was close to that of people with intact dental rows.

**Conclusion:** Thus, it was found that patients using full dental prostheses made according to improved methods, the number of chewing movements is less than in the control group 28.00±1.00 and 33.00±2.00; reduced the time of one chewing movement from 0.74±0.06 seconds to 0.80±0.08 seconds. Together, this reduced the chewing period time to 21.20±0, 34 seconds, and 24.10±0.35 seconds.

**Keywords:** electromyography, complete absence of teeth, chewing muscles

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**CONTAMINATION OF DRIED FRUIT BY BIOLOGICAL AGENTS**

*Ye. A. Khodakova, A.A. Solovieva, N.A. Nolfin*

Chita State Medical Academy, Chita, Russia


**Introduction:** Biological contamination of dried fruit is an important problem as a source of transmission of some infectious agents. According to WHO statistics, about 1.5 billion people in the world, or almost 20% of the world’s population, are infected with helminthes infections.

**Objective:** We aimed to study the contamination of dried fruit sold in the retail network in Chita by biological agents.

**Materials and methods:** We bought different fruit per 100 g (32 samples) in retail outlets located in different parts of the town. All dried fruit were delivered from Uzbekistan, Tajikistan, China, and Iran. To study the contamination by helminthes, the methods of Vasilkova, Kotelnikov-Khrenov were used. The viability of helminthes eggs was determined by microscopy. Bacteriological analysis of dried fruit microflora was carried out in the bacteriological laboratory of Chita State Medical Academy clinic. The identification of isolated microorganisms was carried out according to morphological (gram staining) and cultural characteristics, the nature of growth on nutrient media (blood agar, yolk-salt agar, Endo agar, Levin agar, Ploskirev...
Biochemical properties were investigated using biochemical tests on polystyrene plates – PPDE, PBDS).

**Results:** In the studied samples of dried fruit (Uzbekistan, Tajikistan) were found: 1) Ascaris lumbricoides eggs, the intensity of contamination were 20 eggs per kilogram of weight. Among the eggs, 30±1.2% were unfertilized (no threat to infection); 70±09% of the eggs were fertilized and retained all morphological structures. 2) Toxsocaracanis eggs, the intensity of contamination was 28 eggs per 1 kg of weight, all eggs retained the integrity of the morphological organization. The dried fruit were contaminated with fragments of the bodies of insects (Diptera), and a large number Gamanovich mites. The pollution intensity was 120 ticks per 1 kg of weight. Samples of dried fruit from China were “clean”. In dates from Iran found alive insect larvae, the definition of which caused difficulty. Study of the bacteriological analysis showed contamination by Staphylococcus Saprophyticus was $10^3$ per 1g (33.2 %), Candida fungi – $10^4$ per 1 g (33.2 per cent), Escherichia Coli – $10^3$ per 1 g (25. per cent), Staphylococcus Lentus – $10^2$ per 1 g (8.3 per cent).

**Conclusions:** To prevent the occurrence, spread of mass infectious diseases (poisoning) it is recommended its proper treatment. The presence of viable eggs in non-compliance with the rules of treatment can lead to infection with ascariasis and toxocarosis, and the presence of arthropods and their fragments can result in intestinal miases and allergic reactions, especially in children. The presence of live larvae in food can cause intestinal miases in humans.

**Keywords:** contamination by biological agents, dried fruit, helminthes infections

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FEATURES OF SPEECH DELAY RISK FACTORS IN CHILDREN

*A.V. Leonova*

Tyumen State Medical University, Tyumen, Russia

Scientific supervisor: T.V. Rayeva Head of Department of Psychiatry and Addictology, D.M.Sc., Professor of the Department of Psychiatry and Addictology of the Tyumen State Medical University

**Introduction:** According to statistics indicators of recent years the number of children with speech delay is growing. The primary detection of the problem occurs at the stage of visiting the district pediatrician, who should be wary of this pathology. Studying risk factors in development
of speech delay in children remains an urgent problem which solution will allow developing and holding effective treatment.

Objective: To determine the prevalence and nature of risk factors for the occurrence of speech delay in children.

Methods: 150 children with speech delay were studied by clinical follow-up method.

Results: The most common factor was increase in the age of parents (over 35 years old) – 64%, the prevalence of speech delay among couples over 40 years was in ¾ cases. Extragenital diseases of mothers were in 32%. Pregnancy and childbirth pathology represents: toxicosis in 27%, acute infectious disease in 22%, threatened miscarriage in 9%; premature birth in 29%; post-term pregnancy in 7%; birth abnormalities in 54%; newborn hypoxia/asphyxia in 60%. The use of alcohol, tobacco, narcotic substances was detected in 3% of mothers. 17% of the examined children were suffering from neuroinfection in age 0 to 1 year old, 11% – craniocerebral trauma. The heredity on speech pathology was found in 8% of children with speech delay.

Conclusions: According to the study the most common cause of speech delay is an increase age of parents (35 years or more). However, the speech delay is caused not only by one factor, but their set (3 and more), exerting negative influence on development of nervous system of the child in general and on speech function in particular. There was no found cases of speech delay without any risk factor.

Keywords: speech delay, children, risk factors.

ANALYSIS OF RESULTS OF THE PROGRAMS OF AUXILIARY REPRODUCTIVE TECHNOLOGIES IN THE TYUMEN REGION

M.V. Martynenko, A.S. Zhilina, M.S. Boychenko
Tyumen State Medical University, Tyumen, Russia
Scientific supervisors: Assoc. Professor I. V. Fomina

Introduction: The frequency of infertile marriages in the Russian Federation among the marital reproductive age reaches 17.5%, and has a steady upward trend. The total number of in vitro fertilization (IVF) cycles carried out in Russia is growing, and in 2011 the Russian Federation ranks third among European countries in terms of the total number of IVF cycles performed.

Objective: To study the results of the implementation of in vitro fertilization programs (IVF) in the Tyumen region in 2017.
Methods: A retrospective study was conducted in the family planning department of the “Perinatal Center”, Tyumen. 786 IVF programs were analyzed. The study material was a medical record of patients who applied to the family planning department. Static processing of the material was carried out using Microsoft Office Excel.

Results and discussions: The number of patients who received treatment using IVF was 786 over the period February-December 2017 at CJSC “Malysh” Medical Center; February-August 2017, September-November 2017 at ICRM “Mercury”; September-November, June-August 2017 at LLC “Mother and Child”, conducted at the expense of MIC. The following programs were used: IVF – 55 cases (7%) and IVF + ICSI practices – 731 cases (93%). Comparison of conductivity according to the following indicator: age, diagnosis, pregnancy rate (CNB), mode of delivery, the presence of complications. The study included 786 patients aged from 26 to 47 years after IVF or IVF + ICSI. Taking into account the age, all the examined patients were divided into 3 groups. The first group included 12% at the age of 20-30 years old, the second – 78% at the age of 31-40 years old, the third group included 10% at the age of 40 and older.

Conclusions: The obtained data on the effectiveness of IVF programs carried out in the Tyumen region at the expense of MIC, agree with the worldwide. Thus, the effectiveness of IVF, expressed as a percentage of pregnancies as a result of IVF and IVF + ICSI programs, is 37.2%; birth and birth of living children ended with 28.6% of completed IVF programs, or 77% of the number of pregnant women.

Keywords: IVF, ICSI, obstetrics, gynecology.

THE EVALUATION OF EFFECTIVITY OF KINESIO TAPING APPLICATION IN THE EARLY REABILITATION OF PATIENTS AFTER ORTHOGNATHIC SURGERY TREATMENT

A.V. Mikhaylov, E.G. Zaretskaya

Moscow State University of Medicine and Dentistry, Russia
Department of Maxillofacial and Plastic Surgery

Introduction: In the early period after orthognathic surgery treatment there was the expressed edema of the facial soft tissues.
The fact of the edema presence prolongs the period of the patients’ rehabilitation. Kinesio taping is a relatively new method of restorative treatment in the Russian medicine. Therefore, the work has begun to study the possible advantages of kinesio taping in the patients’ rehabilitation in the maxilla-facial surgery and surgical stomatology.

**Materials and methods:** 34 patients with skeletal anomaly and the deformity of dentitions caused by the dyscrasia of the dentures dimension and the form were selected. All patients’ maxillo-facial areas in the pre-surgery stage were photographed, ultrasonography of the both side facial soft tissues were also made.

The Group of inclusion: male and female patients who underwent surgery due to the mesial and distal occlusion in the gnathological form. All patients were missing absolute contraindications to surgery. The group of non-inclusion: the patients who refused to participate in the scientific research. The group of exclusion: patients who underwent surgery due to the other problems and also having absolute contraindications to the surgery. All patients had finished orthodontic stage of the treatment which was aimed to the dental arch alignment to create the optimal conditions for the orthognathic surgery treatment. All patients in the after-surgery period were prescribed similar anti-edema medicamentous therapy.

21 patients with mesial and distal occlusion were imposed the applications of the kinesio tapes to the one side of the middle and lower third of the face at the moment of the surgical treatment termination with the aim to facilitate lymph drainage to the nearest regional lymph nodes (infraclavicular, supraclavicular) to reach the anti-edema effect. Ultrasonography control and photometry were done at the 3-rd and the 7-th days after the surgery, the analysis of the side edema expression with the fixed tapes with the side free from applications was performed.

**Results:** In the after-surgical period all patients with distal occlusion had edema of the soft facial tissues, however 24 patients at the part with the fixed tapes had expressed reduction of the edema in comparison with the untapped side.
THE MORPHOLOGICAL CHANGES OF PARATHYROID GLANDS DURING CHRONIC ENDOGENOUS INTOXICATION

Mohamed Mohsen M. Amin
Pyatigorsk Medical Pharmaceutical Institute of Volgograd Medical State University, Pyatigorsk, Russia
Scientific supervisor: PhD, Associate Professor L.V. Polyakova

Background: With the development of intoxication syndrome, the toxic compounds affect the individual organ or they have a systemic toxic effect. There are two types of toxins, exogenous and endogenous ones. Exogenous toxins are present in environment (industry, household chemicals, etc.) whereas endogenous toxins are produced as a result of our metabolic imbalance and diseases related primarily to the impaired functions of liver and kidney. With repeated short exposure or chronic continuous exposure to the toxic agent, the damages become much severer, and this can lead to the secondary effects affecting the non-target organs such as parathyroid gland and followed hormonal imbalance produces negative effects.

Objective: To study the morphological features of the parathyroid gland in chronic endogenous intoxication.

Materials and methods: The study was performed on white male rats (Wistar strain), 200 g weigh. Simulation of chronic endogenous intoxication was produced by the intraperitoneal injection of bacterial lipopolysaccharide (LPS) once a week in a dose of 0.2 mg / kg and by the oral administration of carbon tetrachloride (hepatotoxic effect) in a dose of 0.5 ml / kg on a daily basis during one month. A routine histological tissue processing of the parathyroid glands was performed. This was followed by hematoxylin and eosin staining. Microscope Leica DM 1000 was used for the slide imaging and micrograph analysis.

Results and discussion: Microscopically, the morphological findings include the dystrophic changes of the individual chief and oxyntic cells and the dilation of microcirculation. The cell degeneration is characterized by the small-drop vacuolization of the cytoplasm of parenchymal cells. The stroma morphology is no different than the control group.

Conclusion: In chronic endogenous intoxication, the parathyroid tissue changes are nonspecific and reversible. Parathyroid glands are
involved in systemic mechanisms of adaptation to the endogenous toxins.

**Keywords:** morphology, chronic endogenous intoxication, parathyroid glands.

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**ENZYME AND INNOVATION**

*Narayanareddi Rathankumar*

North Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia
Department of Chemistry
Scientific supervisors: **D.T. Dzhatdoyeva**

**Background:** Thousands of chemical reactions proceed very rapidly at any given instant within all living cells of an organism. Virtually all of these reactions are mediated by remarkable molecular devices called enzymes.

**Objective:** The study of role of enzymes in metabolism. The use of innovative systems in solving problems caused by changes in pancreatic functions.

**Result:** Enzyme, a substance that acts as a catalyst in living organisms, regulating the rate at which chemical reactions proceed without itself being altered in the process. A large enzyme molecule is composed of one or more amino acids chains called polypeptide chains. If the enzyme is subjected to changes, such as fluctuations in temperature or pH, the protein structure may lose its integrity (denature) and its enzymatic ability.

Enzymes catalyses an enormous diversity of biochemical reactions due to their capacity to specifically bind a very wide range of molecules. Despite abundant knowledge of the regulation and biochemistry of glycolytic enzymes, we have limited understanding on how they are spatially organized in the cell. The newest evidence indicates that not cyclic metabolic enzymes regulating diverse ways can assemble into polymers. The cell biology of cytosolic metabolic enzymes, particularly their spatial organization, is critical for understanding normal and dysregulated metabolism but remains relatively understudied. Insulin destruction occurs under the action of the enzyme insulinase mainly in the liver and to a limited extent in the kidneys. The dependence of metabolism from enzymes is indisputable.

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**Conclusion:** These findings reveal a new behavior of a key glycolytic enzyme with insights on spatial organization and isoform-specific glucose metabolism in cells.

Insulin has profound effects on both carbohydrate and lipid metabolism, and significant influences on protein and mineral metabolism. Consequently, derangements in insulin signalling have widespread and devastating effects on many organs. Artificial pancreas was the only solution but the Nobel prize laureate 2018 opens up new prospects in this. Frances H. Arnold of the California Institute of Technology received half of the Nobel Prize for the method of directed evolution of enzymes in 2018.

**PRIMARY RESULTS OF THE APPLICATION OF MHEALTH TECHNOLOGIES IN THE TYUMEN REGION ON THE EXAMPLE OF ECG MONITORING**

*D.M. Niginskiy, N.S. Brynza, A.P. Potapov*

Tyumen State Medical University, Tyumen, Russia

Scientific supervisor: D.M.Sc., Associate Professor **N.S. Brynza**

**Introduction:** Only in 2018, 1.41 billion mobile devices with the ability to access the Internet were sold. In this regard, the developments in the use of mobile devices in healthcare have occurred. The interest of researchers has led to formation of a new direction in medicine – mHealth. At the moment, technologies allow to monitor successfully the level of glucose, RR, heart rate, blood pressure, ECG. In the published scientific materials, great attention is paid to the development of ECG telemonitoring. Many authors admit that ECG assessment allows to recognize quick the acute conditions requiring emergency assistance, as well as to detect changes that can lead to acute cardiac abnormalities.

**Objective:** to show the relevance of the implementation of mHealth technology in the therapeutic practice of the Tyumen Region, showing the initial results of the use of remote ECG monitoring.

**Materials and methods:** Description of cardiograms of 502 patients in the period 01.01.2018-01.03.2019 in various medical organization of the Tyumen Region, analyzed with a remote server installed in the regional hospital.

**Results:** After analyzing the data, it is noted that the method had a divergence in ECG results interpretation in 55 cases of 502
cardiograms. 19 cardiograms of 55 were not interpreted with a server in due to the violation technique of ECG registration, and 36 ECG had no acute pathology at analysis. When using the method, 6 acute myocardial infarctions, 32 myocardial infarctions in the subacute stage were detected.

**Conclusion:** The use of mHealth technologies allows remote medical organizations to consult in central organizations. Electronic analysis gives a high assessment of the results, subject to the rules of cardiography. Remote ECG monitoring allows to evaluate quickly several cardiograms at once at one moment.

**Keywords:** mHealth technology, remote monitoring, ECG monitoring, the ECG telemonitoring.

**VEGETARIAN NUTRITION**

*Noufal Thendath, Vaishnavi Murugan*

North Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia

Department of Propaedeutics of Internal Medicine

Scientific supervisors: **S.M. Kotelevets, V.J. Sarithala**

**Introduction:** Vegetarian diets have been shown to promote the regression of coronary lesions, even in patients not using lipid-lowering drugs, insulin resistance and reduce body weight, but the effects on nonalcoholic fatty liver require further confirmation.

**Objectives:** We aim to investigate the association between vegetarian diets, major food groups, and nonalcoholic fatty liver, and to compare the degree of liver fibrosis between vegetarians and non-vegetarians in those with fatty liver.

**Materials and methods:** We analyzed cross-sectional data from the Karachay-Cherkessk region which included 120 non-vegetarians and 71 vegetarians who did not smoke or habitually drink alcohol and had no hepatitis B or hepatitis C. Fatty liver and liver fibrosis were determined using ultrasonography and the non-alcoholic fatty liver disease fibrosis score, respectively. Diet was assessed through a validated food frequency questionnaire.

**Results:** Vegetarian diets were associated with lower odds of fatty liver $p<0.05$ after adjusting for age, gender, education, history of smoking and alcohol drinking. Adjustment for body mass index (BMI) attenuated
the protective association. Vegetarians had less severe fibrosis than non-vegetarians. Replacing a serving of soy with a serving of meat or fish was associated with 12%-13% increased risk, and replacing a serving of whole grains with a serving of refined grains, fruits, and fruit juice was associated with 3%-12% increased the risk of fatty liver.

**Conclusion:** Vegetarian diets, replacing meat and fish with soy, and replacing refined carbohydrates with whole grains, may be inversely associated with nonalcoholic fatty liver related to BMI.

**Keywords:** Body mass index, food substitution analysis, liver fibrosis, NFLD, vegetarian

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ANALYSIS OF PHOTOCOMPOSITE CONSUMPTION IN RESTORATION OF MASTICATORY TEETH

**K.A. Novikova, E.A. Yemtsova**
Chita State Medical Academy, Chita, Russia
Department of Propedeutics
Scientific supervisors: C.M.Sc., Associate Professor N.V. Plyaskina, C.Ph.Sc., Associate Professor Yu.G. Solovieva

**Background:** Restorative polymer materials are widely used in dental practice. The issue of photocomposite consumption depending on the volume of hard dental tissue loss is very significant due to its high cost.

**Objectives.** The purpose of the work is to develop an operative table of photocomposite consumption indicators in relation to the area of crown decay and depth of the carious cavity of premolars and molars belonging to I and II class according to Black.

**Materials and methods.** We made the I and II class carious cavities preparation of 52 extracted premolars and molars. The cavities corresponded to superficial, median and progressive caries as well as to trepanated cavities in pulpless teeth. The index of occlusal surface lesions (IOSL) was evaluated with V.Yu. Milikevich’s indirect method (Milikevich, 1984): with the help of transparent plate with millimeter net on it, the carious cavities corresponded to IOSL 0.2 – 0.5 in superficial and median caries; 0.3-0.5 in progressive caries and 0.5-0.6 in pulpless teeth. Then we restored the teeth with photocomposites and silicon index made individually for every tooth. The teeth were weighed on the electronic scales Filtek, Spectrum, Prismafil (VK-150, division – 5 mg)
before and after filling to estimate material consumption. The difference between the second and first measurements indicated the material weight. The data obtained were statistically processed with the variance analysis. The critical level of significant difference was p=0.05.

**Results and discussion.** The volume and weight of the filling increased due to the enlargement of the area and depth of a carious lesion. So, the filling weight for the I class cavity in premolars varied from 15 to 180 mg. and from 20 to 200 mg. for the II class (p<0.05). In molars, the variations were from 20 to 375 mg for the I class and from 35 to 400mg for the II class. In IOSL increase the filling weight was heavier than that in premolars twice or even more (p< 0.05).

**Conclusion.** 1. The consumption of a filling material correlates directly to IOSL and the depth of a carious cavity. 2. The data obtained can be used in formation of annual requirements for materials within the compulsory medical insurance system and calculations of medical care provision within a private practice system.

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**EVALUATION OF PHOTOCOMPOSITE CONSUMPTION IN RESTORATION OF FRONT TEETH**

*K.A. Novikova, E.A. Yemtsova*

Chita State Medical Academy, Chita, Russia

Scientific supervisors: C.M.Sc., Assoc. Professor *N.V. Plyaskina*,
C. Phil. Sc.
Assoc. Professor *Yu.G. Solovieva*

**Introduction:** The number of photocomposite materials in restorative dentistry is constantly increasing. The issue of composite consumption depending on the volume of hard dental tissue loss is very significant due to their high price. Similar studies in the available literature were not found.

**Objective:** The purpose of the work is to develop an operative table of photocomposite consumption in restoration of incisors and canines of both jaws depending on crown lesions.

**Materials and methods:** We made the preparation of 60 extracted incisors and canines on phantoms to receive typical carious cavities. The destruction of the incisal edge and crown angle was evaluated with M.L. Melikyan’s classification of frontal teeth defects (2010). The prepared cavities were corresponded to: I class – horizontal defect of
the incisal edge, depth up to 2mm; II class– horizontal defect up to 1/3 of the crown height; III class – destruction of the crown up to 1/2 of the height; IV class – defect of the angle and incisal edge up to 2/3 of the crown height; V class – a complete lack of the crown. Then we restored the teeth with photocomposites Filtek, Spectrum, Prismafil and silicon index made individually for every tooth. The teeth were weighed on the electronic scales (VK-150, division – 5 mg) before and after filling to estimate material consumption. The difference between the second and first measurements indicated the material weight. The data were obtained statistically with the variance analysis. The critical level of significant difference was p=0.05.

**Results and discussion:** The filling weight increases in correlation with the increase of class (defects) and the crown size (the upper lateral incisor and lower incisors are the smallest, the upper central incisor is the biggest, the upper and lower canines are average). The filling weight varies from 15 to 90 mg for the lateral incisors of both jaws, from 20 to 140 mg for canines (the difference between the upper and lower jaw is not significant). The variation for the central incisors of the upper jaw is from 30 to 200 mg. The filling weight in the upper central incisor is more than twice heavier than in lateral incisors in case of the increase of class (p< 0.05).

**Conclusion:** 1. The consumption of a filling material correlates directly to defect class, IOSL and the depth of a carious cavity. 2. The obtained data can be used in formation of annual requirements for materials within the compulsory medical insurance system and calculations of medical care provision within a private practice system.

**Keywords:** photocomposite materials, composite consumption, filling material.

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**INVESTIGATION FOR BENEFITS OF MINIMALLY INVASIVE SOFT TISSUES COUNTOURING AT THE SUBMENTAL AREA FOR YOUNG PATIENTS**

*S.V. Petrosyants, A.I. Beresnev*

Novosibirsk State University, Novosibirsk, Russian Federation
Department of Surgical Diseases, Plastic Surgery Division
Scientific supervisor – C.M. Sc. **P.V. Rogazhinskas**

**Background.** The problem of managing for young patients with defects in the soft tissue contours at the submental area is advanced, due
to the complexity and uncertainty of the choice of aesthetic correction tactics, the imperfections of the algorithm searching for optimal intervention, as well as the high risk of choosing aggressive surgical tactics.

**Objective.** Identify the benefits and of minimally invasive techniques for the elimination of the soft tissue contour defects at the submental area for young patients.

**Materials and methods.** A prospective controlled clinical trial is based at the Clinic of Doctor Rogazhinskas LLC from 2017 to 2019. 12 patients aged 25-44 years, females. Diagnosis – contours defect of the soft tissues at the submental area. Patients of group I (n = 6) underwent a lateral platysmoplasty, in group II (n = 6), superwet liposuction of the submental area was used, and the installation of threads for suspension of tissues on a musculoskeletal base at the follow step of the correction. Exclusion criteria: infectious diseases, SDCT, oncological pathology in history, pregnancy, refusal of the patient or the inability to perform the study protocol. Estimated parameters: quality of life (SF-36), pain profile (VAS) and need for NSAID, aesthetic satisfaction by the result (FACE-Q questionnaire). Statistical data processing is the U-criterion of Mann-Whitney (bioSTAT).

**Results and discussion.** When analyzing data on the quality of life in the form of SF-36, the average total values were 78.7 in group I, 89.8 in group II (p≤0.05). The values of pain in the group I amounted to 6.2, in the II group – 2.7 (p<0.05). The index of need for NSAID (Ibuprofen 400 mg + Paracetamol 325 mg) in group I was 3/2, in group II, 2/1 (p<0.05). Aesthetic satisfaction by the result of the intervention did not have statistically significant differences and amounted to 2.0 points (p≤0.05) in both groups of the study.

**Conclusion.** There are higher rates of quality of life, less pain and less need for anesthesia after the intervention in patients of group II of the investigation with an equal aesthetic satisfaction by the result in both groups of the study. The advantage of the proposed method of correction of the soft tissue contours at the submental area is revealed – minimally surgical aggression for patients.

**Keywords:** Submental area, rejuvenation, neck, neck contouring, neck lift
ASSESSMENT OF EFFICIENCY OF VACCINES AGAINST FLU AMONG ADULT POPULATION IN THE MUNICIPAL MEDICAL AUTONOMOUS AUTHORITY “CITY POLICLINIC № 3” OF TYUMEN DURING 2016–2018

A.A. Rychkova

Tyumen State Medical University, Tyumen, Russia
Scientific supervisor: C.M.Sc., Senior Teacher N.E. Zolnikova

Introduction: Influenza vaccines are actively used to diagnose and prevent the urban population in the season of ARVI.

Objectives: Assessment of the effectiveness of vaccines against influenza among the adult population on the basis of MMAU “City Polyclinic № 3” of Tyumen during 2016 – 2018.

Materials and methods: The study was carried out among the adult population, geographically attached to the MMAU “City Polyclinic № 3” of Tyumen: for 2016 – 38,998 people; for 2017 – 39 173 people; for 2018 – 39,291 people.

Results: The effectiveness of vaccines is assessed according to the following criteria: 1) Analysis of the implementation of the preventive vaccination plan against influenza: in 2016 – 103 %, in 2017 – 2018 – 100 %; 2) Evaluation of immunization of vaccines according to the documents was carried out according to the method of Professor N.I. Briko. Thus, in 2016: Ci (coverage inoculations) – 37.2 %; in 2017: Ki – 43.1 %; in 2018: Ki – 45.1 %; 3) The preventive efficacy of vaccines is assessed in accordance with Annex 6 to MI (methodical instructions) 3.1.3490-17 by calculating the index of efficiency (IE) and the coefficient of efficiency (CE). Thus, in 2016: IE = 3.5, CE = 71.4 %; in 2017: IE = 7, CE = 83.3 %; in 2018: IE = 6, CE = 85.7 %.

Conclusions: 1) On calculation results, in 2016 a plan of preventive inoculations was fulfilled for 3% due to the wrong planning of inoculations. 2) Indicators of coverage of vaccination against flu in target groups of adult population during 2016 – 2018 correspond to the established standard. 3) It was established that in 2016 incidence among vaccinated was below, than incidence among not vaccinated by 3.5 times, in 2017 – by 6 times and in 2018 – by 7 times. 4) Specific weight of vaccinated persons which protection against an infection was provided by vaccination against flu in 2016 was 71.4 %, in 2017 – 83.3 %, in 2018 – 85.7 %.

Keywords: vaccination, monitoring, quality, efficacy, safety.
EXPERIMENTAL IMPAIRMENT OF SCIATIC NERVE’S NEUROTROPHIC FUNCTION: CHANGES IN MUSCLE AND SKIN

Savelyev E.S.
Yaroslav-the-Wise Novgorod State University
Institute of Medical Education
Scientific supervisor: Senior Lecturer of General Pathology Department Y.Y. Rumyantsev

Introduction: Neural trophic control is needed to maintain a certain level of metabolism in organs and tissues. Trophogenic influence of the nervous system is executed through special growth factors, called “trophogenic factors”. Some of them are: nerve growth factor, neurotrophic factors, opioid growth factor, substance P, β-endorphins, insulin-like growth factors, acetylcholine, catecholamines.

Objectives:
1. Observation of the lower limb with impaired axonal current due to ligation in the sciatic nerve.
2. Observation of the expected appearance of skin ulcers and effect of treatment.
3. Morphological examination of the epidermis with manifestations of neural dystrophy due to axonal current fault.

Materials and methods: The experiment was conducted by the European Convention for the Protection of Animals used in the experiment (Directive 86/609 / EEC) and the Order of the Ministry of Health of the Russian Federation from 19.06.2003 №267 “On approval of the rules of good laboratory practice” in nondescriptive male rats. Impaired axonal current was created by surgical ligation of the sciatic nerve. Rat developed cutaneous ulcer and received Combilipen treatment for 2 weeks once a day – intraperitoneally administered, 0.01 ml per kg of body weight (dilution in 1 ml of saline).

Results and discussion:
During two weeks following after surgical ligation of the sciatic nerve:
1. Surgical wound healed without suppuration.
2. Loss of sensitivity occurred in area distal to ligature.
3. Extensor muscle’s paralysis was observed.
4. Cutaneous ulcer formed on posterior/lateral talocrural region. During Combilipen treatment ulcer decreased in size.
5. Morphological study revealed dystrophic changes in the epidermis on the 2nd week of the experiment.

6. Decrease in muscle volume occurred (visual observation), compared with the healthy limb.

**Keywords:** trophogenic factors, axonal current, cutaneous ulcer.

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**ANALYSIS OF VIOLATIONS OF EXCHANGE PROCESSES IN ADOLESCENTS WITH DIABETES MELLITUS**

*K.V. Savvateeva, A.B. Balzhinimaev, V.K. Konstantinov*

Chita State Medical Academy, Chita, Russia

Scientific supervisors: C.M. Sc., Assoc. Professor *N.V. Solovyova*, C. Ph. Sc., Associate Professor *T.L. Zenkova*

**Introduction:** One of the most actual medical and social problems of modern society is diabetes mellitus which is over the past two decades has become “younger”. Even more often such diagnosis becomes already in adolescence and even in childhood. The relevance of a problem is quite high especially among girls’ teenagers. The unhealthy diet, emotional stresses, infectious diseases, psychological injuries and genetic predisposition affects.

**Objective:** To estimate changes of indicators of some metabolic ways at teenagers from 13 to 17 years with a diabetes mellitus.

**Materials and methods:** A sample of patients was carried out on the basis of archival materials in the Regional Children’s Clinical Hospital for the period from 2017 to 2018, in total 40 stories of diseases are analyzed. The adolescents were divided into two groups according to gender signs: 1st group – boys, 2nd group – girls. We analyzed the data of biochemical blood tests. The following blood parameters were estimated: glucose, glycated hemoglobin, cholesterol, triglycerides and urine indicators to identify pathological components (glucose, ketone bodies, protein). Statistical data analysis was performed using the STATISTICA 6.1 application software system. The critical level of significance in conducting statistical hypotheses was 0.05. The symbol * indicates differences at p <0.05 in comparing groups with each other.

**Results:** Hyperglycemia of varying severity was observed in adolescents with diabetes mellitus in all cases. The concentration of blood glucose in the 1st group was 12.38 mmol/l, in the 2nd – 10.91 mmol/l (p = 0.047 *). It is obvious that hyperglycemia developed as
a result of insulin deficiency, inhibition of glucose breakdown and glycogen synthesis. The increase of glycated hemoglobin by 65% above normal and respectively in groups – 10.09% and 9.58% (p = 0.04 *) was registered both in boys and in girls. Perhaps, excess of glucose in fabrics, interacting with proteins, changed properties and functions of hemoglobin. And it is one of manifestations of a glucotoxicity. Against the background of a fabric hypoxia growth of sizes of cholesterol was observed that made at boys for 25%, at girls – is 40% higher than reference indicators (p =0.009 *). In adolescents of both groups high values of triglycerides were observed in the blood – to 2.28 mmol/l in boys, and 3.09 mmol/l in girls (p = 0.038 *). Biochemical signs of lipid toxicity were found mostly in girls. Urine tests with a high specific density, glucose and ketone bodies were registered among sick children with polyuria. Practically at all teenagers the glucosuria of different degree of manifestation was noted. At boys the ketonuria appeared only in 15%, and at girls – in 30% of cases. Representatives of both sexes to a diabetes mellitus in addition to deficiency of insulin have a surplus the counter insular hormones: a growth hormone, adrenaline and cortisol (against the background of a stress). Most likely, stimulation of ketogenesis at girls is caused not only a hormonal background, but also various diets including starvation.

**Conclusion:** Biochemical analysis of blood and urinalysis in adolescents with diabetes mellitus allows expanding the possibilities of obtaining information about the state of severity, prognosis of diabetes mellitus and monitoring the effectiveness of the treatment.

**Keywords:** adolescents, diabetes mellitus, analysis of blood and urinalysis, hyperglycemia.

MODERN ROBOTICS SYSTEMS IN MEDICINE

*Seenivasan Sathy Priya*

North-Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia
Department of Chemistry
Scientific supervisor: **D.T. Dzhatdoyeva**

**Background:** Medical robots really change the face of healthcare with the emerging of modern technology. The number of operations in the work is growing at times.
Objective: A key driver for this growth is demand for using robots in minimally invasive surgeries, especially for neurologic, orthopedic, and laparoscopic procedures.

Results and discussion: In 1985, the robotic surgical arm successfully assisted in a delicate neurosurgical biopsy. This marked the first documented robot-assisted surgery. Two years later, the first laparoscopic procedure – a cholecystectomy – was performed using the robotic system. These landmark surgeries opened up the potential for a greater degree of precision in minimally invasive surgeries through the steady, mechanical hand of the robot. Currently, the applications of robotic surgery are rapidly expanding into many fields in healthcare. This can prevent intraoperative infections, since patients can be in a clean room while the physicians operate the robotic surgical equipment from farther away. In the case of AI, the neural network of the brain is similar. After some studies or research on artificial neural networks, researchers say that it is scientifically proven that these networks can diagnose fast & accurate some other diseases includes eye problems, malignant melanoma etc. The other possibility that we could see in the future is the single-incision port.

Conclusion: The biggest advantages of robots are speed and accuracy, two features that are very important for medicine. In the past, surgeons had to make large incisions in order to reach the organs they needed to operate on. Now, the new high-tech robot, called the da Vinci Surgical System, is poised to completely revolutionize surgery once again. In some ways, it already has. It’s also much more precise than even the most skilled doctor with the steadiest hand. Robots ultrasound (RUS) can be defined as the combination of ultrasound imaging with a robotic system in medical interventions. With their potential for high precision, dexterity, and repeatability, robots are often uniquely suited for ultrasound integration. Although the field is relatively young, it has already generated a multitude of robotic systems for application in dozens of medical procedures. For example, future robots will enable procedures not yet possible, and some will begin taking over portions of the surgical procedure from the surgeon.
STUDIES ON THE EFFECTS OF ELECTROMAGNETIC RADIATION IN HUMAN ORGAN SYSTEM AND THE THEORY OF REHABILITATION AND CURE

P.D Shiva Subramaniam

Medical Institute of the North Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia.
Department of Physiology and Pathophysiology
Scientific Supervisor: Assistant Kanipakam Manas Chakravarthy

Background: During the 20th century, environmental exposure to man-made electromagnetic fields has been steadily increasing as growing electricity demand, ever-advancing technologies and other artificial sources. Most biochemical reactions from digestion to brain activities go along the rearrangement of charged particles. For example, the heart, which is electrically active – an activity which can be traced with the help of an electrocardiogram.

The body has sophisticated mechanisms to adjust to the many and varied influences we encounter. But the body does not possess the adequate compensation mechanisms for all biological effects. Changes that are irreversible and stress the system for a long period of time may constitute as a health hazard. Everyone is exposed to a complex mix of electromagnetic radiations both at home and outside premises.

Looking into the study on electromagnetic fields and its effects, in relation with the WHO stated article on the “Effects of electromagnetic waves and effects it has on human body” we look into an aspect of weather we can only take precautions against these health hazards and limit their damage on human body or maybe formulate a rehabilitative or other forms of cure to reduce the hazardous damage to human body to the most minimal, since technology and gadgets have become a part and parcel of human life and development of human civilization.

Aim of the Study: To study the effects of Electromagnetic Radiation in human organ system.

Objective: The main objective of this study is to analyse the effect of various frequencies of radiations. With the help of these studies we aim to maintain various precautions and possible rehabilitation method or possible cure to limit the hazardous effect to minimal for a healthy life span.

Materials and Methods: The study involved 60 human subjects of age group 18-34 who were taken with due consent procedures for
research analysis conducted from September 2018 to still ongoing. These subjects belonged to categories such as students of different majors and employees of various professions.

These subjects were segregated into 3 groups:

Group 1: Consisted of subjects that used gadgets immensely and were exposed more to these radiations (EMR).

Group 2: Consisted of subjects who had minimal or no usage of gadgets but, taken as subjects exposed to radiations in environment (Mobile towers LTE, 2G, WiFi or other such apparatus)

Group 3: For Observational and comparative study were neither limited nor asked to follow any control instructions.

The clinical features or symptoms as a result of immense usage of gadgets and exposure to the radiations (WHO) such as insomnia, improper dietary habits, stress level both on mental and organ level (such as eyes, ears etc.), migraines, irritabilities etc. were noted on group 1, group 2 (comparatively lesser than group 1) group 3 before the start of the study.

Attributes such as Body mass index, usage of spectacles and presence of other unrelated clinical features and diseases were also noted.

The subjects were asked to follow the precautionary methods such as limiting the usage of gadgets, keeping them as far as possible from them when not in use, Ear thing, unplugging mobiles before using them, avoiding Bluetooth headsets etc. as the guidelines (WHO) suggested.

Apart from these they were advised to take certain forms of diets containing high ORAC and super nutrients such as pecans, pomegranate seeds, rosemary, asparagus, blueberries, walnuts, cinnamon, prunes, dates etc.

Rehabilitative and cure method is to reduce the hazard to the minimal level than that of precautionary methods (still ongoing) by new means such as radiation limiting mobile/laptop cases, super nutrient capsules etc. while still looking into other possibilities.

**Results:** Taken on March of 2019 purely based on precautionary and dietary methods shows considerable decrease and differences on the various clinical symptoms in group 1 primarily whom had followed the precautionary instructions regularly but showed decreased productivity on their professional lives (work areas, exam results etc.) due to limitation that was imposed. Whereas group 2 had no or less significant decrease. Group 3 showed no changes.
Results for rehabilitation and possible cure to minimize radiation effects yet to be shown.

**Conclusion:** Human civilization has come to an era where life without technology is not only less productive but also impossible. A precautionary method that just limits the damage or hazardous effect which goes ineffective mostly as the only precaution is to limit the usage and limiting the usage gives less productivity.

Hence, we need to look into a possibility of deflecting or evolving through these hazards through new innovative means of inventions and discoveries to be exposed to such an environment and yet not cause any harmful effects.

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**STUDYING OF MICROBIC ADHESION TO BASIC MATERIALS OF HOT POLYMERIZATION WITH VARIOUS WAYS OF FORMATION**

*V.S. Shtana, A.A. Chekulaeva*

Belgorod State National Research University, Belgorod, Russia
Department of Orthopedic Stomatology
Scientific supervisor: D.M.Sc., Professor **I.P. Ryzhova**

**Introduction:** When determining indications to use of various structural materials for removable prosthetics it is necessary to consider not only data of standard inspections and the patient’s wish, but also a condition of microflora of an oral cavity. The adhesion of microorganisms to an orthopedic design substantially influences a condition of hygiene of an oral cavity that, in turn, has huge value at different local both sharp, and chronic diseases.

**Objective:** To study adhesion of microorganisms to the basic material “Belakril-EGO” with various ways of formation.

**Materials and methods:** Pilot studies on studying of adhesion of microorganisms to basic materials of hot polymerization with various ways of formation were conducted on the basis of OGBUZ “The Belgorod regional clinical hospital of the Svyatitelya Ioasafá” in bacteriological laboratory in vitro by V.N. Tsaryov’s (2003) technique, allowing to correlate quantity of bacteria in test culture caused on a sample of structural material, and quantity of the stuck bacteria at the rate on 1 cm². In an experiment studied in comparative aspect adhesion of microorganisms to the samples prepared from the basic acrylic material “Belakril-EGO”
by method of compression pressing and injection molding in strict accordance with the instruction. As the tested microscopic cultures used aerobic (Candida Albicans (ATCC2091), Escherihiacioli (ATCC25922), Staphylococcus aureus (ATCC25923), Streptococcus Pyogenes (ATCC19615) and anaerobic Prevotella Intermedius (ATCC15033), Fusobacterium nucleatum (ATCC25586), microorganisms. For all these strains, the incubation process lasted the same time: 24 hours and 72 hours. The results were expressed in terms of the decimal logarithm (lg) of the number of colony forming units (CFU).

**Results and discussion:** Indexes of adhesion fluctuated ranging from 0.69±0.02 to 3.591±0.05. According to the obtained data, the index of adhesion for the first period of an incubation in both groups of organisms on all types of basic material rather low, the greatest indicators at Staphylococcus aurous (3.591±0.05) are observed. Values of the index of adhesion of other microorganisms fluctuate at the level of lower than unit that makes low degree of adhesion. On longer terms of an incubation the situation slightly changes. Anaerobic organisms keep steadily low index of adhesion at terms of an incubation both in 24 h, and in 72 h. Namely Fusobacterium nucleatum – 0.69±0.02 and 1.176±0.03, Prevotella Intermedius – 0.56±0.01 and 1.176±0.04, respectively for the material “Belakril-EGO”, the prepared injection molding, 1.0±0.03/1.602±0.03 and 1.0±0.02/1.903±0.06 for “Belakril-EGO” – a compression method respectively.

The adhesion of aerobic organisms significantly differs. The greatest indicators are reached by Staphylococcus aureus on the basic material “Belakril-EGO” by a compression method of production (3.591±0.05). Candida Albicans (0.69±0.04 for 24 h and 1.301±0.02 for 72 h) and Streptococcus Pyogenes (1.0±0.02 for 24 h and 1.602±0.03 for 72 h) show the low index of adhesion on the basic material “Belakril-EGO” by the prepared molding method whereas all other microorganisms show the high level of the index of adhesion. At the same time statistically significant distinctions at p=0.05 it was not revealed.

**Conclusion:** Results of the research allow to approach differentially and individually the choice of structural materials when planning orthopedic treatment. Despite some difference in adhesion of microorganisms to the basic material “Belakril EGO”, preference should be given to a injection molding method of formation.

**Keywords:** removable artificial limb, basic material, microbial adhesion.
POSSIBLE WAYS OF FORMATION OF THE DOMESTIC BASIC MATERIAL “BELAKRIL-EGO”
V.S. Shtana, D.M. Filippov
Belgorod State National Research University, Belgorod, Russia
Department of Orthopedic Stomatology
Scientific supervisor: MD, Professor I.P. Ryzhova

Introduction: Today there is a big arsenal of basic materials and technologies for production of removable artificial limbs. The quality of plastic depends on a number of factors, in particular a type of polymers, a way of processing, amount of residual monomer therefore it is necessary to know the main physicomechanical properties of basic plastic, manufacturing techniques of plastic basis of an artificial limb.

Objective: To study possible ways of formation of the basic material “Belakril-EGO” in comparative aspect.

Materials and methods: Researches were conducted on the basis of dental laboratory of the dental center “VLAD-MiVa” in Belgorod. For the solution of a goal studied ways of formation of the basic material “Belakril-EGO” (VladMiVa, Russia) Type 1 Class 1 according to ISO (1567:1999). Traditional method of formation – compression pressing was carried out according to the instruction, received a split plaster mold, applied to receiving a compression mold standard to a ditch, two halves, after smelting of wax the cavity corresponding to contours and volume of an artificial limb was formed. The base plastic was kneaded according to the instructions and filled in a cuvette, then placed in a press and squeezed mold, a further polymerization process was carried out in a water bath. The next way of formation – casting under pressure, through in advance prepared molding channels. The cuvette 1.0 CHARK was filled with silicone mass Elite Double 22 (Zhermack), after solidification the cuvette was disassembled, the wax base was removed. Kneaded plastic strict compliance with the instruction then filled in in the syringe, and through an ingate filled to a ditch until through the second ingate there is no plastic. Then polymerization was carried out in the device “Averon PMA 1.0” where set the mode of hot polymerization.

Results and discussion: At production of artificial limbs in the different ways of formation results turned out satisfactory. But at a method compression pressing there was a number of shortcomings: time expenditure, big consumption of materials; upon termination of
formation on the basic material which is in a form, pressure is not put therefore it is not possible to condense plastic to reduce its shrinkage during polymerization and to exclude emergence of a time; during rapprochement of a stamp and a counter stamp surplus of material is forced out between them and interferes with their contact, forming грат – the false teeth which are in a counter stamp, in a different way, do not return to the previous level, and remain above it on gratas’s burr. The method of molding formation has advantages in comparison with a traditional method: time of laboratory process of production of an artificial limb is reduced, according to preliminary data, by 2–3 hours; at extraction of an artificial limb from ditches absolutely is absent burr, which at a gypsum leads in the traditional way to increase in interalveolar height, it leads to the fact that when imposing an artificial limb the doctor spends time for correction of an occlusal surface not less than 20 minutes, creating almost new occlusal ratio though when checking a design of it it was not required; the quantity of a consumption of plastic at the expense of an exact dosage decreases; the good, exact modeling of wax basis without distortions is transferred to plastic; artificial limbs are easier ground and polished. But a lack of this method is the cost of silicone weight for duplication of the models “Elite Double 22” (Zhermack).

**Conclusion:** The research showed that the method molding formation at production of removable artificial limbs from the material “Belakril-EGO” allows to improve significantly their quality, to reduce production time, to reach the high level of hygiene when using removable artificial limbs, at the expense of manufacturing techniques.

**Keywords:** removable artificial limb, basic material, formation, polymerization.

**DESCRIPTION OF OSTEOPETROSIS CASE HISTORY IN A CHILD**

_Sinyova P.S., Ulyanov A.S., Baranov I.E., Gurzhabon Ch.I._

Chita State Medical Academy, Chita, Russia

Department of Chemistry and Biochemistry

Scientific supervisors: C.M.Sc., Associate Professor N.V. Solovyova, C.Ph.Sc., Associate Professor T.L. Zenkova

**Introduction:** Osteopetrosis is a serious disease that may manifest itself in utero. Progressive anemia, hepatosplenomegaly, hydrocephalus and compression of the cranial nerves, leading to blindness and hearing
loss are observed in newborns and infants. Usually patients do not live up to 10 years.

**Objective:** is to describe the clinical case of osteopetrosis in a child.

**Materials and methods:** The analysis of a child case history with “marble disease”. Patient S. Age – 1 year. He was examined and treated in the Department of Neurology of the Regional Children’s Clinical Hospital of Chita in April – May, 2016.

**Results:** Since birth the patient was under the supervision of different doctors (hematologist, neurologist, ophthalmologist, gastroenterologist and cardiologist) of the Regional Clinical Children’s Hospital. Blood analysis testified anemia, hyperbilirubinemia, hypocalcemia and hypophosphatemia, accelerated ESR. Splenomegaly and hepatomegaly with diffuse changes were diagnosed during ultrasound examination. In the anamnesis it was noted developmental delay, poor weight gain, deformed rib cage, marbling skin color. Signs of internal hydrocephalus, hyperechogenic and compressed vascular plexus were found during the neurosonography. There was a partial atrophy of the optic nerve as a result of hydrocephalus. At the age of 10 months the child had a fracture of the left thigh. On the radiograph of the chest and hip bones a diffuse bone compaction was revealed. Changes in the cardiovascular system were also diagnosed: tricuspid regurgitation of 1-2 degrees, systolic pressure in LA was 41 mm Hg (norm-25 mm Hg). General blood analysis: erythrocytes – 4.59*10⁶ / µl; hemoglobin – 113 g/ l; leukocytes – 8.8*10³ / µl; platelets – 297*10³ / µl; ESR – 14 mm / h. Biochemical blood parameters were as follows: calcium (Ca²⁺): 1.91 mmol/l; phosphorus (P):1.25 mmol/l; (for admission); calcium (Ca²⁺) of 2.25 mmol/l, Phosphorus (P) 1.2 mmol/l (at discharge); total bilirubin 25 mmol/l (including direct 1 mmol/l), kalium (K⁺): 4.6 mmol/l; natrium (Na⁺): 144 mmol/l. Urine test: ketone bodies: 5 mg / Dl (ketonuria). The content of ketone bodies in the urine indicates hyperglycemia. Other indicators were normal. Violation of mineral metabolism by the type of hypocalcemia (in September of 2015, there were a fracture of the left thigh and decrease in the level of calcium (total)) was revealed.

**Conclusion:** Thus osteopetrosis is a rare pathology of the skeleton characterized by excessive bone mineral density, high probability of fractures, a peculiar neurological symptomatology. It is important to detect it in the early stages as it can be manifested already in utero. Careful work of the pediatrician will allow identifying the disease and
increasing the chances of survival. Knowledge of this pathology features significantly expands the professional outlook of the rheumatologist.

**Keywords:** osteopetrosis, marble disease, indicators, child, case history.

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**PSYCHOEMOTIONAL LEVEL OF PREPARATION OF PARTICIPANTS FOR BIRTHS**

*M.V. Solovyova, A.A. Rychkova, S.Z. Gasanova*

Tyumen State Medical University, Tyumen, Russia
Department of Obstetrics and Gynaecology
Scientific supervisor: PhD, Associate Professor I.V. Fomina

**Introduction:** We all know the seriousness and painfulness of the process of childbirth. Before the upcoming birth, each woman asks questions: how things will pass, whether they will have to resort to medical methods of pain relief, or psychological preparation will be enough.

**Objective:** To assess the psychological state of women before childbirth, their emotional mood for pregnancy and the upcoming act of delivery.

**Materials and methods:** A survey of 30 pregnant women involved in maternity schools was conducted on the basis of the Tyumen Perinatal Center. The materials for the study were the questioning of pregnant women with the help of the test of a pregnant by I. V. Dobryakova and a test by Ch. D. Spielberg and Yu. L. Khanina to determine personal and situational anxiety.

**Results and discussion:** The survey revealed that 53% of pregnant women had euphoric type of PCGD, 7% had a restless type of PCGD, and 40% had the optimal type of PCGD. In evaluating the test results, three categories were identified for determining personal and situational anxiety: a high level — in 27% of respondents, a moderate level in 53%, and a low level — in 20%. It has been observed that women with euphoric type have a low level of anxiety before childbirth. And the anxious type has a high level of anxiety. Among women with the optimal type of PCGD, a high and moderate level of anxiety is detected.

**Conclusion:** Determining the type of PCGD contributes to the proper management of pregnancy, determining the direction of conversations with a pregnant woman to form the right emotional state.
and physiological course of pregnancy. The obstetrician-gynecologist should advise 7% of respondents with an restless type to consult a psychologist for the correction of their psychological state.

**Keywords:** non-drug anesthesia of childbirth, psycho-emotional preparation of women in labor, personal and situational anxiety.

**MORPHO-FUNCTIONAL CHARACTERISTICS OF ENDOCRINE GLANDS WITH EXPERIMENTAL HYPOXIA**

* A. Timouyasse, D. S. Dyukov

Yaroslav-the-Wise Novgorod State University (NovSU)  
School of Medical Education Veliky Novgorod, Russia  
Department of Human Morphology  
Scientific supervisor: D.M.Sc., Professor L.G. Proshina

**Background.** Recently, works have appeared that indicates that preliminary hypoxic training increases the reserve abilities of the body. A significant role in adaptive processes belongs to the endocrine system, which determined the relevance of our research.

**Objective:** To study the functional morphology of the thyroid gland and adrenal glands under the influence of interval hypoxia.

**Materials and methods:** The work was performed on Wistar male rats. Interval hypoxic training was carried out at 10% oxygen content using the “Hypoxicator MM”. Rats were subjected to hypoxia every day for 5, 15, 30 and 60 minutes three times with five-minute intervals. Control rats were in normal vivarium conditions. Experimental animals were removed from the experiment on 1, 3, 7, 15 and 30 days.

**Results and discussion:** Interval hypoxia has led to an increase in thyrocyte height. On day 3, the activity coefficient of the thyroid gland increased to the maximum (68%), it exceeded the indicators of control animals by 7-15 days by 25%. The nuclei of the capillary endothelial cells protrude into the lumen. Signs of vascular plethora, interstitial edema were noted. On the 15th – 30th day of the experiment, a decrease in the reactive changes of the thyroid gland and a decrease in the numerical density of capillaries were observed. By the end of the experiment, the area of thyrocytes, vessels and the activity coefficient of the gland are increased relative to the control. The morphological picture of the adrenal glands during hypoxic interval training is characterized by an increase in the area of zona fasciculate and reticularis.
Conclusion: Interval hypoxic training causes structural and functional restructuring of the endocrine glands, which is adaptive and compensatory in nature and leads to the stimulation of the thyroid gland function and restructuring of its structure, an increase in the numerical density of capillaries. In the adrenal glands, there is a change in the ratio of the glomerular, zona fasciculate and reticularis, as well as an increase in the numerical density of capillaries.

Keywords: hypoxia, thyroid, adrenal glands.

ANTIBIOTIC RESISTANCE

Upasoma Govindan Nair, Sithara Haris
North Caucasian State Humanitarian and Technological Academy, Cherkessk, Russia
Department of Pharmacology
Scientific supervisor: Professor Sh.M. Khubiev, Z.N. Izhaeva

Background: The rapid emergence of resistant bacteria is occurring worldwide, endangering the efficacy of antibiotics, which have transformed medicine and saved millions of lives. Many decades after the first patients were treated with antibiotics, bacterial infections have again become a threat. The antibiotic resistance crisis has been attributed to the overuse and misuse of these medications, as well as a lack of new drug development by the pharmaceutical industry due to reduced economic incentives and challenging regulatory requirements. The modern era of antibiotics started with the discovery of penicillin by Sir Alexander Fleming in 1928. Antibiotics were first prescribed to treat serious infections in the 1940s. However, shortly thereafter, penicillin resistance became a substantial clinical problem, so that, by the 1950s, many of the advances of the prior decade were threatened. In response, new beta-lactam antibiotics were discovered, developed, and deployed, restoring confidence. However, the first case of methicillin-resistant Staphylococcus aureus (MRSA) was identified during that same decade, in the United Kingdom in 1962 and in the United States in 1968.

Objective: This systematic review was conducted to summarize the present scenario of ABR to identify gaps in surveillance, and to provide recommendations based on the findings.

Method: The concept of the inhibition zone is attributed to the
Kirby-Bauer disk diffusion method. E.g.: As the ampicillin diffuses out from the filter paper into the agar, there will be a higher concentration of ampicillin nearer the disk. This concentration decreases gradually, as the distance from the edge of the disc increases. As long as the concentration of ampicillin at any given distance is high enough to properly act as an antibacterial agent, no bacteria will grow at that location. Hence, if the bacteria has increased resistance, a smaller inhibition zone will be seen, and vice versa.

Result: A high prevalence of resistance was detected in most tested pathogens, and many of the common first-line drugs were mostly ineffective.

Conclusions. A high prevalence of resistance to most antibiotics was detected, along with major gaps in surveillance and information gaps in the methodological data of the studies (susceptibility testing method, guidelines for susceptibility interpretation, source of infection). Based on the findings, we recommend appropriate initiatives to monitor and control the use of antibiotics, as well as nationwide surveillance following standardized methodologies.

Keywords: resistant bacteria, antibiotics, penicillin, methicillin-resistant Staphylococcus aureus, ampicillin.

EVALUATION OF COMPOSITE CONSUMPTION IN RESTORATION OF MASTICATORY TEETH

E.A. Yemtsova, K.N. Novikova

Chita State Medical Academy, Chita, Russia

Scientific supervisor: C.M.Sc., Associate Professor N.V. Plyaskina,
C.Philol.Sc., Associate Professor Yu.G. Solovieva

Introduction: Restorative polymer materials are widely used in dental practice. The issue of composite consumption depending on the volume of hard dental tissue loss is very significant due to its high cost.

Objective: To develop an operative table of photo composite consumption indicators in relation to the area of crown decay and depth of the carious cavity of premolars and molars belonging to I and II class according to Black.

Materials and methods: We made the 1st and 2nd class carious cavities preparation of 52 extracted premolars and molars. The cavities corresponded to superficial, median and progressive caries as well as
to trepanated cavities in pulpless teeth. The index of occlusal surface lesions (IOSL) was evaluated with V.Yu. Milikevich’s indirect method (Milikevich, 1984): with the help of transparent plate with millimeter net on it, the carious cavities corresponded to IOSL 0.2 – 0.5 in superficial and median caries; 0.3-0.5 in progressive caries and 0.5-0.6 in pulpless teeth. Then we restored the teeth with photo composites and silicon index made individually for every tooth. The teeth were weighed on the electronic scales Filtek, Spectrum, Prismafil (VK-150, division – 5 mg) before and after filling to estimate material consumption. The difference between the second and first measurements indicated the material weight. The data obtained were statistically processed with the variance analysis. The critical level of significant difference was p=0.05.

**Results and discussion:** The volume and weight of the filling increased due to the enlargement of the area and depth of a carious lesion. So, the filling weight for the 1st class cavity in premolars varied from 15 to 180 mg, and from 20 to 200 mg for the 2nd class (p<0.05). In molars, the variations were from 20 to 375 mg for the 1st class and from 35 to 400mg for the 2nd class. In IOSL increase the filling weight was heavier than that in premolars twice or even more (p< 0.01).

**Conclusion:** 1. The consumption of a filling material correlates directly to IOSL and the depth of a carious cavity. 2. The data obtained can be used in formation of annual requirements for materials within the compulsory medical insurance system and calculations of medical care provision within a private practice system.

**Keywords:** composite consumption, photo composites, filling, carious cavity.

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**EXPERIENCE OF THE LOCAL TREATMENT OF THE MIGRATORY FORM OF DESQUAMATIVE GLOSSITIS USING THE APPLICATION OF GOOSE FAT**

*Yusupov R.D., Chizhikova T.S., Magomadov S.A., Yusupov U.A.*

Pyatigorsk Medical-Pharmaceutical Institute – branch of FSBEI HE VolgSMU Ministry of Health of Russia, Pyatigorsk, Russia

**Introduction:** Desquamative glossitis (geographical tongue – glossitis desquamativa) is an inflammatory dystrophic disease of the tongue plate, accompanied by characteristic changes in the appearance of the back and its lateral surfaces. The disease manifests itself as a
violation of the epithelial keratinization process and dystrophic changes in the papillae of the tongue.

Desquamative glossitis is a relatively common disease. It occurs mainly in childhood, but often it manifests itself in adults life, and in women more often than men. The disease occurs in women aged of 1-7 or 30-40 years. Questions of etiology and pathogenesis of the disease remain relevant. There are different views on the nature of its occurrence: from the normal variant to neurodystrophic or even acute inflammatory process. The disease often develops against the background of endocrine pathology, diseases of the gastrointestinal tract. There are descriptions of genetic, viral, infectious and parasitic (helminthic invasion) theory of the origin of the pathology. It also occurs in galvanism, hypovitaminosis B1, B3, fungal infections, psoriasis, seborrheic dermatitis.

There are various methods of local treatment of desquamative glossitis with the application of keratoplastics and various oils. The main purpose of the treatment of desquamative glossitis is both the elimination of local symptoms and the impact on a specific pathogenetic factor that causes the presence of a general pathology and provokes the development of a particular form of glossitis.

Despite the existing different methods of local treatment of desquamative glossitis, the question of finding new methods of local treatment remains relevant.

Available to us in the literature there is no information on the use of goose fat in the treatment of desquamative glossitis. In this regard, given the properties and composition of goose fat: fatty acids (normalize the body’s water balance; increase the permeability of lipids); selenium (regulates metabolism, in particular, the absorption of proteins and carbohydrates; improves iodine absorption); cholesterol (acts as the basis of cells, regulates their permeability; takes part in the accumulation of vitamin D); vitamin E (activates the immune response of the body; synthesizes collagen; protects cells from damage).

Objective: to improve the effectiveness of local treatment of patients with a migratory form of desquamative glossitis by applying goose fat.

Materials and methods: In 2018 – 2019, 12 people aged 18 to 40 years, including 8 women and 4 men, who, after a survey, anamnesis, examination and additional research methods, were diagnosed with desquamative glossitis (migratory form), applied for help to the dental clinic of PMFI. Specific treatment of desquamative glossitis is not developed. In case of pain and burning, it is recommended, in addition
to sanation of the oral cavity, light antiseptic rinses, applications of keratoplastics (oil solution of vitamin A, rosehip oil and others).

The method of treatment proposed by us for desquamative glossitis in patients is as follows: to carry out the applications of goose fat.

Local treatment with the application of goose fat, which is heated to a temperature of 37 degrees and used as melted fat. Patients independently carry out applications of goose fat for 2 ml with sterile cotton balls applied to the surface of the tongue for 15-20 minutes 3 times a day before meals for 30 minutes. Treatment is carried out for 21 days (Fig. 1;2;3; 4).

The use of this method of treatment of patients with desquamative glossitis gives good results, there is a rapid epithelization and reduction of areas of desquamation on the surface of the tongue, reduces the number of recurrences of this disease.

Fig.1. Migrating form a descriptive Glossary (before treatment.)

Fig.2. At the stage of treatment in 6 days.

Fig. 3. after 12 days.

Fig. 4. after 21 days.
Results and discussion: After the proposed method of treatment of the migrating form of desquamative glossitis in patients with the application of goose fat, epithelization of the mucous membrane of the tongue is accelerated, reducing the foci of desquamation, and also reduces the risk of disease recurrences.

Conclusion: The proposed method of local treatment of migrating forms of desquamative glossitis using the application of goose fat, it is one of the most effective non-drug treatments.

Keywords: desquamative glossitis, goose fat.

SOME ASPECTS OF ANTIMICROBIAL USE IN DENTISTRY
R.D. Yusupov, O.N. Ignatiadi, Kh.R. Yusupov, S.A. Magomadov, I.S. Zakharchenko, Yakhyau R.M.
Pyatigorsk Medical-Pharmaceutical Institute – branch of FSBEI HE VolgSMU Ministry of health of Russia, Pyatigorsk, Russia

Introduction: Chronic, acute and aggravated inflammatory processes in the periodontium as permanent foci of infection and intoxication are a potential danger to the entire body. They can cause odontogenic inflammation of the maxillofacial region, sensitize the body and contribute to the adverse course of some diseases of the internal organs.

Modern antibiotic therapy is a key component of complex treatment of patients with chronic periodontitis in the acute stage. The choice of the most effective antibacterial drug is the key to successful preoperative preparation, rapid postoperative rehabilitation and preservation of remission.

Many of the currently used antibacterial drugs are ineffective due to the special nature of the disease: peripapical position of the focus of inflammation, the presence of exudate, anatomical and topographic features of the periodontal tissues structure.

Erythromycin, penicillin and other macrolides have lost their importance as the antibiotics of choice for the odontogenic infection’s treatment. Fluoroquinolones are sometimes used in dental practice, although antibiotics of this class usually do not act on representatives of the oral cavity’s facultative and obligate-anaerobic microflora.

In this regard, the search for and use of new and more effective antibiotics in dentistry remains an urgent problem.
Objective: to select modern broad-spectrum antibiotics for the effective treatment of chronic periodontitis in dental patients.

Materials and methods: 45 people (aged from 18 to 70 years, including 20 women, 25 men) applied to the dental office of the Pyatigorsk medical and pharmaceutical Institute (branch of FSBEI HE VolgSMU) for chronic periodontitis of teeth from 2015 to 2019. Treatment of chronic periodontitis of teeth was carried out in a complex and consisted of General and local. General treatment is aimed at stimulating the reactivity of the body, anti-inflammatory, desensitizing and restorative therapy. The use of antibiotic therapy in combination with ciprofloxacin Tinidazole (Ciprolet A) can also act on anaerobes, thus blocking the entire range of possible pathogens (we know that oral infections are caused by mixed microflora – more than 3-5 pathogens, including aerobes and anaerobes, Gram+ and Gram-).

Method of application and dosing regimen: prescribed inside for 1 hour before meals or 2 hours after meals, drinking enough water. You should not crush, chew or break the tablet. The recommended dose is 1 tablet 2 times a day for 5-10 days (composition of 1 tablet: ciprofloxacin 500 mg + Tinidazole 600 mg).

Results and discussion: Patients, for example, with staphylococcal osteomyelitis of the mandible, Fluoroquinolones (Ciprofloxacin) may be prescribed on an outpatient basis, if the isolated pathogen is sensitive to it. Ciprofloxacin has high bioavailability after oral administration and good penetration into bone tissue. This antibiotic is also used to treat some forms of periodontitis. Ciprofloxacin has a wide range of actions, including gram-negative and gram-positive bacteria, including those Enterobacteriaceae, which cause severe purulent lesions of the oral cavity. Ciprofloxacin differs from other antibiotics (and even Fluoroquinolones) in that it is effective against such a serious pathogen as Pseudomonas aeruginosa and Klebsiella spp.

Conclusion: We know that ciprofloxacin has a wide range of effects, including gram-negative and gram-positive bacteria, including those Enterobacteriaceae, which cause severe purulent lesions of the oral cavity. The use of Ciprolet-A (ciprofloxacin 500 mg + Tinidazole 600 mg), is an effective antibiotic in the complex treatment of chronic periodontitis.

Keywords: Odontogenic inflammatory processes, periodontitis, antibiotic therapy, microflora.
THE IMPACT OF VARIOUS TYPES OF BRACKET SYSTEMS ON THE ORAL MUCOSA OF PATIENTS WITH VARIOUS DENTAL ANOMALIES

E.G. Zaretskaya
Moscow State University of Medicine and Dentistry named after A.I Evdokimov of the Ministry of Healthcare of the Russian Federation, Moscow, Russia
Scientific supervisor: Ph.D., Professor Slabkovskaya A. B.

Introduction: Nowadays, the application of bracket systems has become so popular that the market provides a great variety of bracket systems made from various materials. We, as clinicians, raised the question whether the degree of injury to the tissues of the oral cavity during orthodontic treatment depends on the dental anomalies and the braces material.

Objective: To establish or refute the influence of fixed orthodontic structures on the oral mucosa, depending on the material of the equipment and the dental anomalies.

Materials and methods: 45 patients with permanent teeth were examined during orthodontic treatment. After processing the standard questionnaires, data collection form, which includes 18 items, was finalized. Patients had braces of various companies and various materials, i.e. ligated and self-ligating braces, metal and ceramic.

Results and discussion: The main zones of injury to the oral mucosa were identified depending on the dental-maxillary anomaly. We observed the least trauma to the oral mucosa, when we use metal braces, regardless of the dentition and the degree of its manifestation. When we use ceramic braces, the mucous membrane of the oral cavity is injured. The localization of the injury is more often observed on the mucous membrane in the region of the vestibular canines and lower incisors in their protrusion position. Self-ligating braces caused less damage to the mucous membrane than ligating.

Conclusions: 1. Self-ligating and metal braces incur less damage to the soft tissues of the mouth.
2. The most common area of injury to the oral mucosa is the area of projection of the molars, canines and incisors of the mandible.
3. The maximum manifestations of mucosal injury are determined in the treatment of vestibular and supraposition of the canines of the maxilla and the retraction of the incisors of the mandible.
4. Patients with this pathology should be recommended self-ligating metal bracket system.

**Keywords:** bracket system, mucous membrane, trauma

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**THE ROLE OF ALPHA-AMILASE IN THE DIAGNOSTICS OF ACUTE PANCREATITIS**

*M.S. Zheludov, D.V. Milyukov*

Tver State Medical University, Tver, Russia

Department of General Surgery

Scientific Supervisor: Assistant *A.M. Morozov*

**Background:** Acute pancreatitis (OP) is an acutely developing inflammatory process in the pancreas, accompanied by activation of pancreatic enzymes with subsequent auto-enzymatic necrobiosis and organ necrosis.

**Objective:** To study the feasibility of determining the level of alpha-amylase in the diagnosis of OP.

**Materials and methods:** The survey is based on the analysis of case histories of 36 patients with clinical diagnosis “Acute pancreatitis” of the City Clinical Hospital № 4, 6, 7 of Tver.

In the survey, 22 (61%) patients had complaints of persistent epigastric pain of a different nature. 14 (39%) patients complained of pain radiating to the lower back. In 20 (56%) patients, among complaints there was vomiting of varying severity. On palpation, 6 (17%) patients had a tense abdomen. A triad of complaints characteristic of acute pancreatitis: severe epigastric pain, shingles, repeated vomiting, and a tense abdomen are present in 4 (11%) patients.

All patients underwent ultrasound diagnosis of the abdominal cavity. Ultrasound showed signs of acute pancreatitis in 20 (77%) patients: the pancreatic contours are uneven, indistinct, the size of the gland is diffusely or totally enlarged, the structure of the gland is heterogeneous. In 14 (39%) patients, some signs of acute pancreatitis were observed, such as increased echogenicity, narrowing of the Virungal duct. In 5% patients it was not possible to visualize the pancreas.

An ultrasound study showed an increase in the size of the liver in 20 (77%) patients. Six (17%) patients had diffuse changes in the liver parenchyma without changing sizes. Liver 10 (28%) patients have
no changes. Among 20 patients with signs of acute pancreatitis, only 12 (60%) have an enlarged liver.

Of the 18 patients who had increased activity of alpha-amylase in combination with increased activity of urine alpha-amylase, signs of acute pancreatitis with instrumental diagnostics were observed only in 10 (56%).

Of the 36 examined with a diagnosis of Acute Pancreatitis, only 2 of the results of clinical, laboratory and instrumental studies coincided.

**Conclusions:** elevation of alpha-amylase should not be regarded as pathognomonic syndrome in acute pancreatitis. Despite the increase in the activity of alpha-amylase in urine and blood, it is necessary to use data from the clinical picture and instrumental diagnostics to confirm or withdraw the diagnosis of Acute pancreatitis.

**Keywords:** acute pancreatitis, alpha-amylase.
SCIENTIFIC ABSTRACTS
OF CONFERENCE PARTICIPANTS
FROM THE UNIVERSITIES
OF THE FOREIGN COUNTRIES
RELATIONSHIP BETWEEN MORPHOLOGICAL CHARACTERISTICS AND PROGNOSIS OF NON-NASOPHARYNGEAL EBV-ASSOCIATED CARCINOMA

DR. Ashuthosh Kumar Singh
Aysha Hospital, Chennai, India, Department of ENT
Scientific supervisor: DR. F. Azeezur Rahman

Objective: To analyse the pathological features and their influence on the clinical outcome of non-nasopharyngeal EBV-associated carcinomas.

Methods: One hundred and twenty cases of non-nasopharyngeal EBV-associated carcinoma confirmed by in situ hybridization were identified at Zhejiang Cancer Hospital from January 1, 2006 to May 1, 2018, and the clinicopathological data were collected and analyzed using Kaplan-Meier survival analysis, Cox univariate and multivariate analysis.

Results: One hundred and twenty cases were involved in the study; the male to female ratio was 1:1; patients’ age range was 24 to 89 years (median 50 years). The primary sites were large parotid glands (62 cases), lung (26 cases), stomach (15 cases), and others (oral, oropharynx, larynx, cervix, liver; totally 17 cases). Non-nasopharyngeal EBV-associated cancer could be divided into two histological types according to the amount of interstitial lymphocytes: type was “lymphoepithelial-like carcinoma” and rich in stromal lymphocytes; type lacked lymphocytic infiltration. Ninety-eight primary tumour samples could be classified morphologically: 43 cases were as type and 55 cases as type; the distribution of type was 57.4% (27/47) in large parotid glands, 20.8% (5/24) in lung, 4/13 in stomach, and 7/14 in other sites. Complete treatment and survival data were obtained for 114 patients. According to the TNM staging criteria of WHO, 52 patients were at early stages and 62 were at advanced stages; 102 patients underwent surgery. Seventy-four patients received adjuvant chemotherapy before or after surgery, and 52 patients received local radiotherapy. Kaplan-Meier survival analysis showed that patients with type EBV-associated carcinoma had a worse prognosis than patients with type tumours (P=0.010 2). In addition, vascular invasion (P=0.021 8), neural recidivism (P=0.000 1), advanced stage (P=0.017 1), lymph node metastasis (P=0.005 0) and chemotherapy (P=0.013 2) were poor prognostic factors;
female patients had better survival than male (P=0.028 4). Cox multivariate regression analysis found that lymph node metastasis (95% CI: 1.489-13.830, P=0.007 6) and neural recidivism (95% CI: 1.228-6.544, P=0.014 7) were independent adverse prognostic factors. Cox multivariate regression analysis after stratification by site revealed that radiotherapy was a preferable prognostic factor for EBV-associated carcinoma of the large salivary glands (95%CI: 0.003-0.569, P=0.016 8).

**Conclusion:** EBV associated carcinoma can be divided into two types, for which type was with abundant interstitial lymphocytes and type was lack of interstitial lymphocytes. Type EBV-associated carcinoma has a worse prognosis than type. Radiation therapy can prolong the survival time of patients with primary EBV-associated carcinoma of large salivary glands.

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**STATE OF THE MICROELEMENT STATUS IN CHILDREN WITH AN ACUTE RESPIRATORY AND VIRAL INFECTION**

*M. Bobomurodova, A. Boyaliyev, T. Khannazarov, Z. Hudoykulova, E. Khusainov*

Samarkand Medical Institute, Samarkand, Uzbekistan

Pediatric Faculty

Scientific supervisor: C.M.Sc., Assoc. Professor **Sh.M. Uralov**

**Introduction:** Though at acute respiratory and viral infections many sides of a metabolism are studied, however the study of the microelement status at this pathology are investigated insufficiently.

**Objective:** To study the microelement status at the children suffering from the acute respiratory and viral infection, through the study of the essential microelements – copper and zinc.

**Material and methods:** The state of the microelement status is studied by us at 18 children suffering from the acute respiratory and viral infection at the aged from 3 months to 3 years which had inpatient treatment in the children’s intensive care department No1 SBRSCEMC. All-clinical laboratory and instrumental methods of researches were conducted to all children in day of arrival. After specification of the diagnosis at the inspected children by a noninvasive way the maintenance of microelements – copper and zinc in hair was determined. Researches were conducted in the first days of patients
of hospitalization. Concentration of microelements was studied in the Laboratory of Macro and Microelements of SGU by an atomic and absorbing method by means of spectrum analysis.

**Results and discussion:** The carried-out work showed that children suffering from the acute respiratory and viral infection had a copper content below normal and made 3.8±0.78 mg/ml that was below in comparison with indicators of healthy children of a check group was reliable (5.33±0.64 mg/ml; P < 0.01). All inspected patients also had a zinc level below normal and averaged 51.2±9.67 mg/ml that authentically differed with indicators of children of a check group (66.19±10.53 mg/ml; P < 0.01).

**Conclusion:** The received results showed that at this pathology violation of exchange of microelements takes place that was expressed in decrease in concentration of copper and zinc in hair at the inspected children. The data revealed by us allow to make the conclusion, about the need of carrying out correction of maintenance of the specified microelements at sick children suffering from the acute with a sharp respiratory and viral infection.

**Keywords:** microelement status, respiratory and viral infection, metabolism, concentration.

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**CHANGES OF PRO-INFLAMMATORY TRANSCRIPTION FACTORS IN WHITE RATS BRAIN DURING HYPOKINESIA**

*A.A Hovhannisyan, D.T Babikyan, A.A Shirvanyan, L.V Mkrtchyan*

Center of Medical Genetics and Primary Healthcare
Laboratory of Research of Genetics of Oncological Disorders,
Erevan, Armenia

Scientific supervisor: MD PHD Babikyan David T.

**Introduction:** Development and progression of neurodegenerative disorders depends from disruption of various defensive mechanisms. Disruption in defensive chain leads to activation of protein aggregation and neuronal apoptosis in brain. Therefore glutamate excitotoxicity stimulates progression of disease.

**Objectives:** Shortage of physical activity initiates pro-inflammatory mechanisms in brain as well as synthesis and secretion of large amount of pro-inflammatory cytokines. Specific transcription factors as well as nuclear factor kappa-B, AP-1 and nuclear factor of activated T cells
Materials and methods: Experiments were carried out on 60 Wistar male rats (n=20). Animals were kept in general vivarium states with free access of food and water. Model of disease was developed by keeping animals in cages with minimalized ability of movement. Anesthesia was performed by injection of 40mg/kg Nembutal. Brain tissue was extracted and centrifuged for 6000g 60min 4C. Proteins were determined by ELISA method. Statistics were performed by SPSS21.0

Results: Results testify that NF-kB increased by 51% and 66.7% on 40th and 60th days, while AP-1 activity increased by 41% and 47.25% (p<0.01). Therefore NFAT activity decreased by 46% and 33.1% during experiment(p<0.001)

Conclusion: Modulation of pro-inflammatory processes in brain opens new pathway of treatment of neurodegenerative disorders. Inhibition of secretion of pro-inflammatory cytokines prevents progression of glutamic excitotoxicity and protein aggregation in brain

Keywords: hypokinesia, neuronal apoptosis, pro-inflammatory cascade
wistar male rats (n=8). Animals were kept in general vivarium states with free access of food and water. Model of disease was developed by keeping animals in cages with minimalized ability of movement. Anesthesia was performed by injection of 40mg/kg Nembutal. After decapitation brain tissue was extracted and centrifuged 6000g of it for 60min with temperature of 4C. Proteins were determined by ELISA method. Statistics were performed by SPSS21.0

Results: Results present that complexin decreased by 44.12% on 60th day, while netrin G1 decreased by 25.4%, 36.6% and 51% (p<0.01). Therefore netrin G2 decreased by 33% on 60th day, while SNAP-25 fraction didn’t changed(p<0.001)

Conclusion: Decrease of activity of synaptic plasticity regulatory proteins concludes to progression of pathologic state. Hypokinetic stress influences on synthesis of proteins in brain, and its combination with lipid peroxidation processes increases damage volume in brain

Keywords: hypokinesia, synaptic plasticity, neurodegeneration

HISTOPATHOLOGICAL STUDY OF RETROLENTAL MEMBRANES SECONDARY TO PERSISTENT HYPERPLASTIC PRIMARY VITREOUS

Dr. Jerald Christopher
G.K.M. Hospital, Chennai, India
The Department of Ophthalmology
Scientific supervisor: Dr. Shankara Lakshmi

Objective: To study the pathological characteristics of retrolental membranes (RLMs) secondary to persistent hyperplastic primary vitreous (PHPV), and to discuss the possible pathogenesis of PHPV.

Methods: Experimental study. Six RLMs obtained from six patients with PHPV during vitrectomy were examined by light microscopy (HE & PAS staining). All of them were observed with proliferating cell nuclear antigen (PCNA) immunostaining, together with collagen I, factor VIII related antigen, smooth muscle actin (SMA), epithelial membrane antigen (EMA), neuron specific enolase (NSE) and glial fibrillary acidic protein (GFAP) staining. Apoptosis were detected by terminal deoxynucleotidyl transferase-mediated deoxyuridine 5-triphosphate nick-end labeling (TUNEL).
Results: Light microscopy showed that the RLM was a dense connective tissue with numerous inflammatory cells including mast cells and lymphocytes. PAS staining showed that RLMs contained a larger amount of polysaccharides. Histopathology and immunohistochemistry showed that there were vascular channels, smooth muscle cells, nervous cells and epithelial cells scattered in RLMs. Collagen I was the main component of RLMs. PCNA-positive nuclei were widely found in RLMs. TUNEL-positive nuclei were also found in all RLMs, as well as in the posterior subcapsular epithelial cells of lens.

Conclusions: The cell types of RLMs secondary to PHPV are similar to those of the primary vitreous. It is possible that the mechanism of the progression of RLMs is the over-development and incomplete regression of the retrolental vascular system. Inflammation may play an important role in the regression of RLMs.

VALUE OF GALACTOSE-DEFICIENT IGA1 IN THE EARLY DIAGNOSIS OF HENOCH-SCHÖNLEIN PURPURA NEPHRITIS IN CHILDREN

Dr. Joby Joseph
Bharathirajaa Multispecialty Hospital, Chennai, India
The Department of Pediatrics
Scientific supervisor: Dr. Geetha Badrinath

Objective: To explore the value of galactose-deficient IgA1 (Gd-IgA1) in the early diagnosis of Henoch-Schönlein purpura nephritis (HSPN) in children.

Methods: A total of 67 hospitalized children who were definitely diagnosed with HSPN between January and April 2018 and 58 hospitalized children with Henoch-Schönlein purpura (HSP) were enrolled in the study. Twenty children undergoing routine physical examinations served as controls. The levels of serum and urine Gd-IgA1 were determined using ELISA. The receiver operating characteristic curve was used to analyze the value of serum Gd-IgA1 and urine Gd-IgA1/urine creatinine ratio in the diagnosis of HSPN.

Results: The level of serum gd-iga1 and urine gd-iga1/urine creatinine ratio in children with hsp or hspn were significantly
higher than those in healthy control group (p<0.01), with a significantly greater increase observed in children with hspn (p<0.01). Serum gd-iga1 ≥1485.57 u/ml and/or urine gd-iga1/urine creatinine ratio ≥105.74 were of favourable value in the diagnosis of hspn. During the six-month follow-up of the 49 children with hsp, the incidence of hspn was in 47% (23/49), which included a 100% incidence in children with serum gd-iga1 ≥1485.57 u/ml and a 73% incidence in children with urine gd-iga1/urine creatinine ratio ≥105.74.

**Conclusion:** Serum and urine Gd-IgA1 is of favorable clinical value in the early diagnosis of HSPN.

**PRELIMINARY STUDY OF SEQUENTIAL MULTI-MODALITY ADJUVANT CHEMOTHERAPY AND RADIATION FOR ADVANCED ENDOMETRIAL CANCER**

**DR. Lavanya**

Billroth Hospitals, Chennai, India
Stavropol State Medical University, Stavropol, Russia
Department of Gynecology
Scientific Supervisor: **D. Lakshmi Devarajan**

**Objective:** To evaluate the clinical outcomes and feasibility of multi-modality adjuvant chemotherapy and radiation, this was conducted as postoperative chemotherapy, radiation, and consolidation chemotherapy (CRC) mode for the treatment of advanced endometrial cancer.

**Methods:** A retrospective analysis of 124 patients with International Federation of Geneecology and Obstetrics (FIGO) stages and endometrial cancer from Jan. 2004 to Oct. 2012 was conducted in Peking University People’s Hospital and Beijing Obstetrics and Geneecology Hospital. Inclusion criteria were comprehensive staging procedure including hysterectomy, bilateral sapling-oophorectomy, and (or) selective pelvic aortic lymphadenectomy, and treatment with adjuvant chemotherapy and (or) radiation. The average age of these patients was (55.9±8.4) years old (range from 23 to 79 years old). According to different postoperative adjuvant treatment modes, the patients were divided into CRC group, chemotherapy-radiotherapy (CR) group and single
chemotherapy (C) group. The survival and side effects of the three groups were compared.

**Results:** (1) One hundred and twenty-four patients with advanced stage endometrial cancer were identified and received postoperative adjuvant therapies. Sixty-one (49.2%, 61/124) cases of them received postoperative CRC fashion, 19 (15.3%, 19/124) received postoperative CR and 44 (35.5%, 44/124) cases received C. The age, stage, grade and type of surgery of the three groups were not significantly different (all P>0.05); while, the pathology, chemotherapy cycles and chemotherapy regimens differed significantly (all P<0.05). (2) The progression-free survivals (PFS) of the patients with CRC, CR, and C group were (121±7), (68±15), and (100±11) months, respectively. The 3-year PFS rates were 87.9%, 43.7%, and 61.4%, respectively. The 5-year PFS rates were 82.2%, 36.4%, and 61.4%, respectively. The above indicators were significantly higher in the CRC group than in the CR group (all P<0.01), and there was no difference between the CRC group and the C group (P=0.037). The overall survival (OS) of patients with CRC, CR, and C group were (128±6), (80±12), and (99±10) months, respectively. The 3-year OS rates were 87.8%, 72.4%, and 67.1%, the 5-year OS rate were 84.2%, 54.3%, and 64.1%, respectively. The above indicators were significantly higher in the CRC group than those in the CR group and C group (all P<0.01). (3) There was no difference in the frequency of adverse effects either chemotherapy, such as severe bone suppression or radiotherapy; hepatotoxicity, blood transfusion, dose modifications; or cycle delays between the CRC, CR and C group (all P>0.05). (4) In the univariate analysis shown that, stage, the fashion of postoperative adjuvant therapy and type of surgery were risk factors for tumour progression in patients with advanced endometrial cancer (P<0.05). After adjusted for FIGO stage and type of surgery, the tumour progression hazard ratio (HR) was 3.931 (95% CI: 1.734-8.914,P=0.001) for the CR group and 2.188 (95% CI: 1.010-4.741,P=0.047) for the C group, compared to the CRC group.

**Conclusion:** Sequential CRC delivered in a “sandwich” fashion for the treatment in advanced endometrial cancer could significantly improve the 3-year and 5-year OS rates and have a similar adverse effect profile compared with other sequencing modalities.
ISSUES OF MEDICAL AID IN CASE OF PNEUMONIA WITH COMORBIDE CONDITIONS AT THE IN-PATIENT DEPARTMENT

N.N. Mamurova, D.E. Nosirova

Department of Internal medicine №4 with Hematology
Samarkand State Medical University, Samarkand, Uzbekistan
Scientific supervisor: Assistant N.N. Mamurova

Background: The algorithm of actions in the provision of medical care to patients with suspected pneumonia should be considered contraindications for outpatient treatment, such as presence of comorbidities: chronic bronchitis with frequent exacerbations, chronic obstructive pulmonary disease, bronchial asthma, chronic suppurative lung disease, diabetes mellitus, chronic renal failure, congestive heart failure and other chronic diseases may affect the course of the disease.

Objective: To study the quality of patients’ life with Pneumonia comorbid conditions in the in-patient department.

Materials and methods: We examined 50 patients in the pulmonology department of Samarkand City Hospital No.1. The average duration of patients care at the hospital, the so-called “bed days” were 9. The patients were divided two groups:

The 1st group – 18 patients aged 17-35 years (36%). In this group, the amount of patients with comorbidities – 13 people (72%). In the first group, the average hospital stay of patients was 10 days. The 2nd group includes 32 patients over 50 years old (64%). In the 2nd group 22 patients were identified with concomitant diseases (69%). In the second group, the average hospital stay of patients was 9 days.

Results: As can be seen from our research, elderly patients were treated at the in-patient department for a shorter period of time than the young ones. The risk factors for inadequate (late) response to treatment include: an older age (>65 years), the presence of chronic comorbidities. It is recommended to increase the effectiveness of drug therapy and improve the quality of medical care for elderly patients, to increase their stay at the in-patient department, since the elderly may have a different clinical picture of pneumonia.

Conclusions: The main difficulties in the management of elderly patients arise already at the stage of diagnosis: atypical course, extra pulmonary symptoms, etc.; and treatment: antibiotic choice, evaluation of efficacy, correction of comorbid conditions.
**Keywords:** pneumonia, comorbidities, in-patient department, treatment, medical care.

**EXPRESSION OF THE FRA-1 GENE IN THE PERIPHERAL BLOOD OF CHILDREN WITH WILM’S TUMOR**

*Dr. Ponsekaran K.*

SRM Institute for Medical Science (SIMS), Chennai, India; Stavropol State Medical University, Russia

The Department of Pediatrics

Scientific Supervisor: **Dr. P S Muralidharan** (Chennai)
Scientific supervisor: D.M.Sc., Professor **N.A. Fedko** (Stavropol)

**Objective:** To study the expression of the Fra-1 gene in the peripheral blood of children with Wilms tumor and its clinical significance.

**Methods:** Fifty children pathologically diagnosed with Wilms tumor between December 2012 and January 2018 were enrolled as the case group, and 40 healthy children for physical examination were selected as the control group. Among the 45 children with Wilms tumor who were followed up, the children with continuous remission were included in the ideal efficacy group (n=33), and those with recurrence, metastasis or death were included in the poor efficacy group (n=12). Peripheral blood samples were collected from all subjects. Quantitative real-time PCR was used to measure the mRNA expression of Fra-1.

**Results:** The case group had significantly higher mRNA expression of Fra-1 in peripheral blood than the control group (P<0.05). In the case group, Fra-1 mRNA expression was significantly different between the individuals with and without distant metastasis and those with different TNM stages (P<0.05), but was not significantly different between the individuals with different sexes, ages, tumor diabetes, tumor locations and alpha-fetoprotein levels (P>0.05). The mRNA expression of Fra-1 was significantly lower in the ideal efficacy group than in the poor efficacy group (P<0.05).

**Conclusions:** Fra-1 may be involved in the development of Wilms tumor and plays a certain role in its development, invasion and metastasis, but the mechanism remains to be further studied.
SAFETY AND EFFICACY OF TOTAL HIP ARTHROPLASTY FOLLOWING FAILED INTERNAL FIXATION OF INTERTROCHANTERIC FRACTURES

Dr. Raja Mohamed Fahadh
Bharathirajaa Multispecialty Hospital, Chennai, India
The Department of Orthopedics
Scientific Supervisor: Dr. S. Arumugam

**Objective:** To evaluate the safety and efficacy of total hip arthroplasty (THA) following failed internal fixation of intertrochanteric fractures.

**Methods:** Between January 2007 and January 2016, THAs were performed in 32 patients (33 hips) for failed internal fixation of intertrochanteric fractures. There were 15 males and 17 females, with mean age of 74.0 years old (range, 65-87 years). There were 3 hips of Evans-Jensen type II, 10 hips of type III, 8 hips of type IV, and 12 hips of type V. The fractures were fixed with dynamic hip screw in 18 hips, proximal femoral nail antirotation in 9 hips, locking plate in 5 hips, and hollow screw in 1 hip. The internal fixation failure caused by fracture displacement and nonunion in 22 patients, traumatic arthritis in 6 patients, fracture nonunion and infection in 3 patients, and avascular necrosis of the femoral head in 2 patients. The mean interval from initial fracture fixation to THA was 20 months (range, 2-48 months). The safety evaluation indicators included operation time, amount of operative bleeding and postoperative drainage, blood transfusion, and perioperative complications. The efficacy indexes included the hip Harris score, the range of motion (ROM), visual analogue scale (VAS) score, and the length difference between both legs; the X-ray films were taken to assess the prosthesis survival condition.

**Results:** The average operation time was 92 minutes (range, 55-135 minutes). The average amount of operative bleeding and postoperative drainage were 480 mL (range, 360-620 mL) and 350 mL (range, 220-520 mL), respectively. Intraoperative proximal femur fissure fracture occurred in 2 hips. After operation, 10 cases received allogeneic blood transfusion, 1 case occurred cerebral infarction, 2 hips experienced dislocation, 1 hip occurred greater trochanter re-fracture and dislocation because of spraining, and 1 case died of myocardial infarction. Twenty-nine patients (30 hips) were followed up 2-10 years (mean, 4.9 years). At last follow-up, there was no infection recurrence in 3 infected hips, and there was no prosthesis loosening, subsidence, or rupture in all
cases. The Harris score, ROM, VAS score, and the length difference between both legs were significantly superior to preoperative ones (P<0.05).

**Conclusion:** THA is an effective salvage procedure after failed internal fixation of intertrochanteric fracture. But its perioperative risks and complications are pretty high. Adequate preoperative evaluation, elaborate and individualized perioperative management are keys to make sure the patient can safely survive the perioperative period.

**ASSESSMENT OF CYP2E1 DETOXIFICATION GENE’S RS2070676 POLYMORPHISM PREVALENCE AMONG A POPULATION LIVING IN AN ECOLOGICAL UNFAVORABLE TERRITORY**

_A.M. Shapikhanova, M.R. Masabaeva_

NJC “Medical University of Semey”, Semey, East Kazakhstan, Kazakhstan

Scientific adviser: D.M.Sc. _Aukenov N.E._

**Introduction:** Due to the increasing anthropogenic impact, the study of the influence of environmental factors on human health is an important task. The population East Kazakhstan for a long time is exposed to effect of radiation and non-radiation risk factors, and its negatively affects the state of population health. The deviation of the functions of the detoxification system leads to the formation of pathological conditions.

**Objective:** To assess the prevalence of the allele and genotypes of the rs2070676 polymorphism of the CYP2e1 detoxification gene among the population living in an ecological unfavorable territory.

**Materials and methods:** A total of 220 people took part in the cross-sectional study, people living in areas with adverse environmental factors (Abai, Borodulikha districts of East Kazakhstan), as well as people not exposed to adverse environmental factors (Kurchum district, East Kazakhstan). Determination of the rs2070676 polymorphism made by Real-time PCR genotyping. The work was performed in the scientific and technical project of the Ministry of Education and Science of Kazakhstan “Development of the scientific and methodological basis for minimizing the environmental load, medical support, social protection and health improvement of the
population in environmentally unfriendly territories of the Republic of Kazakhstan”.

**Results:**

<table>
<thead>
<tr>
<th>Sex: male/female</th>
<th>Abay d. (n=46)</th>
<th>Borodulikha d. (n=60)</th>
<th>Kurchum d. (n=114)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19/27</td>
<td>6/54</td>
<td>24/90</td>
<td></td>
</tr>
<tr>
<td>Allel C G</td>
<td>98% 1%</td>
<td>90% 10%</td>
<td>90% 10%</td>
</tr>
<tr>
<td>Genotype CC GC GG</td>
<td>86,7% 6,7% 6,7%</td>
<td>97,8% 2,2% 0</td>
<td>80,7% 19,3% 0</td>
</tr>
<tr>
<td>The balance of HW (p) *</td>
<td>0,94</td>
<td>1,0</td>
<td>0,25</td>
</tr>
</tbody>
</table>

*Hardy-Weinberg equilibrium – a significance level of p <0.05 indicates deviations from this law

**Conclusion:** The prevalence of the G allele is higher among the African population(69%-76%), than in the European(10%-15%) and East Asian population(15%-17%). If we compare the obtained results, it can be noted that the prevalence of the G allele in the Kazakh population (10%).

**Keywords:** detoxification genes, polymorphism, xenobiotics.

**RETROSPECTIVE ANALYSIS OF RISK FACTORS FOR POSTOPERATIVE BLEEDING UNDERGOING ADENOTONSILLECTOMY**

*Dz. Sajitha Begum*

Sree Balaji Medical College and Hospital, Chennai
The Department of ENT
Scientific supervisor: **Dr. M K Rajasekar**

**Objective:** Adenotonsillectomy is one of the most common surgical procedures in Germany and the most critical postoperative complication is postoperative hemorrhage, particularly in children. The medical history has been considered superior to laboratory tests.

**Materials and methods:** In a retrospective anonymous examination over a 4-year period the data of children and adolescent patients subject to surgery of the Waldeyer’s tonsillar ring were recorded. Based on the preoperative questionnaire of the blood coagulation history and the
laboratory chemical screening, risk factors for hemorrhage as well as for von Willebrand Disease (VWD) were identified.

**Results:** 171 male and 137 female patients were included in the examination. Postoperative hemorrhage occurred in 43 children (14 %) between the 1st and 13th day after surgery. 4.2 % of the hemorrhage occurred within 24 hours and 10.4 % after 24 hours. Children with frequent epistaxis had a significant higher risk of postoperative hemorrhage. A preoperatively pathological hemoglobin value was associated with a significantly higher rate of postoperative bleeding. In children with VWD, a significantly increased risk of postoperative hemorrhage was observed, particularly in male VWD patients.

**Conclusions:** In case of a conspicuous family history, especially of the mother in the bleeding questionnaire, a significantly increased risk for VWD could be observed. Here it is advisable to determine the PTT as well as PFA-100 and, to continue with a further VWD step-diagnostics. A suspect preoperative laboratory screening, especially hemoglobin value, is associated with higher risk of postoperative hemorrhage.

STATE OF SOME MACRO- AND MICROELEMENTS IN YOUNG CHILDREN OF SUFFERING FROM ACUTE PNEUMONIA THAT OCCURS ON THE BACKGROUND OF CHRONIC EATING DISORDERS

*M. Temirova, O. Shoymardonova, Sh. Hanturayev, M. Meyliyeva, Sh. Uralov*

Samarkand Medical Institute, Samarkand, Uzbekistan

Faculty of Pediatrics


**Introduction:** Diseases of a respiratory system at children do not lose the relevance today.

**Objective:** In this regard we set the object – to study features of changes of the microelement status in young children at the acute complicated pneumonia proceeding against the background of chronic eating disorders. Concentration of copper, zinc and magnesium in hair at the children sick with the acute complicated pneumonia which proceeds against the background of deficiency of body weight was for this purpose studied.

**Material and methods:** For implementation of the tasks 48 sick
children aged from 3 months up to 3 years were examined. All children with the complicated course of an acute pneumonia were distributed on 2 groups: 26 children – with acute respiratory insufficiency, with extra pulmonary toxic complications, acute cardiovascular insufficiency were assigned into I-group. The II group was made from 22 children at whom the acute pneumonia with the above complications proceeded against the background of chronic eating disorders. Researches were conducted by an atomic-absorbing method in SGU.

**Results and discussion.** Results of our research showed that the following parameters of the microelement status of an organism are found in patients of I-group: copper – 4.8±0.76 mg/ml, zinc – 56.3±9.34 mg/ml, magnesium – 52.1±9.48 mg/ml. The maintenance of the above-stated elements in hair of patients in II group had 3.6±0.41 mg/ml (P<0.05), 42.8±8.62 mg/ml (P<0.02) and 45.2±8.96 (P>0.2), respectively. So, at the acute complicated pneumonia proceeding against the background of chronic eating disorders we noted more expressed decrease in concentration of copper, zinc and magnesium that indicates the revealed disturbances of exchange of microelements at children of early age. It is necessary to highlight that more expressed changes we noted at patients with high degree of protein and energy deficiency, at children, with the expressed lag in the weight and growth.

**Conclusion:** The data revealed by us allow to make the conclusion that the deficiency of copper, zinc and magnesium leads to reduction of protective and adaptive mechanisms, child’s immune system, therefore in young children the deficiency of the above-stated microelements promotes heavier and complicated course of an acute pneumonia.

**Keywords:** microelement status, acute complicated pneumonia, eating disorders.

**COMPUTER-TOMOGRAPHIC ESTIMATION OF BRAINSTEM GLIOM IN CHILDREN**

**E. U. Yanova, N. K. Giyasova**

Samarkand State Medical Institute, Samarkand, Uzbekistan
Course of Radiation Diagnosis and Therapy
Scientific supervisor: Ph.D., Docent **Mardiyeva G. M.**

**Introduction.** The rapid development of radiation technology can detect tumors in children in the early stages. One of these tumors is
glioma, which accounts for 40–45% of all intracranial tumors in terms of incidence, is characterized by rapid growth and a high malignancy index, and quickly leads to disability and death.

**Objective.** To establish the peak of encounter rates in the age groups of children, the frequency of growth of gliomas in different parts of the brainstem, to evaluate the computer-tomographic semiotics.

**Materials and methods.** Computer tomograms of the brain of 45 children diagnosed with brainstem glioma were analyzed, among them 24 girls (53%) and 21 boys (47%). Computed tomography (CT) was performed by the native method and using intravenous contrast enhancement (76% triombrast). The surveyed children were divided into 4 main age groups: from 1 to 3 years old – 6 people (13%); from 3 to 7 years old – 17 people (38%); 10 people – children from 7 to 11 years old (23%); teenage group – 12 people (26%).

**Results.** Patients were given a native study in which the density measurement showed different variations in the density of the brain substance: in 22 cases it was below brain density (49%), in 16 patients (36%) it was equal to and higher – in 7 patients (15%). After that, patients were given intravenous introduction of a water-soluble contrast agent. On the computed tomographic examination for glioma, a well-defined zone of contrast accumulation was detected. After analyzing CT examinations with the introduction of a contrast agent, we found that in 23 patients (51%), there was localization of the tumor in the region of the brainstem, which had infiltrative growth in 18 cases and in 5 cases – nodular growth; in 12 patients (27%) – in the region of the medulla oblongata; in 9 studies with infiltrative growth and in 3 – with nodal growth; in 10 patients (22%), the contrast was accumulated in the region of the midbrain, in 9 cases with infiltrative growth and in 1 case – with nodular.

**Conclusions.** The peak of the occurrence of gliomas of the brainstem most often falls on the period from 3 to 7 years of age. Brainstem gliomas are predominantly localized in the projection of the pons and in most cases have a diffuse type of growth. CT is an affordable and the best method of study of brainstem gliomas in children, giving the most comprehensive information, particularly in combination with intravenous enhancement.

**Keywords:** glioma, brainstem, computed tomography, children
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«Topical issues of medicine»

(Abstracts)

МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ СТУДЕНТОВ И МОЛОДЫХ УЧЕНЫХ НА АНГЛИЙСКОМ ЯЗЫКЕ
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