

Министерство здравоохранения России
ФГБОУ ВО Амурская Государственная Медицинская Академия
Студенческое научное общество

Ministry of Public Health of Russian Federation
Amur State Medical Academy
Students' Scientific Society



СБОРНИК ТЕЗИСОВ ДОКЛАДОВ

26^я НАУЧНАЯ СТУДЕНЧЕСКАЯ
КОНФЕРЕНЦИЯ НА ИНОСТРАННЫХ ЯЗЫКАХ

ABSTRACTS

26th SCIENTIFIC STUDENTS
CONFERENCE IN FOREIGN
LANGUAGES

19 ДЕКАБРЯ 2016 г.

Благовещенск 2016 г.



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Сборник тезисов докладов 26^{ой} научной студенческой конференции на иностранных языках содержит тезисы 600 докладов, заслушанных на трёх секциях:

- Английского языка
- Немецкого языка
- Французского и латинского языков

Редакционная коллегия:

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- проф., д.м.н. **С.С. Целуйко**—проректор по научной работе;
- проф., д.м.н. **Е.А. Бородин**—председатель Совета по
НИИРС Амурской ГМА (ответственный редактор)
- **Н.А. Ткачева**—зав.кафедрой иностранных языков
Амурской ГМА;
- **П.Е. Бородин**—член СНО Амурской ГМА (технический редактор)

Редакционная коллегия не ставит задачей рецензирование и редактирование представленных в сборнике работ студентов, которые публикуются в оригинальном виде. Ответственность за содержание работ лежит на авторах и научных руководителях, как это общепринято при публикации материалов конференций, симпозиумов, конгрессов и т.д.



Section of the English Language

DRUG RESISTANCE OF MYCOBACTERIUM TUBERCULOSIS

Blagova Zh. – the 3rd year student

Scientific leaders - Dr. Med. Sc. Makarov I.Yu., Kostina V.V.

Tuberculosis is one of the 10 leading causes of death in the world. In 2015, there were 10.4 million of TB sick people, and 1.8 million of people (including 0.4 million of people with HIV) died from the disease. According to WHO estimation, the share of the Russian Federation accounts for 1.7% of the total number of cases in the world. Indicators of the effectiveness of treatment of TB patients in the Russian Federation are not high, although on average, in the countries of the world in 2009, the treatment was effective in 87% of new cases. This is due to multidrug-resistant (MDR-TB). This form of tuberculosis is caused by the bacterium *Mycobacterium tuberculosis*, not reacting at least isoniazid and rifampicin, the two most powerful first-line anti-TB drugs. MDR-TB can be treated and cured using second-line drugs. However, such treatment options are limited and require extensive chemotherapy (treatment duration up to two years) by drugs that have a high cost and toxicity. In some cases, it may develop more serious drug resistance. TB with extensively drug resistant TB (XDR-TB) is a more severe form of MDR-TB caused by bacteria does not respond to the most effective anti-TB second-line drugs, in which patients often do not remain any further treatment options. In 2015, approximately 480,000 of people in the world, there developed MDR-TB. The highest burden of MDR-TB problem lies on the three countries - China, India and the Russian Federation - the part of which in total account is nearly half of all cases worldwide. Currently, worldwide success of MDR-TB treatment is achieved in 52% of patients, and XDR-TB in 28% of patients. Thus, the problem of drug resistance in *Mycobacterium tuberculosis* is one of the leading in the field of medical science and its relevance will persist for quite a long time, not only in our country, but throughout the world.

TARGETING THE MICROENVIRONMENT IN ADVANCED COLORECTAL CANCER

Ustinov E. – the 1-st year student

Scientific leaders - T.L. Ogorognikova., E.A Volosenkova

Rectum is the final part of the digestive tract, named so because of its straight form. The wall of the rectum is made up of the same shells as the wall of the colon: mucosa, submucosa and muscle membrane. The mucous membrane consists of epithelium muscular and own plates. Epithelium: In the upper part - a single-layer prismatic, columnar zone of the lower division - multi-layered cube, in the intermediate - stratified squamous non-keratinized in skin - stratified squamous keratinized. The plate it self is a layer of loose connective tissue. Like any epithelial tissue, because of many factors, colon epithelial cells can become cancerous and develop into colorectal cancer. The spread of tumor cells depends on the prior activation of the stroma with transforming growth factor-beta. In addition to the epithelial cells in the colon functioning the important role is played by the stromal-vascular component that creates the optimal microenvironment both in normal and in various pathologies, such as colorectal cancer.

Colorectal cancer (CRC) - diagnosis which is often revealed at late stages when tumor cells have already disseminated. Current therapies are poorly effective for metastatic disease, the main cause of death in CRC. Despite the microenvironment importance for a tumor and progressing metastasis, clinical practice remains predominantly focused on

targeting the epithelial part. Because CRCs remain largely refractory to current therapies, scientists must develop alternative strategies. Transforming growth factor (TGF)- β has emerged as a key architect of the microenvironment in poor-prognosis cancers. Disseminated tumor cells show a strong dependency on a TGF- β -activated stroma during the establishment and subsequent expansion of metastasis. Daniele V.F. Tauriello and Eduard Batlle review and discuss the development of integrated approaches focused on the treatment of microenvironment during poor-prognosis of CRCs. Using the microenvironment cells of tumor as a therapeutic target, is an important milestone for modern oncology.

THE 1st TYPE OF ALLERGIC REACTIONS

Denishchik K., Sun A. – the 3-rd year students

Scientific leaders - Cand.Med.Sc. Matytsin A.P., Kostina V.V.

The term "allergy" was proposed in 1906 by the Austrian pathologist and pediatrician Clemens Pirke to determine the state of altered reactivity, which he observed in children with serum sickness and infectious diseases.

So an allergy - it is a typical immunopathological process developing in contact with the antigen, and is accompanied by damage to the structure and function of its own cells, tissues and organs. Substances that cause an allergy, called allergens. Allergic reactions, which are formed by first type immune damage, called atopic.

I. Stage of immune responses. Normally, the human body is tolerant to environmental allergens. Individuals with the presence of specific molecular anomalies of the immune system under positive receipt of a number of substances in the body develops an active immune response - (sensitization) to allergens. Memory B cells when re-entering the body, cause significant allergen provide express (within 10-20 min), the answer to it, which corresponds to the following stages of the pathological process. The sensitization is not only regulated by the Th2 cytokine profile, but also by the appropriate costimulatory molecules.

II. Stage of biochemical reactions. In this stage, the main role is played by the mast cells and blood basophils. Mast cells (tissue basophils) - a connective tissue cells. They are found mainly in the skin, respiratory tract, in the ways of blood vessels and nerve fibers. Neutrophils and eosinophils are activated and also release biologically active agents, and enzymes.

III. Stage of clinical manifestations. As a result of the action of mediators there is increased microvascular permeability, which is accompanied by the development of edema and serous inflammation.

All of these effects are clinically manifested as attacks of asthma, rhinitis, conjunctivitis, urticaria (redness and blistering), skin itching, local edema, diarrhea, and others. The allergy of the first type is accompanied by increasing the number of eosinophils in the blood, sputum, serous exudate.

CAROTID ENDARTERECTOMY IN SURGICAL PRACTICE

Prygunov V. - 3-rd year student

Scientific leaders – Doc.Med.Sc. A.P.Saharyuk, E.A.Volosenkova

Carotid endarterectomy - is a surgery aimed at removing the inner wall of the carotid artery, damaged with atherosclerotic plaque in narrowing and destructing arteries. The

result of the operation is the restoration of the blood flow in the carotid artery. Carotid disease is a serious disease. With increased pressure plaques can break off from the walls of the arteries. They are carried away by the current of blood and clog the blood vessels of the brain, thereby disrupting the blood supply to certain areas of the brain. In this case ischemic stroke develops. One of the methods of treatment in this case is the operation carotid endarterectomy. It is relatively safe and has a long lasting effect. The operation is performed under a general or local anesthesia. Before surgery neck shaving is performed to prevent infectious complications. After anesthesia, the surgeon makes a small incision along one of the sides of the neck. Carotid artery is isolated. The surgeon grasps it to stop blood flow through it. At this time, the brain receives blood through the carotid artery on the other side. Alternatively, at the time of surgery, the surgeon may install the shunt to bypass the affected area of the carotid artery with the purpose of cerebral blood supply. After separation and compression of the carotid artery, the surgeon makes the incision just above the constriction. Then the surgeon cleans the existing atheromatous plaques by scraping the inner wall of the carotid artery. Next, an incision in the artery is sutured and blood flow is restored. Sometimes, in order to expand the lumen of the artery a small "patch" is set which can be made from either the patient's own vein taken from the lower limb, or of synthetic material. Then sutured wound on the neck is sutured. A sterile bandage is applied. The duration of the operation is approximately 2 hours. This operation is the "gold standard" in the treatment of carotid stenosis.

BIOINFORMATICS - BIOLOGICAL SCIENCE OF THE 21st CENTURY

Barannikov S. – the 3rd-year student, Beznutrov Y., Vasiliev Y., Stanishevsky S., Umarova N., Kherel Ch., Chernikova P., Konev A. – the 2nd-year students
Scientific leader - prof. E.A. Borodin

The term "Bioinformatics" was first used by Paulien Hogeweg in relation to the study of information processes in biotic systems in 1970. Bioinformatics is an integral part of the triad of new biological sciences, including genomics, proteomics and bioinformatics. Bioinformatics is based on the use of personal computers to store and process the information obtained in the course of sequencing the genomes of living organisms. The main target of bioinformatics is nucleic acids and proteins, as compounds that store and implement genetic information.

Typical problems of Bioinformatics are the following: storing information about the primary structure of the gene (i.e. nucleic acids) and proteins, carrying multiple, local and global alignment of sequences of genes and proteins and searching for their homologs, prediction 3D structure and function of proteins based on their primary structure, modeling of protein-protein and protein-ligand interactions (docking algorithms), a high-precision image analysis, computational evolutionary biology, and computer-aided design of drugs. The latter uses computational chemistry methods to create, improve efficiency and study the mechanism of action of drugs. The first drug created using computer-aided design, carbonic anhydrase inhibitor is dorzolamide, registered in 1995. Another striking example of the effectiveness of the use of computer design was the creation of the firm "Novartis" (Switzerland), the drug imatinib (Gleevec) - tyrosine kinase inhibitor (TKI) of the new generation. The drug has proved itself as an effective tool in the treatment of myeloid leukemia and some tumors. The difference of the drug from its predecessors is the ability to differentially affect the malignantly transformed cells and not to affect the normal rapidly dividing cells. At the Department of Biochemistry of the Amur SMA

bioinformatics methods were used to develop a new drug serine protease inhibitor-based on a soybean trypsin inhibitor. The use of “in silico” (local amino acid sequence alignment) revealed a certain proximity of the primary structures of soybean and pancreatic trypsin inhibitors (aprotinin, the active principle of a pharmaceutical preparation Gordoks, Contrycal) and allowed us to predict the plant inhibitor's ability to influence the hemostasis process that had been confirmed in experiments “in vitro”. An important advantage of bioinformatics, in comparison with traditional methods of biology, is the almost complete absence of necessity of bioinformatics research financing. All you need is a certain level of knowledge in the field of molecular biology, English language and most importantly to have the skills to use personal computers to work with scientific electronic databases and to be able to master the appropriate software.

The aim of our work was to get skills of bioinformatics work on the servers of the American Center for Bioinformatic Information (Database Proteins), the European Bioinformatic Institute, the Swiss Institute of Bioinformatics and protein bioinformatic resource (kontsorsium UniProt). In our research, we have attempted to clarify the phylogenetic differences in a number of proteins of animal and vegetable origin, especially of proteins performing similar functions in the body.

TRP ION CHANNELS AS A POTENTIAL TARGETS FOR TREATMENT OF NEURODEGENERATIVE DISEASES. BIOINFORMATIC STUDY

Borodin P. – the 6th year student

Scientific leader - doct. med. sc., ass. prof. Karnaukh V.N.

The transient receptor potential (TRP) family is a diverse group of channels that regulates cation entry and contributes to a vast variety of physiological conditions. There are 28 mammalian TRPs, divided into 6 subfamilies based on homology: canonical (TRPC1-7), vanilloid (TRPV1-6), melastatin (TRPM1-8), ankyrin (TRPA1), polycystin (TRPP1-3) and mucolipin (TRPML1-3). All six members share a common structure of six transmembrane domains with a hydrophobic pore located between the fifth and sixth domains. Situated in the plasma membrane, TRP channels serve as polymodal integrators due to their activation by a variety of stimuli including temperature, osmolality, mechanical force, chemoattractants and ischemia. [1]

TRPs are widely distributed in the central nervous system, with almost every TRP subfamilies being represented. The most of them are present in the cerebral cortex, hippocampus, cerebellum, and amygdala. In the peripheral nervous system, TRPs are highly expressed in dorsal root ganglion cells and primary sensory afferents, where they are involved in thermal and mechanical nociception.

The basic properties of the nervous tissue are:

- excitability (generation of the action potential),
- propagation of the action potential,
- termination of the action potential.

Action potential is generated and spread along the nerve fiber through the Na⁺, K⁺ and Ca²⁺ ions flow into and outside the cell. TRPs are the channels for Ca²⁺, so they are closely associated with the nervous system functioning.

Ca²⁺ flow through the membrane is associated with cell physiology, including gene expression, cell cycle regulation and cell proliferation. Increasing of the TRP expression leads to the Ca²⁺ flow acceleration. However, the intracellular overload of Ca²⁺ leads to the cell death due do the oxidation of membrane lipids by reactive oxygen

species (ROS). Because of that, Ca^{2+} is called “killer ion”. Thus, preventing of Ca^{2+} overload is important for neuronal cells protection.

Reactive oxygen species (ROS) - hydroxyl radical ($\cdot\text{OH}$), hydrogen peroxide (H_2O_2), superoxide radical ($\cdot\text{O}_2^-$) – damage proteins, lipids and nuclear acids. The brain is one of organs especially vulnerable to the effects of ROS because of its high oxygen demand. Oxidative stress plays a central role in a common pathophysiology of neurodegenerative diseases such as Alzheimer’s disease and Parkinson’s disease.

A potential role for TRPM2 and TRPM7 has been demonstrated in the development of Alzheimer’s and Parkinson’s diseases. Expression of the TRPM2 and TRPM7 results in anoxic neuronal damage in ischemic conditions due to the development of oxidative stress, while the inhibition of expression protects cells. [2]

Within the TRPV family, TRPV1 and TRPV4 are activated in ischemic conditions and contribute to ischemia-induced depolarization in hippocampal cells, intracellular Ca^{2+} accumulation and cell swelling. The injection of **hydroperoxides of eicosatetraenoic acid** triggers TRPV1-mediated microglial cell death in the *substantia nigra* in vivo. On the contrary, co-injection of the TRPV1 antagonist **capsazepine** (red pepper) prevented the cell loss (Kim S.R. et al, 2008) [3]

TRPC1, TRPC4, and TRPC5 are presented in the cerebral cortex, hippocampus, cerebellum, and amygdala. TRPC1 overexpression contributes to the dopaminergic neuronal survival in the experimental models of Parkinson disease (Selvaraj S. et al., 2009) In the experimental models of Parkinson disease decreasing of TRPC1 function makes the cells more vulnerable to apoptosis, but overexpression of TRPC1 shows increased cell protection by preventing loss of mitochondrial membrane potential. [4]

To understand the role of TRP in the human body and in the pathogenesis of neurodegenerative diseases it seems reasonable to find information on the primary structure of TRP structures in protein databases, perform total and local alignments for the primary sequences, search for their homologues, predict the 3D structures and functions.

In the current study, we made our try to characterize TRPC1, TRPC4, TRPC5, TRPM7, TRPV1, TRPV2, TRPV3, TRPV4 as they are the most wide-spread in the tissues of CNS. We used UniProt <http://www.uniprot.org/> and NCBI Protein <http://www.ncbi.nlm.nih.gov/protein> databases to find primary structures, active sites or reactive bonds, functional activities, as well as for performing multiple and global pairwise alignment of the primary structures of TRP receptors compared with each other. To perform local alignment and identify library sequences that resemble the query sequence by comparing a query sequence with a library or database of sequences we used UniProt BLAST algorithm.

We found 3-D structures of TRPV1 and TRPV2 in RCSB PDB <http://www.rcsb.org/pdb/home/home.do> and aligned them with a help of RCSB PDB Protein Comparison Tool in offline. For other TRP receptors we created 3D structures in SWISS-MODEL modelling server <https://swissmodel.expasy.org/> based on the known templates.

It was found that TRPs which are associated with the Ca^{2+} -induced cell death have a similar structure (*identity*: 10% and *similarity*: 24% in the align of the tertiary structures of TRPV1 and TRPM7). On the contrary, TRPC1 is associated with the neuronal protection, and identity and similarity in the align of the tertiary structures of TRPC1 and TRPV1 is quite lower (*identity*: 3% and *similarity*: 14%).

It is concluded that studies have revealed that modulation of TRP channels could provide novel treatment approaches for diseases which are at present, poorly controlled.

If this possibility translates into new therapies, it would provide considerable benefit for a large population of patients with unmet medical needs.

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SLEEP FOR A STUDENT: A DREAM OR REALITY?

Konev A. – the 2nd-year student

Scientific leader - I.V. Siyanova, Ph.D

Every day, after work, each of us feels the irresistible need to take a horizontal position, relax and sleep. Almost a third of our lives we spend in this state - in the dream state. Daily physiological sleep, as well as food is a basic need of the body.

Prolonged sleep deprivation is distressing to a person. Reduced rate of mental reactions, decreases mental capacity, fatigue quickly sets.

Sleep duration is changed with age. The following needs for sleep for people of different age groups were established: up to 1 year - 16 hours; 5 years - 12 hours; 12 years - 10 hours; 17 and older - 8 hours.

These well-known rules are not followed by students. As a result livid rings under the students` eyes, lassitude, twitching eyelids - all this has become almost a norm for students of AmurSMA.

The purpose of my work is to conduct a survey among the 2nd-year students of AmurSMA and determine their quality of sleep. The following questions were asked: How many hours a day do you sleep? Do you sleep during the day? How would you describe your state of sleep? Do you have enough time for sleep to wake up in the morning and be ready to learn? 140 students living in hostel 5-6 were interviewed. The results showed that most students did not get enough sleep, since they slept few hours. Many students underestimate the importance of sleep. For some students there is a stereotype that it can not be otherwise in a medical study. However, there are those students who are able to get enough sleep and have time to learn efficiently and perform all scheduled. I want to introduce all students of AmurSMA with their secrets as well as the advice of experts in the matter of sleep.

Tips for falling asleep:

Do not drink coffee before going to bed; it disturbs to fall asleep quickly.

Nicotine is a strong stimulant as well. Make sure to have your last cigarette smoked less than 3-4 hours before bedtime.

Just make sure, that your stomach wouldn't cry out for help, it is difficult to fall asleep quickly when it is empty and asks to eat.

To go to sleep quickly, you should remove any other external stimuli.

STEM CELLS AND THEIR USE

Mongush A., Konev A. – the 2nd-year students

Scientific leader - Cand.Biol.Sc. T.L. Ogorodnikova

The development of new technologies in medicine, studies conducted in leading medical centers around the world will shape the future development of medicine for decades to come. One of the most impressive directions is the use of cellular technologies.

To update the cellular composition of the damaged body without surgery, to solve the most complicated challenges that were previously solved only by organ transplantation - these problems are solved today by using stem cells.

For patients it is a chance to start a new life. The important point here is that the use of the stem cell technology is available for virtually every patient and gives truly amazing results.

Stem cells are capable of transforming, depending on the surrounding cells, into tissues of various organs. One stem cell gives many active functional descendants. There are many diseases that are almost not cured or their treatment is not effective with the use of medicinal method. Such diseases have been the object of close attention of researchers.

Everyone has stem cells. They were found primarily in the bone marrow. It is easy to discover stem cells in young people and children. In the aged, they are in a smaller quantity. A secret of stem cells is that they can become any cell in the body. Once the stem cells receive a signal about the tissue damage of any organ, they leave for the lesion. There they turn into those tissue cells or organs, which need to be protected. They are able to develop all types of cells: the cells of liver, nerves, smooth muscles, mucous membranes.

An adult has a very small amount of stem cells. Therefore, the older an individual, the more difficult the process of regeneration and recovery of the body happen.

For the first time it is possible to treat such serious diseases as cirrhosis, diabetes, stroke, using stem cells. Their source in the body is the bone marrow. In the developed countries, there are special institutions (banks) for the storage of the stem cells frozen over time. In such a blood bank a newborn baby's umbilical cord blood may be placed, so that in case of injury, illness a baby can have an opportunity to use its own cells. Some forms of leukemias as well as such diseases as arthritis, multiple sclerosis, lupus erythematosus became treatable due to the use of these cells.

The list of diseases in which stem cells are used is very diverse and includes benign tumors (adrenoleukodystrophy, anemia, osteoporosis, a Gunther's disease etc.) and malignancies (leukemia, breast cancer, neuroblastoma and others).

With the help of stem cells it is possible to significantly improve skin elasticity, relieve a person from eczema and dermatitis. Wrinkles, spots after acne will disappear. Hair and nails have a healthy look, their growth is restored.

Perhaps fantastic ideas about the synthesis of human organs and human immortality will ever become a reality.

EVALUATION OF EFFICIENCY OF DIHYDROQUERCETINUM IN BURNS TREATMENT

Leonov D., Mityakin M. - the 1st -year students

Scientific leaders – N.P. Krasavina, Cand.Ped.Sc. I.A. Bibik

A burn is damage to body tissues caused by the action of high temperature or by the action of certain chemicals (alkalis, acids, salts, heavy metals, etc.). There are 4 degrees of burns: first-degree burn - epidermal tissue damage, second-degree burn - damage of the epidermis, dermis and the papillary dermis, third-degree burn - damage of the epidermis, dermis and the papillary dermis, fourth-degree burn – damage of the subcutaneous tissue, muscles, bones.

Dihydroquercetinum is a main flavonoid compound of the Siberian and Dahurian larch. This substance has high biological activity; also it has many positive effects on metabolic reactions and the dynamics of the various pathological processes. They are:

- 1) anti-oxidant action,
- 2) anti-edema action,
- 3) hepatoprotective action,
- 4) antineoplastic action,
- 5) lipid-lowering action,
- 6) radioprotective action.

During the experiment animals were divided into two groups - experimental and control. In this experiment a thermal burn of 250 ° performed with a soldering station after anesthesia for experimental animals was simulated in both groups.

A gelatin pellicle with dihydroquercetinum was applied directly to the burn. Pellicle fixation was achieved by the use of Bioglue B-6 and a dry sterile dressing as well as a narrow medical plaster.

Thus, after the experiment on the rats recovery was revealed in 1.5-2 months for the experimental group, and in 2-3 months for the control group. On that basis we conclude that the time of healing of the third-degree burns with a gelatin pellicle with dihydroquercetinum is reduced by 1.5 – 2 times.

HOMO SAPIENS AFTER A HALF A MILLION YEARS

Gasanova Ch. - the 2nd-year student

Scientific leader – L.G. Zherepa, Cand.Ped.Sc. I.A. Bibik

Most morphologists never doubt that evolutionary changes occur in real time and will continue in the future. One of the most difficult questions in this case is how human appearance will change in the course of further evolution.

Many anatomists and anthropologists who study the theory of "a man of the future", pay great attention to the structure of human body.

As to anatomists, they believe that “ ... the human body is not immutable, complete, and it is just one of the last stages of its development; changes, which occurred in it, proceed so slowly that they are not accessible to our direct observation, and a variety of abnormalities and deformities as milestones indicate the ways of its evolution ” (ND Bushmahin, 1913). Based on this theoretical position and doing a detailed description of various "progressive anomalies" of individual parts of the human skeleton for many years, anatomists tried to characterize the appearance of a distant future man.

Thus, this report proposes a closer look at: which changes will occur with some structures of the human body and which "portrait" will have a Future Human.

FOOT AS A UNIT. THE ARCH OF THE FOOT. ASSESSMENT OF SHRITER INDEX IN THE 2nd-YEAR STUDENTS OF AMUR SMA

Mayorova A., Sulitseva E. – the 1st-year students

Scientific leaders – L.G. Zherepa, Cand.Ped.Sc. I.A. Bibik

Foot is a distal department of the lower extremities. It is anatomically and functionally complex and it is an important organ of support and movement. A lot of bones and joints forming the foot, the arched structure allow it to perform also spring and balancing function.

In the common structure of foot five longitudinal arches and one transverse are distinguished. The longitudinal arches begin from one point of a calcaneus and then divide forwards along the concave downwards radiuses corresponding to five metatarsal bones. The longest and the highest of the longitudinal arches is the second. The longitudinal arches in the forepart connected in the form of parabola form the transversal arch of foot. It is formed at the level of high points of the metatarsal bones. All arches are strengthened by ligaments and muscles. When the ligaments are weakened the arch falls, the foot is flattened and can get a wrong structure called “flatfoot”.

Functional abnormalities, both without change, and with change of a structure cause changes in all locomotor apparatus, statics and kinetics of a man that lead to work decrement.

To recognize platypodia in the students of the 2nd-year of Amur SMA the indications of Shriter index from morphological passports which they fill in during the I and II semesters were analysed. The data of 40 girls and 40 young men were studied. Among 40 girls 24 individuals have a normal arch of foot which amounts 60%, and a flattened foot arch (i.e.revealed platypodia) in 16 which amounts 40%. Among 40 young man 18 individuals have a normal arch of foot which amounts 45%, and 22 students have a flattened arch which amounts 55%.

It stands to reason that the predominance of flatfoot is in young men, i.e. there is platypodia. 40% of girls have platypodia - it is a high rate too.

As for prophylaxis of platypodia, serious attention is paid to footwear and foot walk. Fitting tightly and too loose footwear is harmful. Low heels and high backs at boots and shoes, flexible outsoles are important for feet to spring. It is impossible to walk constantly in flat-soled footwear and especially in thin-soled footwear. Big weight also leads to soles "sprawling". Foot walk in the correct footwear strengthens the ligaments of foot and prevents development of platypodia, and also it is necessary to manage weight.

SCREENING METHODS OF INVESTIGATION AS THE BASE OF PREVENTION OF DIABETES MELLITUS

Kozhechenkov K., Mikhailov P – the 5th-year students

Scientific leader – Prof., Doc.Med.Sc. L.N. Voit

Diabetes mellitus (DM) is one of the most serious medicosocial and economic health problems all over the world. Currently, diabetes mellitus (DM) is ranked third among the direct causes of death after cardiovascular diseases and cancer. That's why many issues associated with this disease, are delivered to the state, at the federal level in many countries of the world. Modern level of diagnostic tools, new means of monitoring of blood glucose, the introduction of innovative insulins and hypoglycemic drugs, the development of high-

tech methods of treatment can significantly change the situation of the patients prognosis, reducing the incidence, disablement and mortality due to chronic complications in diabetes.

Maintaining of the risk factors target control, such as blood glucose and unhealthy lifestyle, is still the most perspective direction in preventing the development and progression of diabetes. An indispensable condition for the effective control of diabetes is the creation of active screening programs to maximize early detection of complications, and optimal organization of clinical and diagnostic process of a multidisciplinary approach to treatment.

The article presents an analysis of the survey and the screening of rapid diagnosis of peripheral blood glucose levels in 785 people aged over 18 years, which were held under the Preventive event to promote healthy lifestyles, timed to coincide with World Health Day "Be healthy!". The basis of conducted survey is to identify the awareness of diabetes among the Blagoveschensk population, namely about which factors can cause the development of diabetes, and about the consequences of this complex medicosocial disorder.

GENERAL PROVISIONS OF SUMMER TRAINEESHIP IN CHINA

Kozhechenkov K., Mikhailov P. – the 5th-year students

Scientific leader – M.D. I.V. Kostrova

Thankfully, our friends from Heilongjiang University of non-traditional medicine are providing a unique chance of taking summer practice there in their University.

We, as a small group of 10 students of 4th and 5th years of education went there to take our practical traineeship, which was, of course really challenging, coz it's the other country, the other world in some aspects even. And, surely, completely different approach to healthcare, which means different hospital organization, different treatment methods and so on.

We were having studies for almost 3 weeks in 3 departments that we were supposed to take our practice basically, this is of course surgery, therapy and obstetrics and gynecology, based on 1st Harbin hospital. So we were divided in different groups, going to different departments for few days and then switching.

Mainly it was all about the exploring techniques and methods of treatment of most common diseases and how much those are differ from ours. We were living in quiet lovely hostel for foreign students. There also were large amount of students from different courtiers that came there for a short duration for scientific or professional traineeship and for a full study program as well.

I definitely should notice that the city is developing really fast, there are lots of worth visiting places, so a cultural program can be intensive, which is always good, we never had time to be bored with it.

So the main positive reasons to take part in this program: this is almost perfect possibility to test yourself, to learn something new, to improve your English skills, learn lot's of medicine and how it's being done in different country, and, of course, it's quite interesting touristic trip.

THE RESULTS OF THE «HEALTH FAIR» PROJECT HELD AMONG SCHOOLCHILDREN OF THE 9th – 11th CLASSES OF EDUCATIONAL INSTITUTIONS OF BLAGOVESHCHENSK AND AMUR REGIONS BY THE STUDENTS OF THE AMUR SMA

Elkina A., Koryukova T. – the 5th year students.

Scientific leaders - E.A. Sundukova, N.A. Subacheva

The aim of our scientific work was to identify bad habits, particularly smoking, among schoolchildren. 3240 participants from 18 educational institutions of Blagoveshchensk and Amur regions were underwent an anonymous questionnaire which was consisted of 10 questions.

Our findings were based on conducted questionnaire data for 2014 and 2015.

1. The number of smoking students less than one year was increased, while smoking students more than a year were declined.
2. In most cases, students begin to smoke because of the "bad company".
3. The most part of parents, of smoking children are aware that their children smoke.
4. All respondents are aware of the dangers of smoking.
5. The number of smokers who want to get rid of smoking in 2015 was increased, compared to 2014 year.

This suggests that the project "Health Fair" was not missed by the children, and they make the conclusion for themselves about the dangers of smoking.

ANALYSIS OF CLINICAL EXAMINATION OF PATIENTS WITH CHRONIC NONINFECTIOUS DISEASES IN THE CITY POLYCLINIC № 2 FOR THE PERIOD SINCE 2013 TO 2015

Labunko T., Cherednichenko O., Mehedova M. - the 6th year students

Scientific leaders - Cand. Med. Sc. O. M. Goncharova., N.A. Subacheva

It is known that clinical examination is an important tool for the detection and prevention of noninfectious chronic diseases and their risk factors. It is a system of measures which are aimed at the prevention of public health; prevention of the disease; reduction of the frequency of exacerbations of chronic diseases, morbidity, disability and mortality; and improvement of the life quality.

The aim of this scientific research is the analysis of clinical examinations of population with chronic noninfectious diseases in the city Polyclinic № 2 for the period since 2013 to 2015.

Our research is based on the annual reports of the clinical examinations, provided by the statistics department of the city Polyclinic № 2.

A SET OF CLASSIFICATIONS OF PERSONAL FRUSTRATION

Guseinli G. - the 6th year student

Scientific leaders - Brash N.Q., Subacheva N.A.

In our scientific report we touched on the set of classifications of personal frustrations:

- paranoid frustration of the personality;
- schizoid frustration of the personality;
- disocial frustration of the personality;
- hysterical frustration of the personality;

- obsessiv-compulsiv frustration of the personality;
- disturbing (evading,avoiding) frustration of the personality;
- narcissistic frustration of the personality.

TUBERCULOSIS OF BONES AND JOINTS

Guseinli G.- the 6th year student

Scientific leaders - Karakulova O.A., Subacheva N.A.

According to localization we distinguish the types of osteal and joint tuberculosis, symptoms of tuberculosis of bones, means and ways of diagnostics of tuberculosis of bones, x-ray Patten, laboratory methods of research and of course the treatment of tuberculosis of bones.

Depending on localization the following types of osteal and joint tuberculosis are distinguished:

- Tubercular spondylitis (backbone);
- Tubercular drives (knee joints);
- Tubercular coxitis (hip joints);
- Tubercular omarthritis (shoulder joints);
- Tubercular olenitis (elbow joints);
- Tuberculosis of ankle joints and bones of foot;
- Tuberculosis of radiocarpal joints;
- Tuberculosis of tubular bones.

PARROT DISEASE – PSITTACOSIS (ORNITOSIS)

Nogai V. – the 5-th year student

Scientific leaders – Soldatkin P.K., Subacheva N.A.

The first cases of parrot disease known as PSITTACOSIS was described by Urgenson in 1876. He was the first scientist who found and described this disease, when he observed sick people with atypical pneumonia who had contact with parrots. Morang in 1895 offered to call this disease – psittacosis (from latin «psittae» - parrot). Later the descriptions of episodes of human infection from, seagulls, sparrows, hens, ducks, turkeys were appeared. In 1942 Mayer called the disease which was appeared from the contact with birds not parrots but ornithosis (from the latin «ornis» - bird). In 1930 Levinthal, Koles, Lilly found and described infectious species of birds. This pathology is a pressing problem because people frequent have contact with birds in manufacturing, in the city sometimes at home. So it is very important to diagnose timely the symptoms of the disease in people and sick birds and to take preventive measures to prevent infection.

SEVERE FORMS OF HEMORRHAGIC FEVER WITH RENAL SYNDROME: CURRENT, OUTCOMES

Vinohodova A., Koryukova T. – the 5th year students.

Scientific leaders - A.V. Gavrilov, N.A. Subacheva

48 % of patient wits severe course of HFRS disease with marked development of hemorrhagic syndrome and acute renal failue were revealed in the upper Amur region.

The main foci are located in the southern agriculture areas of region and in winters they communicate with the foci of HFRS, located in the northern China. There is a need

in rapid assessment of the disease, prediction of outcomes and possible evacuation to the regional centers.

Our study touches on the problems of severe forms of hemorrhagic fever with renal syndrome in people of the upper Amur region.

Our study revealed that in the focus of the disease in the far East (Amur region) the disease has more severe forms than in the European part of Russia (Volga region).

It depends on the untimely address to the medical centres for medical help.

CASE OF EARLY MANIFESTATION OF THE CHARCOT-MARIE-TUTA DISEASE

Ahremenko A. Ostanina A. - the 5th year students

Scientific leaders - Chupac E.L., Subacheva N.A.

The Charcot-Marie-Tuta disease is a large group of hereditary diseases of the nervous system which is characterized by chronic, progressive weakness and atrophy of distal limb muscles, reduction of tendon reflexes, foot and hand deformations, change of gait and sensory impairments. The degeneration of motor and sensory peripheral nerve fibers is the base of the disease. Manifestation of symptoms are often observed in the second decade of life. Mostly an autosomal type pattern of inheritance is predominated.

A boy of 1 year 8 months old complaining of the rough delay of static-motor development was under our observation. Full examination of the child was conducted and Charcot-Marie-Tuta diagnose was made.

The interest of our observation was not just that the disease had its debut at an early age, but also in the fact that its development was associated with the presence of newly arisen mutations in the gene of the child for the detection of which a for the detection of which a required exome sequencing was conducted.

FOLATE CYCLE VIOLATION DURING PREGNANCY

Eroputko S., Mirganyan M. – the 4th-year students

Scientific leaders - Cand.Med.Sc. Zaritskaya E.N., Kostina V.V.

In the first 12 weeks folic acid is responsible for the correct formation of the fetus neural tube. Folic acid deficiency causes congenital malformations of the fetus and the sulfur amino acid metabolism is disturbed and there is a delay amino acid homocysteine in the blood. Due to the decreased activity of the folate cycle enzymes, which are responsible for the conversion of folic acid (MTHFR, MTRR, MTR) there is an accumulation of homocysteine in the body that can stimulate the formation of blood clots. This leads to abortion, premature placental abruption, preeclampsia and chronic fetal hypoxia. It is necessary to add on the earlier timing of folic acid in the diet, it helps reduce the risk of complications during pregnancy, especially it is necessary in the presence of hyperhomocysteinemia.

ANALYSIS OF THE FREQUENCY OF THE CONGENITAL MALFORMATIONS ACCORDING TO THE DATA OF THE REGIONAL PERINATAL CENTER IN 2009-2015

Saaya L., Alieva.A. - the 5-th year students

Scientific leaders - Cand.Med.Sc. E.N. Zaritskaya, N.A. Subacheva.

Congenital malformations can be defined as structural or functional abnormalities that occur during fetal development and can be detected before birth, during birth or later in life. Studies of CM are not only of scientific interest, but also have practical significance in the structure of causes of infant death and disability.

In the world congenital malformations occur in 5-6 cases per 1,000 live births.

According to the data of the regional perinatal center from 2009 to 2015, there were diagnosed 712 cases of congenital malformations, which was 9 ‰ of all pregnancies.

The structure of the CMF was distributed as follows:

- the 1st place is occupied by congenital malformations of the nervous system (anencephaly, encephalocele, hydrocephalus, spinal hernia) -2,62 ‰,
- the 2nd place is occupied by deformations of the musculoskeletal system (reducing defects limbs, diaphragmatic hernia, omfagotsele, gastroschisis) -1,54 ‰,
- the 3rd place is occupied by chromosomal abnormalities (Down's Syndrome) - 1,42 ‰,
- the 4th place is occupied by cleft lip and palate (cleft palate, cleft lip with or cleft palate) -1,32 ‰,
- the 5th place is occupied by congenital anomalies of genitals (hypospadias) - 1,01 ‰.

321- malformations incompatible with life, which led to perinatal loss (miscarriage, stillbirth, abortion) were diagnosed for the period from 2009-2015 There were 391 live births with malformations.

In the diagnosis of CMF ultrasound methods, karyotyping and non-invasive method of DNA diagnostics are of great value.

CONGENITAL MALFORMATIONS OF THE FETUS IN THE AMUR REGION

Alieva A., Saaya L. - the 5th year students

Scientific leaders - O.S. Yutkina, N.A. Subacheva.

Congenital malformations can be defined as structural or functional abnormalities that occur during fetal development and can be detected before birth, during birth or later in life. Studies of congenital malformations are not only of scientific interest, but also have practical significance in the structure of causes of infant death and disability. Over the past six years in the structure of infant mortality and disability in the Amur region vices occupy the 1-2 places. According to estimates 276,000 children die each year from malformations during the first 4 weeks of life. Malformations can lead to long-term disability that has a significant impact on individuals, their families, health systems and society.

The structure of the congenital malformations for the 2009-2015 year:congenital malformations structure was distributed as follows: the 1st place takes Dauna Syndrome – 15.7%, the 2nd place – person malformations (cleft lip/palate)- 14.6%, the 3d place – hypospadias and spinal hernia -11.2%, the 4th place hydrocephalus – 11.09%.

A huge role in solving this problem belongs to the prevention of birth defects. By improving the efficiency of prenatal diagnosis the birth of children with congenital malformations can be reduced, and accordingly infant mortality and disability due to this pathology can be also redused.

MELANOMA

Valieva L.A., Ustarhanova N.Sh. - Interns - dermatovenerologists

Scientific leaders - Can.Med.Sc. Korneeva L.S., Subacheva N.A.

Melanoma is a disease in which malignant (cancer) cells form in melanocytes (cells that color the skin).

Melanoma can occur anywhere on the skin.
Unusual moles, exposure to sunlight, and health history can affect the risk of melanoma.
Signs of melanoma include a change in the way a mole or pigmented area looks.
Tests that examine the skin are used to detect (find) and diagnose melanoma.
Certain factors affect prognosis (chance of recovery) and treatment options.
We considered risk factors.

AWARENESS OF STUDENTS OF MEDICAL HIGHER INSTITUTION IN MATTERS OF CONTRACEPTION

Kiselko N., Kiselko M., Danilov M. – the 5th year students
Scientific leaders – Doc.Med.Sc., Prof. Woight L.N., Subacheva N.A.

Currently the problem of contraception among young people are very important due to the last events about created appeal called as “On circulation of citizens to ban abortion”, that caused us thinking about consequences of this actions in the future and what it can be lead to. We also did a supposition, that a lot part of young people are deficiency competent in sexual education, that’s why we created the anonymous survey list, which included questions of currently information of students of ASMA about methods of contraception and ways of terminating an unwanted pregnancy (abortion); possible consequences of abortion and its effect on women's health (the fetus health), with the aim of further analysis of the gained data and synthesis of the results about the general picture of this problem in the academy. According to the final results the holding of informative and educational conversations on the subject of sex education since the puberty (12-15 years of age) can be recommended as measures of preventing of unintended pregnancies and occurrence of venereal disease.

PREVALENCE OF RENAL REPLACEMENT THERAPIES HEMODIALYSIS IN THE AMUR REGION

Kulpin D., Yakushova O. - 5th year students.
Scientific leaders - I.V. Kastrova, N.A. Subacheva

Renal replacement therapy (RRT) - is a complex heterogeneous in structure and principles of the activities carried out to maintain the life of the patient with permanently lost functions of his own kidneys. In practice, such states are called terminal renal diseases (TRD) or terminal-stage chronic renal failure (TSCRF). The methods include the RRT is program hemodialysis (PG), peritoneal dialysis (PD) and kidney transplantation (KT). To save man from the TRD must be systematically cleansing his blood from toxic compounds and to ensure removal of excess fluids from the body. For this purpose, there are effective means and among them - the artificial kidney. The procedure called program hemodialysis, which takes place in a specialized dialysis centers. However, hemodialysis, peritoneal dialysis and occupy a significant amount of time due to the fact that we are talking about short-term artificial replacement of natural body functions operating continuously throughout life. That is why PG or PD can be considered only as an intermediate treatment of patients with TSCRF.

CLINICAL CASE NIEMANN-PICK DISEASE

Krivenko A, Gorshkova K. - the 5-th year students
Scientific leaders – Can.Med.Sc. Chupac E.L., Subacheva N.A.

Niemann-Pick disease (sfingomielolipidoz) - a hereditary disease caused by the defect of lysosomal sphingomyelinase, this is due to mutations in the sphingomyelin phosphodiesterase 1 gene and is characterized by the accumulation of sphingomyelin in the lysosomes, by the damage of the nervous system and by visceral organs. The lack of the enzyme blocks the cleavage of sphingomyelin into ceramide and phosphocholine, which accumulates in the lysosomes of cells of visceral organs («foamy» cells), including the brain. SMPD1 gene mapped to 11 chromosome locus lip 15.4-r15.1. Niemann-Pick disease is an autosomal recessive pattern of inheritance. Approximate frequency - 1: 100,000 births.

Manifestation of disease falls on the early age of the child - from 4 to 6 months. Symptoms of sluggish baby are anxiety, feeding difficulties, and sometimes nausea, vomiting, diarrhea, unexplainable temperature rises, respiratory disorders. It is characterized by an enlarged liver and spleen, jaundice, generalized lymphadenopathy. There may be spasmodic paroxysms. Gradually, there is a regression of acquired skills, decreased of interest in the world around them. Children cease to hold his head, sit and roll over on their own. In the second year of life it is obvious cachexia and growth retardation. In the terminal stages of the disease there are spasticity, opisthotonus, bulbar disturbances, absence of tendon reflexes. The lethal outcome is between the 2nd and the 3rd year of life. Effective treatment of the disease has not been developed, and treatment is symptomatic.

Alexander M., a year and 10 months was admitted to the hospital with complaints of parents of regress in psychomotor development, frequent tremors, stiffness in the large joints, the presence of umbilical and inguinal hernias. The boy was born with which the weight of 3550 g, length 53 cm. Apgar score was 7/8 points. The diagnosis was based on the following data: a manifestation of the main symptoms of the disease in the first year of life; rapidly progressive disease; regression of psychomotor development; coarse facial features; joint stiffness; hepatosplenomegaly; anemia and thrombocytopenia; symptom of "cherry stone" in the fundus; reduction of sphingomyelinase lysosomal of enzyme activity in peripheral blood leukocytes. DNA analysis (Molecular Genetics) - SMPD1 gene mutations - deletion of the thymidine at 1198 of the cDNA position. Proband was assigned to combined therapy with the use of neuroprotective drugs, antioxidants, A, C, B vitamin complex, broad-spectrum of antibiotics, hepatic.

In the management of patients with suspected disease of Niemann-Pick it is necessary to take into account the severity of the disease and its early deaths and the difficulties of differential diagnosis.

LONG-TERM OUTCOMES OF HEMORRHAGIC FEVER WITH RENAL SYNDROME

Gorshkova K., Krivenko A. the 5th year students
Scientific leaders - A.V. Gavrilov, N.A. Subacheva

The development of the infectious process in hemorrhagic fever with renal syndrome (HFRS) has complex of mechanisms associated with the direct impact of the virus on the walls of the small blood vessels of all organs.

Since 1986, under the supervision there were 484 patients with a clinical diagnosis of HFRS. The observations were made, starting with the acute period of the disease in the

clinic of infectious diseases of Amur State Medical Academy, Department of Nephrology of the land the 1st, and the 3rd city hospitals, the military hospital.

The analysis allowed to identify a group of patients with severe form of the disease (315 people).

To study the residual long-term effects there were examined 116 convalescents who have had severe forms of the disease.

Assessing the dynamics of the recovery period in HFRS, taking into account the received clinical, biochemical and instrumental data there were made the outcomes of this disease.

1. Complete recovery:

- a) early reconvalescence (within 6 months);
- b) prolonged reconvalescence (for 7 months - 5 years);

2. Residual effects:

- a) asthenoneurotic syndrome;
 - b) lumbar pain syndrome;
 - c) the tubular renal insufficiency syndrome (interstitial focal nephrofibrosis);
 - g) hematological syndrome (neutropenia, lymphocytosis);
 - d) Dysproteinemia (gipoalbumemiya, hyperglobulinaemia)
3. Secondary urinary tract disease (chronic pyelonephritis).

Results:

- 1. From the side of the sindrom of tubular failnare is formed, the decrease of the excretory capacity of is remaind tubular system is remains for long-time; of tubular failure is formed: after a severe form of the disease; revealed chronic pyelonephritis and hypertension are revealed;
- 2. From the side of the liver changes were manifested in the US in the form of diffuse manifestations and hepatomegaly. Complaints were presented in a way of dyspeptic character;
- 3. From the respiratory system changes during the recovery period were not observed;
- 4. There are changes in the pituitary gland in the form of the formation of cysts, decrease the size of the pituitary due to hemorrhage, but not always the pituitary lesion were irreversible.

The results of the study of the pathology of the internal organs and the nervous system in patients who have been underwent HFRS indicate the need to organize the monitoring of convalescents.

PENTASOMYA ON X CHROMOSOME

Vinohodova A., Koryukova T. – the 5th year students.

Scientific leaders - E.L. Chupak, N.A. Subacheva

Cases of X pentasomya are extremely rare. Leading clinical manifestations of the syndrome are neurodevelopmental delay in combination with somatic microanomalies.

X pentasomya is developed only in female individuals. The cells of our body usually contains 46 chromosomes, 22 pairs of which are from 1 to 22 plus two sex chromosomes, X, or Y. Women have two X chromosomes and their chromosome set is

known as 46, XX karyotype. But the girls with pentasomy, instead of two, there will be five X chromosomes and their karyotype is written as 49, XXXXX.

Most likely, that such children have four X chromosomes from the mother and one from the father. This event, in which four X chromosomes, are remounted from the mother has its technical name - nondisjunction of chromosomes. And it happens more often than you can imagine.

The first clinical description of the girl with X pentasomy belongs to N. Kesaree and P. Wooley. In subsequent years, the world literature has been described in about 20 cases of X pentasomy H.

Because of the rarity of this variant of X polysomy the observation of this pathology in girl of 6 years old was observed on the basis of a consultative and diagnostic medical genetic St. Petersburg city center.

In this case, they were able to establish the cause of intellectual defect, caused by chromosomal imbalance.

CHARITY AS EFFECTIVE HELP TO PERSONS IN NEED

Telyakova A., Semdyankina Y. – the 5th year students

Scientific leaders – Doc.Med.Sc, Prof. L. N.Voight, N.A. Subacheva.

The charitable help in Russia has long traditions. It had a long way of development and became the base of forming such professional activity as public work.

Charity implies rendering by individuals or the organizations of the free and regular aid to the needing people.

Activities of the doctor are out of limits of his designated use and the doctor is not only the eminent public figure, but the participant of charity.

Charity is performed for the purpose of:

- social support and protection of citizens,
- preparation of the population for overcoming consequences of natural disasters, for prevention of accidents and assistance to victims
- assistance to strengthening of the world, friendship and a consent between the people,
- assistance to strengthening of prestige and role of a family in society;
- activities in the sphere of prevention and protection of public health;
- environmental protection and protection of animals;

The research of the bases of charity plays an important role now. Today there is a revival not only the charitable help of the state, but also private organizations, and also charity of separate legal entities. All this promotes rendering more effective help to the needing people.

LIVER TUMORS IN CHILDREN

Cherednichenko O., Labunko T. – the 6th -year students.

Scientific leaders - S.N. Nedid., N.A. Subocheva

Actuality. Primary tumors of the liver in children are relatively rare diseases and constitute up to 3% of all tumors occurring in childhood. The liver is the third-most-common region area for intra-abdominal malignancy in children, following adrenalneuroblastoma and Wilms tumor. Liver cancer takes part from 0.5 to 2% of all pediatric malignancies and about 5% of abdominal oncology. Among this malignant tumors, hepatoblastoma (HB) and hepatocellular carcinoma (HCC) are the most common

tumors and accounts for two thirds of all liver tumors. Benign liver tumors accounts for 30% and are represented by hemangioma, mesenchymal hamartoma, hepatocellular adenoma, teratoma and focal nodular hyperplasia.

Objective: Analysis of the clinical case.

The aim of this scientific research is the analysis of literature and clinical case.

FEATURES OF DIAGNOSIS OF MALIGNANT MESOTHELIOMA OF PLEURA

Mehedova M., Cherednichenko O. – the 6th year students.

Scientific leaders - Doc. Med. Sc. V.V. Voicehovskiy., N.A. Subocheva

Diffuse malignant mesothelioma – is a malignant tumor of the pleura, it consists of mesothelial cells and showing diffuse growth on a pleural surface. Mesothelioma more often affects pleura (57.1%), peritoneum (39.1%), and pericarditis (1%). Malignant pleural mesothelioma (MPM) – is a rare neoplasm. However, it is the most common primary malignant tumor of pleura, the incidence of which is always increasing.

Objective: to study the diagnostic features of MPM.

Materials and Methods: Literature analysis.

Clinical and radiological picture of this disease is determined by the degree of compression of the lung by the tumor, by its germination in the adjacent anatomical structures, by the amount of fluid in the pleural cavity and the presence of metastases in other organs and tissues.

CT helps to detect of the diffuse mesothelioma out an early stage the pathological changes of which are detected in the pleural sheets: the dissemination of tumor on pleura, its relationship with the tissues of the chest wall, lungs, and mediastinum.

According to the date of literature, the possibilities of MRI and CT in identification of the stage are limited. This is due to the fact that the spread of this neoplasm is unpredictable. Most accurately, changes in the pleural cavity might be detected by thoracoscopy. It helps to detect the tumor early, to determine the extent of its dissemination and relationship with other organs.

The diagnosis can only be exposed after histological examination of biopsy and surgical material.

ANALYSIS OF CASES OF IDIOPATHIC PULMONARY HYPERTENSION ACCORDING ARCH

Melnikova V. - the 6-th year student.

Scientific leaders - Can. Med. Sc. O.N. Sivyakova, Subacheva N.A.

Idiopathic PH - a rare disease of unknown etiology characterized by a marked increase in pulmonary vascular resistance and pulmonary artery pressure, often progressive course with the rapid development of the pancreas decompensation and fatal prognosis. Idiopathic PH is diagnosed at an average pressure in the pulmonary artery 25 mm Hg at rest and greater than 30 mm Hg. during exercise stress, normal wedge pressure in the pulmonary artery (10-12 mm Hg. Art.) and the absence of possible causes of PH (heart disease, lung, recurrent pulmonary embolism, etc.).

Analysis of case histories of patients with IPH of ARCH was conducted in the period from 2011 to 2016. There were revealed 4 cases of the disease between the ages of 19 to 43 years old: women were dominated -75% (3); fatalities - 50% (2). The family nature of

the disease was observed in 50% (2) patients, and 75% (3) patients - inhabitants of the city Belogorsk.

It turned out that the duration of symptoms in patients before diagnosis was from 6 months to 16 years, in the cases of fatal outcome - the median survival from the time of diagnosis is 9 years, surveys in other clinics and excluded the diagnosis were also revealed. A comparison analysis of patients history was done and it revealed: smoking, presence of relatives with a similar pathology, presence of concomitant diseases; physical examination revealed acrocyanosis, cardiac hump, auscultation data. The characteristic changes in the clinical and biochemical analysis of blood were determined: polycythemia, increased transaminases, hyperbilirubinemia, respiratory alkalosis. From instrumental methods ECG, echocardiography (hypertrophy or overload of the right heart), spirometry, CT scan were studied.

Despite the rarity of this disease, you need to remain aware of idiopathic pulmonary hypertension in the event of dyspnea of unclear etiology. Physicians of narrow specialties have no alertness in recognizing of idiopathic pulmonary hypertension, interpretation and analysis of revealed symptoms are usually completed by local pathology that unduly delay the preliminary stage of the diagnosis. Patients with suspicion on idiopathic pulmonary hypertension should be sent as soon as possible to the appropriate profile specialists for individual therapy which is appointed by the severity of the condition, effectiveness of treatment carried out previously.

FEATURES OF THE HFRS EPIDEMIC PROCESS IN THE REGION OF THE UPPER AMUR REGION

Saaya L., Alieva A. - the 5th year students

Scientific leaders - A.V. Gavrilov, N.A. Subacheva

Among the diseased people men (67.4%) dominate, women -32,6% in 2 times less. The most hard-working age are people from 21 years to 50 years old (65.1%). More than half of all patients are rural people (64.5%). The distribution of patients by occupation is presented in table №3.

On the territory of the Amur region the centres of HFRS are located in the southern agricultural areas of the Zeya-Bureya Plains.

22.8% of patients lived in regional centres, and only 6.1% of people lived in city, 6.6% of people lived in workers' settlements. The predominance of the rural population and a professional feature of cases are associated with the work and the possible transmission routes. According to our observation, all patients performed the following kind of work (Table №4) during 2 months before the illness.

According to our observation: 43.1% of patients indicated the presence of a large number of house mice and at work, especially in the field under the shocks and the old rolls of hay and straw. Moreover, 13.3% of the patients only 9.9% of patients cared for HFRS. It should be noted that 23.4% of patients noted the incidence of the disease in relatives and neighbors, and 17.9% were from the same village.

ANALYSIS OF ROAD TRAFFIC ACCIDENTS IN AMUR REGION

Krivenko A., Gorshkova K. - the 5th year students

Scientific leaders - Can. Med. Sc. Sundukova EA, Subacheva N.A.

In the current socio-economic conditions, there is a high incidence of road traffic injuries and their adverse effects which have a significant position in the structure of mortality.

Among the reasons for the death of citizens in Russia - deaths due to external causes, including road traffic accident (RTA) took the 3rd place and the 2nd place in the Amur region. According to statistics from Rosstat and Amurstata for 2015 were deaths from external causes in Russia is 177 590 people (the 1st place - diseases of cardiovascular system (930 105 persons), the 2nd place - tumors (300 232 people)), and in the Amur region from external mortality reasons - 1755 people (the 1st place - diseases of cardiovascular system (4218 people), the 3rd place - neoplasms (1638 people)).

Traffic accident is an event that occurred during the movement of the vehicle and the road with its participation, which killed or injured people, damaged vehicles, facilities, goods or other caused material damage.

The urgency of the problem was confirmed by the statistics of the traffic police in 2014 and 2015, according to which there were 185 540 road accidents in 2014 in Russia in which 24,423 people died and 228,855 were injured. There were 1507 road accidents in the Amur region in which 168 people died and 1904 were injured. In 2015, Russia registered 184,000 cases of traffic accidents, in which 23 114 people were killed and 231,197 were injured. As for Amur region, there were 1398 cases, including 152 dead and 1777 wounded. Consequently, there was positive trend to a decrease in traffic accidents in 2015 compared to 2014 year. In accordance with the decision of the Russian Government dated 14.11.2014 number 1197 to July 1, 2015 the amendments to the "Russian Rules of the Road." As the rule came into force, all pedestrians in the dark time obliged to have reflective elements on clothing that drivers would notice them from a distance.

In order to reduce road traffic injuries there was created a three-tier system for the provision of medical assistance to victims in the accident (trauma centers), and a routing scheme of trauma centers of I-III levels was developed.

Thus, in compliance with all rules of road safety as the drivers and pedestrians the number of accidents may be reduced in future.

THE EXPERIENCE OF LAPAROSCOPIC APPENDECTOMY OF SURGICAL DEPARTMENT OF THE AMUR REGIONAL CHILDREN'S CLINICAL HOSPITAL 2011-2015

Pnuykhtin O., Pnuykhtina M. the 6-th year students

Scientific leaders - Nedid S. N., Subacheva N.A.

Acute appendicitis is the most common acute surgical diseases of organs of abdominal cavity. In acute appendicitis and peritonitis the operation of choice is laparoscopic appendectomy.

The aim of our work was the analysis of postoperative complications of laparoscopic appendectomy in the surgical Department.

The most common complication is postoperative infiltration of the abdominal cavity (3,2%), which is diagnosed according to clinical findings, ultrasound picture on the 5-7 day from the onset of treatment. Among them, the largest number of cases of patients with uncomplicated forms of acute appendicitis are (n=11), that, most likely, speaks about the violation of the methodology and the inadequacy of the treatment of the mucosa of the stump of the Appendix.

Implementation in routine practice of the laparoscopic appendectomy, laparoscopic

sanation, and drainage of the abdominal cavity in the peritonitis has allowed to reduce the number of postoperative complications compared to classic operations.

DIAGNOSIS OF CORONARY ARTERY LESIONS IN UNSTABLE STENOCARDIA

Rogovchenko.A, Archipov S. - the 3rd year students.

Scientific leaders - Doc. Med. Sc., Prof. Menshikova I. G., Subacheva N.A.

Today acute coronary syndrome (ACS) is widely used in emergency cardiology. It includes acute variants of cardiac ischemia (AVCI)- heart attack and unstable stenocardia.

Cardiovascular diseases are still remained the one of the most basic cause of mortality, and it negatively influences on demographic situation and socio-economic indicators of the Russian Federation.

Regional vascular center has been opened and began to function on the base of the Amur Regional Clinical Hospital and on three primary vascular branches in Blagoveshensk, Svoboniy, Raichikhinsk since July 2010. In 2015 two primary vascular branches were opened in Tynda and Zeya.

Coronary angiography and percutaneous coronary angioplasty with stenting of cardiac ischemia patients have been performing since March 2011. Coronary angiography and surgical treatment of cardiac ischemia have been carrying out on the base of Cardiac Surgery Center of the Amur State Medical Academy.

We examined ten patients with unstable stenocardia that were treated in the primary vascular department of City Clinical Hospital of Blagoveshensk : 8 men, 2 women. The mean age of patients was 65 years.

All patients got survey: clinical and laboratory. ECG, echocardiography were registered. Coronary angiography and stenting were performed.

We found single-vessel affection of coronary artery in 4 patients, double-vessel affection of coronary artery in 4 patients and triple-vessel affection in 2 patients.

All patients got percutaneous coronary angioplasty with stenting. After this operation mortality is decreased and patients return to their usual life.

HISTORY OF THE DEPARTMENT OF HOSPITAL SURGERY

Alieva A., Saaya L- the 5th year students

Scientific leaders - Prof. V.V. Yanovoy., N.A. Subacheva

Department of the Hospital Surgery of Amur State Medical Academy was founded in October 16, 1956, when D.M. Sch H.Y. Iosset was elected as a Head of the Department of Hospital Surgery by the order № 125 of BSMI named that the post of Head of the Department of Hospital Surgery was appointed MD Herman Y. Iosset as H.Y. Iosset was born in 1899 in the city of Shiauliai SSR. In 1928 he graduated from the Leningrad Institute of medical knowledge. For several years he worked as the head of the surgery department in the city Kutra of Sverdlovsk Region. In 1934, he was invited to the post of assistant to the department of surgery of the Leningrad Medical Institute, defended his thesis in 4 years. In 1969 the course of Traumatology, which was headed by Associate Professor Canson was transformed into an independent chair. In 1952 there was the first graduation of young doctors - 170 people, 70% of excellent and good ratings on surgery. In the second year of the department there were already 7 teachers. Scientific direction was defined by Prof. GJ Iosset.

Yakimashko O.E for 18 years worked at the department after graduating, the Khabarovsk Medical Institute in 1947. Her scientific and medical activities were devoted to the pathology of the thyroid gland in the Amur region, the scientific topic is now widely studied in many departments of our academy.

The next, the brightest page of the department is connected with the name of Professor Kulik Y.P. He arrived in Blagoveshchensk in 1968 for the first time. Before it he headed the cardiovascular department in Smolensk. From 1968 to 1971 he. He headed the Department of General Surgery of BSML. In 1967 he organized a research group to develop a new method of cardiopulmonary bypass with natural oxygenation, and then founded the "problem research laboratory circulatory support with natural oxygenation." And already in 1969, it carried on the first heart surgery in the region. Then there were performed 150 operations each year on closed procedure and 120 to AIC. There were received 173 certificates for invention, it should be noted that in his direction the whole bureau, headed by engineer Mashkonovym worked.

In 1968 he opened a branch of chest surgery. A significant role in the development of thoracic surgery was devoted Shishlova VI, the pioneer of videotorakain surgery.

One of the main scientific work was the study of Sudakova M.V. It was dedicated to the development of an artificial ventricle. This ventricle had to replace a natural one at all critical conditions associated with loss of function of his own heart. In 1995 the reorganized department was headed by V.V. Janovoy.

CONGENITAL ARVI, COURSE FEATURES

Alieva A. - the 5-th year student

Scientific leaders - P.K Soldatkin., N.A Subacheva.

Congenital acute respiratory viral infections can cause fetal intrauterine lesions that lead to miscarriage, stillbirth, and the formation of placental pathology. The hard and long form of the virus infection in a pregnant woman, can be the greater probability of hitting the fetus, but mild forms of influenza and other acute respiratory viral infections can also lead to a severe pathology. Intrauterine respiratory viral infections can be arised by hematogenous path of infection or infection of the fetus as a result of aspiration by amniotic fluid or through the conjunctiva during childbirth. Infection during embryogenesis (from 3 to 12 weeks.) leads to death of the embryo or the appearance of malformations. Infection of the fetus after the 12th week of development leads to occurrence of fetopathy. Intrauterine malnutrition, stigma dizembriogeneza, prematurity, morphofunctional immaturity, brain damage are revealed in infants wits confirmed congenital respiratory viral infection. In the infection of the fetus in the last days of pregnancy, the newborn in the first hours or days after birth clinical symptoms of congenital respiratory viral infection are revealed. Clinical picture is characterized by the defeat of the respiratory system with the development of catarrh of the upper respiratory tract and pneumonia; often the brain is involved, in the pathological process. Generalization of the process contribute antinatal hypoxia, intranatal asphyxia, and prematurity, fetal immaturity. The reason of deaths outcomes that occur mainly in the early stages (within first 3 days of life), in most cases, is a viral-bacterial pneumonia, at least - brain damage.

We also give information about classification of congenital ARVI: congenital flu, congenital parainfluenza infection, congenital adenoviral infection, congenital respiratory syncytial infection, congenital viral infection.

THE ROLE OF SSS IN PROFESSIONAL TRAINING OF FUTURE DOCTORS

Kramarenko A, Dementieva H – the 5th year students

Scientific leaders – Doc. Med. Sc, Prof. Voight L.N, Subacheva N.A.

The acts for many years Student Scientific Society (SSS) - a scientific association of students of the Amur State Medical Academy takes an active part in social life of our academy.

This society consists of students who are involved in scientific and research work as well as young researches from the graduated students. In the early years the number of circle members was 200 people, and now their number has increased significantly up to 1700 people.

SSS was organized in 1952. Its founder was Professor Kira Alexandrovna Meshcherskaya and the first chairman – Rodion Petrov, was a student of the 1st course. During the entire existence of SSS then were replaced not only supervisors but also the SSS Chairmen. Society was headed by such famous scientists as Meshcherskaya Kira Alexandrovna, Protasov Vladimir Yakovlevich, Kulik Yaroslav Petrovich, Pavel Belozarov Tihonovich, Ryzhavsky Boris Yakovlevich, Zabolovskaya Larisa Ivanovna, Borodina Galina Petrovna.

Such as students Rodion Petrov, Viktor Lifar, George Antimony, Viktor Smirnov, Vladimir Zhizhin Evgeny Borodin, Vladimir Samohvalov, Marina Savelyeva, Alexey Barabash, Sergey Tarasyuk, Paul Matytsin Andrew Gritsoun, Sergey Anikin. Were in the role of the SSS Chairmen.

At present, the position of the supervisor takes the head of the Department of Biochemistry, Doc. Med. Sc., Prof., Honorary Worker of Higher Professional Education of the Russian Federation, Yevgeny Borodin, and the position of Chairman of the SSS takes the 6-year student, excellent students - Melitsky Eugeny.

Being engaged in the scientific circle, students deepen their knowledge not only on the subject of the circle, but also in related disciplines, develop their creative abilities, broaden their horizons, learn to speak in public. Working in a circle, students have the opportunity of scientific training with teachers and with each other outside the classroom.

Scientific work of students are published in the AGMA collections of student research papers, scientific journals, which are also, in turn, allows students to expand their capabilities and even closer approach to their future profession.

ENZYMOPATHY. GALACTOSEMIA

Zaitseva O. – the 2nd year student

Scientific leaders – Assoc. Prof., Cand. Biol. Sc. Doroshenko G. K., Kostina V. V.

Galactosemia - a rare genetic disorder of a metabolism at which normal process of metabolism of a galactose changes. The galactosemia is inherited behind autosomno-recessive type and arises because of deficiency of activity of enzyme of galaktozo-1-phosphate. It is characterized by the increased maintenance of a galactose in blood – a galactosemia and in urine – a galactosuria.

The babies affected with a galactosemia usually have symptoms:

- a lethargy;
- attacks of vomiting, diarrhea;
- retardation of physical development;
- an icterus.

The only treatment at a classical galactosemia is strict abstention from the use of a galactose and lactose. Babies can't eat breast milk and use mixes on the basis of soy milk.

JAUNDICE (HYPERBILIRUBINEMIA) IN NEWBORNS

Grek N., Chuvakina A. - the 2nd year students

Scientific leaders - Cand. Med. Sc. E.V. Egorshina, V. V. Kostina

Jaundice (hyperbilirubinemia) in newborns — state of children of the first months of life, when the skin, mucous membranes, whites of the eyes (sclera) turn in yellow. It occurs due to the increase in the blood special substances, bilirubin. Jaundice is observed in 65 – 70% of newborns during the first week of life, approximately 10% of cases it is pathological. The most common is physiological jaundice. The reasons for the increase in the concentration of bilirubin in the blood after birth. 1. Increased the rate of formation of bilirubin due to: a) physiological polycythemia; b) shorter life expectancy of the erythrocytes containing fetal hemoglobin; c) the catabolic orientation of a metabolism leading to formation of bilirubin from sources which have no erythrocytes (myoglobin, pirrola, hepatic cytochrome, etc.); 2. Functional ability of a liver on bilirubin removal is reduced: a) bilirubin capture is reduced by a hepatocyte; b) activity of GTP and other fermental systems of hepatocytes is reduced (activity of GTP increases by 50% within the first week, reaching the level of adults only by 1–2 months of life); c) the excretion is lowered; 3. Repeated intake (recirculation) of indirect bilirubin from intestines in blood is increased in connection with: a) high activity of enzyme of a β -glucuronidase in intestines; b) receipt of a part of blood from intestines through venous (Arantsiyev Canal) in the lower hollow vein, passing a liver; c) transitory disbiocenosis intestines. Classification of neonatal jaundices - Jaundices: physiological and pathological. - On genesis all jaundices are subdivided on hereditary and acquired. - According to laboratory data all neonatal jaundices are divided into two main groups: 1) hyperbilirubinemia with prevalence of indirect (untied) bilirubin; 2) hyperbilirubinemia with prevalence of direct (connected) bilirubin.

CHILDREN'S ONCOLOGY IN THE AMUR REGION

Nesterenko T., Demyanenko E., Shikulskiy A. – the 2nd year students

Scientific leaders – Guba L. A., Kostina V. V.

Cancerogenesis processes in children are of great interest from the standpoint of both clinical and theoretical oncology. Interest in oncology in the Amur region is due to the growth of disease. We note an increase in the number of patients with primary localizations of malignant tumors in the last ten years. On average, each year we have a more than 2.5 thousand new patients of which 25% - children. There's no galloping growth of cancer in our region during the last five years. Amur region has a below average indices out of the total cancer incidence. In the Far Eastern Federal District we give almost all regions by «leadership», the lower the incidence is only in Chukotka and Yakutia. However, cancer still remains one of the pandemics. This term is used in the case where the death rates are the primary cause of demographic losses. The proportion of patients with the fourth stage remains high, especially since 2015 in the Amur region, the index rose from 23 to 25.3%.

DETOXIFICATION OF XENOBIOTICS

Nesterenko T., Demyanenko E., Shikulskiy A. – the 2th year students

Scientific leaders – Cand. Med. Sc. Egorshina E.V., Kostina V.V.

Xenobiotics - a substance foreign to the body. Neutralization of most xenobiotics occurs in two phases:

I – phase of chemical modification;

II - phase of conjugation.

I. Chemical modification - is the process of enzymatic modification of the original xenobiotic structure, which results in:

- breaking intramolecular bonds;
- joining the molecule additional functional groups (-CH₃, -OH, -NH₂),
- removal of functional groups by hydrolysis.

The types of modifications:

- Oxidation (microsomal, peroxisome)
- Restoration
- Isomerization
- Acetylation, methylation, hydroxylation
- Hydrolysis etc.

As a result of chemical modification xenobiotics become more hydrophilic, increasing their solubility and they are excreted in urine. Additional functional groups are necessary the substance to enter a phase of conjugation.

II. Conjugation - the formation of covalent bonds between the xenobiotic and endogenous substrate. Formation of links occurs on xenobiotic OH or NH₂-group. The resulting conjugate has low toxicity and is easily excreted from the body in urine.

CAFFEINE AND THEOBROMINE. OUR MISCONCEPTIONS ABOUT COFFEE

Beznutrov Ya. – the 2nd year student

Scientific leaders: Cand. Med. Sc. Doroshenko G.K., Kostina V.V.

Caffeine takes effect immediately and for 20-25 minutes. It has effects: narrows vessels of all organs except kidney blood vessels, so blood flow improves in all organs, hence the person feels good spirits. Theobromine effects are opposite: expands all vessels, except renal, so - pressure reduction and deterioration of blood flow to the kidneys, and the person begins to feel uncomfortable pulling sensation in the kidneys and fall asleep.

The worst thing is that people are not aware of these arrangements fall into a very unpleasant situation: bake for oneself instant coffee, do not receive any cheerfulness, and after 20-25 minutes begins theobromine stage, which is very often the cause of frequent road accidents.

THE AGENTS APPLIED AT THE OBESITY

Kapustyanskaya A., Mokrushina Yu. –the 4-th year students

Scientific leaders - Assoc.Prof. Anokhina R.A., Kostina V.V.

Obesity is in excess adjournment of fats. It results from disturbance of power balance for a long time. At the same entering of energy with a nutrition surpasses its expense, for example at an insufficient exercise stress. It must be kept in mind also genetic

predisposition to excess body weight. Besides, an important role is played by mental and neuroendocrinal factors, and also age.

Obesity represents a serious medical problem it is risk factor of development of diabetes, cardiovascular diseases, an osteoarthritis and many other chronic diseases. Besides, the premature mortality of such contingent of people is enlarge.

Phenaminum – bond from group of phenylalkilamin with the central and peripheric sympathomimetic properties belongs to effective anorexigenic substances. The mechanism of its action is mainly that it strengthens release from the nervous terminations of norepinephrine and Dofaminum their return capture.

For depression of caloric content of a nutrition it is recommended to limit reception of sugar for a long time or to use its substitutes of non carbohydrate structure (like Saccharinum, aspartame) which to taste are similar to saccharin, but have low caloric content or are badly soaked up from a digestive tract. It is very rational way as carbohydrates (glucose) are one of important sources of synthesis of fats in an organism.

Appetite suppresses and melanocortin, interacting with special receptors (MC4).

NEUROBRUCellosIS

Kapustyanskaya A., Mokrushina Yu. – the 4-th year students

Scientific leaders – Cand.Med.Sc., Assoc. Prof. Karnauh A.I., Kostina V.V

It causes by several species of Gram-negative bacteria of Rubella. The main source of an infection are the sick animals (large and small cattle) representing the natural tank of brucellas in the nature. Infection occurs by contact, nutritional, airborne ways.

Clinical implications. The incubation period is averages 2-4 weeks in the average, but can be much longer. The onset of the illness is acute, from temperature increase up to 40 °C, a cold fit, profuse sweat, joint and muscular pains, sleeplessness, a headache, a hyperadenosis, hepatosplenomegaly.

The brucellosis encephalitis is shown by paralyzes of extremities, conduction disturbances of sensitivity, hyperkinesis, coordination disorders. The CNS lesion at a brucellosis has a polymorphic clinical picture. The combined CNS lesions with development of a meningocephalitis, encephalomyelitis, meningoencephalomyeloradiculitis are quite often observed

In an acute stage and at meningitis and an encephalitis parenteral administration of antibiotics is recommended. At chronic forms of a brucellosis the antibrucella polyvalent vaccine is administered.

VASCULAR DEMENTIA

Mokrushina Yu., Kapustaynskay A.A. – the 4-th year students

Scientific leaders – Prof. Karnaukh A.I., Kostina V.V.

Vascular dementia - the expressed disturbance of cognitive functions owing to cerebrovascular disorders leading to disturbances of social functions, professional skills and ability to self-service.

For the dementia it is characteristic acute emergence of cognitive disturbances for the first month (but no more than three months) after the first or repeated strokes. The multiinfarctive vascular dementia is mainly cortical, it develops gradually (for 3-6 months) after a series of small ischemic episodes. At a multiinfarctive dementia there is "accumulation" of infarcts in a brain parenchyma. Existence of arterial hypertension and

signs of a lesion of deep departments of white substance of cerebral hemispheres is characteristic of a subcortical form of a vascular dementia.

Retardation, rigidity of all mental processes and their lability, narrowing of a focus of interest are characteristic of patients with a vascular dementia. At patients it is noted perceptible depression of cognitive functions (memory, attention, thinking, orientation, etc.) and difficulties when performing functions in everyday life and family life (service of oneself, cooking, shopping, filling of financial documents, orientation in a new situation, etc.), loss of social skills, adequate assessment of the disease. Depression of memory on last and current events - the characteristic symptom of a vascular dementia, however mnemonic disorders are expressed more softly in comparison with a dementia at Alzheimer's disease. Disturbances of memory are shown mainly when training: storing of words are complicated, visual information, acquisition of new movement skills. Generally active procreation of material suffers while simpler recognition is rather safely. At later stages disturbances of abstract thinking and judgments can develop. The expressed narrowing of volumes of any attention, appreciable disturbances of its functions - concentration, distributions, switchings are defined.

INHIBITORS OF A PROTON PUMP AS REMEDY FOR A PEPTIC ULCER OF A STOMACH

Mokrushina Yu., Kapustaynskaya A. – the 4-th year students
Scientific leaders – Assoc.Prof. Anokhina R.A., Kostina V.V.

Inhibitors of a proton pump (H^+/K blockers +-Atfazy, further IPP) — anti-secretory medicinal preparations for treatment the acid dependent diseases of a stomach, duodenum and esophagus due to blocking of a proton pump ($N + / To$ +-Atfazy) parietal cells of a mucosa of a stomach and decrease, thus, secretions of the hydrochloric acid.

Inhibitors of a proton pump are the most effective and modern medicines at treatment of ulcerous damage of a stomach, duodenum and esophagus providing decrease of acidity and, as a result, aggression of a gastric juice.

The mechanism of action of an inhibitor of a proton pump. Inhibitors of a proton pump, after passing of a stomach, get to a small bowel where they are dissolved, then on a blood flow come to a liver in the beginning, and then get through a membrane into parietal cells of a mucosa of a stomach where concentrate in a secretory canaliculus. Here, at acidic value pH, inhibitors of the proton pump are activated and turn into a tetracyclic sulfenamid which is loaded and therefore it isn't capable to get through membranes and doesn't leave an acidic compartment in a secretory canaliculus of a parietal cell. In this form inhibitors of a proton pump form strong covalent bonds with mercaptogroups of the cysteic remains of H^+/K +-Atfazy that blocks conformation transitions of a proton pump, and it becomes irreversible the secretion of the hydrochloric acid excluded from process. So production of acid to renew, synthesis of new H^+/K +-ATFAZ is necessary. A half of H^+/K +-ATFAZ the person is updated in 30-48 hours and this process determines duration of therapeutic action of IPP. At the first or single dose of IPP its effect isn't maximum as not all proton of a pump are built in a secretory membrane by this time, a part of them is in cytoashes. When these molecules, and also again synthesized by H^+/K +-ATFAZ appear on a membrane, they enter interaction with the subsequent doses of IPP, and its anti-secretory effect is implemented completely.

DISTOTION OF A COAT HANGER

Mokrushina Yu., Kapustyanskaya A. – the 4-th year students

Scientific leaders – Cand.Med.Sc. Mirlas E.M., Kostina V.V.

Distotion of a coat hanger (shoulder dystocia), further DP — a complication of the second period of childbirth when after the birth of a head there is a delay of a forward shoulder for symphysis or peg and socket articulation in a pelvis, and back arm at this time or densely concisely in a sacral hollow, or is under the cape therefore further promotion of a fetus on patrimonial ways of mother stops.

Maintaining tactics:

It is necessary to work quickly, avoiding three things (3 P: pulling, pushing, pivoting):

- not to pull (not to make excessive tractions for a head);
- not to push (not to try to squeeze out a fetus);
- not to bend (not to make excessive lateral bendings of a head).

In English-speaking obstetrics there is a mnemonic abbreviation of HELPERR [H — help to call to the aid, E — evaluate for episiotomy (to think of an epiziotomiya), L — legs, legs (Mac-Roberts's acceptance), P — pressure, pressure (over a pubis), E — enter, to enter a hand (for internal turn), R — remove, to remove, take the back handle, R — roll, to turn ("on all four").

Mac-Roberts's acceptance - a method is effective, easy, safe and quickly in fulfillment. Thighs bring into contact with a stomach, trying to obtain at the same time reduction of a lordosis and an inclination of a pelvis. This acceptance, naturally, doesn't reduce the sizes of a small pelvis, but in case of movement of a lonny joint there are cranially conditions for release of a forward arm.

Thus, timely and correct rendering of obstetric benefit in case of a distotion of a coat hanger promotes decrease in frequency of patrimonial injuries of newborns.

LONELINESS PSYCHOLOGY

Mokrushina Yu., Kapustyanskay A. – the 4-th year students

Scientific leaders – Brush E.G., Kostina V.V.

One of representatives of psychoanalysis of Zilburg considers distinguished loneliness and privacy. Privacy it read an essence "normal" and the "passing mood" resulting from absence specific "someone".

The loneliness is insuperable, unpleasant (it as "worm" corrodes heart), constant feeling. Zilburg considers that such lines of the personality as a narcissism, megalomania and hostility, and also aspiration to save infantile feeling of own omnipotence are the reasons of loneliness. Such nartsissistic orientation begins to form at children's age when the child together with feeling of joy to be darling feels the shock caused by the fact that he is small, feeble being, forced to wait for satisfaction of his needs from others.

Fromm-Reihman, assigning the loneliness reasons, emphasizes a harmful consequence of a premature excommunication from maternal kindness.

Weiss selected two types of loneliness: emotional and social. The first is result of absence of such tight intimate attachment as loving or matrimonial. The social loneliness is result of absence of significant friendly relations or feeling of a community that can express in experience of melancholy and feeling of a social marginality.

STRUCTURE OF NAILS IN NORM AND UNDER ONYCHOMYKOSIS

Zaitseva O. – the 2nd year student

Scientific leaders – Prof., Dr. Med. Sc. Krasavina N. P., Kostina V. V.

Nails - horny epithelial skin appendages in the form of plates lying on the dorsal surface of the distal phalanges. In the nail apparatus there is proper nail plate, bed, matrix, cuticle and nail ridges. Nail functions: prevents damage of the fingertips, increase the sensitivity of the fingertips, plays an important role when manipulating with small objects.

The growth of the nail - the constant formation of a new substance of the nail plate. Various factors influence on the rate of growth.

About the state of health we can judge by the appearance of nails mind: their shape, pattern and color changes during the flow of the pathological processes in the body. Pink, shiny, smooth and fully appropriate form of finger nails - a sign of absolute health.

One of the manifestations of pathological changes in the structure of the nail is a nail fungus (onychomycosis). Onychomycosis - the most common disease in which the nails turn yellow, become brittle and thick, covered with cracks. The disease is caused by three types of fungi, but most fungi species *Trichophyton rubrum*.

Prevention is based on personal and social activities and health education. It is important to observe good personal hygiene, use of individual shoes.

NERVE DAMAGE IN HERPETIC INFECTION

Pchelina K., Shpidonova R. - 4th year students

Scientific leaders: Cand. Med. Sc., Assoc. Prof. Karnauh A. I., Kostina V. V.

The herpes virus is a DNA-containing and belongs to the family of herpes viruses. A characteristic feature of all herpesviruses is their ability to remain in a latent form in the ganglia and lymphoid tissue.

Herpes simplex virus 1,2 (HSV - 1,2, HSV-1,2), infection usually occurs by contact. After recovery, the virus migrates to the trigeminal ganglia, where HSV-1 and HSV-2 in more sacral ganglia. For reactivation of the virus results in decreased immunity and its output to the periphery, which is manifested stomatitis or characteristic rash in the mouth and on the lips, if it is HSV-1 and HSV-2 is characterized by the manifestation of the lesions on the genitals. Herpetic complication is encephalitis. There is a clinic of acute focal encephalitis with severe symptoms. There are foci of necrosis in the frontal and temporal lobes, which can lead to transtentorialn wedging, which will lead to death. You can recover from neurological deficits.

Herpes simplex virus type 3 (TSB-OG) Varicella-zoster (VZV) causes two types of lesions - chicken pox and shingles. If the virus damages the spinal ganglia, then there is a picture of herpes zoster or zoster (Human herpesvirus 3, HHV-3). Shingles is caused by reactivation of the virus in the lymph nodes, in those early recover from chickenpox. There are blisters on the skin dermatome area. There are severe radicular pain in the area of herpetic vesicles (persistent or recurrent, burning and painful, poorly amenable to analgesics). Prognosis is favorable. Neuralgic pains can be stored for a long time. In rare cases there may be relapsing course. varicella encephalitis can occur when lowered immunity. It occurs with a frequency of 0.1 - 0.5%. At 2-3 day appear rash, encephalitis development is associated with the penetration of the virus into the subarachnoid space after the stage of viremia. There is a demyelinating process with perivenous inflammatory infiltration, damage often occurs in the cerebellum, brain stem, at least - in

the spinal cord and the cerebral hemispheres. Out of encephalitis is characterized by complete recovery.

PLOT OF DELIRIUM

Shpidonova R. - the 4th year student

Scientific leaders- Brush N. G., Kostina V. V.

This is the main content of the delusional concept, which can take many forms. Delusional judgments of the patients are subjective, and almost unique, but they reflect the dominant ideas in society. Classification based on the ideas of V. Grezinger includes persecutory delusions, depression and grandeur.

Delusions of grandeur is manifested in patients with allegations that they have extraordinary intelligence and strength. By the greatness of delirium delusions of wealth are similar, inventiveness, reformists, of high birth, love. When delusions of wealth patient claims he owns countless treasures.

As a rule, persecutory delusions (delusions of persecution) always takes place with a sense of fear, mistrust and suspicion towards others. Often, "pursued" becomes the persecutor. By persecutory delusions are delusions relationships, values, harassment, exposure, poisoning, injury, staging. jealousy.

For depressive delirium is characterized by negative emotions, pessimistic installation. The most typical for this group of self-incrimination delusion, self-deprecation and sinfulness, are usually observed in depressive states - when the depressive phase of a circular psychosis, involuntal melancholia. For depressive hypochondriac delirium refers to dysmorfomaniac. It is characterized by unreasonable concern patients who are at imaginary signs of serious and incurable disease, exaggerated attention to the health of the patient. Most often hypochondriacal complaints related to physical health, and so hypochondriac syndrome is sometimes interpreted as delusions of bodily transformations, delusions imaginary physical illness. However, there are cases when patients say they are sick by severe mental illness at. Patients it is dominated a sense of sadness and depression that, is often the cause of suicidal behavior, sometimes patients are punished physically abused.

MONITORING OF COMMUNITY-ACQUIRED PNEUMONIA

Nikitina D., Skripelev A. - the 3-rd year students

Scientific leaders – Prof. Chubenko G. I., Kostina V. V.

Identification of patients with community-acquired pneumonia (CAP) carried out by experts of therapeutic and prophylactic institutions (TPI) in all types of medical care. CAP diagnosis is considered definite if there's a radiologically confirmed focal infiltration in patient of the lung tissue and by the presence of clinical symptoms: acute fever at the beginning in the disease, cough. The final diagnosis of the disease, flowing with symptomcomplex is diagnosed in considering of clinical and laboratory examination case history of the patient.

The decision to hospitalize patients with a confirmed diagnosis of CAP takes the physician in with the standards of medical care.

In every instance in CAP doctors of all medical institutions in the prescribed manner within 12 hours send urgent notification to the Federal Service on the place of detection of the disease, specifying the diagnosis and the results of the study.

Laboratory examination of CAP patients with sporadic disease is carried out in laboratories accredited in accordance with established procedure in the direction of health care facilities.

In severe CAP it is expedient to conduct research: on legionellosis pneumonia in generalized dangerous infections. These studies are conducted in organizations of microbiological work in the prescribed manner.

When registering an epidemic outbreak of CAP with the group incidence laboratory tests are conducted in the laboratory of medical organizations and organizations that provide state sanitary and epidemiological supervision.

ANALYSIS OF THE FREQUENCY OF STROKE IN PATIENTS WITH HYPERTENSIVE DISEASE

Pushkov A., Skripelev A., Nikitina D., Baldanov E. - the 3-rd year students
Scientific leaders- Cand. Med. Sc. Kvasnikova Yu. V., Kostina V. V.

Hypertension (H) - the most common disease that is associated with a significant risk for cardiovascular development and death. In Russia, the prevalence of H in women - 40.4%, among men - 37.2%. Hypertension in its development is associated with structural and morphological changes in the vascular system of the head.

In CBHD AR "Blagoveshchensk City Clinical Hospital" there was retrospective analysis which aim was to identify the incidence of acute cerebrovascular accident (CVA) in patients with hypertension. It was investigated 95 case histories in 2015 at the age of 47 up to 89 years old. In 85.2% of patients there was diagnosed ischemic stroke (IS), in 14.8% of patients - bleeding (HS) one.

Among patients with IS lesion usually localized in vertebro-basilar pool, in the pool of left and right middle cerebral artery. Patients lesions were more frequent in the right hemisphere of the brain and cerebellum pool.

In most people there were noted following harbingers of stroke: headache (92.6%), dizziness (66.6%), speech disorder (44.7%), nausea (35.6%), the rise in blood pressure (32.5%), epistaxis (1.7%).

Analysis of hospital outcomes showed that there were discharged 7.6% with recovery, with an improvement - 78.8%, "no change" - 0.6%. The lethal outcome is set at 11.5% of patients.

The results can be used in the planning of activities for the prevention of cerebral complications of hypertension.

CONSERVATIVE TREATMENT OF CHRONIC TONSILLITIS

Piura D. – the 4th year student
Scientific leaders – Dr. Biol. Sc. Simonova N.V., Kostina V.V.

Chronic tonsillitis is the inflammation of the tonsils that occurs with periodic exacerbations in the form of angina.

Medications are selected from the following groups:

1) Antibiotics. Drugs of antibiotic therapy is assigned only in the period of exacerbation, and only after a crop on sensitivity of causative agents (Amoxicillin, Cephalexin, Oxacillin, etc.).

2) Probiotics. Their appointment is necessary during treatment of chronic tonsillitis by antimicrobials (Normoflorin, Calm, Primadophilus, Acipol, Narine).

3) Antiseptics. They can be in the form of tablets or lozenges: Strepsils, Sage, Septotele, Faringosept, Sebidin, Streptocid. Also they are available in sprays and aerosols: Miromistine, Bioparox, Ingalipt, Hexetidine. Preparations for the lubrication of the tonsils are very effective: Lugol, Hlorofillipt, Yoks, Yodinol.

4) Analgetics. In severe pain they are often prescribed drugs of the group of non-steroidal anti-inflammatory agents (NSAIDs): Ibuprofen (Nurofen).

5) Antihistamines are needed in the treatment regimen as decongestant and desensitizing medicines. This group of drugs enhances the action of other drugs and reduce the time of treatment. Antihistamines of the latest generation are usually prescribed (Cetirizine/Zyrtec, Zodak, Cethrin; Fexofenadine/Telfast).

6) Immunomodulatory drugs. In the treatment of tonsillitis it is recommended to use natural remedies: chamomile flowers, propolis, tincture of ginseng. Medication is Imudon, rutaskorbin Rue "Belmedpreparaty", Lizobakt.

7) Mitigating drugs. To eliminate dryness and sore throat recommended to use a natural plant oils (sea buckthorn, apricot, peach).

INFLUENCE OF AN ELECTROMAGNETIC ON HEALTH OF THE PERSON

Mokrushina Yu., Kapustyanskay A. – the 4-th year students

Scientific leaders – Cand. Med. Sc. Goryacheva S.A., Dr. Med. Sc. Prikhodko O.B., Kostina V.V.

The body of the person has its own electromagnetic field as any organism on the Earth thanks to which all cells of an organism work harmoniously. Electromagnetic radiations of the person are still called a biofield (his visible part — aura). Don't forget that this field is the main protective membrane of our organism from any negative impact. Destroying it, bodies and systems of our organism become an easy spoils for any pathogenic factors.

If other sources of radiation, much more powerful, than the radiation of our body, begin to affect our electromagnetic field, so chaos in an organism begins. It also leads to cardinal deterioration in health.

And not only household appliances, mobile phones and transport can be such sources. The big congestion of people has also considerable impact on us, also mood of the person and his attitude towards us, geopathogenic zones on the planet, magnetic storms, etc.

Feeble electromagnetic fields (EFF) by power of the 100-th and even thousand shares of Watts of high frequency are dangerous to the person that intensity of such fields matches with intensity of radiations of a human body at usual functioning of all systems and organs in his body. As a result of this interaction own field of the person is distorted, provoking development of various diseases, mainly in the most weakened organism links.

The most negative property of electromagnetic signals is that they have property to collect in an organism over time. At people, by the nature of activity there is a lot of using various office equipment – computers, phones – decrease of immunity, frequent stresses, dropping of sex activity, increased fatigue are revealed.

The circulatory system, brain, eyes, immune and sexual systems are mostly subjected to influence of electromagnetic fields.

ANTINEOPLASTIC ORIGIN REMEDY OF VEGETABLE

Neverova A., Soloveva I. - the 4th-year students

Scientific leaders – Assoc.Prof. Anokhina R.A., Kostina V.V.

According to the classification D.A.Kharkevich, anticancer agents of plant origin can be represented by the following groups: Vinca alkaloids - vinblastine, vincristine, Alkaloids yew tree (taxanes) - paclitaxel, docetaxel, Podophyllotoxin secreted from the thyroid podofilla - etoposide, teniposide, Alkaloids *Colchicum speciosum* - demecolcine (kolhamin), colchicine. Vinca alkaloids - structurally related compounds in the chemical structure of which there are two polycyclic units - catarantin and vindoline. Antitumor effect is due to the influence of these alkaloids on cells in M- phase of the cell cycle. Natural vinca alkaloids are used for the treatment of rapidly proliferating tumors. Taxanes - chemotherapeutic agents are widely used in clinical practice in the 1990s. Paclitaxel - first taxane derivative with anticancer activity was isolated in 1967 out of bark of Pacific yew (*Taxus brevifolia*). Docetaxel is produced by chemical synthesis from natural raw materials - European yew needles (*Taxus baccata*). Taxanes are a class of drugs acting on microtubules.

Podophyllotoxin. Anticancer agents of plant origin is podophyllin (Berberidaceae). Podophyllin contains at least 40% of podophyllotoxin, alpha- and beta-peltatiny. Podophyllotoxin is used topically in the treatment of warts and other skin lesions. Camptothecins - semisynthetic camptothecin derivative alkaloid isolated from the shrub stalks *Camptotheca acuminata* are presented by topotecan and irinotecan. In accordance with the mechanism of action they are a group of topoisomerase inhibitors. Currently, irinotecan is the drug of first-line treatment for colon cancer. Topotecan is widely used in the treatment of lung and ovarians cancer.

Thus, anticancer therapy is not limited by surgery, chemotherapy and radiotherapy. One of the possible options for enhancing the effectiveness of the treatment is a continuous method, offering alternating support and specific methods, in particular the use of herbal medicines in oncology, role and place of which in the prevention and treatment of cancer in these days are not great. A wide range of curative action of anticancer herbs should be used in the treatment of tumor.

ETIOLOGY OF DISSEMINATED SCLEROSIS

Neverova A., Soloveva I. - the 4th-year students

Scientific leaders – Dr.Med.Sc. Karnaukh V.N., Kostina V.V.

Disseminated sclerosis (DS) - a chronic demyelinating disease of the nervous system with a pronounced variability in clinical presentation, relentlessly progressive course and unknown etiology. The etiology of DS has not been established until the end, it is believed that this disease is multifactorial one. DS currently associated with the following factors: environmental factors, genetical, infectious, hormonal. The environmental factors are: geographical location and deficiency of vitamin D. The climate also makes a difference in the development of DS. Higher incidence corresponds to higher latitudes in the northern hemisphere. Epstein-Barr virus and low levels of vitamin D are the most studied environmental factors that play a role in the etiology of DS. It is assumed that vitamin D alters the immune response to the virus and these factors exert a synergistic effect, increasing the risk of developing DS. The fact that women more often than men

suffer from DS, gives reason to think about the role of hormonal factors in the development of disease. In women with DS in the 3rd trimester of pregnancy, when the frequency of exacerbations of multiple sclerosis significantly is reduced, there was found significantly higher levels of vitamin D. In men there was identified estradiol relationship between the concentration and the degree of brain tissue damage. According to data obtained during the population, genietological and twin studies the genetic predisposition to multiple sclerosis were elucidated. Thus, a plurality of these factors leads to the most downstream progressive DS. Further study of the etiology of this disease allows to understand better the mechanism of its development, which will make it possible by acting on the pathogenesis of the links a more effective treatment.

RESEARCH METHODS IN NEUROLOGIC PRACTICE – A LUMBAR AND SUBOCCIPITAL PUNCTURE

Margasova A., Terentieva E. – the 4-th year students

Scientific leaders – Cand.Med.Sc., Assoc. Prof. Karnauh A.I., Kostina V.V.

Lumbar puncture. Indications:

1. The medical purpose is introduction of antibiotics at infectious lesions of nervous system, cytostatics (at an oncology), sanitational removal of a bloody liquor at subarachnoid hemorrhages.

2. Diagnostic purpose: definition of a cytosis, inflammatory diseases of a central nervous system, craniocerebral injury (at differentiation of concussions from bruises), vascular diseases.

Contraindications:

1. Signs of rising of intracranial pressure - a congestive optic disk of visual nerve.

2. Signs of dislocation syndromes, blockade of liquoroproducing channels, displacement of median structures.

3. Infectious lesions of a skin or soft tissues in lumbar area.

Technology of performance: Introduction of a needle for an intake of cerebrospinal fluid is dangerously if higher than the L2 level, because it can lead to injury of a spinal cord. For definition of the place of injection there is the line connecting the upper edges (crests) of ileal bones. The aspirating needle is introduced between spinal processes of L3-4 or L4-5.

Suboccipital puncture. Indications:

It is made in case of researches's need of cerebrospinal liquid when the lumbar puncture can't be executed, at the descending myelography for the purpose of definition of permeability of a subarachnoid space of a spinal cord.

Contraindications:

1. Craniospinal tumors.

2. Volume processes in a back cranial fossa.

3. Anomalies of development of occipital and cervical area.

4. Local purulent processes.

5. The expressed rigidity of occipital muscles.

Technology of performance: puncture of a skin, a hypodermic fat, a membrane between the rear edge of a big occipital opening and a back handle of an atlas. The puncture is made only by the neurosurgeon under control of a roentgenoscopy (depth of the surface from 4-5 cm).

ALKALOSIS AS A VIOLATION OF THE ACID-BASE STATE OF THE ORGANISM

Andreychenko M., Selina I. - the 2nd year students

Scientific leaders - Cand. Med. Sc. Egorshina E.V., Kostina V. V.

Alkalosis - a violation of the acid-base balance in the body, manifested by excessive accumulation of alkaline compounds. For alkalosis it is characterized by the loss of acids and excessive accumulation of alkaline compounds, resulting in respiratory failure and metabolic disorders. Types of alkaloza: 1) Respiratory alkalosis is caused by the loss of CO₂ (carbon dioxide) from the exhaled air due to hyperventilation. For example, children with strong crying, high in the mountains, breathing exercises performed incorrectly, excessive artificial respiration, certain nerve diseases); 2) metabolic alkalosis develops when the body losses acids (for example, when strong vomiting in pregnant women), and administered when is a large number of bases, such as alkaline mineral water, soda. It is characterized by a primary increase in blood HCO₃⁻ with a compensatory increase in pCO₂. Alkalosis causes a decrease of ionized calcium in the blood, which leads to spasms and muscle tension. At higher pH of Serum more then 7.55, mortality reaches 40%. In alkalosis absorption of minerals is disturbed. Food is digested much slower, allowing toxins from the digestive canal to enter into the bloodstream. High alkali content in the body is dangerous and difficult adjusting. Pathogenesis during alkalosis: When alkalosis (especially associated with hypocapnia) there occur general and regional hemodynamic disturbances: decreasing of cerebral and coronary blood flow, reducing of blood pressure and cardiac output. Neuromuscular excitability increases, muscle hypertonus occurs until the development of seizures and tetany. Often there is inhibition of intestinal motility and constipation development; reduced respiratory center activity. For gas alkaloza it is characteristic by reduce of mental capacity, dizziness, fainting may occur.

CHARACTERISTIC FEATURES OF RETINA IN DIABETES

Rukosuev E. - the 2-nd year student

Scientific leaders: Kozlova V.S., Kostina V.V.

The vision provides people with information about the three-dimensional structure and the spectral composition of the surrounding world. These tasks are performed by recording visual sensors - photoreceptors of electromagnetic waves reflected from the surrounding objects. In the retina of each person's eyes there are the photoreceptor cells (rods and cones). Color is better perceived by the action of light on the central retinal hole. The photoreceptor neurons - consist of outer segment containing visual pigment, the internal segment, connecting the legs, with a large part of the nuclear core and the presynaptic terminal. The outer segment of the photoreceptor contains a lot of drive. The rods contain rhodopsin pigment responsible for the black-and-white vision. For the perception of color vision idopsin is responsible. In the absorption of a quantum of light in a molecule of rhodopsin cis-retinal goes into a trance. Following this the protein portion of the molecule comes into a state metarhodopsin II. After a number of transitions in the outer segment occurs closing of ion channels. Due to the concentration of gradient there occurs hyperpolarization of the cell membrane. Photoreceptors synaptically linked to bipolar neurons. From them nerve signal is transmitted to the ganglion cells. The interaction of neighboring retinal neurons provides horizontal and amacrine cells. Visual information from the retina by the optic nerve fibers rushes to the brain. The blood supply to the inner

layers of the retina is carried out of the central artery of the retina, which is part of the eyeball in the center of the optic nerve and then is divided to provide the power the entire inner surface of the retina. The outer layers of the retina depend mainly on the diffusion of nutrients from the choroidal vessels. During prolonged hyperglycemia there appears microaneurysm, which is accompanied by the occlusion of the congestion in the thickness of the retinal blood cells, microparticles, proteins and fats. However, some areas are experiencing ischemia. These processes stimulate neovascularization, accompanied by hemorrhage into the vitreous and the growth of fibrous tissue. This ultimately leads to retinal detachment. Due to the accumulation of blood clots there may be increase of intraocular pressure. This in its turn leads to damage of the optic nerve. Patient complaints of appearance of blurred vision, poor night vision and distortion of objects. This disease is referred to as diabetic retinopathy.

HEBEPHRENIC SCHIZOPHRENIA

Trimanova S., Rogozina V., Rustamova L. - the 4th year students
Scientific leaders – Bugrova M.I., Kostina V.V.

Schizophrenia - the chronic mental disease, inclined to progressing, which is shown by violation of coherence between various mental functions, ambivalence, a perversion of processes of thinking and the accruing changes of the person in the form of a closure, passivity and emotional coldness. Hebephrenic schizophrenia- one of schizophrenia subtypes which is characterized by existence in behavior of the expressed lines of childishness silliness. For the first time the hebephrenia was described by Gekker (1878) as a self-contained mental disease, it was carried by Krepelin to schizophrenia subsequently. The name «hebephrenia» indicates that this mental disorder peculiar to the young age hebephrenia begins at 15-19 years old. The hebephrenic type of defect-type of defect is shown by a picture of a steady hebephrenic syndrome which keeps not less than within half a year, without conceding and without being softened considerably under the influence of the most intensive treatment with antipsychotic neuroleptics. The structure of a heberphrenocatic syndrome reveals: 1) Motive and strong-willed changes in a type of grimacing, silliness, regress of instincts, unmotivated euphoria. 2) Emotional inadequacy. 3) Disorders of thinking-reasoning and disruptiveness. 4) Brad and hallucinations which do not act into the forefront and have character of inclusions. The diagnosis of a heberphrenic form is made with the common criteria of schizophrenia: the persistent, daily hallucinations not less than a month accompanied with the crazy ideas without distinct affective coloring or it is long the remaining supervaluable ideas, the neologisms, episodes of an uncontrollable stream of thoughts resulting in disruptiveness of the speech, the increasing apathy, impoverishment of the speech. Neuroleptics are used at treatment of hebephrenic schizophrenia: Chlorpromazinum, Haloperidolum, Thioproperazinum, Trifluperidolum, Trisedylum, tranquilizers, and also insulin therapy and hyper vitamin therapy should be. Hebephrenic schizophrenia schizophrenia should be differentiated with tumors of frontal lobes and dementias at a disease of Peak and Gentington.

ANABOLIC STEROIDS

Rogozina V., Trimanova S., Rustamova L. – the 4th year students
Scientific leaders - Assoc. Prof. Anokhina R.A., Kostina V.V.

From a chemical point of view of anabolic steroids - are cyclopentanperhydrophenatren derivatives, which is the structural basis of male sex hormones. Therefore anabolic steroids are artificially synthesized derivatives of the male sex hormone - testosterone. They enhance the processes of nucleic acid synthesis, protein in the cells, various enzymes and thereby affect almost all types of metabolism. This ultimately leads to an increase in body weight due to enhanced muscle growth, decrease in percentage of fatty tissue and increase in physical performance: speed-strength and endurance. The mechanism of action of anabolic steroids is that they are soluble in fats, so they can penetrate through the membrane into the cell, where the androgen receptor binds to the nucleus and cytoplasm. The effectiveness of anabolic steroids depends on the following factors: the specificity of the steroid, the individual characteristics of the organism, the scheme of steroid use, the availability of sufficient quantities of amino acids and energy for the synthesis of new proteins in the cell, the level of physical activity when taking medications as lack of volume will negatively affect efficiency of the drug. As a result of research it has been found that up to 80% of the athletes taking anabolic steroids, suffer from impaired liver function, and were marked even deaths. A number of studies indicate the possibility of adverse consequences of even 15-20 years after the end of supplementation. Anabolic steroids are banned for use by the medical commission of the International Olympic Committee.

ATYPICAL FORMS OF ALCOHOLIC PSYCHOSIS

Mikhailova V., Kazakov A. – the 4-th year students

Scientific leaders - Brush N.G., Kostina V.V.

Atypical forms are a fantastic delirium and delirium; acute hallucinosis, accompanied by short-term numbness or stupor with severe depression; hallucinosis with true psychic automatism; visual hallucination. The appearance of atypical psychoses after typical speaks about the rise encephalopathic changes. Further deepening encephalopathy can lead to the disappearance of atypical symptoms and occurrence of organic psychoses.

Atypical delirium - symptoms include certain manifestations of the syndrome Kandinsky - Clerambault. Atypical delirium is accompanied by a sufficiently deep dimming of consciousness, severe motor and speech excitement. It is difficult to come into contact with patients, their speech is abrupt and inconsistent at psychosis. The current atypical delirium can be long, especially when the specific weight of acoustical hallucinations is big.

Fantastic delirium (oneiric alcohol) occurs at an altitude of atypical or systematic delirium, as well as at the height of acute hallucinosis. There are complete disorientation, visual hallucinations scenic fantastic content, sharp fantastic delirium, combined with the various manifestations of the syndrome Kandinsky-Clerambault, disorders of body schema at the depersonalizing disorders.

Atypical hallucinosis is accompanied by stupor, the appearance of short-term or severe depression. The stupor with catalepsy lasts only several hours, the further course of psychosis is usual. In severe depressive symptoms there marks the motor and ideational confusion, depressive delusions, accusing and condemning the content of hallucinations, melancholy with a sense of hopelessness.

UROLITHIASIS DISEASE

Mikhailova V., Kazakov A. – the 4- th year students

Scientific leaders - Cand. Med. Sc. Velichko D.N., Kostina V.V.

Urolithiasis - a biophysical phenomenon whereby in urine especially in high density crystals are formed, their growth and aggregation that leads to disruption of the structure and function of the urinary system.

Types of urinary stones: 1) Oxalate - formed from oxalic acid (use of plant foods). Dense, black and gray, prickly. 2) Urate - formed from uric acid (due to eating meat). Yellow-brown or dark - orange, smooth and rough. 3) Phosphate - formed from phosphoric acid. Smooth, soft, rounded. 4) Cystic - arises as a result of congenital metabolic abnormalities, when the level of cystine in the urine is constantly upgraded. 5) Mixed

The principles of treatment:

1) Conservative (Diet therapy, anti-inflammatory therapy, monitoring of pain, litholytic therapy, drug therapy: Cystone, Cystenalum, Olimetin, Urolizin, Urolesan, Avisan, Phytolysinum, Litovt "U" and others, herbal medicine, physiotherapy, sanatorium treatment).

2)Surgical treatment (pyelolithotomy, nefrolitomiya, ureterolithotomy, cystolithotomiya).

INTESTINAL DYSBACTERIOSIS

Mikhailova V., Kazakov A. – the 4-th year students

Scientific leaders - Cand. Med. Sc. Kruglyakova L.V., Kostina V.V.

The intestinal dysbiosis is the clinical laboratory syndrome arising at a number of diseases and clinical situations which is characterized by change of qualitative and or quantitative structure normal microflora, metabolic and immunologic disturbances, and also at a part of patients followed by clinical symptoms of a lesion of an intestine.

Change of composition of intestinal microflora happens at the following situations:

1. At almost healthy persons where a role is played: age factor, seasonality, alimentary factor, professional factor.

2. At patients with a disease of a gastrointestinal tract, in the presence of parasites, at an oncopathology.

3. At use of antibiotics, non-steroidal anti-inflammatory drugs, cytostatic, hormones, antituberculous drugs.

4. In the presence of a radiative factor. There is a prevalence of defective strains of E.coli., what promotes weakening of E.coli properties., the number of the strains producing a cholesterolin is enlarged, capsular forms prevail (clostridium, klebsiyela) at age dysbacteriosis.

Treatment of dysbacteriosis:

1. A diet: porridge (rice, semolina, buckwheat) with a small amount of butter, boiled meat, fish, a bird, steam cutlets, meatballs, a souffle.

2. Medical physical culture (at locks).

3. Eubiotiki (Intetrix, Intestopan, Ertsefuril).

4. Antibiotics (depending on structure of an opportunistic or pathogenic microflora).

5. The drugs are removing swelling (Ditsetet, Espumisan, Meteospazmil).

6. Enzymes (Mezim-forte, Kreon, Panzytrat, Pancreatinum).

7. At locks — Duphalac, Duspatalin.
8. At a diarrhea — Smekta, Almagelum, Imodium (Loperamide), Ditsetet, Sandostatin, Meteospazmil.
9. Sedative therapy (Prosulpin, Novopassit, Amitriptyline, Valeriana).
10. Probiotics — Lactobacterin, Bifidobakterin-forte, Bificol, Biform, Probifor.
11. Prebiotics — Hilakforte, Lactofiltrum.
12. Sanatorium treatment.

PERINATAL OUTCOMES OF GESTATIONAL DIABETES

Mikhailova V., Kazakov A. – the 4-th year students

Scientific leaders - Can. Med. Sc. Zaritskay E.N., Kostina V.V.

According to classification of World Health Organization, "gestational Diabetes" is the diabetes revealed during pregnancy and also disturbance of tolerance to the glucose which is also revealed during this period. The reduced sensitivity of cells to own insulin which is bound to high content in a blood of hormones of pregnancy is its reason. Level of sugar in blood most often comes back to norm after the birth. Gestational Diabetes in the majority of clinical situations develops in the range from 16 up to 32 weeks of pregnancy. Features of carbohydrate metabolism between mother and the child are that the fetus receives glucose from mother, but doesn't receive insulin. Thus, the hyperglycemia (excess quantity of glucose) especially in the first trimester when the fetus has still no own insulin, provokes development of various malformations of a fetus: most often anomalies of a CNS, heart, bones, a GIT, and urinary tract. After 12 weeks when in an organism of future kid the insulin is produced, the hyperinsulinemia which threatens with development of an asphyxia and traumatism in labors, respiratory disorders (a respiratory distress syndrome) and hypoglycemic conditions of newborns. Adaptation to extra uterine life is slowed down in the neonatality period. In the neonatal period there are often observed complications from a CNS, a hypoglycemia, a syndrome of respiratory disorders, a polycythemia, a hyperbilirubinemia, a hypopotassemia, a cardiomyopathy. Children have a diabetic fetopathy: the large body weight, a disproportion of a head and a trunk, the puffiness, excessively developed hypodermically fatty layer, the lunar face, a hemorrhagic rash on face skin and extremities.

FROM FOLIC ACID TO THE HEALTH OF THE FUTURE BABY

Mikhailova V., Kazakov A. – the 4-th year students

Scientific leaders: Can. Med. Sc. Anokhina R.A., Kostina V.V.

Any woman planning to become mother has to remember that reception of some vitamins before pregnancy is necessary for health of future kid. One of such vitamins is folic acid (B9 vitamin). It is water-soluble substance, comes into an organism with food (in a large number contains in green vegetables and leaves, citrus, bread, liver, cheeses, eggs and cottage cheese) and can be synthesized by symbiotic bacteria in intestines at a normal state of microflora. During pregnancy B9 vitamin plays a role in a formation and development of nervous fabric of a germ, participates in formation of vessels of a placenta. The lack of folic acid during pregnancy can lead to emergence of uglinesses in violations of mental development in newborn children. Average daily norm of folic acid – 400 mkg, the most admissible quantity - 600 mkg. Modern preparations of folic acid contain its necessary

quantity, are safe for the pregnant woman in the recommended dosage and are studied rather well.

Foliber can be applied by women at the time of planning of pregnancy and in the first three months of incubation of the child to prevention of defects of development. Gemoferon is applied during pregnancy and a lactation, at anomies, after a stomach operations, a renal failure, a helminthes invasion. Elevit promotes decrease of risk of emergence of congenital defects. It isn't necessary to accept for a long time a complex by persons, with a big amount of calcium in blood.

Folic acid – one of the few medicines, efficiency and which safety at pregnancy is proved in many researches. Reception only one tablet in day – an easy, inexpensive and reliable way to reduce risk of serious diseases of the kid and to present it full-fledged life.

HISTOLOGY OF THE NORMAL KIDNEY AND IN GLOMERULONEPHRITIS

Selina I. - the 2nd year student

Scientific leaders - Kozlova V.S., Kostina V.V.

The kidney is the main organ for the allocation of end products of nitrogen metabolism, and protecting the constancy of physical and chemical conditions, osmotic pressure and acid-alkaline balance in the body.

The nephron is the structural and functional unit of the kidney. It consists of the renal corpuscle, proximal, thin part of the loop, the distal.

The renal corpuscle provides a process of selective filtration of blood, resulting in the formation of primary urine. It has a rounded shape and consists of a vascular bundle, covered by two-layer of the glomerulus capsule of Shumlyansky-Bowman. The glomerulus is formed by 20 - 40 capillary loops. The endothelium of capillaries consists of highly flattened endothelial cells with fenestrae. The endothelium lies on the three-layered basement membrane common for the endothelial cells and podocytes. The outer and inner layers in the membrane are bright and medium — dark. In the dark layer there are microfibrils forming a network. Only very small protein molecules can get in to urin through these cells. The inner (parietal) wall of capsule nephron consists of a single layer of podocytes. From the body of the podocyte in all directions a large processes of cytotrabeculae depart and from cytotrabecula— smaller processes — of cytopodia. Cytopodia are attached to the basement membrane, between them there are a filtration slits. The endothelium of capillaries, three-layer membrane and membrane between cytopodia of podocytes form the filtration barrier through which primary urine is filtered from plasma. This filter passes water, salts, low molecular weight proteins.

Glomerulonephritis is a diffuse immune inflammation of the glomeruli. Own immune system of the body, is broken due to a previous infection that causes inflammatory lesions of the glomeruli, leading to glomerulonephritis. Due to the damage of kidney filtration removal of fluids from the body is deteriorating leading to edema. Often in acute glomerulonephritis urination is reduced, or urine itself takes red color from the admixture of red blood cells. In the absence or inadequacy of treatment glomerulonephritis leads to progressive chronic renal failure, high blood pressure, to the poisoning of the body by slag newimagename manifested toxic lesions in internal organs, particularly the central nervous system and intestines.

HISTOPHYSIOLOGY OF RECEPTORS

Andreychenko M. - 2nd year student

Scientific leaders - Kozlova V.S., Kostina V.V.

Thanks to receptors we perceive information about the external environment and our internal environment. Receptors - a specialized sensory formation, perceiving and transforming stimuli from the external and internal environment to the specific activity of the nervous system. There are several classifications of receptors. The position of the body at an adequate stimulus, according to the structure characteristics: free nerve endings, not free (encapsulated). Of particular importance to our lives have analyzers. Recently, however, there are many factors, reducing our ability to perceive. Long and frequent use of computer technology impairs vision, and the use of headphones - hearing. Genetic diseases are of great importance where the lack of sensitivity is inherited. Also, one doesn't forget about the additional possibility of using our receptors, namely - for physiotherapy treatment. An example of one of the pathological it's pain insensitivity syndrome, it is a genetic disorder characterized by the absence of thermal and pain sensitivity. Experimentally it was revealed in patients lack of a system of afferent (sensory) neurons of the first order, that are responsible for pain and temperature sensitivity. Such patients often do not even notice the serious damage, even in case of burns or fractures, they will not experience any discomfort.

ACIDOSIS AS A VIOLATION OF THE ACID-BASE STATE OF THE ORGANISM

Rukosuev E. - the 2nd year student

Scientific leaders - Cand. Med. Sc. Egorshina E.V., Kostina V. V.

Acidosis (from the Latin acidus - Sour) - displacement of the acid-base balance of the body in the direction of acidity increasing i.e. below pH 7.35. Depending on the mechanisms of disorders of acid-base equilibrium there is isolated respiratory and metabolic. Such diseases such as alveolar-capillary dysfunction, neuromuscular disease, CNS disorders, broncho-obstructive disease, and the effect of drugs which depress the central nervous system, are accompanied by the development of respiratory acidosis. These diseases result in increased arterial blood P_{CO_2} . As a consequence content of H_2CO_3 in the blood plasma is increased. Increased P_{CO_2} also leads to an increase in HCO_3^- concentration of ions in the plasma due to the hemoglobin of the buffer mechanism. The low pH and increase of plasma concentrations of H_2CO_3 and HCO_3^- characterizes respiratory acidosis. With the decline of blood pH urinary excretion of ammonium salts is increased. Metabolic acidosis is caused by accumulation in the blood and tissues of organic acids. Increasing of acidity in the blood is due to the intake of large amounts of ketone bodies. In response to continued production of ketone bodies (β -hydroxybutyric and aceto-acetic acid) in the organism the concentration of H_2CO_3 - proton donor in a bicarbonate buffer system decreases. Reducing of the concentration of HCO_3^- is achieved as a result of the accelerated release of CO_2 light. It is associated with metabolic disorders and is possible for diabetes, fasting, fever, diseases of the digestive tract, in shock. Metabolic acidosis is manifested in patients with severe diabetes. Metabolic acidosis acidity of urine and the concentration of ammonia in urine are increased. Lowering of the pH below 6.8 is the cause of death.

BERI – BERI ILLNESS

Yakubovskaya T., Khon A., Shabalina O. – the 3-rd year students

Scientific leaders - Prof. Korshunova N. V., Kostina V.V.

Beri-beri (vitamin deficiency B1) - a disease that occurs due to a lack of thiamine (vitamin B1) in the human body. Vitamin B1 provides the normal course of the processes of carbohydrate and fat metabolism. Its deficiency leads to the accumulation in the blood of pyruvic acid and its increased concentration in the nervous system. The consequence of this biochemical metabolic disorders are lesions of the nervous system ("dry beriberi") - Wernicke's encephalopathy (acute middle cerebral damage), Korsakoff's syndrome, polyneuritis, and others, as well as the defeat of the cardiovascular system ("wet beriberi"). The disease may develop acutely or gradually. In acute forms symptoms of peripheral nerves appear within 24-48 hours: pain along the nerve trunks, paresthesia and weakness of the distal extremities, disturbance of sensation in the form of "socks" and "gloves" sluggish paresis and paralysis of hands and feet. Polyneuropathy is combined with a disturbance of cortical activity, which is manifested by emotional lability, delusions, Korsakoff's syndrome. Recovery is possible in timely beginning of treatment. At prolonged deficiency of thiamine chronic polyneuritis develops.

SURGERY FOR ABDOMINAL WALL HERNIAS

Yakubovskaya T., Darina N. – the 3-rd year students

Scientific leaders – Assoc. Prof., Cand. Med. Sc. Sergienko A.V., Kostina V. V.

Hernia of the abdominal wall or external hernia of the stomach, is called the emergence of abdominal viscera beneath the skin through a natural opening in the muscular-aponeurotic layer or through the hole in the same layer, the result of surgery or injury. Components of hernia are: hernial hilus, hernial sac and hernial content. Hernial hilus is called the gap or hole in the muscular-aponeurotic layer of the abdominal wall where hernial sac goes out. Herniation of the pouch is called a diverticulum of the parietal peritoneum, penetrating through hernial hilus under the skin. The herniation may be the contents of the intestinal loops, omentum. Depending on localization there distinguished inguinal, femoral, umbilical hernia, white line hernia, obturator. Indications for surgery for hernia are pain, disorders of the gastrointestinal tract, difficulty in physical work, walking. A vital indication for operation is the infringement of a hernia. Contraindications: advanced age of patients, especially in the presence of decompensated forms of cardiovascular and pulmonary diseases, obesity, flabby degenerated tissue, which do not allow to rely on the strength of the postoperative scar. The goal of surgery is to remove the hernia and to prevent relapse: the first is obtained by removing the hernia sac, the second — with the help of plastic closure of abdominal wall defects.

HYPERTENSIVE HEART DISEASE

Kukhno T., Safronova E. - the 3-rd year students

Scientific leaders - Cand. Med. Sc. Perfileva S. S., Kostina V. V.

Hypertensive heart disease-chronic hypertension the main clinical feature of which is along and persistent increase in blood pressure. It is widely distributed in economically developed countries experiencing increase of stress of psycho-emotional sphere. Men in the second half of life are ill more often.

Etiology. Hereditary factors and excess salt in the diet plays an important role in the occurrence of hypertension, in addition to psycho-emotional surge, leading to disturbance of higher nervous activity such as neurosis and frustration of the regulation of vascular tone.

The nature of the disease may be benign and malignant. When malignant hypertension is dominated by manifestations of hypertensive crisis, i.e. a sharp increase in blood pressure due to spasm of the arterioles. Morphological manifestations presented corrugation and the destruction of the basement membrane and endothelium original position it as a stockade, which is an expression of a spasm of arterioles, plasmatic impregnation or fibrinoid necrosis of its wall and joining thrombosis. Infarcts and hemorrhage are developed.

In benign hypertension, taking into account the duration of the disease, there are three stages: 1) pre-clinical stage of hypertension; 2) stage of widespread changes in arterial; 3) the last stage of hypertensive disease is characterized by secondary changes bodies in connection with the change of the arteries and impaired circulation intraorganic

TRANSPLANTATION OF THE BRAIN

Homenko A, Gribov A., Sukhorukova V. - the 3-rd year students

Scientific leaders - Grebenyuk V. V., Kostina V.V.

Relevance of this problem is very big. Worldwide many people have serious diseases of a brain.

Purpose: studying and understanding of a question of transplantation of a brain, and also acquaintance of students with this problem.

From all sections of medicine transplantology — one of the most difficult both in the theory, and in practice. Each organ intended for transplantation consists of several types of tissues, is surrounded with the nerves sending it signals and accepting reciprocal impulses from the organ and blood vessels. The immune system of an organism will reject any cell which initially didn't belong to this organism. Thus, donor organs can not get acclimatized because of immune reaction.

In the head there is the most important organ — a brain and to replace it, without having damaged, it is almost impossible. In the neck basis in a place of connection of backbone with the skull the brain passes into spinal. The spinal cord controls the movements of all muscles below a neck, and it does it on the basis of the orders coming from a brain. At transplantation of a brain the spinal cord will inevitably separate from head, and no signals to a trunk and extremities will be able to pass — therefore, all movements, except a mastication and expression of emotions mimic muscles, will become impossible. In the opposite direction impulses won't be transferred too and even if the person will survive after operation, he won't feel anything, except the face. The nervous tracts going through a spinal cord and connecting a brain and heart, a brain and lungs will also be broken.

Transplantation of a brain as separate organ is impossible because to take it from a skull cavity without damage of all elements is unreal. Therefore, before scientists there is a question of transplantation of the head entirely. The history knows several examples of transplantations of an animal head.

The brain is difficult human organ up to this day is not up to the end studied. Its structure and the vital functions are a hindrance for transplantation. Perhaps, new technologies will help to find safe ways of its transplantation.

WOUND MEPHITIC GANGRENE

Gribov A. Sukhorukova V - the 3-rd year students

Scientific leaders – Cand.Med.Sc. Prokopenko A.V, Kostina V.V.

In 1952 Ambroise Paré for the first time described a mephitic gangrene, having called it hospital gangrene. In domestic literature N.I.Pirogov in detail described its clinical picture. Synonyms of the term "mephitic gangrene" are: gas, anaerobic and hospital gangrene, blue or bronze erysipelas, Antonov fire, gas phlegmon, malignant edema. By the way the famous literary hero Bazarov, according to the description died of anaerobic gangrene. On the researches published in «the Clinical Surgery» magazine for 1987 A. S. Pushkin's death also was caused from a gas infection by a gunshot wound with fragmentation of the right ileal and sacral bones and injury of muscles of a girdle of inferior extremity.

Mephitic gangrene — the serious complication of a wound process caused by an anaerobic microflora, which is characterized by a necrosis of tissues with formation of vials of gas in them or plentiful treatment by serous and bloody liquid and serious general intoxication.

Originators of a mephitic gangrene — *Cl. perfringens*, *Cl. oedematiens*, *Cl. histolyticum*. All of them form spores, transfer boiling within an hour. Microbes meet in putrefactive organic substances in the earth, in an intestine of animals and men. Having taken root into tissues, they quickly cause their necrosis, in the presence of *Cl. perfringens* with formation of gases, in the presence of *Cl. oedematiens* — an edema. In most cases mephitic gangrenes cause not one, but a combination of two or three microorganisms. Prevalence in tissues of this or that originator also defines an originality of a clinical picture.

Adequate therapy of mephitic gangrenes represents a difficult complex problem of etiotropic, pathogenetic and symptomatic character. Medical measures should have the general and local character, and well-timed and full operations, combined with use of antibacterial drugs.

HYGIENIC BASES OF THE NUTRITION AS SOURCE OF HEALTH AND NORMAL PHYSICAL DEVELOPMENT OF SCHOOL AGE'S CHILDREN

Gribov A. Sukhorukova V. – the 3-rd year students

Scientific leaders - Gosteva L.Z, Kostina V.V.

The correct nourishment in the quantitative and qualitative relation — the most important factor of body height and harmonious development of the child. It is necessary for adaptation to changed environmental conditions, the high resilience to illnesses. The need for nutrients of the growing, developing and actively moving child is very high. At the same time the organism of small children can acquire not every nutrition. The child's nutrition by the quantity and quality has to correspond to features of a digestive tract and satisfy the need of the growing organism for necessary substances.

Hygienic bases of a healthy nutrition of the school student begin with the correct drawing up the menu on one meal taking, and also for day and for a week. The menu needs to be diversified and made in every possible way taking into account daily energy (high-calorie) needs of an organism.

The concept "rational feeding" includes administration of feedstuffs not only for creation of an energy source, but also for providing the optimum metabolism providing vital activity of organs and tissues, creation of new cells and destruction of old ones. Processes of exchange include a series of consecutive phases — an absorption in an intestine, intracellular processes of assimilation, processes of accumulation and power consumption. In this regard the main feedstuffs — proteins, fats, carbohydrates, mineral salts, and also biologically active elements of a nutrition (vitamins) — have to be introduced in certain quantities and have a certain qualitative structure.

A certain knowledge and abilities from parents organization of school age children's. However and school students have to take active part in cooking, purchase of products and another economic matters.

HPV - A RISK FACTOR FOR CERVICAL CANCER

Khomenko A. – the 3rd year student

Scientific leaders - Prokopenko A.V., Kostina V.V.

In recent years, in Russia, as in many countries around the world, there is increasing of the incidence of HPV infection. The problem of its diagnosis and treatment attracts the attention of doctors of various specialties. This is due to the ability of some types of human papillomavirus (HPV) to initiate the malignant process. Some of these species are the two types of HPV-16 and -18, cause cervical cancer and precancerous cervical pathological states.

Human papillomavirus relates to a DNA-containing virus family, commonly known as Papillomaviridae. The HPV genome is a circular double-stranded DNA molecule length of about 8,000 base pairs, coated by protein capsid. Capsid is shaped and formed of 72 L1 protein pentamers, with which protein L2 is associated.

To protect against HPV-16 and -18 vaccines are used. Currently there are two vaccines - "4 Gardasil 'and' Cervarix '. These vaccines can also provide some cross-protection against other less common types of HPV that cause cervical cancer. One of these vaccines ("Gardasil") also protects against HPV-6 and -11 types that cause anogenital warts. Results from clinical trials suggest that both vaccines are safe and highly effective in preventing of HPV-16 infection and -18.

Today, vaccines are a good method of preventing diseases caused by HPV.

HYGIENIC ESTIMATION OF THE POWER OF PRE-SCHOOL AGE CHILDREN

Denishchik K., Davidova D., Moiseeva S. – the 3-rd year students

Scientific leaders - Prof.Korshunova N.V., Kostina V.V.

Protection and promotion of children's health is a top priority in any society, because children determine the life potential of society in the future. According to the Scientific Center of RAMS, no more than 15% of the child population can be considered healthy. Children of all age groups have the preferential growth of chronic pathology.

The actual power of healthy preschool children affects their nutritional status, it is a complex clinical, anthropometric and laboratory parameters that characterize the proportion of muscle and body fat mass. It is found that an insufficient protein intake from food is a risk factor for the formation of body composition.

To ensure the children by quality balanced nutrition in preschool institutions the "Collection of technological standards, recipes of dishes and food products for preschool institutions and children's health institutions" should be used.

Nutrition is one of the most important factors, which operates from the moment of birth to the last days of life and contributes in the formation of health. Quantitative and qualitative indicators of power define the processes of growth, development and functioning of the central nervous system, adaptive immunity to infections and unfavorable environmental factors.

DEVELOPMENT OF BLOOD SERVICES IN THE AMUR REGION

Skripelev A., Nikitina D. - the 3-rd year students

Scientific leaders - Cand. Med. Sc. Volkov L. A., Kostina V. V.

Executive Committee of Amur Oblast on August 29, 1951 decided to organize in Blagoveshchensk station of blood transfusion. It became operational on 1-st September of the same year.

The basis was put by doctor-resident of Blagoveshchensk of city hospital Eugeny Belousov. He performed the first operation of blood transfusion in the Amur region.

In 1934, there was a blood service on the basis of the city hospital. Three full-time doctors worked with donors. During the year, it managed to collect 7.5 liters of blood, which helped to save the lives of 20 patients. First blood decided to surrender physicians themselves and patients relatives.

At the time of the Great Patriotic War the station of blood transfusion from Blagoveshchensk moved to Svobodniy. For five years it managed to procure 1.5 thousand liters of blood. The number of donors has increased to nearly seven thousand people.

In 1951, the station received a separate building in Blagoveshchensk. Staff of it increased up to 17 professionals. Here to the preparation of blood started on March 12, 1952. In the period from 1951 to 1966 three laboratories were opened at the station - clinical, serological and bacteriological.

Three years after the discovery of the blood service staff began to produce Rh serum, in 1957 - to preserve the blood, to produce components - native plasma, erythrocyte, leukocyte and platelet, and in 1959 - a dry plasma.

1991 was marked as the beginning of the organization for the use of plasmapheresis method for the preparation of blood in plastic containers. Four years later, donated blood began to check for the presence of hepatitis C virus.

XXI century has brought its innovations in the work of the station - the plasma was started to send on quarantine by freezing, to produce the filtered blood components, plasma and platelets by apparatus method. Rates of preparing of the blood and the number of donors increased.

HEART ATTACK

Skripelev A., Nikitina D. - the 3-rd year students

Scientific leaders – Cand. Med. Sc. Perfilieva S. S., Kostina V. V.

Heart attack - a vascular necrosis, the investigation and the ultimate expression of ischemia.

Form of heart attack: a wedge-shaped, base of the wedge facing the capsule, and the point - to the body of the gate is formed in the organs with the main type of blood supply. Irregularly shaped infarcts are formed in organs with collaterae type of arterial branches.

Depending on appearance there are three types of infarction:

1. White (ischemic) myocardial portion is white-yellow, well delimited from the surrounding tissue.

2. White infarction with hemorrhagic rim portion represented by white and yellow, but the plot is surrounded by a zone of hemorrhage.

3. When red (hemorrhagic), myocardial necrosis land soaked in blood, it is dark red and is well demarcated.

In the heart an infarct is usually white with hemorrhagic rim, has an irregular shape, more common in the left ventricle and the interventricular septum, rarely - in the right ventricle and atrium.

In the brain, a heart attack occurs more often white, which quickly softens. If a heart attack is formed on the background of significant disorders of blood circulation, venous stasis, the necrosis of the brain center is impregnated with blood and becomes red.

Hemorrhagic infarction in the lungs is formed in most cases. It is well delimited, it has the shape of a cone whose base faces the pleura.

Causes of heart attack - a long spasm, thrombosis or embolism of the arteries, as well as a functional body of the voltage in low its blood supply. Insufficiency of anastomoses and collaterals has great importance for the occurrence of infarct .

TYPES OF NOURISHMENT

Nikitina D., Skripelev A. - the 3-rd year students

Scientific leaders – Prof. Korshunova N. V., Kostina V. V.

The basic idea of a healthy diet, "you need to eat everything but in extent". A "measure" is defined by the so-called "food pyramid", in which all products are divided into several categories. Products in each category should be represented in the diet in a certain proportion.

The basic idea of a separate food - do not eat at the same time incompatible with each other products. All components of food are divided into 3 groups - proteins, fats and carbohydrates. Fats are compatible with almost all kinds of products. A protein and carbohydrates with each other can not be combined as needed for the digestion of proteins acidic environment, and for carbohydrates - alkaline.

Vegetarianism and its subtypes: lactovegetarianism and ovovegetarianism - prohibit the eating of animal flesh. The main benefits of vegetarianism is in the reduction of the share of products of animal origin and increasing the proportion of plant foods.

Veganism - kind of nutrition that excludes the use of all animal products. Raw food eating only raw food. Sometimes it can be vegetarian (with milk and eggs) and omnivorous (meat, fish, seafood, milk, eggs - only raw or dried form).

Fruitarianism - consume only fruits and vegetables. No grains or legumes or nuts are included in their diet.

Ayurvedic meals - the ancient Indian system of healing. It provides not only a specific range of products or a combination them, but also a meal, climate, time of year, the type of human digestion.

The liquid food - liquid nourishment juices and soups.

Prana eating - absolute refusal of food consumption, and in the most advanced form, and from the water.

WILSON-KONOVALOV'S ILLNESS

Yakubovsky T., Darina N. – the 3-rd year students

Scientific leaders – Cand. Med. Sc. Perfilyeva S. S., Kostina V.V.

Wilson-Konovalov's illness (hepatolenticular degeneration) is the autosomal and recessive disease which is characterized by copper binding disturbance that leads to cirrhosis, a degeneration basal ganglions, an olive-brown pigmentation on a cornea (Kayser-Fleischer's ring). The lesion of a liver can be shown by one of four options: acute hepatitis, fulminant (malignant) hepatitis, chronic active hepatitis or early cirrhosis. The quick release of copper from a liver at malignant hepatitis causes developing of hemolytic anemia characteristic of this pathology. Motive disturbances are typical and characterize a lesion of a nervous system. On the contrary mental disturbances are diverse and are shown by asocial behavior, schizophrenia, neuroses, a dementia. When conducting laboratory tests depression of level of a ceruloplasmin in blood, rising of a daily content of copper, rising of content of copper in a liver at a biopsy are defined. Treatment consists in binding of excess of copper D-Penicillaminum, or thriethylene melamiae dihydrochloride. At the malignant course of a disease there may be performed the orthotypical liver transplantation.

ATYPICAL FORMS OF MYOCARDIAL INFARCTION

Shabalina O., Khon. A. – the 3-rd year students

Scientific leaders – Cand. Med. Sc. Menschikova N.V., Kostina V.V.

The peripheral shape with atypical localization of different localization of pain in the throat, pain in the left hand end of the left little finger, left shoulder blade, in the neck and thoracic spine, the lower jaw. Abdominal form is usually found at the back myocardial infarction. There intense pain in the epigastric or right upper quadrant, the right half of the abdomen, accompanied by nausea, vomiting, abdominal distention, paresis of the stomach and intestines, diarrhea. Asthmatic form flows by type of severe breathlessness, cough with frothy pink sputum (cardiac asthma, pulmonary edema) in the absence or low intensity of pain in the heart. At the same time there is a gallop rhythm, arrhythmia, drop in blood pressure. Arrhythmic form is characterized by the appearance of different rhythm disturbances (arrhythmias, atrial fibrillation, paroxysmal tachycardia), as well as different types of atrioventricular block. Cerebral form appears clinic dynamic cerebral circulatory disorders - headache, dizziness, nausea, vomiting, less motor and sensory disorders. Insufficiency of cerebral blood supply occurs against a background of atherosclerotic lesions of cerebral arteries due to a decrease in cardiac output, which is typical for acute myocardial infarction. Edematous form of myocardial infarction is manifested by shortness of breath, weakness, a relatively rapid swelling and even ascites, the liver increases - that is, acute right ventricular failure develops.

TOURETTE SYNDROME

Khon A., Shabalina O. – the 3-rd year students

Scientific leaders - Cand. Med. Sc., Assoc. Prof. Maximenko V.A., Kostina V.V.

Tourette syndrome (Tourette's disease, Gilles de la Tourette Syndrome) - a genetically caused disorder of the central nervous system manifestation in childhood, characterized by multiple motor tics and at least one vocal tic.

A person with Tourette syndrome has a 50% probability of gene transfer (gene) to one of his child, but Tourette's syndrome - a condition with variable expression of genes with incomplete penetrance. Thus, not everyone who inherits the genetic defect will manifest symptoms; even among close relatives may show symptoms of varying severity, or even cannot be. Gene (s) can be expressed in Tourette's syndrome as teak mild (transient or chronic tics) or obsessive-compulsive symptoms without tics.

Non-genetic, environmental, infectious, or psychosocial factors which cannot cause Tourette's syndrome, but can affect its severity. Autoimmune processes may provoke the emergence and exacerbation of tics in some cases.

Genetic and environmental factors play a role in the etiology of Tourette's syndrome, but the exact causes are unknown. In most cases, treatment is`t required. There are no effective drugs for each case of ticks, but the use of medicines and treatments that facilitate the patient's condition, is justified. Education, explanation is an important part of psychological support for patients.

METHODS OF IDENTIFYING DETERMINANTS OF ANTIBIOTIC RESISTANCE

Kozyrev V., Pernitskiy S. - the 3rd year students

Scientific leaders - Cand.Med.Sc. Bubenets O.V., Kostina V.V

To determine the resistance of gram-negative microorganisms in beta-lactam antibiotics it is necessary the study of nucleotide sequence encoding beta-lactamase genes to identify the type of genes and the presence of mutations.

Multiplex of RC of DNAm: for amplification of several genes multiplex it is simultaneously used (multiprimer) PCR reaction co-amplification of several DNA-matrix in the same reaction medium using several pairs of primers. The method allows to identify the identity of the gene of the enzyme to a specific type of beta-lactamase.

Method time-of-flight mass spectrometry : an alternative to existing methods for detection of polymorphous DNA regions is differential sequencing by using time-of-flight mass spectrometry. The ionized molecules of DNA detached from the substrate by the methods of MALDI , is accelerated in an electric field and are directed through the vacuum chamber to the detector. The method is characterized by high productivity and possibility of simultaneous analysis of several samples. The undoubted advantages of the method include the ability to detect new, still undescribed mutations.

DOWN SYNDROM

Kozyrev V., Pernitskiy S. - the 3rd year students

Scientific leaders - Krylov A., Kostina V.V.

Down syndrome (Down's Syndrome) is the result of genetic anomalies. The first signs of people with Down syndrome, described in 1866 English physician John Langdon Down (Down), whose name was the name for this syndrome. The cause of the syndrome was discovered only in 1959 by the scientist Jerome.

The syndrome occurs due to the differences of chromosomes during the formation of gametes (eggs and sperm), as the result that the child receives from the mother (in 90% of cases) or father (10% of cases) the spare 21st chromosome. Most patients with down syndrome have three 21-x chromosome instead of two; in 5 8% of cases the anomaly is related to the presence of not a whole, spare chromosome, its fragments.

Modern methods of research - Screening

The first stage of the procedure "screening" – is an ultrasound examination of the fetus. The compliance of the size of the baby to gestational age during it evaluate. The general condition of the embryo, some severe defects in the development and so on. That is what can be seen externally. But it is worth noting that even if the apparent abnormalities are not observed, this does not mean that there no them. For example, kids suffering from down's syndrome, only half of the cases it is possible to notice visual abnormalities. A more accurate result of the presence of chromosomal diseases can only be obtained after the second stage screening – biochemical. Here the blood of the mother examine for the presence of specific substances that is released by the placenta. Also the ratios and concentrations of specific proteins in the blood and marker substances evaluate. Third stage – calculating the risk of chromosomal abnormalities with the help of special computer programs.

THE ENDOSCOPIC PLASTIC ARTS. TREATMENT OF SOME CARDIAC ANOMALIES

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders – Cand.Med.Sc., Assoc. Prof. Sergienko A.V., Kostina V.V.

One of the latest developments inculcated in cardiac surgery practice are little invasion operative technologies - found the application in the correction of congenital heart diseases. It is the most sparing methods, allowing to lead an operating trauma to the minimum, execute interference without connecting of patient to the heart-lung apparatus, to unite a few stages in one, to reduce the amount of complications and substantially to facilitate the flow of rehabilitation (restoration) period.

For similar interferences front-rank endoscopic technologies are used, supposing application of the special devices - endoscopes. The last are the very flexible, thin and long tubes, equipped by the optical system and source of light. Due to endoscopes, any damage of fabrics and internals is taken to the minimum: cuts replace quite small punctures; here the vital functions of organism do not suffer practically

PROBLEM OF OBESITY IN THE MODERN WORLD

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders – Cand.Med.Sc. Matytsin A.P., Kostina V.V.

It is considered that the person has obesity if its weight exceeds normal more than for 20% and continues to increase further. More than a third of adult population of Russia has this illness. According to WHO statistics, in economically developed countries about 30% of adults and up to 10% of children have this or that form and degree of an obesity.

For the last decade the number of such patients in the world increased almost twice and according to experts in 2025 their quantity will make 300 million people. Every year the number of the young people having obesity increases, the common life expectancy of the population of the globe in connection with the serious illness accompanying an obesity decreases.

At an obesity proteometabolism which is characterized by decrease in level of the common protein of blood mainly due to decrease of concentration of albumins, increase in maintenance of a fibrinogen, fibrin degradation products, decrease in level of a heparin. Violation of transport of lipids, decrease in fibrinolytic activity and increase in thrombogenic properties of blood, emergence of tromboembolic episodes is a consequence of it. These changes are risk factors of an atherosclerosis, coronary heart disease, stroke, idiopathic hypertension. There are violations of functions of the central nervous system: fatigue, drowsiness, memory impairment are noted; the senilism develops, there are changes in internals, for example a fatty infiltration (an obesity or fatty transformation) of a liver

TUMORS OF THE MELANIN FORMING TISSUE

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders – Cand.Med.Sc. Levchenko N. R ., Kostina V.V.

Melanocytes are ancestors of the most malignant tumor of the person and animals – a melanoma. Considering the important place of melanocytes in a regulation of a homeostasis and development of pathology, questions of studying of a melanogenesis and its histologic diagnostics take the increasing value.

Melanocytes are cells of a neurogenic origin which can be a source of tumorous manifestations - a nevus, and the true tumors - melanomas. A nevus meets in skin, on a face, trunk in the form of convex formations of dark color. Several types of a nevus are distinguished: the boundary nevus, the intra dermal nevus, the composite nevus, the epithelioid nevus, the blue nevus.

Melanoma (melanoblastoma, malignant melanoma) - a malignant tumor of the fabric forming a melanin, one of the most malignant tumors with the expressed tendency to an innidiation.

THE SPECIES COMPOSITION OF THE VAGINAL LACTOBACILLI IN PREGNANT WOMEN

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders - Prof. Chubenko G.I., Kostina V.V.

According to the data of literature there was the analysis of the species composition of lactic acid bacteria in various states of the vaginal microbiota of women in the II and III trimester of pregnancy [A.R. Melkumyan, T.V. Pripitnevich et al .; -2013].

They were screened 163 women. Status microocenosis was rated as normocenosis in 36.8% of women, while 63.2% were diagnosed various options for vaginal infections. Candida vaginitis in 21.9% of patients, aerobic (non-specific), vaginitis (AV) are associated with facultative anaerobic opportunistic pathogens - in 14.2%, bacterial vaginosis (BV) - in 16.8% of pregnant women and others.

In inoculations of vaginal discharge of pregnant women with normocenosis 8 species of Lactobacillus have been identified in high titer. The leading position occupied

by 3 species: *L. crispatus* (63,2%), *L. jensenii* (33,4%) and *L. gasseri* (17,5%). In 54.4% of pregnant women there were allocated opportunistic microorganisms in low titers. Frequency of inoculation remaining 5 species - *L. fermentum*, *L. salivarius*, *L. mucosae*, *L. delbrueckii*, *L. plantarum* was less than 5.3%.

When BV there was noticed an increase in a wide range of facultative anaerobic opportunistic microorganisms. Coagulase-negative staphylococci, *Corynebacterium* and actinomycetes have dominated. The growth of lactobacilli is found in pregnant women with BV in 80.6% of cases, but in low titers. 15 species of lactobacilli are allocated: *L. crispatus*, *L. jensenii*, *L. gasseri*, and others.

In women in the group with aerobic vaginitis (AB). *Enterococcus faecalis*, *Escherichia coli*, *Streptococcus agalactiae*, *Staphylococcus aureus* prevailed in a high titer.

An analysis of the species composition of vaginal lactobacilli isolated from pregnant women with normocenosis, confers a presumption of dominance species *L. crispatus* indicator of norm stability of microecology vagina.

PREVENTION OF COLD EFFECT ON HUMAN BODY. HARDENING

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders - Prof. Korshunova N.V., Kostina V.V.

Hardening - physiotherapeutic method for effects on the human body of different natural factors: air, water, sun, low and high temperatures (relative to body temperature) and reduced atmospheric pressure, with an aim to improve the functional organism's reserves and its resilience to the adverse effects of these factors. The systematic application of hardening procedures reduces the number of colds in 2-5 times, and in some cases, almost completely eliminates them. Hardening may be specific (increased resistance to certain factors) and nonspecific (increases overall resistance to a number of factors). At starting of hardening, it is necessary to learn its basic rules:

1. It is necessary to verify the necessity of hardening and raise the need for it.
2. Hardening should be systematic.
3. You cannot change sharply the temperature of the water or air, as well as to increase the duration of exposure.
4. Individual approach - air or water temperature, duration of the procedure shall be established taking into account age, gender, health status, level of physical development, sensitivity to cold or heat.
5. In each climatic region, hardening must be specific.
6. To increase the effectiveness of hardening is necessary to use various means - solar radiation, air and water environment.
7. Hardening should be fun, it should be carried out in a good mood, because positive emotions completely eliminate the negative effects of heat or cooling steps.
8. The efficiency of hardening will increase if it is performed in the active mode, i.e. to perform procedures during exercise or any physical work.
9. In the process of hardening it's required constant self-control. Indicators proper hardening are: deep sleep, good appetite, improve health, increase efficiency. The emergence of irritability, decreased appetite, decreased performance indicate errors in hardening procedures.

Hardening should be seen as an attempt to bring the human way of life to the natural, to keep congenital adaptive abilities of an organism.

IMPLANT INFECTION PREVENTION

Pronina D., Chervova Y., Shebunova V. – the 3rd year students
Scientific leaders – Ivanova E.P., Kostina V.V.

Meaning of antiseptic and aseptic techniques in the development of surgery can't be overemphatic. They have enhanced the volume of surgical interventions and surgery penetrate into all areas of the human body.

Prevention of implant infection – ensuring of strict sterility of all alien artificial materials and devices with a specific medical purpose, introduced into the body of the patient.

Sutures can be administered in the body of the patient, also catheters and drains, prosthetic heart valves, blood vessels, joints, various metal constructions (brackets, scrapers, screws, needles, plate osteosynthesis), spirals, Steptoe, transplanted materials. All implants must be sterile. Sterilization method may be different, depending on the material structure. The main, most reliable method in practice is a factory beam sterilization.

The classic way to silk sterilization (Kocher method) and catgut (method of Gubarev) are currently not applied because of the complexity and sufficient efficiency. In the hospital nylon is now only sterilized, polyester and metal braces. There are sterilized by autoclaving. The rest of the suture is sterilized beam prefabricated; it is available in vials and containers. After sterilization, or opening packages suture material is stored only in 96° ethyl alcohol.

Various prosthetic design and are available in hermetically sealed sterile packages.

Allogenic organs may become a source of transplant surgery. Sterilization transplant is not possible. After removal from the donor organism and washing by sterile solutions the organ is placed in a special sealed sterile container and stored in special compartments before transplantation.

BIOLOGICAL ACTIVE FOOD

Baldanov E., Darina N. – the 3-rd year students
Scientific leaders – Prof. Korshunova N.V., Kostina V.V.

The evolutionary meaning a nourishment is to use a varied diet with nutritional value (proteins, fats, carbohydrates, dietary fiber, vitamins, minerals). The biological value of food is determined by the availability of essential nutritional factors, they are not synthesized in the body or synthesized in limited quantities and with low speed. The main essential components of food are 8-10 amino acids, 3 — 5 polyunsaturated fatty acids, all vitamins and most minerals as well as natural physiological substances of high biological activity: phospholipids, protein-lecithin and glycoproteins complexes.

LAPAROSCOPIC CHOLECYSTECTOMY

Smirnova A., Mirganyan R. - 3rd year students, Poroshin A. – 6th year student
Scientific leaders - Assoc. Prof., Cand. Med. Sc. Sergienko A.V., Kostina V.V.

The first laparoscopic cholecystectomy in persons was performed by Ph. Mouret (Lyon, France) in 1987 and then received a quick distribution and recognition in the developed world. Laparoscopic cholecystectomy combines radicalism (removed the diseased gall bladder with calculi) with small traumatic (almost completely preserved the integrity of the soft tissues of the abdominal wall, especially muscle and fascia), which

considerably reduces recovery times of patients disability. Gallstone disease is more common in women, often before the age of 30 - 40 years old, great importance has the cosmetic effect of intervention - small skin incisions (5-10 mm) heal with the formation of scars inconspicuous. Laparoscopic cholecystectomy has advantages before cholecystectomy from a small (5-6 cm) laparotomy incision, used by some domestic and foreign surgeons. A small section of the anterior abdominal wall limits the inspection and manipulation in the depth of the wound, especially in the allocation of the neck of the gallbladder elements. When cholecystectomy under laparoscopic control intervention scope, as a rule, even better compared to the operation of a large laparotomy incision, particularly in relation to cystic duct and artery of the same name. In addition, during laparoscopic surgery it is possible atraumatic inspection and, if necessary instrumental revision of all the organs of the abdomen and pelvis. When a co-morbidities (chronic appendicitis, ovarian cysts are small, and others.) a second operation may be performed after completion of the primary intervention. The advantages of laparoscopic cholecystectomy have made it even now the main method of treatment of calculous cholecystitis in many countries around the world, including in our country.

MECHANISMS OF THE INFLUENCE OF CATECHOLAMINES ON IRON METABOLISM

Mirgyan M. – the 4th year student., Mirgyan R., Smirnova A. – the 3rd year students
Scientific leaders - Cand. Med. Sc. Matytsin A.P., Kostina V.V.

Many human somatic cells can simultaneously interact with hundreds of symbiotic microbes, which allows to say about microecological human system. Based on modern science data, which consider the relationship between higher animals and microorganisms. In the works of Ugolev it is described "natural technology of biological systems" that are of interest to the detailed study of the effect of neurotransmitter amines such as catecholamines on the growth of microorganisms. During the last 15 years there were accumulated evidence suggested that the ability to actively use the neurohormonal products host of physiological reactions, such as catecholamines, as an environmental stimulus for the growth and implementation of the biological activity was widespread among bacteria. It is experimentally proved that the absence of free iron in the medium inhibits the growth of bacteria culture and the realization of their pathogenic properties, so there is a strong correlation between the availability of iron ions and the virulence of the microorganism. In the intestinal mucosa and lungs, which is the primary line of defense of the body against the microflora, low levels of iron determines the inhibition of pathogen growth. According to studies it is known that in mammals the iron ions are in a bound state, which means that the primary mechanism of nonspecific defenses against microbial infection. Catecholamines can release iron from transferrin, which facilitates the subsequent intake of iron microorganisms inwardly and as a consequence, increases sharply bacterial virulence. Studying the role of catecholamines effects on the body, the effect of free iron on the virulent properties of the organism contributes to the fact that a key element emphasize the innate host defense system to attack pathogens and viruses and to develop a more advanced method of treatment, in order to avoid various complications.

MODERN METHODS OF TREATMENT OF INTESTINAL DYSBIOSIS IN CHILDREN

Smirnova A., Mirgyan R. – 3rd year students

Scientific leaders - Cand. Med. Sc. Prokopenko A.V., Kostina V.V.

Gastroenterologists on the results of fecal analysis, establish a diagnosis - intestinal dysbiosis, the symptoms of which are expressed in diarrhea, constipation, nausea, weight loss, in children - the occurrence of allergic reactions, anxiety, abdominal pain and etc. In children, depending on the age of the normal intestinal microflora in the 85-98% is represented by bifidobacteria, as it contains Lactobacillus, Escherichia coli, Escherichia, Clostridium, Staphylococcus, Streptococcus. Some of these bacteria - helpful: they help digest food, synthesize vitamins, contribute to the good functioning of the immune system and perform other important functions in the body. Dysbiosis risk factors include: the latest breastfeeding, bottle-feeding, malnutrition. The basis for the correction of dysbiosis is proper nutrition, prolonged breast feeding, introduction of complementary foods in the time. Medicinal agents include drugs containing microorganisms - representatives of the normal flora (liquid and dry "Bifidumbacterin" "Lactobacterin" "Lineks", etc.); agents that are nutrient medium for the growth of bifidobacteria and lactic acid bacteria and stimulate their proliferation ("Hilak forte", "Lysozyme", etc.), bacteriophages, in some cases treatment begins with antibiotic with subsequent correction of probiotic microflora. Immunomodulators to accelerate the recovery of the intestinal microflora, can be applied only on prescription, it will be better to use herbal preparations, such as Propolis, Dibazol, Immunal, tincture of echinacea, lemongrass, Eleutherococcus. Not to permit the development of dysbiosis will allow the timely and proper treatment of chronic diseases of the digestive system, against the background of which there may be an imbalance of intestinal microflora.

THE USE OF OZONE FOR THE TREATMENT OF PURULENT WOUNDS

Poroshin A. - 6th year student, Smirnova A., Blagova Zh., Mirganyan R. – 3rd year students
Scientific leaders - Dr.Med.Sc. Volodchenko N.P., Ivanova E.P., Kostina V.V.

The problem of treatment of inflammatory diseases occupies a leading position in the surgery due to the steady increase in the prevalence and increase in the percentage of complications and mortality. The frequency of inflammatory complications, even after "pure" planning of operations is quite high (5 to 35% according to the literature and has a tendency to increase. Despite the widespread use of modern highly effective antibacterial drugs in patients with purulent surgical infection, the results of treatment of these diseases often remain unsatisfactory (slow recovery, relapse, superinfection, etc.). Often this is due to the fact that pathogens of purulent infections are highly resistant to the action of the antibiotics and antiseptics. This concerns the agents of nosocomial infections. In connection with this growing interest of surgeons to use in the treatment of inflammatory diseases of natural physical factors and chemical substances grows. One of the physical factors is ozone. Its anti-inflammatory effect is due not only high bactericidal and antiviral activity. Ozone significantly modulates prostaglandin system - unconditional conductors of inflammation. Furthermore, it was found that it increases the activity of glutathione system forming intracellular antioxidant protection against free radical reactions. Ozonation tissue carries anti-inflammatory effects by the of influence on the synthesis of biological conductors of phagocytes inflammation. Also, ozone has a pronounced anti-hypoxic action. When hypoxia tissue ozone restores oxygen-transport function of blood. As a result, it improves oxygenation of tissues. Ozone is a highly effective non-specific treatment of surgical infection, which can be used both independently and in combination

with conventional treatments. The use of ozone accelerates the timing of cleansing and healing of wounds, reduce the time of hospital stay, reduce the amount or dose, to give up out of antibiotics. Ozone therapy provides a simple and economical method of treatment and, at proper selection of doses, does not give side effects and complications.

EPSTEIN-BARR VIRUS

Blagova Zh. – the 3rd year student

Scientific leaders - Cand. Med. Sc. A.V. Prokopenko, V.V. Kostina

Epstein-Barr virus - one of the most diffused viruses in the human population. Like most herpes viruses, Epstein-Barr virus can not be eliminated completely that's why every person that was infected, remains the carrier and a potential source of virus infection. The virus was discovered and described in 1964 by two British virologists - Michael Epstein and Yvonne Barr. Epstein was a professor at one of the British institutions, and Barr worked as his assistant. The virus genome is represented by the double-stranded DNA virus, it has not RNA level in its replication. The main way of getting this infection is kissing. The largest number of viral particles are in the epithelial cells around the salivary glands and a larger number in saliva. The virus affects primarily epithelial cells of the mouth, throat, tonsils, and salivary glands. Here it reproduces the most active. The main quality of this virus is that it does not slow down and does not violate the proliferation of cells, it makes their proliferation stronger. As a result, in the acute phase of infection increases the number of lymphocytes, they fill the lymph nodes, causing them to swell and seal. In order to identify Epstein-Barr virus in the early stages of its development, microbiologists use a few basic diagnostic methods: serological diagnosis to determine the titer of IgM antibodies. The titer of 1:40 is already diagnostically significant; determining the titer of specific antibodies to the virus. This method is especially important for children, who do not have heterophile antibodies. By the way, after getting this virus, level of specific IgG titer remain high for the whole life. Linked immunosorbent assay, PCR, cultural methods are also widely used for diagnostics.

OPERATIONS IN THE VEINS: HISTORY, THE CURRENT STATE OF THE QUESTION

Shebunova V., Blagova Zh., - the 3rd year students

Scientific leaders - Assoc. Prof., Cand. Med. Sc. Sergienko A.V., Kostina V.V.

In ancient times surgeons faced with damage of the main veins, which could lead to death. Damage of the main veins occurs in trauma, with the defeat of vascular inflammation, occlusion of veins surrounding tissue tumors, in the first place of the reasons for surgery on the veins is the blood clot. That is why the operation on the veins in modern vascular surgery plays an important role. Modern vascular surgery refers to a type of minimally invasive surgery. Modern technologies allow to carry out operations inside blood vessels, which is indicative of intravascular or endovascular surgery. The main feature of endovascular surgery is that all interventions are made without cuts - through small punctures in the skin (tool 1-4 mm in diameter) under X-ray control. X-ray inspection is carried out by using high-tech equipment (angiographic apparatus) in special roentgen operated rooms. The main methods used by endovascular surgeons to treat a variety of diseases of the veins include: endovasal laser photocoagulation; miniflebectomy; installation of cava filters; radiofrequency ablation.

MYOCARDIAL INFARCTION. ETIOLOGY

Bayramov M., Mirgyan R. – the 3rd year students

Scientific leaders – Cand.Med.Sc. Levchenko N.R., Kostina V.V.

Myocardial infarction can be started in the most unexpected moment. Violation of the integrity of the plaque can be provoked by palpitations, hypertension, psychoemotional overexertion and physical activity. The appearance of cracks in the atherosclerotic plaque results in the deposition on it activated platelets and erythrocytes. These processes start the process of blood clotting and thrombus formation. It can quickly grow and the artery begins to narrow sharply. Typically, the time of clot formation until complete obturation (occlusion) of the coronary artery runs about 2-6 days. The main cause of myocardial infarction is significant breach in the arterial blood vessels of the heart, which leads to ischemia (inadequate flow of blood) of a section of the heart muscle and provokes the death of myocardial cells.

HYGIENE OF CHILDREN'S SKIN

Mirgyan R., Arkhipov S., Bayramov M. - the 3rd year students

Scientific leaders – Prof. Korshunova N.V., Kostina V.V.

The skin of children, as well as the entire body, from the moment of birth until the onset of puberty is in the organic and functional development. Significant impact on the physiology and pathology of the skin in different periods of childhood have a hereditary and social factors, metabolism, immune system and others.

Skin muscles in children are not well developed, the epidermis is thin, connective tissue fibers are underdeveloped - this leads to increased irritability of nerve receptors. But small children's subcutaneous fat differs by loose epidermis.

Sweat glands are beginning to show its activity gradually to 2 years old of a child's life, and only at puberty there occurs sweating on the adult type.

The sebaceous glands in children bigger, they atrophy progressively as the child grows, but not on of them.

The circulatory system of children is characterized by increased vascular permeability, which is visible through the thin epidermis. This factor and underdeveloped dermis cause the pink-pearl skin of color children.

Anatomic failure of children's skin in the form of abundant vascularization, increased hydrophilicity and lack of connective tissue structures - resulting in imperfect protection of the skin. Also children's skin is characterized by a decrease of bactericidal properties of the sebaceous and sweat glands, and water-lipid mantle has neutral and slightly alkaline reaction. This causes easy vulnerability of children's skin, a tendency to the formation of cracks, scratches, etc.

TECHNOLOGY OF FAST TRACK-SURGERY

Bayramov M., Arkhipov S. – the 3rd year students

Scientific leaders – Ivanova E.P., Kostina V.V.

The founder of the multimodal fast track program in Europe, covering all phases of perioperative care, is Professor H. Rehlet. Konstantin Puchkov introduced great importance in the development of this technology.

Preoperative strategy: Patient education - a real explanation and information about the upcoming medical procedures, surgery, postoperative, fast track program benefits, limit of nutrition before the operation. The need for mechanical intestines preparation is not considered reasonable to surgery.

Intraoperative Strategy: Anesthesia, which reduces surgical stress to a minimum. The use of minimally invasive surgical techniques to reduce the inflammatory component of the stress response; optimized infusion therapy; providing of intraoperative normothermia.

Postoperation strategy: Effective pain relief. Early oral hydration. Early restoration of enteral nutrition (6 hours after surgery). Rapid mobilization.

LAPAROSCOPIC TREATMENT OF ALLOWED ECTOPIC PREGNANCY

Arkhipov S., Bayramov M. – the 3rd year students

Scientific leaders – Assoc. Prof., Cand.Med.Sc. Sergienko A.V., Kostina V.V.

When laparoscopic treatment of ectopic pregnancy a radical (salpingectomy) and organ-saving operations are performed.

Salpingectomy. The operation was performed from 3 accesses: one 10-mm for the laparoscope and two - a 5- or 10-mm - for tools.

Conserving surgery. Types:

1. Laparoscopic linear salpingotomy.
2. Segmental resection of the pipe.
3. Extrude of the ovum of ampullar tube division.

Laparoscopic linear salpingotomy:

1. Dissection of the tube.
2. Remove of ovum.
3. Rehabilitation of the tube.
4. The final phase of the operation. Lavage of the pelvic cavity, aspiration of blood and clots.

Segmental resection of the pipe:

1. Sanitize the abdominal cavity and pelvic cavity, removing of blood and clots.
2. The section of tube with the fetal egg captures by atraumatic clamp and lifts upward to visualize mesosalpings.
3. Using scissors to cut tissue along coagulation line.
4. Closer to the wall of the fallopian tube coagulates and crosses mesosalpings.
5. Section of tube is removed by one of the above methods.

EDUCATION INTOXICATION MECHANISM

Arkhipov S., Bayramov M. - the 3rd year students

Scientific leaders – Cand.Med.Sc. Matytsin A.P., Kostina V.V.

With increasing concentration of ethanol in the blood firstly cells of the cerebral cortex react on it, then the medulla and spinal. Spinal reflexes are affected only at a very deep intoxication. When the content of alcohol in the blood of less than 30 mg% of its apparent effect on the body is absent. Absolutely lethal concentration of 500-800 mg% (with individual variations).

The main effect of the influence of alcoholic beverages on the central nervous system - disregulating. At moderate intoxication its two stages are manifested by:

excitation and inhibition. At high doses the first stage is almost absent. In the first stage, when a person experiences a state of euphoria, bioelectric processes in the brain are activated, EEG α -rhythm disappears, there is a spike activity, reaction to stimuli are enhanced.

In the second stage, when there is braking, electroencephalogram indicates generation of α -rhythm, slow waves appear, the reaction to stimuli is inhibited. All this shows that at the intoxication of large degree the tone of the reticular formation of the brain.

NON-FREE SKIN PLASTY

Fomina E. - the 3-rd year student

Scientific leaders - Ivanova E.P., Dr.Med.Sc. Volodchenko N.P., Kostina V.V.

Non-free skin plasty is divided into two types: 1) the closure of the wound by making use of the adjacent skin with or without additional cuts; 2) wound closure by moving the skin flap on the leg, taken near the wound or from distant parts of the body.

Regional skin plasty.

1. Closure of the skin defect in usual way after the mobilization of the surrounding tissue from the muscle fascia;
2. Using laxative incisions around the defect;
3. Scalloping rotating tongue-shaped flap of skin from lying next to healthy skin - carved out flap is placed over the defect and fix.
4. Z -shaped, or plastic counter triangular flaps (A.A.Limberg's method).

Distantly related skin plasty.

1. Method of pedicled flap. The main indication for the use of pedicled flap are limb defects. The advantage of the method is that extensive skin and subcutaneous defects can be closed in a relatively short period of time (12 - 18 days).
2. The method of bridge flap. At the plastic flap bridging the latter receives nourishment from the maternal soil on both sides. There produces two parallel incision and mobilization of the skin - to form a "bridge", under which the defect is placed and the flap is sutured to the edges. After engraftment of flap cutting off his maternal soil is performed.
3. Method of dermal-fat flap including artery. This method provides a microsurgical technique, a special ultra-thin suture material for applying of vascular anastomoses. It is used for closing defects of the fingers, replacing the fingers, with extensive defects of the feet, hands, neck and face.
4. Plastic round migrating stalk flap. There produce two parallel incision of the skin and subcutaneous tissue to the muscle fascia. Mobilizing the flap of the fascia the edges are sewn together, thus forming a skin cylinder. Place of taking of flap is sutured by separate bundle seam.

THE PATHOPHYSIOLOGY OF ALZHEIMER'S DISEASE

Sadykova A., Pronin V. – the 3-rd year students

Scientific leaders – Cand. Med. Sc., Assoc. Prof. Maximenko V.A., Kostina V.V.

Alzheimer's disease - the most common form of senile dementia, occurring usually at age of 60 years old. It has been established that Alzheimer's disease is proteopathy - a disease associated with the accumulation in the brain tissue abnormal proteins - amyloid-beta and tau protein.

The main role in the neuronal damage in Alzheimer's disease is necessary, β -amyloid Protein-Term, β -amyloid peptide. It has a neurotoxic effect. It is formed by the cleavage of amyloid precursor. Excessive amyloid deposition occurs either by excessive production or by catabolism of disorders due to extracellular amyloid deposits.

The essence of the disease is Alzheimer's progressive atrophy of nerve cells in the brain, leading to disruption of first functions and then to death. The death of nerve cells is due to the formation of abnormal protein in the body (β -amyloid): its synthesis is caused by genetic disorders that occur with age. Protein forms numerous plaques (deposits) in the brain tissue, which cause the death of nerve cells.

HYGIENIC ASPECTS OF USING OF THE POLYMERIC MATERIALS IN MEDICINE

Gubershtro Y., Pronin V., Sadykova A. – the 3-rd year students

Scientific leaders – Prof. Korshunova N.V., Kostina V.V.

The main advantage of polymers is their lightness, high specific strength and the ability to impart a predetermined shape. This reduces the weight and volume of structures.

Applicable polymers may produce odorous substances that create firm smell; have a toxic, irritating and allergenic properties. Products made of polymers should be safe.

In technology of medicinal forms these medicinal products are exposed to special requirements: long-term preservation of physical and chemical properties under the action of the enzyme properties of a living organism; biological inertness (easy adaptation of the body to the contact).

Products made of polymer materials are intended for temporary stay in the body and then they should disperse.

Polymers that come into contact with body tissues should not contain toxic substances, and specific properties of the cumulative effect on the body. Upon contact with body fluids they do not alter their physic-chemical properties. The polymers should not produce substances which are not included in the formulation of the material and don't stimulate the growth of microorganisms.

CHARACTERISTICS OF DEATHS IN MECHANICAL ASPHYXIA

Gorshkova K. – the 5-th year student, Fedotova T. – the 6-th year student

Scientific leaders – Cand.Med.Sc. Cheryomkin M.I., Kostina V.V.

Asphyxia - a special form of hypoxia, combined with a high content of carbon dioxide in the blood and tissues (hypercapnia).

According to data's of many researchers in recent years the forensic medical examination of persons who died of mechanical asphyxia is 25 - 30% of all violent deaths. Hanging accounts 77%, drowning - 25%.

Among the dead the greatest part consists of the men; mainly age of victims ranged from 31 up to 60 years old; mortality peaks occur in spring (31.6%) and summer (28.6%); most of the corpses were found in the places (65.7%), mainly in flats (45.8%).

The study showed that suicide is characteristic not only of very high incidence among men of working age (25.94%) and that index is growing among both male and female persons over 60 years old that is - 39.5% and 22.2%, respectively.

We must note that mostly people in active working age is killed. Therefore, the problem of high mortality rate of asphyxia has long acquired a pronounced social character, as it brings essential damage to productive forces of society.

HISTOLOGIC EVIDENCE OF MECHANICAL ASPHYXIA

Gigolyan A., Kucherenko T. – the 6th year students

Scientific leaders – Cand.Med.Sc., Assoc.Prof. Gigolyan M.O., Kostina V.V.

Histological studies method complements and deepens the macroscopic picture of a typical specific characters (traces of mechanical action) and atypical (common asphyxial) characteristics of various types of mechanical asphyxia. This type of research is of great diagnostic value in dealing with issues related to determining of the presence, nature and origin of damage in vivo. Microscopic examinations are confirmed or excluded by various kinds of aspirations, tissue analysis is conducted for the presence of diatom plankton that is used in the diagnosis of drowning.

In cases of asphyxia from compression of neck organs there is carried out a study of the main features - strangulation furrow, but in this study, we must take into account the macroscopic changes without which to give a full forensic assessment of the signs of asphyxia is not possible.

Histological diagnosis of the aspiration of blood is based on the detection in the small bronchi, bronchioles and alveoli the blood of the masses, and what is typical - the formation of severe emphysema in the peripheral areas of the lung tissue, is regarded as a compensatory phenomenon. In aspiration of food masses there is observed the presence of the same parts of fragments of muscle fibers, fat, starch granules, fat droplets, and fiber.

VARIANTS OF CLINICAL COURSE OF ACUTE DISORDERS OF CEREBRAL CIRCULATION

Eroputko S., Mirgyan, M. - the 4th year students

Scientific leader - Cand.Med.Sc., Assoc. Prof. A. I. Karnaukh A.I , Kostina V.V.

The clinical picture of disorders of cerebral circulation depends on the etiology, localization and severity of stroke. According to international multicenter studies, the ratio of ischemic and hemorrhagic stroke are in the average 5.0-5.5 : 1; i.e. 80-85 and 15-20%. Hemorrhagic stroke includes bleeding into the substance of the brain due to rupture of the vessel wall or hemorrhagic infarction of blood through the altered vascular wall. Ischemic stroke is clinically manifested by focal neurological symptoms and constitutes a violation of cerebral circulation, which is caused by significant reduction or sudden cessation of blood supply to a certain area of the brain. To all patients with the aim of differential diagnostics of hemorrhagic and ischemic stroke it was performed CT of the brain, duplex scanning of the main arteries of the head.

Clinical manifestations of stroke maybe different and depend on the nature of cerebrovascular disease and its localization and extent of the lesion. Part of the symptoms may be due to the presence of chronic cerebrovascular insufficiency occurred in most patients before the development of stroke, as indicated by the data of the additional survey.

THE BIOLOGICAL ROLE OF SUCCINATES

Eroputko S., Mirgyan M. – the 4th year students

Scientific leaders – Cand.Med.Sc., Assoc. Prof. Anokhina R.A., Kostina V.V.

Succinic acid (succinates) is a substance produced during the processing of natural amber. It is a completely product with a number of useful qualities. It is obtained in the form of white crystalline powder, taste similar to citric acid. Succinic acid provides anti-virus and anti-hypoxic action. Scientists have proved that succinic acid and succinates were adaptogens. Succinic acid stimulates the process of oxygen to the cells, relieves stress, restores energy, it normalizes the production of new cells, and has restorative and regenerative properties. Restoring the balance of biochemical reactions in the body, succinates normalize the function of all organs and tissues. Especially important is their influence on the brain, therefore, succinic acid is used to prevent brain pathologies developing in the aging process. It restores functions of the nervous system and prevents stress. It has a favorable effect on the cardiovascular system, stimulates the liver and kidneys, causing the body more effectively cleared of toxic metabolites and other harmful agents. It enhances immunity due to more efficient synthesis of immune system cells. Due to its antioxidant action, succinates inhibit the growth and development of tumors and prevents division of cancer cells. Succinic acid is able to exert therapeutic effect even in small quantities. It also increases the nutritional value of basic food components and enhances the effect of medicines. These properties define it as a very useful dietary Supplement that is restoring the work of all organs and systems of the body, the self-regulation of its functioning, accelerate recovery, and maintain the natural balance of this life. Succinic acid is available under several commercial names (Kogitum, Succinic acid, Enteric, Mitomin, Enerlit, etc.) in four dosage forms – tablets, capsules, solutions for injection and powder. Comprehensive pharmaceutical preparations containing as active components not only succinic acid but also other substances, are as follows: Influnet, Limontar, Remaxol, Serebrenik, Cytoflavin.

TELA AS COMMON CAUSE OF SUDDEN DEATH IN NEUROLOGICAL PATIENTS

Mirgyan M., Eroputko S. – the 4-th year students

Scientific leaders - Prof. Sakharyuk A.P., Kostina V.V.

VTEC must be comprehensive and includes: ultrasound of the lower limbs with the early stages of the disease and the dynamics of non-pharmacological means (compression stockings, intermittent pneumatic compression of the lower extremities, early rehabilitation, including the use of robotic techniques), medical prophylaxis (preventive doses of LMWH in doses recommended by the manufacturers, prophylactic doses of unfractionated heparin can be used at their inaccessibility. Starting the use of anticoagulants should be at 2 days of the disease, provided a stable (including the background of drugs) hemodynamic and availability monitoring.

MANIC-DEPRESSIVE SYNDROME

Mirgyan M., Eroputko S., Dadasheva S. - the 4th-year students

Scientific leaders - Brush N.G., Kostina V.V.

Bipolar disorder manifests as depressive and manic phases. Alternation of depression – intermission is a manic period of depression. Risk factors are premorbid personality traits related to emotional instability, which is expressed in excessive affective reactions to external causes, as well as spontaneous oscillations of mood. People who have mental reactions differ by rigidity and monotony are susceptible to disease.

DISSEMINATED INTRAVASCULAR BLOOD COAGULATION

Baymysheva D. – 4th year student

Scientific leaders - Cand.Med.Sc. Kruglyakova L.V., Kostina V.V.

DIC (disseminated intravascular coagulation) - is: a secondary pathological process that occurs at a constant and prolonged stimulation of the hemostatic system, having phase current, with initial activation and subsequent deep progressive exhaustion of all parts of the hemostatic system up to the total loss of the blood's ability to clot with development of catastrophic uncontrolled bleeding and severe generalized hemorrhagic syndrome;

Triggering factors of DIC may be the wide variety of intense or prolonged stimuli, somehow fit into a triad of Virchow - disorders of blood circulation, its characteristics or vascular wall.

During DIC there are 4 stages:

Stage 1 - Phase of hypercoagulation and hyperagresion of platelets;

Step 2 - a transitory phase (multidirectional changes in blood clotting both in the direction of hyper- and towards hyporcoagulation);

Stage 3 - phase deep anticoagulation (blood does not clot at all);

Stage 4 - the resolution phase (or normalized hemostasis, or develop complications that lead to death).

In the first phase there is increased clotting instant clots in large vessels and small clots (during operation). The patient is not possible to take a blood test, since it is immediately minimized. As a rule, the first phase is very fast and unnoticed by doctors. There is a sharp decrease in blood pressure, skin pale, covered with cold sticky sweat, weak pulse (thready). Then, there develops respiratory failure due to lung disease, cough and crackles in the lungs, skin cyanosis, cold feet and hands. In the second phase there is retained the same symptoms as in the first stage of DIC, plus the process involved kidney (renal failure), the adrenal glands, digestive tract (nausea, vomiting, abdominal pain, diarrhea).

The third phase (anticoagulation stage) is characterized by massive bleeding, like from the original hearth and of other organs (stomach and intestinal bleeding due to ulceration of the mucous, blood in urine - kidney disease, sputum mixed with blood when expectoration). It is also characterized by the development of hemorrhagic syndrome (occurrence of massive bleeding, bruising, petechiae, uncontrolled bleeding at injection site and during the operation, bleeding gums, nosebleeds, etc.). The fourth phase with timely and appropriate treatment leads to restoring of hemostasis and stopping of the bleeding, but it often ends by lethal in massive defeat of internal organs and bleeding.

Treatment of the underlying disease - the main thing that is required to do in the fight against intravascular coagulation.

QUANTITATIVE DISTURBANCES OF CONSCIOUSNESS

Baymysheva D. – 4th year student

Scientific leaders - Cand.Med.Sc., Assoc.Prof. Karnaukh A.I., Kostina V.V.

For the doctor of any specialty in any medical establishment it is important to determine the degree of impairment of consciousness. Quantitative disturbances of consciousness is associated with the activation of violations, which leads to a decrease in the level of consciousness with a kind of "off," the oppression of mental activity (mainly due to the suffering sredinnostvolovyh structures).

There are: 1. a clear consciousness; 2. oglushenie moderate; 3. stunning deep; 4. sopor; 5. coma moderate; 6. deep coma; 7. coma terminal (prohibitive).

A clear mind: the safety of all mental functions: the ability to correct perception and understanding of the world and of their own "I". Adequate steps critic maintained, full voice contact, reaction to stimuli - adequate and targeted, and allopsychic, autopsychic orientation are preserved.

Stun is mild: mild drowsiness, reduced active attention, rapid exhaustion, voice contact - saved, but sometimes you want to repeat the questions, answers are slowed, monosyllabic. Sophisticated commands are performed slowly. On appeal to him the eyes are opened immediately. The motor response to pain - the active, purposeful. Allopsychic orientation - is inaccurate. Autopsychic orientation - is preserved. Monitoring for the function of the pelvic organs is kept.

Stunning deep: deep lethargy, the patient almost always in a state of sleep, active attention is reduced, fast exhaustion, voice contact is limited, need to repeat the questions, answers slowed, monosyllabic. It performs only simple commands. On appeal to him the eyes are opened immediately. The motor response to pain - is preserved. The response to other stimuli is changed. Allopsychic orientation is partly preserved. Autopsychic orientation is partly preserved. Monitoring of the function of the pelvic organs is weakened.

Sopor: deep depression of consciousness, lack of mental activity with the preservation of a coordinated security responses to pain and other stimuli.

Coma: shutdown of consciousness with complete loss of perception of the world itself, the absence of other signs of mental activity, the gradual suppression of reflex reactions and functions of vital organs. Depending on the severity and duration of the violations coma severity is divided into three levels: mild (in response to pain stimuli uncoordinated defense reactions); deep (the absence of any reaction to external stimuli); terminal or prohibitive (total areflexia).

To determine the degree of depression of consciousness using the Glasgow Coma Scale:

15 points - a clear conscience;

14-13 points - moderate stunning;

12-10 points - a deep torpor;

9-8 points - the stupor;

7 points or less - coma.

THEORY OF PATHOGENESIS OF ALCOHOLISM BY ANOKHIN I.P.

Baymysheva D. – 4th year student

Scientific leaders - Brush N.G., Kostina V.V.

Alcoholism is a problem, which reflects typical psychiatric difficulties in understanding the causes and mechanisms of disease. A series of investigations conducted by Anokhin I.P. with colleges over the past 10 years, has allowed to formulate a theory about the leading role of catecholamines in the development of alcoholism. Acting on the

catecholamine neurotransmitter system of the brain, alcohol leads to increased release of norepinephrine and dopamine from presynaptic structures in the hypothalamus and midbrain. This may explain the agitation in the first phase of intoxication in humans, that these structures are activating system of the brain. However, alcohol and further contributes to the enhanced destruction of neurotransmitters catecholamine nature, which entails a reduction in the concentration of norepinephrine, a decrease in the activity of the corresponding brain structures. Clinically, it may correspond to the second phase of intoxication, proceeding with a depressive component, depression and lethargy.

At long-term use of forced alcohol debilitating CNS neurotransmitters emissions combined with their power of destruction, cause a deficit of norepinephrine and dopamine brain. The result can be a reduction in the patient's mood and performance against this background, and receive a relatively moderate amounts of alcohol, which stimulates the release of catecholamines, causing a short time condition improved, creased tone. Again, there is an increasingly growing shortage of these neurotransmitters in the brain. In turn, this state is pushing patients on a regular intake of alcohol, in order to somehow improve their time on the condition and state of health. Thus, a vicious circle «circulus vitiosus» - a classic example of a pathological chain of transformations. Pathological essence of the vicious cycle that breaks down the functioning of the mechanism of feedback in the system. Such closed on dead-end functional components can be found at various levels of the organism in alcoholism. A vicious circle, named above, and the main leads in the end to the progression of the disease, as exhausted compensatory capacity of the organism.

Compensatory role is performed observing in alcoholism increased synthesis of catecholamines in the central nervous system.

There is an accelerated circulation of catecholamines, and this is a major shift, indicating the biological changes in the body, about the formation of alcohol dependence and craving for it. Emissions may be terminated, the collapse of catecholamines can return to normal, and the synthesis is steill be reinforced. Upon termination of habitual alcohol intake. In this activity an essential enzyme is reduced.

There is a clear correlation between the degree of concentration of dopamine in the blood and the severity of the clinical condition of patients with alcoholism.

FOLATE CYCLE VIOLATION DURING PREGNANCY

Eroputko S., Mirgyan M. – the 4th-year students

Scientific leaders - Cand.Med.Sc. Zaritskaya E.N., Kostina V.V.

In the first 12 weeks folic acid is responsible for the correct formation of the fetus neural tube. Folic acid deficiency causes congenital malformations of the fetus and the sulfur amino acid metabolism is disturbed and there is a delay amino acid homocysteine in the blood. Due to the decreased activity of the folate cycle enzymes, which are responsible for the conversion of folic acid (MTHFR, MTRR, MTR) there is an accumulation of homocysteine in the body that can stimulate the formation of blood clots. This leads to abortion, premature placental abruption, preeclampsia and chronic fetal hypoxia. It is necessary to add on the earlier timing of folic acid in the diet, it helps reduce the risk of complications during pregnancy, especially it is necessary in the presence of hyperhomocysteinemia.

THE CAUSES AND PATHOGENESIS OF PSORIASIS

Trubachyov R., Smirnova A., Blagova Zh. - 3rd year students

Scientific leaders – Cand.Med.Sc. Levchenko N.R., Kostina V.V.

Psoriasis is a chronic dermatosis characterized by scaly papular rash on the skin. The most common are viral, hereditary (genetic), neurogenic and metabolism (metabolic) disease theory, but none of them is universally accepted. There are parakeratosis, acanthosis in intrapapillary areas of malpighian layer and thinning of its papillary sites, intracellular edema and spongiosis, accumulation in the intercellular spaces, penetrating the dermis of neutrophils (microabscesses Munro). In the old elements hyperkeratosis is more pronounced than parakeratosis; nuclei in the stratum corneum occur independently of the antiquity of papules. The granular layer disappears or persists interrupted a number of its cells. In acute cases of missing and shiny coat. Malpighi layer above papillae is thinned, epidermal outgrowths are elongated. The stratum corneum between the papillae pronounced acanthosis. The capillaries of the papillary layer are expanded strongly crimped, overflowing with blood.

ARE THERE EXTRA ORGANS IN THE ORGANISM?

Rytenkova A., Kazmina A. – the 1-st year students

Scientific leaders – Zherepa L. G., Kostina V. V.

A biologist Ilya Mechnikov supposed that there were too much «superfluous» intestines in the organism of man, and the French doctor Franz Glenar asserted in general, that some organs were located quite wrong at us. The whole segments of large intestines were cruelly thrown out, a coccyx was retired, and although after such interference the patients felt themselves from bad to worse.

An appendix, quite not is a rudimentary. Appendix – important part of the immune system of man, participating in a homeostasis: it helps to support balance in process of all organs and tissues. A spleen carries out immune control of blood. Amygdales (tonsils) are appeared as our first defender at intruding of microbes to the organism. Also protective proteins– interferon, immunoprotein are produced in tonsils. Thymus (thymus gland) - one of main organs responsible for immunity.

Truncal cells, getting into thymus, are transformed into T-lymphocytes, including «cells killers», that destroy viruses and bacteria.

Attempts to perfect the devices of human organism do not cease in our days. It is assisted by successes of the genic engineering. As some gerontologists consider the reconstructed man will be able to live 200 years.

Presently scientists came to the conclusion, that in a human organism nothing superfluous can be. Many organs are rehabilitated, but yet their greater number is studied not enough, and their functional destiny is not found out.

THE SEX AND AGE CHARACTERISTICS OF THE SKULL

Nazarenko D. – the 1-st year student

Scientific leaders – Zherepa L. G., Kostina V. V.

Skull from the moment of birth of the child is undergoing major changes until the end of life. They come under the influence of reconstruction of bone architecture. The changes in the skull can be divided into five age periods.

The first period covers the years from birth up to 7 years old. Active growth is characteristic of its skull.

The second period of the skull changes occur between 8 and 13-14 years old and is characterized by a relative slowdown in the growth of the skull bones, although there was a significant increase in the nasal cavity, the upper jaw and eye socket.

The third period lasts from the beginning of puberty (14-16 years old) up to 20-25 years old, the end of skeletal growth.

The fourth period (26-45 years old) are most stable when changing of the size of the skull does not occur.

The fifth period lasts from the time of the imperforate seams 45 years to old. It is characteristic for it marked transformation of the facial skull, associated with tooth loss. Male and female skulls have significant anatomical features noted in 80% of cases.

STATINS

Guschin D., Moskvitin D. - 4-th year students

Scientific leaders - Assoc. Prof., Cand. Med. Sc. Tikhanov V.I., Kostina V.V.

Statins, also known as HMG-CoA reductase inhibitors, are a class of lipid-lowering medications. They inhibit the enzyme HMG-CoA reductase which plays a central role in the production of cholesterol. There are several generations of statins, among which are drugs such as fluvastatin, atorvastatin, and rosuvastatin. Now in clinical practice statins of the last generation are used, containing atorvastatin, cerivastatin, rosuvastatin and pitavastatin. Statins are used to reduce cardiovascular disease, for prevention of atherosclerosis and successfully using in the rehabilitation of myocardial infarction. Also, statins help to reduce cell adhesion, potentiate the anti-inflammatory effects and stabilize the shape of an atherosclerotic plaque.

VIOLATIONS OF VASCULAR PERMEABILITY. DAMAGE TO THE VASCULAR WALL

Beznutrov Ya. –the 2nd year student

Scientific leaders - Dr. Sci. Biol. Batalova T. A., Kostina V.V.

Violations of vascular permeability (transcapillary exchange) are due to the very vascular pathology (mainly the endothelium and basement membrane of capillaries and venules), impaired ability to pass water, and it contains a substance through ultrafiltration processes, diffusion, pinocytosis, active intracellular carriers like without energy costs and with the expenditure.

In pathological conditions, violation of vascular permeability often characterized by its increase. Increased traffic exchange may be related to structural changes in the walls of microvascular and speakers with impaired circulation.

The reasons for increasing the permeability of microvessels (transcapillary exchange) are most often the inflammatory processes in tissues, allergic reactions, shock, tissue hypoxia, burns, cardiac failure, thrombosis, and compression of the veins, hypoproteinemia, transfusion of protein and salt solutions.

As a result of micro traumas of the vessel walls is the development of acidosis and activation of hydrolases, swelling (edema) of endothelial cells, the appearance and increase the roughness of their shells, hyperextension of the walls of microvessels (which leads to stretching fenestrae formation and micro-breaks in the walls of microvessels).

ACUTE NECROTIZING FASCIITIS

Baldanov E. – the 3-rd year student

Scientific leaders - Cand.Med.Sc. Bubinets O.V., Kostina V.V.

Acute streptococcal necrotizing fasciitis is caused by *S. pyogenes*, which is a beta-haemolytic streptococcus of group A. This pathogen produces hemolysin, streptolysin O and S leukocidin. These properties determine the pathogen and the pathogenesis of typical clinical picture.

β -hemolytic streptococcus group A (pyogenic streptococci, BGSA *S.pyogenes*) - Gram-positive Non-spore, fixed microorganism. It occurs everywhere, often colonizes the skin and mucous membranes of man. Transmission routes are airborne, contact and food.

The input gates of infections are damage of the skin and deeply lying tissues. During the multiplication of streptococcus in the dermis their toxic products enter the bloodstream. Toxemia causes infectious-toxic syndrome with high fever, chills and other symptoms of intoxication. Factors of pathogenic streptococci, which have cytopathic effect: cell wall antigens, toxins and enzymes play an important role in its development.

The frequency of the NF is 0.4 per 100,000 of population. Mortality due Mc Henry statistics is 33%.

Treatment of necrotizing fasciitis is to maintain vital functions, excision of necrotic tissue, and parenteral administration of antibacterial agents.

THE STRUCTURE OF THE MUCOS OF THE RESPIRATORY ORGANS WITH PNEUMONIA

Mamontov S. – the 2nd year student.

Scientific leaders - Dr. Med. Sc., Prof. Krasavina N. P., Kostina V. V.

The lungs are the organs of external respiration in men. They consist of an airway system – the tracheobronchial tree and acini, in its structure there are the alveoli with surrounding blood vessels and nerves. The bronchial tree lung is made up of the bronchi system: the main, lobar, regional, segmental, small and terminal.

The wall of the large bronchi is presented by 4 shells: mucosa, submucosa, fibrous-cartilage and adventitia.

The mucosa is lined with multi-row ciliated epithelium. 7 types of cells are identified in the epithelium: ciliated goblet cells intercalary, brush cells, bronchiolar exocrine cells and dendritic.

Lungs are fitted with safety systems. These systems include air conditioning, nasal and tracheobronchial, mucociliary, alveolar clearances and immune mechanisms.

One of the diseases of the respiratory system is bronchopneumonia. It is an inflammation of the lungs that develops due to bronchitis.

Bronchopneumonia has morphological features depending on the type of infectious agent causing it. The greatest manifestation has staphylococcal, streptococcal, pneumococcal, viral and fungal focal pneumonia.

CACHEXIA

Serebrennikova A – the 2nd year student

Scientific leaders – Assoc.Prof.,Cand.Biol.Sc. Doroshenko G. K., Kostina V. V.

Cachexia – extreme attritions of all organism, with change of physiological

process and disturbance of a mental condition of the person. Types of cachexia: 1. primary; 2. secondary; 3. a cachexia on the basis of starvation and malnutrition. Cachexia reasons: 1. alimentary system; 2. amyloidosis; 3. endocrine diseases; 4. gerontal cachexia;

Nutrients perform function of protection of system's organs, redistributing energy and plastic resources, their adaptation passes through hormones. At starvation or malnutrition of products, adaptation is made through depressions of insulin and rising of catabolic, somatotropic hormones. At incontinuous starvation, the person still has resources to ensure normal functioning of organs of system, but at the end of one and a half weeks resources come to an end that leads to disturbance of functions of an organism.

For recovery of healthy nutrition of the patient with all necessary components and vitamins it is especially important that the nutrition has to be easily acquired and contain necessary amount of proteins and fats.

MAGNETIC RESONANCE ANGIOGRAPHY

Lopatina E., Ondar S. – the 6th year students

Scientific leaders - Dr.Med.Sc., Prof. Yanovoy V.V., Kostina V.V.

Magnetic resonance angiography - a highly informative and safe method of beam diagnostics, allowing to evaluate the anatomical and functional characteristics of blood vessels.

Currently, the method can successfully diagnose arterial aneurysms, arteriovenous malformations of the brain and spinal cord stenosis and thrombosis of vessels, their developmental abnormalities, inflammation of the vascular wall (vasculitis), atherosclerosis of the arteries. In the case of tumoral lesions, this method provides more information about the deployment of the main tumor vessels, and in some cases allows you to visualize the tumor vasculature.

There are two main methods of performing magnetic resonance angiography - without contrast enhancement, and contrast-enhanced MRA. No contrast is usually examined brain vessels and arteries of the neck, with the contrast - the aorta, renal arteries, the arteries of the lower extremities.

The method of magnetic resonance angiography is based on the difference of signal of the moving tissue (blood) from the surrounding stationary tissue. Under the influence of a strong magnetic field, the spins of the nuclei of hydrogen protons change their position and are arranged along the magnetic field axis.

Advantages of the method: get a clear and detailed images of blood vessels without the need for catheterization and therefore no risk of artery damage and related complications; time spent on the research process and the rehabilitation period is shorter than that required for contrast angiography; lower cost compared with contrast angiography; there is no need of the patient X-ray exposure; no need for radiopaque formulations for which the patient can be observed allergy.

Absolute contraindications for the method is the presence of a pacemaker or other implanted metallic devices in the patient's body. Claustrophobia, pregnancy, mental disorders with the impossibility of long-term presence in the supine position at rest are included into relative contraindications.

HISTOPHYSIOLOGY OF LUNGS IN NORMAL AND IN PATHOLOGICAL CONDITIONS

Grekh N. - the 2nd year student

Scientific leaders – Kozlova V.S., Kostina V.V.

Lungs are paired parenchymatous organs. The lung is covered by serous membrane – visceral pleura. In the lungs the part of the Airways (tracheo-bronchial tree), and respiratory division are contained. Lung consists of particles, segments, lobules and acini. The bronchial tree includes: 1) main bronchi; 2) bronchi 1 to 15 of the order; 3) the terminal bronchioles. After terminal respiratory bronchioles begin the divisions, the structural-functional units – acini. It is a system of air cells, alveolar passages and alveolar sacs. Acinus begins by bronchioles of 1st, 2nd and 3rd order. The composition of the epithelial lining of the alveoli there are the 3 types of cells: alveoli of the 1st type (respiratory); alveoli of 2nd type secrete a surfactant; alveoli of 3rd class control the concentration and composition of surfactant. Lung pathology is congenital or acquired. The congenital includes malformation of the lung; abnormalities of the lung vessels. Injuries, tumors, pneumoconiosis, bronchial asthma, tuberculosis are acquired pathology.

SARCOIDOSIS

Fomina E. - the 3rd year student

Scientific leaders - Cand. Med. Sc. Levchenko N.R., Kostina V.V.

Sarcoidosis (Besnier-Boeck-Schaumann disease) - a systemic disease of unknown etiology, which is based on histopathology epithelioid cell granulomatous structure without evidence of caseous necrosis. Sarcoidosis occurs worldwide and affects people of all ages and races. Its prevalence varies depending on geographic location and racial groups. Cardiac involvement is typical for Japanese, lupus pernio for Afro-Americans and nodal erythema for Europeans (3-5 per 100 thousand.).

The pathogenesis of sarcoidosis.

Lymphocytic alveolitis. This is the earliest change in the lungs, caused most likely by alveolar macrophages and T-helpers that release cytokines. At least part of pulmonary sarcoidosis patients have oligoclonal local expansion of T-lymphocytes, causing by an antigen-driven immune response.

Sarcoid granulomas. The formation of the granuloma controls the cascade of cytokines. Granulomas can form in various organs. They contain a large number of T-lymphocytes. At the same time, sarcoidosis patients are characterized by reduced increase of cell and humoral immunity: blood level of T-lymphocytes are reduced and number of B-lymphocytes - normal or elevated.

Anergy to skin tests. That substitution of lymphoid granuloma tissue leads to lymphopenia and anergy to the skin test antigen. Anergy often does not disappear even when clinical improvement and is probably due to the migration of circulating immunoreactive cells in the affected

PORPHYRIA

Gusevskaya V., Verhoturov D., Paputsya I. - the 2nd year students

Scientific leaders – Cand. Med. Sc. Egorshina E.V., Kostina V.V.

Porphyria or porphyrin disease - almost always an inherited disorder of pigment metabolism with a high content of porphyrins in the blood and tissues. It is manifested by photodermatitis, hemolytic crises, gastrointestinal and neuropsychological disorders. Severe cases of this disease led to the legend of the vampire. The most common species is its acute intermittent porphyria (EPP). What is the mechanism of the disease? Non-protein part of hemoglobin - heme - turns into a toxic substance that corrodes the subcutaneous tissue. The skin starts to get brown color, becoming thinner and by exposure to sunlight it bursts, so the skin of patients is covered with scars and sores. Ulcers and inflammations damage the cartilages - the nose and ears, deforming them. Together with covered with sores, eyelids and twisted her fingers, it's incredibly disfigures man. Sunlight contraindicated for patients, which brings them untold suffering.

MALE GENITAL GLANDS

Voynitskiy A. – the 2nd year student

Scientific leaders - Cand. Med. Sc. Semyonov D. A., Kostina V. V.

The indifferent gonad begins to develop on male pattern from the 7th week of embryogenesis, when there is formation of seminiferous tubules under the influence of the expression of factors Y - chromosome. Male genital glands are laid on the surface of the primary kidney. As the egg migrates back down the abdominal wall it, is covered by the peritoneum. Connective partitions divide the gland into segments whose number reaches 250. In each lobe there is from 1 up to 4 of the convoluted seminiferous tubules. Each seminal tubule has a diameter of 150 up to 250 microns and a length of 30 up to 70 cm. In the eggs lobes spaces between the convoluted seminiferous tubules are filled with layers of loose connective tissue, which has in its composition a special endocrine cells of Leydig-cells which secrete the hormone testosterone regulating spermatogenesis and manifestation of secondary sexual characteristics. Testosterone is the most active androgenic hormone. Outwards from epitheliospermatogeny layer of seminiferous tubule there is its own membrane, consisting of three layers: basal, middle and fiber. Epitheliospermatogenetic has two major populations of cells, spermatogenic cells at different stages of differentiation, and supporting cells, and Sertoli cells. Between neighboring supporting cells it is formed tight junctions zone that divided spermatogenic epithelium into two sections - the outer and the inner basal adluminalny. Supporting epitheliocytes create epithelial microenvironment needed for differentiating genital, isolate forming germ cells from toxic substances and various antigens, prevent the development of immune responses. Thus, the Sertoli cells are important competent of hemo-testicular barrier.

KIDNEY AND ITS DEFECTS

Verkhoturov D. - the 2nd year student

Scientific leaders - Cand. Med. Sc. Semyonov D.A, Kostina . V.V.

Kidney - paired organ in which urine is produced continuously. The basic function of kidneys-removal from the organism the foreign substances, metabolic products, excess water and ions. It is carried out through formation and evacuation of urine. Kidney is covered with a connective tissue capsule, the front of the serous membrane. Substance of kidney cortex is divided into a dark red medulla lighter color. Kidney filter consists of three layers: the endothelium of the capillary, basal membrane capsule of Bowman, specialized

epithelial cells, podocytes. Structural and functional unit kidney is the nephron, the total number of it is more than 2 million. Kidney passes stages of development: the front kidney, kidney and primary constant. During the period of uterine development there occur some defects: bilateral renal agenesis occurs at a frequency of 0.1-0.3 per 1000 of in fats and often in boys. This malformation may be an isolated pathology, but sometimes are part of the syndrome, which occurs due to chromosomal abnormalities. A child with this birth defect often die within a few days after birth. Polycystosis of kidneys disease (fine-cystic kidney disease) -autosomno recessive inheritance violations with bilateral symmetrical increase in kidney. At the base of the anomaly is the primary defect of collecting tubes which have lost their ability to properly connect with the distal tubules forming metanephric nephron. Like horse shoe kidney arises from the fusion of two embryonic metanephric rudiments, the lower pole of which merge at the level of lumbar vertebral bodies to form one large body. The cause of this malformation is an obstacle movement of kidneys in the cranial direction, created a by trunk of the inferior mesenteric artery. A kidney grows and changes all human life, in the process of it there can also develop abnormalities.

HISTOPHYSIOLOGY OF SMALL INTESTINE AND ABSORPTION PROCESSES

Papytsya I. - the 2- nd year student

Scientific leaders - Cand.Med.Sc. Semyonov D.A.,Kostina V.V.

Small intestine- division of the human digestive tract, located between the stomach and large intestine. In the small intestine section chyme is treated by saliva and gastric juice and intestinal juice, and is exposed to action of bile, pancreatic juice, later digestion products are absorbed into the blood and lymph capillaries.

The wall of the small intestine is constructed mucosa from submucosa and muscle serous membranes. The inner surface of the small intestine has a characteristic relief due to the presence of a number of formations- circular folds, villi and crypts. These structures increase the overall surface of the small intestine, thereby fulfilling its main digestive functions. Intestinal villi and crypts are the basis structural and functional units of the small intestinal mucosa. Intestinal villi are finger-mucosal protrusions or leaf-shaped, freely jutting into the lumen of the small intestine. Absorption in the small intestine: the presence of folds provides greater villi suction surfase. Absorption of electrolytes: one of the most important functions-transport of sodium ions. The small intestine is involved in all stages of digestion, absorption including a stirred chyme.

FIBER-OPTIC BRONCHOSCOPY WITH DUST BRONCHITIS

Belunkina E., Prilutskaya A. – the 4th-year students

Scientific leaders - Cand. Med. Sc. Goryacheva S. A., Kostina V.V.

Dust bronchitis is a disease of the bronchial tubes when diffuse loss is not due to infection, but due to mechanical or chemical action on the mucous membranes of the bronchial tree of dust particles, which are in the inspired air. This disease belongs to the category of professional and is chronic. Endoscopic examination of the bronchi allows to estimate visually the condition of the bronchial tree and, if necessary, to carry out histological studies. In chronic dust bronchitis with endoscopy it is often revealed atrophic changes in the mucosa, atrophy of the bronchial glands, and also can be detected the

deformation of various parts of the bronchial tree. Kind of the mucous membrane of the trachea and bronchi is: pale, thinned, with sharply wibehouse cartilaginous rings into the lumen of bronchi and "valleys" of interchondral spaces. Areas of dust pigmentation of the mucous membrane - "tattoo" at all levels of the bronchial tree. The excretory ducts of the bronchial glands are enlarged and gaped, arranged in groups, clearly visible in the region of spurs and subsegmentary segmental bronchi, reminding bronchopneumonia fistula. At hypersecretion there may be redness and swelling of a diffuse nature. The excretory ducts of the bronchial glands is more pronounced. The appearance and quality of secretions: mucous lumps, on the walls of the bronchi there are puriform movable lumps. Sometimes there is vitreous mucus, it is often of frothy character. The form and character of folding of the mucosa: folding is moderately strengthened.

HYPERKINETIC SYNDROME

Varaksina A., Melnichenko A. - the 4-th year students

Scientific leaders - Bugrova M.I., Kostina V.V.

Hyperkinetic syndrome - a disorder characterized by disturbance of attention, motor hyperactivity and impulsive behavior. Hyperkinetic disorder can begin at a very early age. For the diagnosis of hyperkinetic disorder the state must correspond to the following criteria: 1) Violations of attention; 2) hyperactivity ; 3)impulsiveness ; 4)start of the disorder at the age of 7 year old.

STEM CELLS IN BIOLOGY AND MEDICINE

Nesterenko T. – the 2nd year student

Scientific leaders – Cand. Med. Sc. Semyonov D. A., Kostina V. V.

Stem cells - undifferentiated cells are found in all multicellular organisms. These cells do not yet have their specialties, such mechanisms are not yet included specialization is why such stem cells and allow them to use any regeneration of organs and tissues. Stem cells have the ability to self-renew, the formation of new stem cells, as well as to differentiate into specialized cells. Stem cells are divided into embryonic and adult cells. Embryonic cells can proliferate faster and more frequently than mature, fully differentiated cell. This means that the donor cells are able to quickly restore lost function of the body. Additionally, these embryonic stem cells can differentiate in response to the signals of their environment. Due to their location, they can grow, elongate, migrate and establish functional connections with other cells in the body around them. In these cells, the mechanisms that determine the specialization is not yet included, so one can develop any cells. Adult cells, in particular hematopoietic stem cells are able to multiply and differentiate divided into distinct populations of mature erythroid cells. Hematopoietic stem cells maintain a pool of blood cells by self-renewal and production of daughter cells which differentiate into lymphoid, myeloid and erythroid line. Bone marrow transplantation can restore hematopoiesis, and the title role in the play hematopoietic (hematopoietic) stem cells that make up a significant proportion of bone marrow cells. Stem cells have occupied a special place in medicine and the use of technology are developing rapidly.

ZIK'S VIRUS

Rogovchenko A. - the 3-rd year student

Scientific leaders - Cand. Med. Sc Prokopenko A.V., Kostina V.V.

Zik's virus is a flavivirus, carried by mosquitoes. It was discovered in 1947 in the Zik's forest (Uganda) among macaques. Symptoms of the disease are similar to symptoms of other arbovirus infections, such as dengue fever: it is a fever, skin rash, conjunctivitis, pain in muscles and joints, malaise, and headache. These symptoms are usually mild and persist for 2-7 days. It is assumed that the virus initially infects dendritic cells near the place of introduction and then spread to the lymph nodes and blood flow. The virus has a strong neurotropism and infects efficiently neuronal progenitor cells. As a result of a comprehensive analysis of the actual data, the scientific community has come to a consensus that Zik's virus causes microcephaly and Guillain-Barre syndrome. Zik's virus is transmitted to human beings in tropical regions through the bites of infected mosquitoes of the genus *Aedes*, mainly species *Aedes aegypti*. Typically *Aedes* mosquitoes bite in the daytime, their activity peak is in the early morning, late afternoon and evening. Sexual transmission of Zik's virus is also possible. As of June 2016 there aren't vaccines and drugs for prevention and specific treatment of Zik's fever. Clinical trials are conducted on the basis of DNA.

FOOD POISONING OF MICROBIAL ORIGIN

Rogovchenko A. - the 3-rd year student

Scientific leaders - Prof. Korshunova N.V., Kostina V.V.

Food poisoning is an acute disease resulting from eating food containing microorganisms and toxic substances of microbial and amicrobic nature. Food poisoning of microbial origin can be divided into three groups: infections, toxicosis and mixt. Measures for prevention of microbial food poisoning include: 1. Sanitation of infection sources 2. Prevention of ingress of pathogens and their toxins into foods: A) observance of conditions, time of keeping, transportation and implementation of perishable foods and ready meals in accordance with the sanitary rules and regulations; B) periodic disinfection, disinfestation (destruction of insects) and rodent extermination in caterings. C) personal hygiene 3. Prevention of accumulation of pathogens and their toxins in food. 4. Destruction of pathogens and toxins in food. It is necessary to pick up such conditions in which microbes will die and their quantity REDUCES. 5. Hygienic training of personal in public caterings.

Following these conditions, you will save yourself and your family from possible troubles and diseases. Be healthy!

ENDOSCOPIC HERNIOPLASTICA

Rogovchenko A. – the 3-rd year student

Scientific leaders - Cand. Med. Sc., Assoc. Prof. Sergienko A.V., Kostina V.V.

Endoscopic hernioplasty is operation performed inside abdomen through small incisions 2-3 cm in size with special video devices and manipulators. The operation is performed under general anesthesia. Traumatism in this type of surgery is minimal, the recovery period is short and there is a good cosmetic effect.

Advantages of endoscopic hernioplasty:

- Reticulate implant covers all weak spots in the anterior abdominal wall, respectively appearance of relapses is practically unlikely.
- The absence of large scars on the skin
- Short recovery period, it does not require admission to hospital for more than 1 day.
- Most people can begin to work the next day.

IMMUNE RESPONSE OF NEWBORNS WITH CEREBRAL ISCHEMIA

Yakubovskaya T. – the 3-rd year student

Scientific leaders - Cand. Med. Sc. Gorikov I. N., Dr. Med. Sc. Batalova T.A., Kostina V.V.

The aim of this work was to study the immune response in 25 full-term newborns with cerebral ischemia of moderate-and-severe degree in utero mixed respiratory viral infections. It is established that in cerebral ischemia of moderate-to-severe degree in newborns with intrauterine mixed respiratory virus infection as compared with healthy newborns, in cord blood serum there is determined a fourfold increase in titers of antibodies to influenza virus In (12), A(H3N2) (7) and parainfluenza type 3 (6) in comparison with those of their mothers. In the development of intrauterine infection by several pathogens in newborns with cerebral ischemia of moderate-to-severe whose mothers suffered mixed respiratory viral infection during the second trimester of pregnancy, an important role is played by the violation of the utero-placental-fetus blood flow, endotoxemia, structural changes in the placenta (angiopathy, inflammation), antenatal hypoxia, which increases the permeability gematoplacental barrier to viral antigens, leading to an increase of concentration of immunoglobulin M and to a fall of the content of immunoglobulin G, midmolecular peptides and seromucoid in the blood from the vein of the umbilical cord.

PORTAL HYPERTENSION

Umarova S., Omoniddinova U. – the 3rd year students

Scientific leaders – Cand.Med.Sc., Assoc. Prof. Sergienko A.V., Kostina V.V.

Portal hypertension - high blood pressure syndrome in portal vein is caused by a violation of blood flow in the vessels of portal, hepatic vein and inferior vena cava.

Normally, the pressure in the portal vein system is 5-10 mmHg. Increased pressure in the portal vein system, above 12 mm Hg shows the development of portal hypertension. Varicose veins occur when the pressure in the portal system is more than 12 mm Hg.

In most cases, portal hypertension is a consequence of liver cirrhosis, schistosomiasis (in endemic areas), structural abnormalities of hepatic vessels.

If the pressure in portal hypertension in small hepatic vein is higher or equal to 12 mm Hg., collateral circulation occurs between the portal venous system and the system network. A portion of the portal blood along collaterals (varices) taking aside flow from the liver which helps to reduce portal hypertension, but never completely eliminate it. Collaterals occur in places of proximity branches of portal and systemic venous network: in the lining of the esophagus, stomach, rectum; on the anterior abdominal wall (between the umbilical and epigastric veins).

The diagnosis of portal hypertension is established on the basis of clinical evaluation data, imaging methods and endoscopy examination. Portal hypertension, the symptoms of which are based on the manifestations characteristic for dyspepsia, ascites, splenomegaly,

varicose veins of the esophagus and stomach and intestinal bleeding, as a radical method of treatment there is the need for surgical intervention.

LOCAL TREATMENT OF WOUNDS AND WOUND INFECTION

Umarova S., Omoniddinova U. - the 3rd year students

Scientific leaders – Dr.Med.Sc., prof. Chubenko G.I., Kostina V.V.

Local are treatment of wounds and wound infection is still the field of surgery, in which there no clear standards. A huge number of local antimicrobial agents found its niche as a result of adequate information deficit among practitioners, the influence of pharmaceutical companies and outdated ideas that can lead to the wrong treatment of patients.

As a result, anonymous survey of Russian surgeons conducted by V.V. Privolnev (2016), there was produced "census" of local products, which are used in surgical practice for treatment of wounds and wound infections (46 local agents).

Following the results of the survey it was found that doctors overestimated the value of the ointment "Levomekol" in the first phase of wound healing process, the drug can not be considered a universal remedy in this phase. In the first phase of wound healing process there should be greater use of combined ointment on the basis of bacitracin, neomycin, ofloxacin, povidone-iodine and silver products.

Second in the phase of wound healing ointment is applied with the effect of stimulating regeneration. In this period it is necessary to limit the use of antiseptics, especially drugs based on potassium iodide and hydrogen peroxide due to cytotoxicity, the same attention should be given to antimicrobial components of local agents.

In the third phase of wound healing process surgeons use ointments and creams to provide a moist wound environment. For example: methyluracyl ointment solkoseril, aktovegin.

Thus, the adequate choice drug for the treatment of wounds and wound infections will ensure a best recovery of the patient.

PATHOPHYSIOLOGICAL BASIS OF ACUTE EROSIVE-ULCERATIVE LESIONS OF THE GASTROINTESTINAL TRACT IN VICTIMS OF SEVERE BURNS

Umarova S., Omoniddinova U. - the 3rd year students

Scientific leaders – Ostyakova M.E., Kostina V.V.

Links of the pathogenesis of acute erosive-ulcerative lesions of the gastrointestinal tract in suffered from extensive burns, despite the results of numerous researchers, till now are not accepted.

The pathogenesis of acute erosive-ulcerative lesions of the gastrointestinal tract in the burned caused by ischemia of the wall of the gastrointestinal tract, violation of mesenteric of blood flow, the emergence of edema and violation of the integrity of the mucous membrane, and also the violation of the motor-evacuation function of the stomach, change intraluminal gastric acidity, the influence of complex metabolic processes – the phenomena of endotoxicosis, exchange of histamine, a direct participation of the products of lipid peroxidation in the pathogenesis of burn disease.

Many etiopathogenetic factors of sharp erosive and ulcer defeats at development of a burn disease exert mutually burdening impact at each other, thereby oppressing protective

mechanisms of mucous a stomach and a duodenum even more (production of slime, bicarbonates, a condition of a gastric blood-groove, power balance of cages mucous, providing regeneration, and also production of acid function of a stomach and production of humoral factors of protection). It leads to the strengthened influence of factors of aggression, promoting, thus, formation of sharp erosion and ulcers which very often are complicated by bleeding.

New insights about the pathogenesis of the acute erosive-ulcerous lesions of the stomach and duodenum in hard burned, will effectively affect the protective properties of the mucous membrane.

POSTINJECTION COMPLIFICATION

Umarova S., Omoniddinova U. – the 3rd year students

Scientific leaders – Dr.Med.Sc., Prof. Volodchenko N.P., Kostina V.V.

Postinjection complications attracted the attention of doctors over a hundred years ago, immediately after the invention of the syringe in 1853 and the first injection in 1855.

The increase of volume of the public medical aid, increasing of its accessibility, the emergence of new drugs are accompanied by a constant increase in the number of performed injections. Along with the necessary therapeutic effect there is observed undesirable consequences, complications of intravenous interventions - infiltrates, abscesses and cellulitis, the number of which is increasing. The widespread adoption in currently practice medicine of disposable syringes greatly facilitated and simplified the procedure for intramuscular and subcutaneous injection. However, the incidence of postinjection complications and their treatment are still one of the most pressing problems.

Postinjection suppurative complications are among the most frequent iatrogenic purulent diseases. It often develops after intramuscular administration of a drug or as a result of contact with the drug in the soft tissue in violation of art intravenous or intra-articular administration. At the basis of the development of post-injection suppurative complications are often the injection flaws: violation of aseptic conditions, the wrong choice of area or depth of injection, failure to comply with the breeding mode, infusion rate, or an introduction to the soft tissues of the drug intended only for intravenous or intra-articular injections. Intramuscular drugs which most often causes postinjection purulent complication - the concentrated solutions of nonsteroidal anti-inflammatory drugs (50% solution of sodium metamizol), 20% magnesium sulfate solution, 10% calcium gluconate solution.

In order to prevent postinjection complications one should avoid repeated administrations of drugs in one place, periodically change the injection side, because repeated administration of drugs leads to injury to muscle tissue by (medicine or needle) and to the development of an abscess even in compliance with all the rules of asepsis.

In recent decades, there has been significant success in the treatment of septic postinjection complications due to the introduction of the practice tactics of active surgical treatment, including radical surgical treatment of purulent focus with additional methods wound treatment and modern dressings, early wound closure using sutures or skin plasty, adequate antibiotic and general intensive care.

TOXIC EFFECTS OF HEAT AND COLD IN THE ORGANISM

Umarova S., Omoniddinova U. – the 3rd year students

Scientific leader - Prof. Korshunova N.V, post – graduate student Litovchenko E.A, Kostina V.V

The human body can be exposed to stressful environmental factors, including hyperthermia and hypothermia, which are extreme in nature.

Overheating and overcooling, which are the most important stress factors, influence the subcellular structures of the body and contribute to the activation of lipid peroxidation (LPO) and the accumulation of lipid peroxidation products - diene conjugates, Schiff bases, malondialdehyde, etc. For the proper functioning of the body in different environmental conditions it is very important structural and functional maintenance of membrane integrity, and an increased content of LPO products not only leads to modification, but also to damage of biological membranes. It should be noted that lipid peroxidation, as a metabolic process intact membranes of organs and tissues, only begins with the appearance of free radicals, which can be formed in biological systems, autoxidation in unsaturated fatty acids or the reaction between oxygen and reducing agents.

According to some authors, the destruction of the membrane is influenced by the simultaneous action of three factors: the intensification of free radical oxidation, activation of phospholipase and detergent action of excess fatty acids. As a result, celebrated disorders barrier function of membranes, cell metabolism and ionic balance. This appears in change of the system features a variety of transporting ions, especially Ca-ATPhase and Na. K-ATPhase. Increased activity of the latter is proved under stress and is associated with membrane lipids mediated by regulating the action of Mg-ATPhase.

Regulatory functions in violation of these perform antioxidant system, as with a decrease in the activity of antioxidant redundant system of the organism increases the intensity of lipid peroxidation.

Thus, the action of heat and cold leads to increased activation of lipid peroxidation products of which lead to the accumulation of aldehydes, ketones, fatty acid oxidation, causing structural and functional destabilization of the membrane with all the consequences - an irreversible inactivation of membrane bound enzymes and changes in membrane permeability up to break and cell death.

CHORIOCARCINOMA

Umarova S., Omoniddinova U. – the 3rd year students

Scientific leaders – Cand.Med.Sc. Levchenko N.R., Kostina V.V.

Choriocarcinoma- is a malignant tumor that develops from trophoblastic epithelium. This tumor has been known to doctors for a long time, but only in 1886 the Moscow pathologist M.N.Nikiforov found that it developed from the epithelium of the chorionic villi, ie from fetal tissue, not from the mother. The tumor was named Choriocarcinoma.

Choriocarcinoma may develop after a molar pregnancy (at which the death of the embryo and the placenta villi grow in the form of bubbles filled with liquids), as well as without prior molar pregnancy after induced abortion, ectopic pregnancy, spontaneous abortion, or after normal delivery. The most adversely flows tumor, which developed after birth. The latent period (time from the end of a pregnancy up to the first signs of the disease) in most cases, is non-existent or is 1-2 months, but in described the cases where the latent period was 9 years and even 21 years after the abortion. Consequently, Choriocarcinoma

is observed predominantly in women of childbearing age, it rarely develops after 40 years, isolated cases occur after menopause.

Morphological picture Choriocarcinoma looks motley assembly of sponge on a broad basis, at the location of a mucous or serous membrane assemblies shine in a dark cherry formations. Microscopic Choriocarcinoma consists of cytotrophoblast cells and syncytiotrophoblast polymorphic giant cells. Stroma in Choriocarcinoma is absent, and the vessels are of the cavities form lined by cells of the tumor itself. In this regard, multiple hemorrhage and necrosis in the tumor tissue are determined. The structure also determines the tumor of early and rapid metastasis. Choriocarcinoma is called as metastatic disease. Metastases are hematogenous in 80% of the lungs. In 30% of patients it is determined retrograde hematogenous metastases in the vagina, with the characteristic form of knots of dark cherry color. Also it is described the pelvic bone metastases, in brain, liver and other organs.

Choriocarcinoma is one of the most malignant tumors but is well treated by a combination of chemotherapy and hysterectomy, except when it develops after a normal pregnancy. In these cases, the prognosis is extremely unfavorable.

RAPID TEST CARDIO PBFA

Natpit A. – the 4th year student

Scientific leaders - Cand. Med. Sc. Kostrova I.V., Kostina V.V.

Express test "Cardio PBFA" is a test system for rapid "bedside" definition of high levels of early cardiomechanical marker of cardiac protein, binding fatty acids in whole venous blood. Cardiac protein, binding fatty acids (PBFA) is a cardiospecific with low molecular weight, cytoplasmic protein (15 kD) responsible for binding and transporting fatty acids within cells. In the blood of healthy people there constantly circulates a small amount of PBFA. The upper limit of normal is 6 ng/ml, while the background level varies depending on the age, sex and circadian rhythm. Rapid test of Cardio PBFA allows with a high degree of reliability to verify acute myocardial infarction (AMI) after 2 hours from the start of symptoms and can be used for the early differential diagnosis of AMI. From a practical point of view, this is particularly important in patients with AMI without ST-segment elevation. This technique due to its high sensitivity and specificity makes it possible to identify early patients at high risk and an unfavourable outcome, early treatment, and fundamentally affect the prognosis in these patients. In addition, Cardio PBFA can be used to confirm the diagnosis in difficult cases, such as atypical clinical presentation, with questionable ECG data, complicating the diagnosis of myocardial infarction, and to exclude diagnosis of myocardial infarction in the first days when patients are with similar clinical symptoms. The use of this test system does not require learning, testing can be performed by any health care provider as by directly treating physicians and nursing staff. Knowing such characteristics of Cardio PBFA as simplicity in the formulation of the test and interpretation of results, speed of obtaining the result, no need for special conditions and hardware support, I believe that this technique can successfully be used in a hospital environment (emergency room, in any medical Department - intensive care, cardiology, therapy, etc.) and at the prehospital stage (when examination of the patient at home, on admission to hospital in the car of EC, in the clinical diagnostic laboratory), when there is the greatest number of difficulties in the differential diagnosis of ACS.

FIBRINOUS INFLAMMATION

Sun A., Moiseeva S., Davidova D. – the 3-rd year students

Scientific leaders - Cand. Med. Sc. Menshchikova N.V., Kostina V.V.

It is characterized by the formation of exudates that contains fibrinogen, which is converted in injured tissue to fibrin. Inflammation is often localized on the serous and mucous membranes. Causes of fibrinous inflammation - bacteria, viruses, chemicals exogenous and endogenous origin.

Among the bacterial agents - the development diphtheria *Corynebacterium*, *Shigella*, mycobacterium tuberculosis. There are two varieties of fibrinous inflammation: croupous and diphtheritic.

Croupous inflammation often develops on a single-layer epithelium of the mucous or serous membrane. This fibrinous pseudomembrane is thin, easily removable. For example, fibrinous inflammation of the pericardium figuratively is called "hairy" heart.

Diphtheritic inflammation develops in the organs covered by stratified squamous epithelium, or a single layer of epithelium with loose connective tissue foundation that promotes deep tissue. In such cases, the pseudomembrane is thick, it is difficult to removed, there is a deep tissue defect in its rejection.

On the mucous membranes the pseudomembrane is rejected and form ulcers-surface with lobar inflammation and deep in diphtheritic. Superficial ulcers are usually completely regenerated, scars are formed during healing of deep ulcers.

On serous membranes fibrinous exudate can be melted, but more often it is subjected to the organization with the formation of adhesions between the serous sheets. It may happen completely overgrown of serous cavities - obliteration.

HYGIENIC ESTIMATION OF THE POWER OF PRE-SCHOOL AGE CHILDREN

Denishchik K., Davidova D., Moiseeva S. – the 3-rd year students

Scientific leaders - Prof. Korshunova N.V., Kostina V.V.

Protection and promotion of children's health is a top priority in any society, because children determine the life potential of society in the future. According to the Scientific Center of RAMS, no more than 15% of the child population can be considered healthy. Children of all age groups have the preferential growth of chronic pathology.

The actual power of healthy preschool children affects their nutritional status, it is a complex clinical, anthropometric and laboratory parameters that characterize the proportion of muscle and body fat mass. It is found that an insufficient protein intake from food is a risk factor for the formation of body composition.

To ensure the children by quality balanced nutrition in preschool institutions the "Collection of technological standards, recipes of dishes and food products for preschool institutions and children's health institutions" should be used.

Nutrition is one of the most important factors, which operates from the moment of birth to the last days of life and contributes in the formation of health. Quantitative and qualitative indicators of power define the processes of growth, development and functioning of the central nervous system, adaptive immunity to infections and unfavorable environmental factors.

HYPOBARIC EXOGENUS HYPOXIA

Davidova D., Moiseeva S., Denishchik K. – the 3-rd year students

Scientific leaders - Assoc.Prof., Cand. Med. Sc. Maximenko V.A., Kostina V.V.

Hypoxia - a typical pathological process. It is a result of failure of biological oxidation, which leads to disruption of energy supply functions and plastic processes in the body. In etiology it is identified a number of types of hypoxia, they are combined into two groups: exogenous and endogenous.

By lowering of the barometric pressure it is called hypobarometric exogenous hypoxia. The reasons for its occurrence: a decrease of barometric pressure during the ascent to altitude (more than 3000-3500 m, where the air pO₂ is reduced to about 100 mm Hg) or in a pressure chamber. Under these conditions it is possible to develop either a mountain or altitude and decompression sickness.

Mountain sickness occurs when climbing in the mountains, where the body is exposed not only the low oxygen content in the air, but the reducing of barometric pressure. Altitude sickness occurs in people, raised to a great height in the aircrafts, and in reducing pressure in the pressure chamber.

Decompression sickness occurs when a sharp decrease in of barometric pressure (for example, due to depressurization of aircraft at an altitude of more 10000-11000m). This forms for the life-threatening condition characterized by mountainous and high-altitude sickness or acute fulminant.

PATHOLOGICAL ANATOMY OF KAPOSI'S SARCOMA

Usoltseva A., Sadykova N., Denishchik K. – the 3-rd year students

Scientific leaders - Cand.Med.Sc.Menshchikova N.V., Kostina V.V.

Kaposi's sarcoma (angiosarcoma, or multiple hemorrhagic sarcomatosis) is presented as numerous malignant neoplasms of derma.

Typically, the tumor has a purple color, but the color may have different shades of red, purple or brown. The tumor may be flat or slightly rise above the skin, it is painless spots or nodules. It is always located on the skin, less often - on the internal organs.

Kaposi's sarcoma is often associated with damage of the mucous membrane of the palate and the lymph nodes. Detection of Kaposi's sarcoma in HIV infection provides the basis for the diagnosis of AIDS.

Tumor structure is characterized by a variety of randomly distributed thin-walled neogenic vessels and bundles of spindle-shaped cells. The vascular nature of the tumor dramatically increases the risk of bleeding.

Kaposi's sarcoma - a special type of tumor, which often requires not only the verification of the diagnosis but its treatment. Treatment of Kaposi's sarcoma is usually palliative, that is aimed only at reducing the symptoms.

SYNDROME THE CROSSING OF BRONCHIAL ASTHMA AND COPD

Lopatina E., Ondar S. – the 6th year students

Scientific leaders - Dr.Med.Sc. Prikhodko O.B., Cand.Med.Sc. Smorodina E.I., Kostina V.V.

Chronic obstructive pulmonary disease (COPD) and bronchial asthma (BA) are widespread in the world and for mankind are enormous social, demographic and economic

problem. The combination in one patient asthma and COPD is referred to as cross-syndrome BA - COPD. Patients with overlap-syndrome - a COPD patients with increased reversibility of obstruction, and (or) smoking asthma patients with irreversible airflow obstruction.

Patients with symptoms like asthma and COPD experience frequent exacerbations, have a poor quality of life, a more rapid decline in lung function and a high mortality rate compared with separately taken patients with asthma and COPD. It is reported on the prevalence of this condition in the range of 15 up to 55% with variations depending on gender and age. The frequency of established competing by physician diagnosis of asthma and COPD amounted up to 15-20%.

The first step in the diagnosis of such conditions is to identify patients at risk of, or substantial likelihood of chronic respiratory disease and to exclude other potential causes of respiratory symptoms. Signs that allow to suspect a chronic disorder of the airways, the following: a history of chronic or recurrent cough, sputum, shortness of breath or wheezing or recurrent lower respiratory tract infections; diagnosis of asthma or COPD, previously set by the doctor; treatment with inhaled medication in history; smoking history; exposure of harmful environmental factors such as pollutants, airborne, at work or at home.

Important for the evaluation of patients with suspected chronic airway disease is spirometry. Spirometry is used to confirm the chronic airflow limitation, but is of limited value in the differential diagnosis between asthma with fixed airflow obstruction, COPD and overlap-syndrome.

Treatment should include inhaled glucocorticosteroids (in a low or moderate dose, depending on the severity of symptoms). It should be also continued treatment by β_2 -agonists long-acting, if the patient has already received them, or they should be added to the treatment. If syndromal diagnosis allows to suspect COPD, you must assign the appropriate symptomatic treatment with bronchodilators or combined therapy, but should exclude monotherapy.

BRONCHIAL ASTHMA IN PATIENTS IN THE POSTPARTUM PERIOD

Borodina K. - the 6th year student

Scientific leaders - Dr.Med.Sc. Prikhodko O. B., Cand.Med.Sc. Goryacheva S. A., Kostina V. V.

In recent years, worldwide there is an increasing interest to the problem of diagnostics and treatment of bronchial asthma during the gestational period. The aim of this work was to determine the clinical and functional characteristics of bronchial asthma during pregnancy and in the postpartum period.

There were monitored 102 patients with bronchial asthma in the dynamics of the postpartum period from the 3 months up to 3 years. The dynamics of bronchial asthma in gestational period: worsening was observed in 44% of patients, often with non-allergic and mixed forms of the disease, without significant dynamics – in 39.2%, and improvement in the 9.8%. To the weighting of BA course given: the presence of allergic rhinitis, chronic diseases of otorhinolaryngologic and respiratory organs are the signs of severe duration of BA.

In the first three days after delivery, exacerbation of asthma was observed in 6 (5.9%) of patients, within the next 2-4 weeks at 34 (33,3%), 2-4 months in 24 (25.3%) and after 6 months in 16 (15.7 per cent). In 10 (9,8%) of patients, bronchial asthma symptoms

resumed in one year after childbirth. At the same time 35 (34,2%) of patients showed improvement after childbirth, 42 (41,2%) had no changes.

It should be noted that the improvement after the delivery was in patients with partially or completely controlled course of bronchial asthma during pregnancy. Aggravation of BA course after birth was diagnosed in 25 (25,5%) patients with moderate and severe bronchial asthma.

Thus, the influence of the following factors on the dynamics of the BA course during gestation and the postpartum period: the severity of the disease, presence of extra-pulmonary allergic diseases, polyvalent sensibilization, of chronic pathology of otorhinolaryngologic organs, ARVI and the extent of fulfilment of patients of medical recommendations.

CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF ACUTE INTESTINAL INFECTIONS CAUSED BY PROTOZOA

Borodina K. - the 6th year student

Scientific leaders - Soldatkin P. K., Kostina V. V.

Duration of many intestinal parasitosis is characterized by scarce clinical symptoms and lack of pathognomonic symptoms.

Amoebiasis - antropologia infestation, characterized by ulcerative lesions of the large intestine, extraintestinal lesions in the form of abscesses in various organs. Infection occurs in using of infected cysts water, fresh vegetables and herbs.

It is characteristic general malaise, mild abdominal pain, poor appetite, loose stools – 7 - 10 times a day, mushy stool mixed with transparent mucus and blood, remind of raspberry jelly. The mucus is viscous, it sticks to the bottom of the vessel. There are characteristic cramping pain sin the abdomen.

Giardiasis: transmission path – water, contact-household. It is manifested by a sudden diarrhea with fever, nausea, vomiting, loss of appetite. In the beginning stool is copious, watery, frothy, with undigested food, then the stinking, floating. There are many mucus in stool of biliary acids, stained in green or "white lumps" of colloid salts.

Balantidiasis is zoonotic protozoal disease characterized by ulcerative lesions of the large intestine. The source of the pathogen are pigs, sick people and carriers. Start is acute (rapid) with increasing of temperature to high numbers, headache, nausea, repeated vomiting, progressive weakness, constant pain in abdomen, flatulence, diarrhea. Stool is copious, fluid, often with blood, pus, putrid odor from 3-5 up to 15-20 times a day.

Cryptosporidiosis: source is farm animals, cats, dogs, a sick person, a carrier of Cryptosporidium oocysts. In patients with normal immune systems start of acute with profuse ("choleraform") watery diarrhea without pathological impurities and foul-smelling.

Thus, knowledge of the clinical and epidemiologic features for proteose will allow to timely diagnose and prescribe the appropriate specific therapy that will prevent the development of severe duration.

GROUPS OF CHILDREN'S HEALTH

Ermolaeva D., Pechyorskaya Yu., Tsydendambaeva S. – the 3-rd year students

Scientific leaders - Gosteva L.Z., Kostina V.V.

The term "group health" is largely conditional and reflects the state of health of the child on the basis of data.

Currently, the distribution of children's health groups is carried out on the basis of instructions by a comprehensive assessment, the health of children, approved by the Order of Health care Ministry from Russian service 30.12.2003 № 621. In accordance with this document an integrated system of health assessment is based on four basic criteria:

- The presence or absence of functional disorders and (or) chronic diseases;
- The level of the functional state of the main systems of the body;
- The degree of the body's resistance to unfavorable external influences;
- The level of development achieved and degree of it`s harmony.

Depending on the health condition of children can be attributed to the following groups: 1 group - children who do not have deviations in health status

2 group - children with any functional changes, most often associated with uneven growth and development

3 group - children with chronic diseases in the stage of compensation

4 group - children with chronic diseases in the stage subcompensation

5 group - children with chronic diseases in the stage of decompensation. As a rule these are children with disabilities.

Children with the 1st and 2nd teams when entering the children`s establishment visit it on a general basis and have no restrictions. Pupils from the 3rd health group it is often required the appointment of a special diet and limitation of physical activity. In the process of monitoring of child health group may vary depending on the dynamics of the state of health of the child.

TRANSPLANTATION OF "GENDER" ETHICAL ASPECTS

Ermolaeva D., Pechyorskaya Yu., Tsydendambaeva S. – the 3 rd year students

Scientific leaders - Grebenyuk V.V., Kostina V.V.

Purpose: 1) To read the normative - ethical aspects of the problem of gender transplant; 2) to conduct a survey among students of Amurskaya SMA, in order to identify the views on the subject; 3) to interview the person of changed sex.

Problems of transsexuals: the need to be seen by a psychiatrist is humiliating, discrimination in the field, a lack of understanding from family and loved people.

Ethical conflict of Principles of Medical Ethics, totality and integrity of the individual, it protects the integrity of the individual. The human body is indivisible independently functioning of unified whole. However, many experts believe that the sacrifice of the body for the sake of the integrity of psychological stability is unjustified. Therefore, there are still debates on the theme of sex-change operations.

The survey results among the students of the Amurskaya SMA: what do you think about the sex-change operation? 88% of respondents answered negatively, 12% - positively; whether is transplantation of gender perspective in Russia? 98% believe that it is not promising, 2% - is promising; do you have any friends who have made such an operation? 99.7% - no; 0.3% - yes.

Conclusion: The majority of students have a negative attitude towards transgender operations, and believe this trend in surgery is not promising in our country. In total 0.3% of the surveyed students are personally familiar with patients after transplantation of "sex." Implementation of such operations will for a long time cause a debate in society.

ENZIMODIAGNOSIS

Voynitskiy A. - 2nd year student

Scientific leader - Cand. Med. Sc. Egorshina E. V., Kostina V. V.

Enzimodiagnosis is disease diagnosis (or syndrome) based on the determination of enzyme activity in human biological fluids. Enzimodiagnosis principles are based on the following positions. At damage of cells in the blood or other body fluids increases the concentration of intracellular enzymes of damaged cells. The number of released enzyme is sufficient for its detection. The activity of enzymes in biological fluids detected when damaged cells, is stable for a sufficiently long time and is different from the normal values. A number of enzymes has priority or the absolute localization in certain organs. There are differences in the intracellular localization of a number of enzymes. Typically, these enzymes perform its function within the cell and have physiological significance in plasma. In a healthy person the activity of these enzymes in the plasma is low and sufficiently constant as speed ratio continuously release from the cells and their speeds destructions. At many diseases there is damage of cells and their contents, including the enzymes which are released into the blood. The reasons that cause the release of intracellular contents into the blood, include violation of the permeability of the cell membranes (inflammatory processes), or a violation of the integrity of cells (necrosis). Ferments that catalyze the same chemical reaction, but differ in the primary structure of the protein, are called isoenzyme. They catalyze the same type of reactions with essentially the same mechanism, but differ from each other by kinetic parameters, activation conditions, peculiarities of apoenzyme and colzynus connections. Isozymes differ in primary structure of the protein molecule and, accordingly, by physico-chemical properties. On the differences in the physical and chemical properties methods of determining isoenzymes are based.

TUMORS OF THE HEART. MYXOMA OF THE LEFT ATRIUM

Malynova I., Zolotareva J. – the 4th year students

Scientific leaders - Cand. Med. Sc. Kostrova I. V., Kostina V. V.

Tumors of the heart - a rare disease with the polymorphic clinical picture. The incidence of primary and secondary tumors of the heart are up to 0.1 and 6% respectively.

Myxoma of the heart - the primary intracavitary histologically benign tumor that occurs at any age, but the most frequently occurs in the age from 30 up to 60 years old, presenting 2-4 times more often in women than in men. Myxoma is most frequently localized in the left cavity (75%) or right atrial (20%) and rarely in the heart ventricles.

Clinically myxoma of the left atrium is shown by diverse clinical symptoms, simulating a number of diseases of the cardiovascular system.

For more accurate diagnosis there is a magnetic resonance tomography. Moreover, emboli obtained from a surgical interference are histologically analyzed.

Treatment. Radical treatment involves surgical removal of myxoma of intracavitary cardiac tumors. Due to the high risk of thromboembolic complications and a sudden death there is a need for an immediate surgery just after diagnosis.

CONGENITAL DEVELOPMENT IN THE AMUR REGION. VENTRICULAR SEPTAL DEFECT

Belikin A., Dumen-Bayyr A. – the 4th year students

Scientific leaders - Cand. Med. Sc. Kostrova I. V., Kostina V. V.

Congenital heart disease (CHD) is a defect in the structure of the heart and (or) large vessels that is present from birth. The majority of defects disrupt the flow of blood inside the heart or the large and low circulation. Heart defects are the most common birth defects and are the leading cause of infant mortality from the malformation.

Ventricular septal defect (VSD) — a congenital heart defect characterized by the presence of a defect between the right and left ventricles of the heart. Intracardiac hemodynamic disorders in VSD begin to form shortly after birth, as a rule, on 3-5 day of life. In the early neonatal period, the heart murmur may be absent due to equal pressures in right and left ventricles because of the so-called neonatal pulmonary hypertension. Gradual decrease of the pressure in the system of pulmonary artery and right ventricle creates the difference (gradient) in pressure between the ventricles as a result there is discharge of blood from left to right (from a region of high pressure to low pressure). The additional volume of blood flowing into the right ventricle and the pulmonary artery leads to the overflow vessels of the pulmonary circulation, where develops pulmonary hypertension.

ABORTION. CLINICAL INDICATION AND CONTRAINDICATION

Mironenko N., Yusibova R. - the 3-rd year students

Scientific leaders - Grebeniuk V.V., Kostina V.V.

Relevance: the problem of abortions in our country was rising for along time and now, thanks to the speech in public of Ann Kuznetsova the Commissioner for the rights of the child at the President RF, this question has again become relevant. "The whole world is not for the first year opposed such phenomena as abortions, and we support this position, of course, believe that this issue requires a systemic approach," - said Kuznetsova. It is really so, but totally to prohibit abortions is not necessary, because there are certain indications and contraindications for such intervention as abortion. In surgical 81 abortion is to 100 deliveries in Amur region. Abortion is the termination of pregnancy in terms up to 28 weeks, counting from the first day of one's menses.

On medically evidence abortion is held regardless of its period if pregnancy and childbirth can worsen the health of the woman and threaten her life, or if there are abnormalities of the fetus. The testimonies set obstetrician-gynecologist together with specialists of the worthy profile (general practitioner, surgeon, oncologist, psychiatrist, etc.) and the head of the medical institution after the examination of the patient in the hospital. A woman writes a application that regards the medical commission.

Contraindications to medical abortion can be a result of inflammatory processes of sexual organs, in the presence of purulent foci, irrespective of their localization, acute infectious diseases, late-term pregnancy. In the later stages abortion is contraindicated if the termination of pregnancy in this period is more dangerous for life and health than continuing pregnancy and childbirth. The term is less than 6 months after a previous abortion.

FEATURES OF THE CURRENT OF THE MYOCARDIAL INFARCTION AT PATIENTS WITH THE DIABETES MELLITUS

Pronina D., Chervova Y. – the 3rd year students

Scientific leaders – Dr.Med.Sc., Prof. Menshikova I.G., Kostina V.V.

Damage of heart at the diabetes mellitus (DM) is frequent and prognostically an adverse complication of a disease. Into the forefront in clinic of "diabetic heart" a coronary failure acts. The main features of clinic of the myocardial infarction (MI) at DM are the following: a female dominance among patients, the larger centers of defeat, frequent repeated heart attacks, tromboembolic episodes, development of a heart failure.

Mainly, three factors explaining an originality of a clinical picture of a disease participate in a myocardial infarction genesis at DM sick: 1) defeat of coronary vessels, including shallow intramuralny branches; 2) change of coagulating and anticoagulative system of blood which can be regarded as a pretrombotichesky state; 3) large fluctuations of a glycemia.

Development of a sharp coronary syndrome often provokes a hyperglycemia by increase in level of vasoactive cytokines which can increase insulin resistance and reduce insulin secretion. Deficiency of insulin reduces utilization of glucose in a myocardium, causing shift of metabolism towards fatty acids that leads to increase in oxygen consumption by a myocardium and aggravates the hypoxia phenomena, making heavier a current of them, provoking complications of the sharp and subacute period, such as cardiogenic shock, arrhythmias.

Patients with DM and ischemic heart disease differ in smaller ability to development of collaterals in this connection they note more frequent development of postinfarction stenocardia and distribution of a zone of a necrosis with decrease in pump function of a left ventricle. Dystrophic changes and violation of the neuroreceptor device provoke low-expressiveness of a pain syndrome at most of patients in the sharp period of a disease. It, in its turn, can become one of the reasons of overdue diagnostics to them that also causes heavier course of heart attacks and high percent of a lethality.

Thus, it is obvious that DM exerts adverse impact on a current of them, increases quantity of complications. It dictates need of searching of the most efficient methods of diagnostics and treatment of this combined pathology.

PATHOMORPHOLOGY OF SILICOSIS

Krylova E., Melkonyan A. - 4th year students

Scientific leaders - Cand. Med. Sc. Dubyaga E.V., Cand. Med. Sc. Goryacheva S.A., Kostina V.V.

The pulmonary changes due to pathological inhalation of dust particles, so called pneumoconiosis, has long been observed by medical scientists. But it is only the investigation of the last decade that have supplied us with a more comprehensive and thorough knowledge of the more intricate pathological anatomy and pathogenesis. As numerous investigations have conclusively shown that nearly all forms of pneumoconiosis are due to the silica present in the particles of stone most forms of pneumoconiosis are nowadays designed by the common name silicosis. The purpose of this work is to comprehend the pathomorphology of silicosis in Amur region.

The first response to the appearance of silica in the acinus is the accumulation of macrophages. If the inhalation of dust is massive then the macrophages fill the lumen of bronchioles and surrounding alveoli. If it's a slow development then at an early stage in the lung tissues of the upper sections - mainly in the area of the gate - are revealed multiple tiny nodules that give fine-grained view of the lung parenchyma. Nodular form occurs with a high content of free silica in dust and prolonged exposure to dust. In severe case of silicosis nodules coalesce into large silicatic nodes that occupy a large part of

the lobe or the whole lobe of the lung. This form is considered as a tumorous form of silicosis.

If a diffusely sclerotic form takes place then typical silicatic nodules in the lungs are not present or if they are, then there are very few of them, though these nodules are often found in bifurcation lymph nodes. This form occurs by inhalation of industrial dusts with little free silica content.

ADDICTION ON SOCIAL NETWORKING

Piura D., Dolgoruk E. – the 4th year student

Scientific leaders – Brush N.G., Kostina V.V.

Internet dependence (Internet addiction) — the obsessional aspiration to use the Internet and excess use of it, spending a large number of time in network. Internet addiction is not a mental disorder by the medical criteria (MKB-10).

It is consider that the most common type of Internet-addiction need of uninterrupted communication. It can be forums, social networks and chats.

Recently, on the World congress of psychiatrists in St. Petersburg, scientists suggested to consider addiction on the Internet and social networks the chronic disease required serious treatment

Addiction on social networks is similar to alcohol or drug addiction — they develop on one mechanism. The only difference is that in internet-addiction we do not find signs of chemical dependency from toxic substances. So, such people seldom come into field of vision of physicians.

Stage of development of Internet addiction:

- At the first stage user gets acquainted with the Internet, chooses the option of virtual reality suitable for itself.

- Gradually, it forms special style in network compensating to it for that deficiency of communication or information which is not enough in real life. Further, user begins to spend more and more time in that reality which he or she choose.

- On thirds stage — signs and symptoms of Internet-addiction on the person. It gradually becomes chronic.

The world's first support center for Internet addicts has become a center created an authoritative scholar in such field - Kimberly Young, a professor of psychology at the University of Pittsburgh.

In Russia, treatment of the Internet addiction is carried out too, but the list of clinics involved in the rehabilitation of such patients is limited outside of Moscow and St. Petersburg. Fact is that only a few wants to treat, because the majority of dependent either don't consider to be so or try to fight against the addiction independently.

INFLUENCE OF DIETARY SUPPLEMENT ON THE BASIS OF 350 MG OF L-CARNITINE OF TARTRATE AND A 30 MG OF DIHYDROCVERTSETIN ON PRODUCTS OF PEROXIDATE OF LIPIDS

Pchelina K. – the 4th year student, Mironenko A. – the 3rd year student, Sydorenko D. – the 2nd year student

Scientific leaders – Dr.Med.Sc., Prof. Dorovskikh V.A., Cand.Med.Sc., Assoc. Prof. Anokhina R.A., Kostina V.V.

The intensive physical activities which are followed by insufficient intake of oxygen in fabric are a stress for an organism and cause activation of processes of peroxidate of lipids while activity of antioxidant system becomes insufficient. In turn the POL leads to destruction of organic molecules, first of all lipids, and, respectively, membrane structures of cages that often comes to an end with their death. We conducted a research on group of 10 athletes accepting dietary supplement (of 6 capsules a day for 4 weeks) on the basis of a L-carnitine of tartrate and a dihydrocvertsetin.

According to control of physical working capacity at athletes there observed statistically not significant (in case $p < 0,05$) changes to the best. According to laboratory blood tests increase in concentration of products of PL was revealed (hydroperoxide of lipids, HMM, dien conjugates) at 75% of athletes in comparison with data before dietary supplement acceptance, these changes are statistically significant (in case of $p < 0,01$). Also there is an increase in indicators of AOS (vitamin E, ceruloplasmin) at 50% of athletes that is statistically significant (is noted in case $p < 0,01$).

On the given indicators it is possible to judge about activation of PL of athletes, but also and activation of system of antioxidant protection. For better assessment of results it is necessary to conduct a research with bigger the number of athletes and with placebo control.

ANATOMY OF PELVIS

Maltseva A. – the 1 – st year student

Scientific leaders – Zherepa L.G., Kostina V.V.

The bone pelvis represents a strong receptacle for internal genitals, a rectum, a bladder and the tissues surrounding them. The female pelvis forms the patrimonial channel where the born fetus moves ahead. In process of development of an organism there is a change of volume and form of a pelvis. On development of a pelvis, as well as all on organism in general, psychoemotional overloads, stresses, the concentrated sports study, reception of hormones affect. Deformations of a pelvis can be caused by an osteomalacia, tuberculosis and tumors of bones, fracture of pelvic bones, a rachiocampsis (scoliosis, a kyphosis, coccyx fracture), and also congenital anomalies, a cerebral palsy, a poor nutrition, a disease of rickets, a poliomyelitis.

The narrow, wide and deformed pelvis are concerned to anomalies of a bone pelvis. At the improper maintaining, childbirth at pregnant women with anomalies of a bone pelvis is accompanied by maternal and children's traumatism.

Now the expressed deformation and narrowing of a pelvis at women are rarely noted. There are mixed forms of anomalies of a pelvis.

TOXOPLASMOSIS

Logvinova I. – the 1-st year student

Scientific leaders – Naumenko V.A., Kostina V.V.

Toxoplasmosis - a disease caused by single-celled parasite of toxoplasma (*Toxoplasma gondii*). Up to half of the world's population is infected with toxoplasmosis. In the USA 23% of the population are carriers, in Russia - about 20%, and in some countries of the world - 95%. Infection of human beings occurs in close association with the cat in the use of infected raw meat, as well as through contact with soil containing oocysts that were there with cat feces.

Toxoplasmosis - not an absolute indication for termination of pregnancy.

GALLBLADDER AND EXTRAHEPATIC BILE DUCTS IN NEWBORNS

Logvinova I. – the 1-st year student

Scientific leaders – Zherepa L.G., Kostina V.V.

Gallbladder in most cases is completely hidden by the liver. Lodge bubble may be small or deep. The shape of the gallbladder is diverse. The most common is cylindrical or pear-shaped, at least - spindle-shaped and S-shaped, the latter is often associated with the unusual situation of the cystic artery.

Bundles. Occasionally (10%) is determined lig. cysticocolicum, which may be located on one or both sides of the bladder.

Common hepatic duct sharply varies in length from 5 up to 18 mm, more often it is the same length and diameter with cystic.

The common bile duct length is from 13 up to 22 mm (pars supraduodenalis - from 3 up to 5 mm, pars retroduodenalis - from 10 up to 23 mm) in diameter and 2 mm.

Lymph nodes (ranging in size from 1-2 up to 5-8 mm) are most common in the neck of the gall bladder, the initial part of the cystic and common bile duct formation.

THE ASHERMAN'S SYNDROME

Kirillova Ya. – the 6th year student

Scientific leaders - Cand. Med. Sc. Sharshova O.A., Kostina V.V.

Nowadays, childless marriages remain an important medical and social problem. The most relevant in modern obstetrics is the problem of miscarriage. Intrauterine adhesions (Asherman's syndrome) - is a pathological fusion surfaces of the uterus due to adhesions, resulting in deformation of the uterus, causing impaired menstrual and reproductive function. Intrauterine adhesions are connective seam, soldered between walls of the uterus and causing its deformation. In the presence of adhesions, normal endometrium undergoes atrophic transformation. Intrauterine adhesions lead to the disorder of menstrual function, create a mechanical obstacle to the promotion of sperm, impair the conditions for the implantation of the ovum. Consequently there the main manifestations of Asherman's syndrome appear - oligomenorrhea, secondary amenorrhea, miscarriages and infertility. For the diagnostic it is used hysterosalpingography, ultrasound diagnostics and hysteroscopy. The main treatment is surgery adhesiolysis. The probability of pregnancy and child bearing at Asherman's syndrome depends largely on the stage of the process and the reasons that lie at its core. So, the prognosis of tuberculous lesions of the uterus is less favorable. At the same time the average of fertility restoration is relatively high, probability it is about 75%.

BIOIMPEDANCE ANALYSIS IN PRACTICE OF PROGRAM HEMODIALYSIS

Kirillova Ya., Glushkova N. – the 6th year students

Scientific leaders - Cand. Med. Sc. Smorodina E.I., Anyushkin S.V., Kostina V.V.

Persistent hyperhydration is a key element in the emergence of left ventricular hypertrophy, arterial hypertension, and high mortality from cardiovascular disease in patients with end-stage renal failure, who are on program hemodialysis treatment. Accordingly, the normalization of hydration sectors of body using ultrafiltration - is one of

the main problems in the treatment of patients by dialysis. Euvolemia condition in dialysis patients is determined by the term "dry weight". So far, the dry weight was determined mainly on the basis of clinical observations, despite the subjectivity and imprecision of this method. The most promising is the use of bioimpedance analysis (BIA), which allows to evaluate not only the volumes of extracellular and intracellular fluids of body, but also the value of lean and fat mass. Thus, the BIA seems reliable method of objectification hydration status in patients, who undergoing hemodialysis treatment program. Taking into account the ease of conduction and small dimensions, low cost of techniques, we can assume that the BIA will take a leading position among the instrumental methods to assess the degree of hydration and will become a standard method in routine practice of program hemodialysis. Multi-frequency BIS, wherein more accurate results when evaluating the fluid distribution by sector of the body, can be a useful tool for studying and monitoring the parameters of body composition - lean and fat mass. These indicators allow to objectify nutritional status, which is one of the main factors in the dialysis population, determining the results of the treatment.

COMPLICATIONS AFTER AN ADENOMECTOMY

Mokrushina Yu., Kapustyanskay A. – the 4-th year students

Scientific leaders – Cand. Med. Sc. Velichko D.N., Kostina V.V.

Frequency of complications fluctuates within 8.8-18.8%. We will stop only on the most serious, organic types of complications. Here there are: structure of an urethra, its obliteration, formation of "prevesical"(wounded cavity between bladder and resected proximal end of urethra), an urine incontinence.

A simple stricture of a back part of an urethra is a the most frequent of latest infravesical complications of an adenomectomy. In a clinical picture there is observed difficulty of an emiction. It is only possible to assume the reasons of this complication - early excision of a catheter and an urethritis. Treatment of this complication - a bougieurage. At the present stage the sparing methods of treatment of strictures of an urethra are developed and introduced in practice. The optical urethrotomy and a transurethral electroresection, an internal blind urethrotomy (Myuzo's ureterotome)are applied to them.

One more type of the remote complication of an adenomectomy of a prostate of the organic nature - a residual cavity on the place of remote adenoma, a so-called prevesical. If "prevesical" isn't followed by a stricture of a neck of a bladder or urethra, it doesn't cause any clinical implications in most of patients. The clinical picture of a disease when neck of urinary bladder stricture joins the complication described above happens even more serious, that is the patient has bladder neck strictures, "prevesical", an urethra stricture. The leading symptom is complicated, with a straining, sometimes on drops, the emiction; the expressed pains in a perineum and on the urethra course, long dribble of urine after an emiction.

INFLUENCE OF AN ELECTROMAGNETIC ON HEALTH OF THE PERSON

Mokrushina Yu., Kapustyanskay A. – the 4-th year students

Scientific leaders – Cand.Med.Sc.Goryacheva S.A., Dr.Med.Sc.Prikhodko O.B., Kostina V.V.

The body of the person has its own electromagnetic field as any organism on the Earth thanks to which all cells of an organism work harmoniously. Electromagnetic radiations of the person are still called a biofield (his visible part — aura). Don't forget that this field is the main protective membrane of our organism from any negative impact. Destroying it, bodies and systems of our organism become an easy spoils for any pathogenic factors.

If other sources of radiation, much more powerful, than the radiation of our body, begin to affect our electromagnetic field, so chaos in an organism begins. It also leads to cardinal deterioration in health.

And not only household appliances, mobile phones and transport can be such sources. The big congestion of people has also considerable impact on us, also mood of the person and his attitude towards us, geopathogenic zones on the planet, magnetic storms, etc.

Feeble electromagnetic fields (EFF) by power of the 100-th and even thousand shares of Watts of high frequency are dangerous to the person that intensity of such fields matches with intensity of radiations of a human body at usual functioning of all systems and organs in his body. As a result of this interaction own field of the person is distorted, provoking development of various diseases, mainly in the most weakened organism links.

The most negative property of electromagnetic signals is that they have property to collect in an organism over time. At people, by the nature of activity there is a lot of using various office equipment – computers, phones – decrease of immunity, frequent stresses, dropping of sex activity, increased fatigue are revealed.

The circulatory system, brain, eyes, immune and sexual systems are mostly subjected to influence of electromagnetic fields.

MOTIVATIONAL ORIENTATION OF PATIENTS WITH HYPERTENSION

Hotsanyan K., Kirillova Ya., Glushkova N. - 6th year students

Scientific leaders – Dr.Med.Sc., Prof. Pavlenko V.I, Kostina V.V.

Arterial hypertension (AH) is one of the most common diseases, the occurrence of which is associated with a significantly increased risk of cardiovascular morbidity and mortality. Despite the large number of used today antihypertensive drugs, effective control of hypertension remains an urgent problem. Purpose of the study. To study the motivation of patients with hypertension in the success of the treatment and conduct analysis of the factors that determine its orientation.

Materials and methods. The study included a group of patients with hypertension degree II-III, the disease duration from 4 to 25 years who were hospitalized in a specialized cardiology department. There were 26 (52%) men and 24 (48%) women. Each patient filled an individual case history showing demographic data, level of education, awareness of the disease, the history of life, the presence of cardiovascular complications, prescribe antihypertensive drugs with indication of the mode of application and duration of treatment before hospitalization, and test a questionnaire motivation and fear of failure (EOR). Evaluation of patients with motivation to success of treatment was carried out using a points system. There was determined gradation in the following groups: failure - when typing - from 0 up 7 points, closer to failure - from 8 up to 10; closer to success - from 11 up to 13; fortune - more than 14 points. Conclusions. As a result it was found that the majority of patients (62%) were motivated by the success of the treatment. Men with higher

education, as opposed to women, there was a significantly low motivation for treatment ($p < 0.05$). If the experience of the disease for more than 15 years, the proportion of patients with failure or closer to failure of treatment was 8.3%. It should be noted that it was the only male person with a lack of awareness about the disease. Patients with II hypertension stage were less motivated by the success of the treatment.

Among other factors that reduce the motivation to treatment, were: lack of understanding of medical instructions (28%), fear of side effects and addiction to medication (36%), the presence of comorbidity (54%) no symptoms of the disease (14%), the denial of the existence of disease (12%), lack of confidence in the success of the treatment (36). Also, it was found that persons older than 50 years old are more motivated to succeed in treatment than patients in the age range 40-50 years old.

Thus, the motivation is inducement to recovery, so keeping the doctor motivational sphere of the patient will help to give some advice on the success of the treatment, which will significantly improve treatment outcomes.

PROBLEM OF CHOICE OF HIP IMPLANTS IN MODERN TRAUMATOLOGY

Hotsanyan K. - the 6-th year student

Scientific leaders - Dr. Med. Sc Borozda I.V., Kostina V.V.

According to the World Health Organization the number of diseases grows with increasing of life expectancy and general aging of population. In 2000, the worldwide number of 60 years old people and older was 590 million persons, and in 2025 it will exceed one billion people. The urgency of the problem every year increases.

The actual question of a endoprosthesis - a philosophy of construction, review and selection of implants. The country has presented an extensive overview of hip implant systems and different manufacturers used in Russia. endoprosthesis developments underway in various areas of construction of the prosthesis elements, methods of fixation, the use of different materials, various kinds of processing the surface of implants and a variety of options for implant shapes that allows an Operating orthopedists choose from a wide range of models of the products of a particular company (Scott D. F., 1996). The choice of friction pairs for a particular patient is influenced by many factors related to the patient's sex, age, weight, level of physical activity, risk factors - features of professional work, and allergic reactions.

Conducted searches optimal friction pair, and marks a return to the metal friction pair, as the most resistant to abrasion. Improved implant fixation in the bone bed technology due to optimal shape and various deposition or coating.

The problem of returning to an active life for patients with hip injury was and remains valid to this day. Thus, conservative management hip gives 80% negative results fractures, hip surgery various osteosynthesis provides 20% to over 30% of failures and consolidation occurs at the fracture avascular necrosis of the femoral head of 10% to 50% (A. Kaplan ., 1978; Gaiko GV, Reshetnikov AA, 1979; Movshovich IA, 1985; Nuzhdin VI, 1987; Gear NA, 1992).

The emergence of the latest developments of domestic and abroad hip replacements allows us to rethink the whole strategy of the management of patients with injuries and diseases of the hip joint, to significantly reduce the periods of disability and rehabilitation, to improve the quality of life of patients, returning them to an active lifestyle

SURGICAL TREATMENT OF THE HIRSCHSPRUNG'S DISEASE

Hotsanyan K., Sharvadze N. - 6th year students

Scientific leaders – Cand.Med.Sc., Assoc.Prof. Vdovin O.B., Kostina V.V.

The relevance of the study Hirschsprung's disease remains one of the most severe congenital malformation of the abdominal cavity in children requiring complex reconstructive surgical procedures. The main clinical form of the disease manifests by persistent constipation, on average, for about 20% of children under 1 year old and up to 25% of children older than 1 year old suffer from this symptom. [Mazurin AV et al. (2000), Dubrovskaya MI, Shumilov PV, Mukhina G. et al. (2008)]

Modern surgical trends early and radical cure of congenital malformations in newborns require revision of adopted a multi-stage treatment strategy with the imposition of an intestinal stoma age- aspect [Hassan TA (2003), Eradnock T.J. (2010), Andrievskiy A. (2012), Nayhus L. et al. (2014)].

The overall incidence of complications based on large specialized hospitals, with extensive experience in the treatment of children with Hirschsprung's diseases, ranging from 22.7% to 38.5%. Related to this there is the lack of generalized information on the results of operational activities at the Hirschsprung's disease and its possible complications and their treatment tactics. In a study of local physicians, 152 children have been diagnosed with Hirschsprung's disease supershort segment. The dominant symptom - chronic constipation in children, is not amenable to conservative therapy may be associated with "supershort" form of Hirschsprung's disease. The share of these patients account for about 44.8% of all children with Hirschsprung's disease, and 6.2% in the population of children with chronic constipation. [Svarich V.G.1, Kyrgyzstan I.V.2, Abayhanov RI]

To clarify the diagnosis in addition to X-ray, endoscopy, functional studies of the colon it is necessary transanal biopsy of the rectal wall, which is the most reliable diagnostic method for Hirschsprung's disease in adults. The best way surgery is abdominal-anal resection of the rectum with bringing down the proximal colon to the anal canal, which answers the requirements of radicalism (removal of hypo- or aganglionare zone). This offered us kind of surgical treatment can reduce the number of postoperative complications, promotes early restoration of motor-evacuation function of the colon and the normalization of self-defecation. [Mirzakhmedov MM, Original Researches]

AWARENESS AMONG THE POPULATION ABOUT TUBERCULOSIS

Pnyukhtin O., Pnyukhtina M. - the 6-th year students

Scientific leaders – Cand. Med. Sc. Soluyanov I.P., Kostina V.V.

Tuberculosis is a serious threat to public health worldwide. Half of patients with active tuberculosis representing a danger to others, do not appeal to medical institutions and is able to infect 5 - 50 people per year. A favorable outcome of tuberculosis is possible with early detection and timely treatment.

The purpose of the work: to determine the level of awareness among the population about TB and to identify knowledge about the disease, methods of diagnosis, treatment and prevention.

Using the compiled questionnaires 50 people (men 72%, women 28%) aged 18 – 60 years old were anonymously examined.

The results of the survey showed a low level of knowledge about the disease. People want to know more about the disease, prevention and hygiene. In this regard, health

workers should intensify health education work on a healthy lifestyle. Public awareness lectures in schools, institutions of secondary and higher education, release of sanitary bulletins in clinics, through the media, schools health.

PARTICULAR FEATURES OF VIRAL INFECTION ASSOCIATED PNEUMONIA IN PREGNANT WOMEN

Sharvadze N., Khotsanyan K. – the 6th year students

Scientific leaders – Assoc. Prof., Cand. Med. Sc. Lazutkina E.L., Kostina V.V.

In 2009 during the epidemic of influenza A (H1N1) there was a significant increase in cases of viral infection associated pneumonia among pregnant women. During this time 37 women were treated with CAP. Most of the women were in the 3rd trimester of pregnancy - 70.4%. 9 persons (24.3%) had influenza A (H1N1) associated pneumonia, 5 (13.5%) - influenza virus type A associated pneumonia, they represented the first group. 23 persons (62.2%) with negative test results for the presence of influenza viruses were combined in the second group. Among patients from the 1st group there was more severe course of pneumonia in comparison with the 2nd one: severe course was observed in 7 patients (50%), while in the 2nd group 3 patients (13%) had a severe course. In terms of destruction of lung tissue in the 1st and 2nd group lobar pneumonia was more common – in 72% and 78% respectively. A clear physical picture was observed in 85.7% of women in the 1st group and in 100% of cases in the 2nd group. There was one case with a fatal outcome of patient L., 23 years old with total bilateral influenza A (H1N1) associated pneumonia, complicated with acute respiratory distress syndrome, sepsis, multiple organ failure, at 28 weeks of gestational period.

During the influenza epidemic in 2016 11 pregnant women with respiratory disorders have been treated. One pregnant had viral infection associated pneumonia and influenza A virus (H1N1) has been identified in one case. In pregnant woman with viral infection associated pneumonia severe course, segmental loss of lung tissue, a clear physical picture was noted.

TUBERCULOSIS IN HIV-INFECTED PEOPLE

Sharvadze N., Khotsanyan K. – the 6th year students

Scientific leaders - Zagny L.P., Kostina V.V.

Tuberculosis (TB) in patients infected with human immunodeficiency virus (HIV) is an actual medical problem. WHO estimates that nearly 10% of newly diagnosed TB cases in the world are combined with HIV, and TB is a major cause of death among HIV-infected patients.

HIV-infection contributes the transition of infection caused by *Mycobacterium tuberculosis* into active TB. For HIV-infected persons coinfecting with *M. tuberculosis* risk of active TB is 5-10% per year, whereas for people who are not infected with HIV the risk is 5-10% throughout life.

As HIV infection progresses, CD4 count of lymphocytes is reduced by about 50-80 / mcl per year that reduces the ability of the immune system to inhibit proliferation of local spread of *Mycobacterium tuberculosis* in the body. Clinical manifestations of TB at the early stage of HIV infection (CD4 > 350 cells / mm) are similar to the symptoms of secondary TB in HIV-negative patients. TB at the late stage of HIV infection (<200 cells / mm) is characterized by the absence of mycobacteria in sputum, detection of infiltrative

changes at fluoroscopy, but not cavities. In severe immunodeficiency extrapulmonary TB incidence increases.

At active TB in HIV-infected patients the worsening of immunodeficiency is observed, any opportunistic infection can be fatal. In these cases, TB is an indirect cause of death. TB is the cause of death in 30% of patients with HIV / AIDS. In this regard, early detection and treatment of TB in HIV-infected patients is necessary.

TRAUMATIC SHOCK AS A PROTECTIVE-ADAPTIVE REACTION OF MAMMALIAN ORGANISMS

Sharvadze N. Babijchuk E. – the 6-th year students

Scientific leaders - Assoc. Prof., Dr. Med. Sc. Borozda I.V., Kostina V.V.

Although, historically, shock associated with traumatic injury has been evaluated through knowledge of the 4 recognized shock patterns - cardiogenic, obstructive, distributive, and hypovolemic - many trauma practitioners viewed traumatic shock as a unique fifth shock pattern. Secondary to a systemic inflammatory response syndrome triggered by endogenous danger signals, traumatic shock represents a unique pathological condition that begins with multiple, usually blunt, trauma and may conclude with multiple organ dysfunction syndrome and death. While varying mechanisms of injury may lead to different presentations of shock and cardiovascular decompensation, a unifying theme of traumatic shock is an overwhelming inflammatory response driven by proinflammatory cytokines, and the downstream results of this cytokine storm including, but not limited to, acute respiratory distress syndrome, coagulopathy, sepsis, and multiple organ dysfunction syndrome. Treatment is primarily supportive; however, research of novel therapeutics for traumatic shock is ongoing and promises some directions for future care.

ACUTE AND PROGRESSIVE FETAL HYPOXIA - CAUSES AND OUTCOMES

Sharvadze N., Khotsanyan K – 6th year students

Scientific leaders - Zaritskaya E.N., Kostina V.V.

Placental insufficiency (PI) - a clinical syndrome caused by morphofunctional changes in the placenta and disorders of compensatory and adaptive mechanisms to ensure normal fetal growth and development as well as the adaptation of the woman's body for pregnancy. In order to identify patterns in the causes and outcomes of placental insufficiency we had analyzed 60 birth histories. In analyzing the causes of placental insufficiency following extragenital diseases there were identified: acute respiratory viral infection (21.67%), extragenital herpes (41.67%), anemia (16.67%), chronic pyelonephritis (11, 67%). Vaginitis (33.33%), endometritis (13,33%), cervical erosion (25%), inflammation of the uterus (10%), abortion (65%), miscarriages (20%) were the most common of genital diseases and complications of obstetric and gynecological history. Polyhydramnios (20%), cord entanglement (18.33%), chronic placental insufficiency (15%), IUGR (8.33%), preeclampsia (8.33%) were important during pregnancy. In the case of progressive hypoxia (65%) in the histology of the placenta there was found the mature placenta with compensated CPI (66.67%), with subcompensation (25.64%), dissociated maturation of the placenta with decompensated CPI (7.69%). In the acute hypoxia (35%) the uneven ripening villi, (47.62%), vascular necrosis of the villi, focal sclerosis (28.57%), congestion of the villi (28.57%) was found more frequently.

After analyzing the above figures, comparing outcomes with the expected causes of placental insufficiency as a whole and in each individual case, have concluded that the outcome of the pregnancy were more influenced by the possibility of compensating of the placenta ahead of the factors contributing to placental insufficiency.

BLOOD GROUPS AND RH FACTORS AMONG 1-ST YEAR STUDENTS OF THE AMUR SMA (2016)

Mamontov S., Lyashenko D., Aksenova A. – the 2nd year students
Scientific leaders - Ambrosieva N. P., Kostina V. V.

Blood type is inherited combination of antigens and antibodies. Two antigens A and B can contain on the surface of red blood cells, and in the serum may be antibodies α and β . There are four possible combinations of antibodies and antigens determine the four blood types: if the red blood cells antigens and blood serum of two antibodies α and β it is AB (I) blood group. If the red blood cells have antigen A and antibody of β it is β amyloid (II) the second group of blood. If the red blood cells have antigen β , and blood serum antibody α it is VA (III) the third group of blood. And finally, if red blood cells have two antigens and serum no antibodies is ABO (IV) the fourth group of blood. The purpose of the study was to investigate the predisposition to chronic diseases depending on the blood group, and the patterns of distribution of antigen in people of different nationalities. Research methods: Questionnaire. Survey research: Questionnaires of 205 1-st year students of ASMA. The results of the study: 1.77% of respondents – Russians, 18% - Tuva. B amyloid (II) Rh (+) is dominated and in that and other nationalities. 2.7% of the respondents live in the Amur region. 34.2% of which b amyloid (II) Rh (+) and 18.2% VA (III) Rh (+). 3. 12% of respondents live in the Republic of Tuva, 46% of which b amyloid (II) Rh (+) and 42% - AB (I) Rh (+). 3. 38% of girls suffer from gastro – intestinal diseases, diseases of the musculoskeletal system and central nervous system. 53% of them – b amyloid (II) the second blood group Rh (+) with positive Rh factor. The same disease affects 28% of boys. 57% of them – β amyloid (II) the second blood group Rh (+) with positive Rh factor.

TULAREMIA CONTINUES TO BE POPULAR FOR THE AMUR REGION

Mamontov S. – the 2nd year student
Scientific leaders - Prof. Gordienko E. N., Kostina V. V.

Tularemia — an acute infectious natural focal disease affecting lymph nodes, skin, sometimes eyes, throat and lungs and is accompanied by severe intoxication. The causative agent of tularemia is an aerobic gram-negative rod-shaped bacterium *Francisella tularensis*. Of interest is the variety of carriers of tularemia: blood-sucking insects - mosquitoes, fleas. Numerous species of wild rodents, hares, birds, dogs and others are the natural reservoir for bacteria. The disease is characterized by variety of symptoms. Clinical presentation depends on the organ in which the infection develops.

Forms of tularemia: the bubonic form, ulcer-bubonic form, eye-bubonic form, anginal-bubonic, form, abdominal form, pulmonary form, generalized form.

Transmission of tularemia: vector-borne, contact, aerogenic, water, alimentary.

The urgency of the problem is determined by the characteristics of the epidemic manifestation of infection in which the causative agent is one of the most pathogenic microorganisms.

Territory of the Amur region endemic for tularemia. However, a characteristic of natural foci of this infection is their low epidemiological activity, manifested rare human cases. In this regard, the epidemiological situation on natural focal infections, including tularemia in the Amur region remains relatively stable. The last case of the disease among the population of Amur oblast was registered in 2007.

Diagnosis of tularemia is made by serologic reactions, skin allergic tests, immunogenetic methods, PCR.

CLINICAL CASE OF CHURG-STRAUSS SYNDROME

Arkhipova M., Kirey U., Matylyuk O., Strekalova M., Sharvadze N., Yudina E. – the 6th year students

Scientific leaders - Cand. Med. Sc., Assoc. Prof. Pogrebnaya M.V., Kostina V.V.

Systemic vasculitis - a heterogeneous group of diseases, their main morphological feature is the inflammation of the vascular wall. Systemic vasculitis are among the relatively rare diseases: 4.2 people per 100 000 population per year.

Analysis of annual reports was conducted by rheumatology department from 1995 up to 2009 and from 2008 up to 2015. Diffuse connective tissue diseases prevailed and systemic lupus erythematosus, systemic sclerosis and dermatomyositis were in leaders. In the group of systemic vasculitis polyarteritis nodosa, Wegener's granulomatosis, Takayasu's syndrome, hemorrhagic vasculitis are more common.

Churg-Strauss syndrome - is an allergic inflammatory lesion of small and medium-sized vessels, proceeding with the formation of necrotizing eosinophilic granuloma. The syndrome is characterized by asthma, eosinophilia, neuropathy, R-signs of pulmonary infiltrates, paranasal sinus pathology.

Patient M., 37 years old. She was admitted in the rheumatology department on the 28th of August with complaints on reducing surface sensitivity and muscle weakness mainly in the left arm, leg weakness, unsteadiness in walking, increasing with closed eyes, lethargy, a feeling of lack of air. She considers herself a patient since 1999, when an allergic reaction of immediate type by type of hives had unreasonably developed. In 2000, she was in the neurology department in connection with the advent of aching pain in the cervical spine; leukemoid revealed eosinophilic reaction; trichinosis had excluded. In 2003 there was a severe expiratory dyspnea. In September 2003 Bronchial asthma, a mixed form was diagnosed. Since 2005, Flomax and Symbicort were appointed. In 2006, worsening - a feeling of coldness in hands, frequent headaches. The diagnosis: Vascular dystonia. Raynaud's Syndrome. In November 2008, the neurological symptoms appeared: a feeling of weakness in his right hand, diagnosed: Systemic vasculitis. Churg-Strauss syndrome (eosinophilia; with damage to the lungs: asthma, eosinophilic infiltration in the lung, double-sided encysted pleurisy; Central nervous system, peripheral nervous system: atactic syndrome, polyneuropathy of the upper extremities; Heart: myocardial mixed genesis. Ventricular premature beats I c. by Bigger). In 2009, the diagnosis was confirmed at the Research Institute of Rheumatology in Moscow. In October 2009 - Gilbert's syndrome was diagnosed. In May 2011, the patient noted shortness of breath and palpitations expressed with little physical activity, rare flying pains in the joints. In February 2015 - deterioration: weakness in the legs, unsteadiness during walking and standing, the state of stupefaction, shortness of breath with little exertion. There was hospitalization in August 2016 for the correction of the treatment.

CLINICAL AND ANATOMICAL SPECIFICS OF SIZES OF LARGE PELVIS OF ASMA GIRL-STUDENTS' (1989-1992 YEARS OF BIRTH)

Mikhaylovskiy A., Barlit H. – the 1st year students
Scientific leaders – Pavlova A.E., Kostina V.V.

Clinical and anatomical specifics of sizes of large pelvis of ASMA girl-students' (1989-1992 years of birth) depending on type of constitution. One of the most important government's goals is physically strong young generation's upbringing, that is why control of young people's physical development is important, especially girls' because exactly female organism has an important mission – motherhood. After examining a lot of literature sources we came to the conclusion, that there was insufficient information about sizes of pelvis dependence of the constitution's types. We conducted 90 large pelvic measurements with simultaneous determination of the type of constitution according to M. V. Chernoruzkiy, using Pinya's indexes. Taking into consideration above given data in the table we can draw the following conclusion: all types of constitution are characterized by the predominance of the large pelvis' normal size.

THE 40TH ANNIVERSARY OF THE DEPARTMENT OF VASCULAR SURGERY CAEHC AR "ARCH"

Kucherenko T. – the 6-th year student
Scientific leaders – Zavaruev A.V., Kostina V.V.

One of the main achievements of the XX century is a reconstructive vascular surgery. In November 1975, an order was issued on the organization of care for patients with vascular disease in the Amur region. At the same time in the Amur Regional Hospital department vascular surgery with 25 beds was opened. One of the founders was Professor Kulik Ya.P. - Head of the Department of Hospital Surgery BSMI. The first head of department became M.V.Sudakov. At this time, there was gradually becoming of surgery of great arteries in the department, the venous system, surgical technique was improved.

From 1995 up to 2012 the department was headed by Yury Konovets. This significantly expanded the range of operational benefits. By the end of the 90-th, members of the department of hospital surgery Mazurenko A. A., Lyashko V.V., Shimko V.V., Sadchikova V.V., Saharyuk A.P., Anyushkin S.V., Dubrovin V.M., Kolotova R.B., Tolpygin P.V, Hotchenkov M.V. worked. Intensive practical work was accompanied by the active research activity - on the basis of department several theses were protected, executed about 20 patents and more than 200 publications.

The Department is currently headed by the doctor of the highest category, Cand.Med.Sc. Mazurenko A.A. The doctors Konovets Yu.A., Tolpygin P.V., Burlakov V.N., Domke A.P., Dzhalilov R.V., Zavaruev A.V. work here. A huge contribution to the department was made by the nursing staff - Davydova Olga - the first elder nurse; O.V.Fedulova – nurse-anesthetist; department-nurses - Razumets E.G., Sokolova I.I., Menshikova M.Yu., Starsheva Yu.S.; Lysenko T.Yu.

For 40 years, the staff of department carried out more than 20 thousand operations in cooperation with the Department of rentgensurgical methods of investigation and treatment, anesthesiology and intensive care and a number of others. Modern technologies are introduced in the treatment of patients with vascular pathology - hybrid operation with multistory lesions of arteries, joint replacement aortic angioplasty and stenting of arteries of all vascular beds, surgery for aneurysms suprarenal and descending aorta, combined

with advanced tumors of the abdominal and thoracic cavity, minimally invasive with pathology of the aorta, laser and radio frequency with varicose veins, embedded technologies outpatient phlebology. Currently, there is performed more than a thousand of planned and emergency surgeries a year. The staff of department has a number of government incentives and rewards.

THE ANTIOXIDANT PROPERTIES OF PARIETIN

Ruder M. – the 4th year student

Scientific leaders – Dr. Med. Sc. Prof. Dorovskikh V.A., Kostina V.V.

Parietin is the drug of plant origin, it was extracted from the lichen by B.F. Kerimov in 1982. The model of cold stress effect has been chosen to determine antioxidant properties of parietin. The cold effect is the daily maintenance of animals in a climate chamber Fentron 3 hours at a temperature of -15 degree below zero in a ventilation chamber.

Parietin is derived of antrakhinon. It's a yellow powder, molecularly weight 284, melting point is 206-207 degree, not soluble in water. (V.A. Dorovskikh, 1986).

The cold effect stimulates a sharp increase in the content of the diene conjugates both in the liver and in the lungs of experimental animals. This is especially clearly seen in the first 14 days of the experiment. Preliminary introduction of parietin resulted in a decrease in the content of diene conjugates in the lungs of rats.

The cold effect inhibits antioxidant system (E.E. Burlakova, 1975).

Improvement of the oxygen regime of the organism play an important role in metabolic activity of erythrocytes, factors molecular allosteric regulation of oxygenation (deoxygenation) of hemoglobin (V.A. Dorovskikh, E.A. Borodin, 2001, 2004, 2006). Metabolic phosphoglycerate glycolysis 2,3-diphosphoglycerate acid is an allosteric regulator of oxygenation (deoxygenate hemoglobin M.Perutz 1965). The increase in the content of 2,3-DFG in erythrocytes should help to deoxygenate. The cold effect exposure significantly reduces the content in the erythrocytes of 2,3-DFG, that promotes better oxygenation of hemoglobin in the lungs, however, at the same time severely limits impact of oxygen, to tissues, which contributes to their hypoxia. Parietin significantly increased the contents of 2,3-DFG in the erythrocytes of rats which were subjected to cold exposure, which led to the increase of oxygen release in peripheral tissues and lowered the level of tissue hypoxia.

ISLETS OF LANGERHANS OF THE PANCREAS

Chernukha D. - the 2-nd year student

Scientific leaders - Prof.Sayapina I.Yu.,Kostina V.V

The Human pancreas (Latin páncreas.) - organ of the digestive system; large gland having exocrine and internal secretory functions. Exocrine organ function the is realized by release of pancreatic juice containing digestive enzymes. Producing hormones, pancreas takes an important part in the regulation of carbohydrate, fat and protein metabolism. Between slices numerous groups of cells are interspersed that do not have excretory ducts - pancreatic islets. Islet cells, namely alpha-cells (15-20%) and beta-cells (65-80%) function as endocrine gland, releasing into the blood stream directly glucagon and insulin - hormones that regulate carbohydrate metabolism. These hormones have the opposite effect: glucagon increases so and insulin lowers blood glucose levels. If it affects the beta

cells, diabetes is developed. Therefore, the purpose of my work is: study of the structure and function of pancreatic islet isolation mechanism of insulin from the beta cells and the mechanism of islet transplantation apparatus.

It is known that mature islet pancreatic parenchyma has ordered organization. It is surrounded by connective tissue, has lobules, and the blood capillaries are inside. Islets are made up of cells - islet cells, among which are based on the presence in them of different physical, chemical and morphological properties of the granules there are 5 main types: alpha cells (15-20%), beta cells (65-80%), delta cells (3-10%), PP cells (3-5%) and epsilon cells (<1%). Islet cell architecture affect intercellular connection and paracrine regulation, synchronizes the release of insulin. Namely, the beta cells support basal insulin levels, and also provide a rapid release of insulin presynthesized and its formation, with a sharp increase in blood glucose levels. Answer comes fast enough and usually takes a few minutes. Under the influence of the stimulus - high blood glucose - beta cell membrane is depolarized, calcium ions enter the cell that starts the process of reducing the intracellular microtubule system and the movement of the granules to the plasma membrane with their subsequent exocytosis. In violation depolarization of mechanisms of beta cells there is produced antibodies that destroy them and lead to the development of diabetes.

Topical method of treatment of diabetes is the allograft cells pancreatic pancreas islets from one human donor to another person - the recipient. Transplantation of islet apparatus serves as a worthy alternative to transplantation of the pancreas, or installing artificial organ. This is one of the types of experimental treatment of diabetes of first type. An alternative source of material for the recovery of pancreatic islets are stem cells. They may be relevant, as donor cells reserves are limited.

Thus, knowledge of the structure and function of pancreatic islets are necessary for each qualified doctors, who are often in their practice will face diabetes disease that develops because of the defeat of their structure. The early detection of diabetes in a patient there is a very high chance of avoiding further development of this serious illness.

PORPHYRIN DISEASE

Seficulieva A. - the 2-nd year student

Scientific leaders - Assoc. Prof., Cand. Biol. Sc. Doroshenko G.K., Kostina V.V.

Porphyria or porphyrin disease (Gr. Πορφύριος - "purple",) - almost always an inherited disorder of pigment metabolism with a high content of porphyrins in the blood and tissues and increased of their allocation with urine and feces. It is Manifested by photodermatosis , hemolytic crises, gastrointestinal and neuro-psychiatric disorders.

It is classified in accordance with the main places of hemoglobin synthesis, which manifest "error" of metabolism. Primary violation may occur in the liver (hepatic porphyria (porphyria hepatica)) or in bone marrow (erythropoietic porphyria (erythropoietic porphyria)); sometimes it can develop in both these bodies. On the clinical course of the disease is often divided into acute porphyria shapes and forms, occurring primarily with lesions of the skin.

Non-protein part of hemoglobin - heme is not synthesized but accumulated intermediate products of its synthesis - porfirinogenes. They are converted into the light porphyrins which, by interaction with atmospheric oxygen form active radicals that damage skin cells. The skin starts to get brown hue, becoming thinner and by exposure to sunlight they bursts, so the skin of covered with time is scars and sores. Ulcers and inflammation damage the cartilage - the nose and ears, deforming them. Coupled with

covered sores and twisted fingers, it's incredibly disfiguring man. Sunlight is contraindicated to patients as it, brings them untold sufferings.

Well-known expert on porphyria David Dolphin says that. Even weak sunlight adversely affects the patient. Skin damage can be so severe that his nose or fingers can be completely destroyed. The lips and gums were significantly reduced while maintaining the normal size of teeth - the result is a likeness of an animal jaw with fangs. Moreover, reinforced hair growth can be in porphyria patients. Dolphin wrote: ... try to imagine how in the Middle Ages perceived the one who went out into the street alone at night, and it looked like a kind of animal - increased hairiness, large teeth, disfigured face.

It is assumed that such people might well consider were wolves. Dolphin suggests that vampires bloodsuckers, too, were victims of porphyria and "sought to ease terrible disease symptoms," If you drink a lot of blood, then someone else will bring the missing hemoglobin due to impaired biosynthesis of red blood cells and alleviate the symptoms. Although the effect of hemoglobin released into the bloodstream through the lining of the stomach, is extremely small. Today porphyria patients are often treated by injecting the hemoglobin.

BREAST CANCER

Pisarevsky A. - the 3-rd year student

Scientific leaders - N.V. Menshchikova, E.A. Volosenkova

The incidence of breast cancer takes the 1st place, more than 1 300 000 new cases per year in the world are detected, 458,300 women die of breast cancer, despite the fact that this pathology is a so-called visual location. Breast cancer is a malignant tumor of glandular breast tissue. In the world it is the most common form of cancer among women, affecting over a lifetime from 1/13 to 1/9 of women aged 13 to 90 years. Risk factors and causes of breast cancer: menopause at the age of over 50 years; no delivery or first birth over the age of 30 years; family history. Previous pathological processes in its tissues (fibrocystic breast disease) dishormonal hyperplasia. Endocrine disorders are often caused by associated diseases of ovaries, repeated abortions, improper feeding of the child, etc., anatomical and embryological abnormalities - the presence of additional lobes of glandular tissue, and previous benign tumors - breast fibroadenoma. According to histological structure the following breast cancers are more often: an adenocarcinoma or solid cancer with a variety of transitional forms, alveolar, pleomorphic, tubular, mucinous, medullary. There are ductal and lobular cancers presented by infiltrating and noninfiltrating forms.

PANCREAS TRANSPLANTATION

Prygunov V., Marushko L. - the 3rd year students

Scientific leaders – Doc.Med.Sc. G.N. Maruschenko, A.V. Sergienko, V.V.

Grebenyuk, E.A. Volosenkova

The pancreas is a complex organ with both exocrine and endocrine functions. Disorders of the pancreas require surgical intervention. Transplantation of the pancreas is associated with great technical difficulties. There are also biological problems caused by high enzymatic activity of trypsin, so that a process of "self-digestion" may occur. The most preferred mode of transplantation of pancreas is its transplantation in the peritoneal cavity and close connection to the vascular cavity. Now the problems of transplantation of the pancreas are studied in several directions. Along with the development of methods

of transplantation a model of an artificial pancreas creation continues. Currently it is a miniature device with a dispenser for insulin release into the blood, made of stainless steel, silicone rubber or polytetrafluorethylene. It is implanted under the skin of the patient and essentially imitates the work of the endocrine cells. Transplantation of the pancreas is so far the least known chapter of Transplantation.

MODERN ASPECTS OF BRAIN TRANSPLANTATION

Pisarevsky A. - the 3rd year student

Scientific leaders - G.N. Marushchenko, V.V. Grebenyuk, E.A. Volosenkova

The probability to transplant the brain is investigated for a long time. Since the beginning of the century, scientists have tried to implement various brain transplantations by transplanting the head. The best results were achieved by the Soviet surgeon V.P. Demihov. He proved fundamental possibility of such an operation and the preservation of the viability and full activity of the transplant on the recipient's body. In the developed model of the isolated brain transplantation donor vessels of the brain are connected with the vessels of the recipient. Transplanted brain was placed in a cervical pocket between the carotid artery and jugular vein. The brain is connected with monitoring systems for EEG monitoring, temperature, cerebral blood flow velocity. The volume of cerebral blood flow through the graft is relatively low. Due to the successful use of modern methods of microsurgery and vascular surgery median survival of transplanted brain was 7.3 days. In 2 of 7 cases it reached 14 days.

PREVENTION OF OXIDATIVE STRESS

Marushko L., Trebukhova A. - the 3-rd year students

Scientific leaders – E.A. Litovchenko, E.A. Volosenkova

Oxidative stress is a disorder of the metabolic processes and energy, as well as the accumulation in the body of the active agents that damage or trigger mechanism of cell damage, resulting in various pathological processes in the body. The causes of oxidative stress are pathogens, involution processes, stress, environment, solar active radiation, over eating, regular drug therapy, alcohol abuse and smoking, lack of fresh air.

Prevention:

- 1) Bioflavonoids. They bind free radicals, preventing their further formation and dissemination, as well as harmful effects on cells. They influence the oxidative processes that occur in the body, reducing their intensity.
- 2) Antioxidants. They are an excellent prevention of very serious diseases such as atherosclerosis, hypertension, strokes, heart attacks, cancer. Antioxidants clean vessels, help to normalize and restore the nervous system, hearing and vision, improve memory.
- 3) Polyphenols. They stop the oxidation process. Polyphenols include not only flavonoids but also tannins and anthocyanins.

ACUTE CORONARY FAILURE

Trebukhova A., Marushko L. - the 3rd year students

Scientific leaders - M.E. Ostyakova, E.A. Volosenkova

Acute coronary failure is a pathological state which develops owing to a vasospasm, saturating a cardiac muscle with a blood. The spastic stricture can develop

in the person both in a condition of absolute physical rest, and at the raised emotional and exercise stresses. The main symptom of a coronary failure is the feeling of an acute pain in the field of a breast bone which can irradiate also in the left arm, a neck, the left ear, a scapula. Emergence of such pain has the character of periodic attacks. Attack duration seldom exceeds 3 minutes. At emergence of an attack, the patient instinctively tries to adopt the most optimum provision, spontaneous emergence of sensation of fear quite often becomes perceptible. An acute coronary failure –is a cause of death of every third elderly inhabitant of the planet. Most often development of a coronary failure is associated with a hypertonia, and also with the inflammatory processes affecting cardiac muscles. In certain cases the systemic vasculites, an atherosclerosis acquired and congenital heart diseases can provoke a coronary failure. In rare cases an acute coronary failure doesn't lead to immediate death. Often the only chance of survival is correctly given first aid. At emergence of signs of disturbance of work of the heart the patient must take a horizontal position on a firm plain surface, and then to put Tabulettae Nitroglycerini under tongue. The person with an attack should be abirritated and whenever possible without sharp movements as it can aggravate its situation. The ambulance at emergence of signs of an acute coronary failure needs to be called surely and immediately.

HEMORRHAGIC SHOCK

Pugacheva E., Tsyupalo V. – the 3rd year students

Scientific leaders – M. E. Ostyakova, E. A. Volosenkova

Hemorrhagic shock (GSH) is a critical condition of the body associated with acute blood loss, resulting in a crisis of macro-circulation and microcirculation, organ dysfunction syndrome, and multisystem failure.

From pathophysiological point of view, is a crisis of the microcirculation, its failure to provide adequate tissue metabolism to meet the demand of tissues for oxygen and energy products, to remove toxic products of metabolism.

4 stages are distinguished according to their severity.

Clinical features of hemorrhagic shock.

GSH is manifested with weakness, dizziness, nausea, dry mouth, darkening of the eyes, increasing blood loss — loss of consciousness. In connection with the compensatory redistribution of the blood, its amount is reduced in the muscles, the skin is pale with a gray tint, the extremities are cold, wet. Reduction of renal blood flow is manifested with decreased urine output, subsequently, with the disruption of the microcirculation in the kidneys, with the development of ischemia, hypoxia, necrosis of the tubules. By increasing the volume of blood loss the symptoms of respiratory failure increase: shortness of breath, disturbance of respiratory rhythm, excitation, peripheral cyanosis.

CORRECTION OF OXIDATIVE STRESS ADAPTOGENIC HERBAL PRODUCTS HEMORRHAGIC SHOCK

Pugacheva E., Tsyupalo V. – the 3rd year students

Scientific leaders – E.A. Litovchenko, M.D., Doc. Med. Sc., Prof. N.V. Korshunova, E.A. Volosenkova

Oxidative stress is the failure of the antioxidant system of the organism in which the cells are exposed to excessive levels of reactive oxygen forms and other free radicals.

Free radicals are unstable atoms and compounds, they function as aggressive oxidants resulting in the damage of the vital structures of the body.

Despite efficient antioxidant defense system of the organism, the level of free radicals exceeds the capacity of antioxidant potential. Thus, there is a progressive increase in oxidative stress. Scientists believe that phytoadaptogens decrease the level of reactive oxygen forms and other free radicals in the body, reducing oxidative stress.

Phytoadaptogens are plants that help the body to overcome a stressful situation.

Scientists have proved that foods that contain large amounts of antioxidants are vegetables and fruits of red, orange, yellow, green, blue and black colors. It is not important whether they are sour or sweet. For example, the black and dark blue berries are rich in such antioxidant as anthocyanin, orange vegetables, fruits contain a lot of carotene and the red ones - lycopene.

Berries antioxidants are blueberries, cranberries, raspberries, cherries, blackberries, strawberries, currants. The precise dependence of amount of nutrients from a certain type of berries is not known, but it is believed that the strong antioxidant berry is the one with the rich color.

Among medicinal plants strong antioxidant properties belong to green tea on the basis of rose hips, sea buckthorn, red clover, St. John's wort, nasturtium, nettle and common wood sorrel, bark of ash, sorrel, chamomile, eleuthero and ginseng.

BACTERIEMIC SHOCK

Pugacheva E., Tsyupalo V. – the 3rd year students

Scientific leaders – Can. Med. Sc. N. R. Levchenko, E. A. Volosenkova

Bacteriemic (toxico-infectious, endotoxin) shock is possible with peritonitis, infections of urinary and biliary tract, pneumonia, necrotizing pancreatitis, gynecological diseases. Most often the bacterial agents are gram-negative bacteria such as E. coli, Klebsiella, Proteus, but gram-positive bacteria, viruses, fungi and protozoa can be pathogenic also.

Gram-positive flora secretes exotoxins that cause proteolysis and the subsequent formation of plastoquinone. Paralysis of the vessels and hypotension in isovolemic type develop.

Gram-negative flora contains endotoxin that enters the blood during the destruction of bacteria. Stimulating the adrenal medulla, it causes the release of catecholamines and subsequent vasoconstriction.

Clinical manifestations of bacteriemic shock are hyperthermia, changes in white and red blood, agitation, stupor or coma, hypotension and microcirculatory disturbances, arrhythmias, hypoxaemia, oliguria, jaundice, thrombohemorrhagic syndrome.

The shock can be prevented by early treatment of purulent-inflammatory diseases, emergency closed drainage of purulent foci, proper postoperative management.

THE LIVER CIRRHOSIS, ETIOLOGY AND PATOGENESIS

Mamedova E., Moseikina V. – the 3rd year students

Scientific leaders - Doc.Biol.Sc. A.V. Krylov, E.A. Volosenkova

Etiology of the liver cirrhosis explains morphological changes in the organ. Such factors as alcohol, malnutrition, viral infection, interruption of a metabolism cause a necrosis of hepatocytes. However, autoimmune reactions are the main damaging factor.

There comes lobule collapse - loss of space, which early was occupied by a parenchyma under the influence of intra hepatic pressure. That process originates massive, submassive necrosis, which distributes from the center of a lobule to a portal path (bridging port – and central necrosis). In this case the restoration of hepatic tissue is impossible.

As a result portal paths and the central veins approach, connecting tissue begins to grow. The escaped hepatocytes or fragments of hepatic lobules regenerate and form knots – regenerators, which constitute with the remains of the remained parenchyma pseudo – lobules. Pseudo – lobules represent the parenchyma sites deprived by usual radial orientation of trabecules to the central vein. Moreover, the central veins are not found and portal paths are not revealed on the periphery. The centers of the regenerating parenchyma and the expanded connective tissue bands squeeze blood vessels, especially thin - walled hepatic veins, microcirculation is broken. There is an obliteration of venous vessels. Intra hepatic pressure increases. It is 2-5 times higher in comparison with normal venous vessels. The speed of a portal blood - flow is slowed down, the volume blood - flow decreases to 30-70%. Connective tissue grows deep into parenchyma, connects portal paths to the central zone of a lobule. Finally, the hepatic lobule is fragmented, portal vessels connect to branches of a hepatic vein and form arteriovenous anastomosis (shunts). Blood from a portal vein goes directly to system of a hepatic vein by this shunts, passing by a liver parenchyma that sharply breaks oxygenation and nutrition of hepatic cells, that inevitably leads to emergence of new necroses.

In conclusion, it is important to mark, that the progressing of cirrhosis goes as chain reaction: necrosis-regeneration-reorganization of the bloodstream - parenchyma ischemia - necrosis.

ETHICS AND DEONTOLOGY IN THE PHYSICAL CULTURE AND SPORTS AMONG MEDICAL STUDENTS

Mamedova E., Moseikina V. – the 3rd year students

Scientific leaders - F.S. Mironov, E.A. Volosenkova

According to the FGOS-3 program of medical schools, students are taught medicine in hospitals from the first course. Therefore, the deontological principle is extremely relevant. It provides specific requirements for the appearance of students, clothing, sanitary and epidemiological requirements. Moreover, teachers of physical culture keep these requirements up too.

We have carried out the research and have found that: 95% of respondents use indoor shoes at the physical culture classes, 87% of students consider that it is necessary to use clothing, which are recommended by teachers, 84% think it is necessary to take shower after the physical culture class and 45% are agree with the requirement not to let female students to have the bright long nails . It is possible to suggest, using the results of the research, what doctor can become a student in the future, because it is extremely important for a doctor to follow the deontological rules.

In conclusion, it must be noted that such discipline as physical culture plays an important role in the process of formation the correct deontological norms among students, what might be an excellent foundation for the emergence of competent experts in any field of medicine.

THE ACTUAL ISSUE OF HUMAN CLONING

Moseikina V., Mamedova E. – the 3rd year students

Scientific leaders - Prof. Marushchenko G.N., Volosenkova E.A.

The urgency of human organs cloning can not be overestimated. While the population of the Earth is rapidly aging, there are the catastrophic lack of donor organs. Besides that fact, transplantation is technically difficult and it threatens severe complications. The artificial organs, which are made out of inorganic materials are still imperfect. It is significant disadvantage because to clone the organ must mean not only to create something similar, but to enforce the functions, which are inherent to the sore organ.

We carried out the survey among patients of the "Annunciation city clinical hospital №1" at the emergency department of cardiology, trying to identify the people's attitude to the issue of human cloning. Analyzed the results, we found out, that 57% of patients were in favor of the prohibition of cloning procedures. Another 43% believed that artificial appearance of a person was morally. 50% of patients said, that they knew cases of human cloning. 25% of people would like to have their own clone. 28% think that it is possible to increase the number of physically and mentally gifted people with the help of cloning and, finally, 60% of the polled people expect the progress in medical cloning.

The issue of human cloning evokes a mixed assessment. People cloning is potentially attractive from scientific and practical point of view. In spite of this, there are bioethics rules on the first place, which usually do not admit the development of cloning. Moreover, the technique of cloning has not reached yet the level, which allows to use this method extensively. After a survey, we found out that, on the one side, generally patients extraordinary related to the cloning. On the other side, the majority of them were waiting for a colossal leap in the sphere of medical cloning.

POSSIBLE STRUCTURE OF THE HUMAN HAND

Panfilov S., Semeshko M. - the 2nd year students

Scientific leaders – Can. Med. Sc. S.S. Seliverstov, E.A. Volosenkova

Hand is a treasury of all kinds of information about human organism. One can see status of a body as well as diseases. For example:

- Red palms mean toxic damage of the liver.
- Marble print of palm means defects of autonomic nervous system (ANS).
- If skin is shelling, it means the lack of A, D vitamins.

Form of hand can tell about future defects of humans. If man has wide palms and short fingers it means that blood-vessel system is damaged. People with little palms have high susceptibility of ANS, their "professional" disease, are bronchial asthma, rectal inflammation, and hypotension. People with "meaty" palms have problems with blood-vessel system they have low metabolism and hypo function of thyroid.

At present diagnosis of diseases on fingers of a hand is possible. Doctors say that the length of fingers and distance between ring-finger and forefinger may mean low high risk of autism, psychic diseases and depression. This rotation is an indicator of fetation. For example:

- If ring-finger is longer that forefinger, a man can be with autism.
- Short fingers point at high resistance to negative factors.
- Forefinger is like middle finger in length and it is lower than a ring-finger, in this case the diseases of heart and stomach are possible.

-Forefinger is longer than ring-finger may be man has pathology of colon.

Fingers like some organs and the show their work: a thumb-lungs, forefinger-colon, middle finger-heart and reproductive function, ring-finger-activity of metabolism, and allocation of over energy, little finger-heart and small intestine.

INJURY, DISABILITY, MORTALITY DUE TO ROAD ACCIDENTS IN THE AMUR REGION IN 2016

Rybina E, Rybina M. - The 2nd year students

Scientific leader - Prof. E. A. Vanina

Traffic accident is an event that occurred during the movement of the vehicle that killed or injured people, damaged vehicles, facilities, goods or other property damage. The number of traffic accidents increased by 12.5% in 2016 as compared to 2015, on the roads of Amur region. Therefore, the theme of our research is relevant. Due to the fact that the number of cars in the city has increased by 32.7%, the number of traffic accidents has doubled. Main causes of accidents are a violation of the distance, the use of alcohol, speeding, talking on mobile phone, non-use of seat belts, the use of a defective car, talking with passengers, smoking, driving, deliberate creation of an emergency. As a result of studying the statistics it was revealed that during 2016 the number of accidents on the first place is the city of Blagoveshchensk (491 accident victims, injured 617 people, 50 people died). The safest city is Svobodny (7 accident victims, injured 5 people). After analyzing the statistics for five years, it was established that the number of traffic accidents is increasing every year. The consequences of accidents are injure 75%, disability 20% and mortality about 5%.

AIDS IN THE AMUR REGION

Karpova M., Semeshko M. - the 2nd year students

Scientific leaders - Assoc.Prof. L.A.Guba, E.A.Volosenkova

Causative agent of the human immunodeficiency virus(HIV) disease was found in 1983.

According to the data of early November, 2015 862cases of HIV infection were registered in the Amur region. This year 89 new cases and last year 53 cases were revealed.

Over the entire period of observation since 1995 on the territory of the Amur region 72cases of HIV infection were found among foreign citizens, including 5cases in 2015. In 2015, the highest number of HIV cases was registered in Blagoveshchensk, Belogorsk, Tynda and Svobodny and Skovorodinsky district. Most of the cases are recorded in the age group of 20-30 years, it accounts for 72.7%

In the Amur region 130 new HIV cases were registered in 2015,35 carriers of diagnosis have died. Amur region is characterized by instability of population, low population density and high rates of migration, that has an effect on the development of the HIV epidemic. The total number of cases reported from1995 to the present day makes up 882 persons.

According to experts, the most likely cause of mortality is a late appeal for medical help, and the rejection of anti-retroviral therapy(ART).Every year the number of patients who are registered and the number of patients with HIV infection at the stage of secondary effects increase.

STRUCTURE OF THE PANCREATIC GLAND. DIABETES MELLITUS OF TYPE 1

Semeshko M. - the 2nd year student

Scientific leaders - V.S.Kozlova, E.A.Volosenkova

The pancreas is covered with the capsule from which septa divide an organ into lobes. In the lobes the stroma is presented by a raggy not properly formed connecting tissue. Pancreas is alveolar and tubular in form.

It consists mainly of an exocrine tissue. A basic element of an exocrine part of PZh — an acinus. An acinus represents a subunit of lobes of PZh and consists of the pyramidal cells turned by an apical part to a secretory canaliculus. Secretory canaliculus of an acinus, merging among themselves, form intralobular ducts.

The exocrine tissue of PZh consists of three types of cells:

- acinar, producing glycolytic, lipolytic and proteolytic enzymes;
- the central acinar and ductal, cosecreting the liquid containing bicarbonates;
- cell which secretes mucin.

Acinar cells — the main structural component of acini and PZh in general. Exocrine pancreatic cell has the form of the truncated cone. Secretes and excretes an albuminous secret in an acinus cavity.

Endocrine part of PZh consists of islets of Langerhans. They are separated from an acinus by layers of a connective tissue and contain 5 types of cells: A-cells, B-cells, D-cells, D1 cells, PP-cells.

A cell-large spherical cells with an acyanotic large core and the cytoplasm containing acidophilic granules. Hormone the glucagon splitting a glycogen and increasing the content of Saccharum in a blood is a part of these granules.

B-cells have the cubic form, a large core dark, rich with a heterochromatin. In a cytoplasm of B-cells the osmiophilic granules containing hormone insulin collect. Insulin regulates synthesis of a glycogen from a glucose. At a disadvantage of production of insulin the glucose does not turn into a glycogen, contents it in a blood increases and conditions for development of the disease called by a diabetes mellitus are created.

D-cells - their form sometimes star-shaped with processes. In a cytoplasm of a granule accumulate hormone somatostatin. It slows down secretion of insulin and a glucagon, reduces production of hormones of digestive tract - Gastrinum, a secretin, an enteroglyukagon, cholecystokinin, etc., suppresses secretion of somatotropic hormone in a pituitary body.

D1 - cells - in a cytoplasm are taped the dense argirofilny granules containing a vasoaktivny intestinalny polypeptide. It possesses the expressed vasodilating action, reduces blood pressure, oppresses secretion of the hydrochloric acid in a stomach, stimulates allocation of a glucagon and insulin.

PP-cells — a polygonal form of an insulotsita, in a cytoplasm are taped the granules containing a pancreatic polypeptide. The main role of a pancreatic polypeptide in an organism — a regulation of rate and number of exocrine secretion of a pancreas and bile in a liver.

In diabetes mellitus of the 1 type there is an absolute deficiency of insulin caused by disturbance of work of the pancreas. Disability of an organism to use the glucose arriving with a nutrition and to reserve its excess in a liver and muscles is the cause of diabetes. The unused glucose in excess quantity circulates in a blood (it is partially removed with urine) that adversely influences all organs and tissues. As entering glucose in cells isn't enough, as an energy source fats begin to be used. As a result. in the increased quantity toxic for an organism and especially for brain substances, called as ketone bodies are formed, fatty, protein and mineral metabolism is broken.

CARDIOMYOCYTES MITOCHONDRIA AS A FACTOR OF PROGRESSION OF HEART FAILURE

Goleva A., Mazaeva T. - the 1-st year students

Scientific leaders - E.N. Gordienko, E.A. Volosenkova

Mitochondrial dynamics is a recent topic of research in the field of cardiac physiology. The study of mechanisms involved in the morphological changes and in the mobility of mitochondria is legitimate since the adult cardiomyocytes possess numerous mitochondria which occupy at least 30% of cell volume. However, structural limits exist in the cardiomyocytes that hinder mitochondrial movements and communication between adjacent mitochondria. Still, the proteins involved in mitochondrial fusion and fission are highly expressed in these cells and could be involved in different processes important for the cardiac function. For example, they are required for mitochondrial biogenesis to synthesize new mitochondria. They are also involved in inner membrane organization and may play a role in apoptosis. More generally, change in mitochondrial morphology can have consequences in the functioning of the respiratory chain, in the regulation of the mitochondrial permeability, and in the interactions with other organelles. Furthermore, the proteins involved in fission of mitochondria are altered in cardiac pathologies such as ischemia or heart failure. Thus, mitochondrial dynamics deserves particular attention in cardiac research.

CERVICAL CANCER

Baldan S. – the 3rd year student

Scientific leaders – Can.Med.Sc. N.V. Menshchikova, E.A. Volosenkova

Cervical cancer is a malignant tumor that develops from the mucosal lining of the cervix. Among malignant tumors of female genital organs, cervical cancer ranks second after breast cancer. The cause of cervical cancer is infection with human papillomavirus. Early pregnancy, a large number of sexual partners, sexually transmitted disease, inflammatory processes of genital organs, smoking, and prolonged use of hormonal contraceptives increase the risk of malignant tumors.

Cervical cancer is preceded by precancerous lesions, in the form of severe dysplasia of the epithelium of the vaginal portion of the cervix. Cervical cancer can be noninvasive (cancer in situ) and invasive. One can distinguish between cancer of the vaginal portion of the cervix and cancer of the cervix. Cancer of the vaginal portion usually has exophytic growing in the vaginal cavity, and early ulcerates. Cancer of the cervical canal has endophytic growth. It grows through the cervix, surrounding tissue and grows into the bladder wall and rectum. In ulceration of the tumor vaginal-vesical or vaginal-rectal fistula are formed.

On the histological structure the cervical cancer can be squamous, glandular (adenogenic) and glandular-squamous, and each of them may have a different degree of differentiation. In addition, we distinguish endometrioid adenocarcinoma of the uterine cervix.

Metastases in cancer of the cervix occur early and spread through the lymphatic ducts to the lymph nodes of the pelvis, inguinal and retroperitoneal; later hematogenous metastases occur.

HYPERNEPHROMA

Osintseva A. – the 3rd year student

Scientific leaders - N.V.Menshchikova, E.A.Volosenkova

Renal cancer - a malignant tumor of the kidney, which is most often a carcinoma and develops either of the epithelium of proximal tubules and collecting tubules (renal cell carcinoma, RCC), or from the epithelium of the renal pelvic system (transitional cell carcinoma). In adults, the proportion of renal cell cancer among primary malignant renal tumors is 80-85%. According to other sources, on the renal cell carcinoma makes up for approximately 90% of all malignant renal tumors. There are 4 types of kidney cancer: clear cell (60-85%), chromophilic (papillary, 7-14%), chromophobe (4-10%) and cancer of the collecting ducts (2-5%). The histological types of renal cancer have characteristic genetic features that contribute to the difference of morphological characters, different clinical course and response to systemic therapy. Clear cell (hypernephroma) cancer - a malignant tumor consisting of cells with pale or eosinophilic cytoplasm, located in the small vasculature. Predominantly solitary tumor is located in the cortex of the kidney. Multicentric and / or bilateral lesions in sporadic cancer are less than 5%. Most clear-cell carcinomas have a node form with clear boundaries, forming pseudocapsule, characterized by the presence of cysts, foci of necrosis and hemorrhage, calcifications. The yellow color is caused by a tumor rich in lipids and cholesterol. Stage of disease is the leading prognostic factor for renal cell carcinoma. About 50% of clear cell carcinomas are detected in the 1st and 2nd stages of the disease, and less than 5% - in the 4th stage. Invasion of perirenal tumors or tissue ingrowth into the renal vein occurs in about 45% of cases. Often there is a combination of hematogenous and lymph node metastases. Retrograde metastasis through paravertebral, testicular / ovarian veins is possible. Among the clear cell carcinomas multicystosis (5% of clear cell tumors) is distinguished. It is always I grade carcinoma with a favorable prognosis, case progression, recurrence or metastasis has not been described. Male to female ratio is 3: 1. The average age of patients is '51 (from 20 to 76 years). Usually the tumor is represented by a node with the presence of multiple small and large cysts filled with serous or hemorrhagic content. Node is delimited by a dense fibrous capsule from surrounding tissues. Tumor diameter ranges from 25 to 130 mm. More than 20% of tumors have calcium deposits in intercystic septa, often with ossification.

SURGICAL ABORTION, CURETTAGE OF UTERINE CAVITY

Osintseva A., Lukashova L. – the 3rd year students

Scientific leaders - G.N. Marushchenko, E.A.Volosenkova

The most common and most reliable method. Cervical canal is extended by special tools, then the curette is introduced and abraded. This procedure is performed by a physician, and the result is achieved and evaluated immediately in the hospital. Mechanical treatment of the uterine wall is considered to be qualitative procedure.

On the other hand, the interference has several drawbacks. Probability of infection is high due to the introduction of a foreign metal object through the lower genital tract inhabited by microbes. The probability of the uterus walls injury (perforation) is rare, but life-threatening complications may occur. The positive outcome can sometimes be achieved by removal of the uterus only. The pregnant uterus has more friable and vulnerable walls, especially in the place of attachment of the embryo, scraping the uterus

is considered to be "blind" manipulation that sometimes still leads to the abandonment of parts of the embryo and the need for re-intervention. This disadvantage can be largely prevented by vaginal ultrasound probe to perform immediately before and after the procedure. And you can bring it to nothing, if you do curettage under control of hysteroscopy - inspection of the uterine cavity through a special optical system. There is a risk of cervical injury that leads to its spasm and delay of blood clots; and in the future - to cervical incompetence, that prevents the carrying of pregnancy, and scar deformation, which prevents the normal process of childbirth.

The procedure is performed under general anesthesia, usually intravenous, but sometimes - under epidural (spinal) anesthesia or general endotracheal anesthesia. Each type of anesthesia has its own characteristics. Intravenous anesthesia is momentary epidural-does not turn off consciousness, endotracheal - deep, fraught with complications. The choice of anesthesia method should be determined by a physician on the totality of the circumstances.

For the prevention of infectious complications after abortion itself a course of antibacterial, anti-inflammatory therapy is necessary and it is obligatory from the first day, in the early hours of physiotherapy.

PRIMARY TUBERCULOSIS

Lukashova. L. - the 3rd year student

Scientific leaders - N.V.Menshchikova, E.A.Volosenkova

Primary tuberculosis is a disease, coinciding with the period of primary infection by mycobacteria. Children are mostly ill, but it may occur in adolescents and adults. Morphologic expression of primary tuberculosis is the primary tuberculous complex. It consists of three components: a lesion in an organ- the primary focus or affect, tuberculous inflammation of efferent lymph vessels - lymphangitis and regional tubercular inflammation, of regional lymph nodes - lymphadenitis.

Primary tuberculosis of the lungs. Children with a strong immunity recover: in the primary affect zone petrificate - Ghon's focus is formed. It can serve as the repository of the inactive pathogen. Progressive forms of primary tuberculosis or secondary tuberculosis may develop over time from the Ghon's focus. Tuberculous lymphangitis is presented as lymphostasis and formation of tubercles along the lymph vessels in the perivascular edema tissue

In alimentary infection primary tuberculosis complex develops in the intestine. When the disease develops nodes increase, and their contents can penetrate into the abdominal cavity. As a result free fluid (ascites), accumulates and bloating occurs. In other cases, the nodes are merged, causing coalescence of bowel loops. This can cause pain and bouts of intestinal obstruction. In women the fallopian tubes and ovaries are involved in the tubercular process. As a result of this process infertility may occur.

Similarly, primary tuberculosis complex of skin is evident. After 8-10 days, sometimes a few weeks dense papule of red-brown color is formed, which turns into plaque and then ulcerates. Soon regional lymphadenitis occurs, which tends to ulceration. When healing comes only enlarged regional lymph node indicates primary tuberculosis affect.

There are three types of the course of primary tuberculosis: 1) attenuation of primary tuberculosis and healing centers of the primary complex; 2) the progression of primary TB with generalization of the process; 3) chronic course

MASTOPATHY

Golub' A., Dolgova E. - the 3rd year students

Scientific leaders – N. V. Menshchikova, E.A. Volosenkova

Mastopathy (from Greek.- mastos breast + pathos suffering, disease, synonymous - fibroadenomatosis) is a dishormonal breast hyperplastic process. It occurs at the ages of 30 to 50 years.

Etiology:

- Violations of the regulatory activity of the central nervous system and the hypothalamic-pituitary system, ovaries, thyroid, adrenal glands, liver.
- The consequence of certain intoxications and infections.
- Inflammation of uterine appendages and cystic changes in ovaries.

Macroscopic and microscopic picture:

Nonproliferative form of mastopathy - overgrowth of dense, often hyalinized connective tissue in which atrophic lobules and cystic dilated ducts lined with atrophic or light apocrinized epithelium, sometimes forming small buds are located. Dilated ducts can be lined with pyknotic or vacuolated epithelium with sloughing of the cells and the formation of "colostrum corpuscle"; around the ducts focal lymph plasma and cell infiltration with a picture of mastitis is revealed.

Proliferative form of mastopathy - a combination of different variants of epithelial, myoepithelial and fibroepithelial proliferation. In case of epithelial proliferation adenitis or mazopathy (physiological hyperplasia of lobules with initial pathological changes) occur with sharply increased, well-formed glandular lobules. In the later stages of mastopathy cysts cystodenopapillomas and others are detected. In another variant of the epithelial proliferation duct and lobular epithelium proliferation is marked. Emerging intraduct proliferations have the form of papillae, fibrous growths and solid fields formed by monomorphic, sometimes double-row, cylindrical epithelium with signs of secretion. Intralobular epithelial proliferation leads to the formation of a multilayered epithelial lining. Intraduct and lobular proliferative forms can lead to malignancy and are considered by most authors as pre-cancerous changes.

Prognosis is favorable, with the exception of some cases, when against the background of some forms of proliferative mastitis as a result of malignancy breast cancer develops.

CONSERVATIVE MYOMECTIONY

Golub' A., Dolgova E. - the 3rd year students

Scientific leaders – G. N. Marushchenko, E.A. Volosenkova

Conservative myomectomy is an organ conserving surgery carried out for women of childbearing age.

1. Clipping and husking myoma node

In case of subserous uterine myoma node is fixed by rigid clamp, the leg of a tumor is cut off after its pre-coagulation.

Figure 1. Myomectomy: 1 - subserous myoma node; 2 – gripping the node with serrated clamp and cutting it off with hook of Redick; 3 - coagulation of bed of the node with spherical electrode; 4 - removal of the preparation.

In case of subserous-interstitial localization of myoma node a circular incision is performed. Fig.2

Husking subserous-interstitial myoma node.

For fixing a serrated clamp or a corkscrew are used. In case of interstitial myoma nodes incision on the uterus is performed on the highest place of the deformation of the uterine wall with underlying node. In case of intraligamentous location of myoma node the incision of serous uterine cover is carried out at the point of its greatest protrusion.

2. Restoration of the myometrium defects

If there is myometrium defect more than 0,5 cm in depth after myomectomy then it must be restored using endoscopic sutures.

Figure 3

3. Extraction of macropreparation from the abdominal cavity.

a. Extraction through the anterior abdominal wall. Under visual control Museo forceps or Kocher clamp are introduced into the abdominal cavity, myoma node is captured and taken out. Anterior abdominal wall is restored in layers under the control of the laparoscope to prevent hernia or eventration.

b. Extraction through the anterior abdominal wall using morcellator. In recent years, for the evacuation of myoma nodes from the abdomen mechanical and electromechanical morcellators («Wolf», «Karl Storz», «Wisap» et al.), are used allowing them to remove macropreparations dividing them into small parts.

at. Extraction through an incision of posterior vaginal fornix. Rear colpotomy can be performed using special vaginal extractors. The ball of vaginal extractor is placed in the posterior vaginal fornix, sticking it in the abdomen.

Across incision of the posterior fornix is performed between sacral and uterine ligaments bay Laparoscopic approach using monopolar electrode. Then 10 mm notched clamp is introduced into the abdominal cavity through trocar, myoma node is grasped and removed from the abdominal cavity.

4. Hemostasis and sanitation of the abdominal cavity

At the end of the operation all blood clots are removed and a thorough hemostasis of bleeding sites is performed. Adequate hemostasis and sanitation of the abdominal cavity are prevention of adhesions in the future.

KAPOSI'S SARCOMA

Dylykova S. – the 5-th year student

Scientific leaders - O. S. Yutkina, E.A. Volosenkova

Kaposi's sarcoma (multiple idiopathic hemorrhagic sarcoma Kaposi, angiosarcoma Kaposi, angioedema of skin) are multiple malignant lesions of the dermis, developing from endothelium of lymph and blood vessels held in it. Often the disease is accompanied by damage of oral mucosa and lymph nodes. Kaposi's sarcoma often manifests as, multiple bluish-reddish spots on the skin, transforming into tumor nodules up to 5 cm in diameter. Diagnosis of Kaposi's sarcoma includes histology of biopsy sample from the lesion, the study of immunity and the HIV blood test. The treatment is administered by systemic and local application of chemotherapy and interferons, radiation effects on tumor nodules, cryotherapy.

CONGENITAL HEART DEFECTS IN CHILDREN IN THE AMUR REGION

Cherenkova M., Safarian V., Davudov T. – the 4th year students

Scientific leaders - Assoc. Prof., Doc. Med. Sc., O. A. Tanchenko, E.A. Volosenkova

Congenital heart disease (CHD) is one of the most common congenital anomalies in children (30% of all congenital malformations).

Inherited abnormality infections, especially viral diseases, are of great importance in the development of defects. Identification of risk factors for having a child with CHD is important not only from a theoretical but also practical point of view in order to predict the risk developing and planning adequate preventive measures to reduce them.

CHD relate to multifactorial diseases because in their etiology in addition to genetic factors a certain role is assigned to the presence in the child's parents bad habits, keeping unhealthy lifestyle, mother's age, toxicosis, the environment. The aim of our study was the investigating the development of congenital heart defects in children of the Amur region.

In conclusion, it should be noted that the risk of CHD in many cases is due to a combination of genetic predisposition with multilateral pathological influence of internal and external environmental factors, the simultaneity of their effects, as well as term of exposure of the damaging factor, the number of damaging factors and the simultaneity of their impacts.

LIVER AND ITS ROLE IN METABOLIC PROCESSES IN HEALTH AND DISEASE

Povysheva S. – the 2-nd year student

Scientific leaders - Prof. N.P.Krasavina, E.A.Volosenkova

Liver is a vital internal organ.

Structurally functional unit of a liver is the hepatic lobe. A stroma consists of the external connective tissue capsule, interlobular layers of RVST in which there are blood vessels, the nervous apparatus. The liver is connected with two large blood vessels: the hepatic artery and the portal vein.

The liver is the central organ of a chemical homeostasis of an organism.

Synthesis of proteins in a liver is carried out from free amino acids. The liver is the only place of synthesis of albumins, a fibrinogen, prothrombin, proconvertin, proaccelerin. In chronic diseases of a liver the level of proteins in a blood can fall to very low values that is the reason of emergence of generalized edemas and an ascites.

All metabolic processes in a liver are carried out thanks to the corresponding enzymes which are contained in hepatocytes. In laboratory diagnostics in various diseases of a liver biochemical indicators of a blood, such as ALT, AST, alkaline phosphatase, GGTP have one of significances. For example, in case of alkaline phosphatase raising a characteristic sign is an occlusion of a cholic duct. ALT may increase in viral, toxic hepatitis, liver cancer, myocardial infarction. AST shows the maximum values at lesions of cardiovascular system, toxic and chronic hepatitis.

Participation of liver in maintenance of concentration of a glucose in a blood is defined by the fact that in it processes of glycogenesis, glycogenolysis, glycolysis and gluconeogenesis proceed. For example, the increase of content of Sodium lactatum and pyruvate in a blood can be observed also at liver parenchyma lesions (late stages of hepatitis, cirrhosis, etc.)

Detoxication belongs to a series of the homeostatic functions of a liver. Bacteria and other pathogenic organisms are removed from a blood of sinusoids by Kupffer's cells, and toxins are decontaminated as a result of the biochemical reactions occurring in hepatocytes.

Thus, the liver is the organ taking the major part in processes of metabolism, circulation, digestion.

MORTALITY IN THE AMUR REGION IN 2014

Alieva A., Saaya L. – the 5th year students

Scientific leaders – Can.Med.Sc. E.A.Sundukova., E.A. Volosenkova

Mortality- process of generation extinction, is one of the two major sub- processes of population reproduction. It depends on a large number of biological and social factors (climatic, genetic, economic, political, cultural, and others).

Total mortality of the population in the Amur region in 2014 was 13.9 per 1,000 population, in the Russian Federation – 13.1 per 1,000 population. In the structure of mortality in the first place there are diseases of the circulatory system – (600 per 100 thousand people). In the II place – neoplasms – (182.7 per 100 thousand population), including malignant (181.6), in the III place – cerebrovascular diseases – (138 per 100 thousand population), in the IV place – digestive diseases – (88.6 per 100 thousand population) in the V place – respiratory diseases – (63.5 per 100 thousand population). (Fig.1)

Infant mortality is one of the main indicators of population health. In the Amur region in 2014, infant mortality was 9.1 per 1000 alive births. The main causes of infant mortality are individual states of perinatal period – 56.4%, congenital anomalies – 12.9%, and sudden death syndrome – 5%. (Fig.2)

Conclusion: Thus, the analysis of mortality of the population showed that in 2014 the highest adult mortality was from diseases of the circulatory system, and the infant mortality was caused by the individual states of perinatal period.

TUBERCULOSIS AND RESPIRATORY COPD

Balatsereva E., Babijchuk E. – the 6th year students

Scientific leaders - L.P. Zagnii, E.A. Volosenkova

The frequency of COPD in patients with pulmonary tuberculosis is from 12-15 to 90% with a tendency to increase in frequency during the destructive and chronic forms. With age, the number of patients with pulmonary tuberculosis in combination with COPD is increasing.

Tuberculosis often joins COPD - paratuberculosis process, the two diseases can occur in one patient at the same time - metatuberculosis process. COPD sometimes develop as a result of tuberculosis on the background of residual changes - post-tuberculosis process.

The occurrence of non-specific inflammation in the lung tissue and bronchi in patients with tuberculosis is associated with fibrous deformation and disorder of the drainage function of bronchi. The non-specific inflammation is constant morphological and clinical component of disseminated and especially fibro-cavernous and cirrhotic pulmonary tuberculosis. The course of tuberculosis in patients with COPD is less favorable.

Chronic obstructive pulmonary disease (COPD) is a disease characterized by persistent airflow limitation that is usually progressive and associated with an increased chronic inflammatory response of the lungs to the action of pathogenic particles or gases.

In patients with active tuberculosis joining nonspecific inflammation may manifest as increased cough, shortness of breath, the appearance of cyanosis. The amount of sputum increases, a variety of pathogenic microflora is revealed.

It is necessary to examine the sputum for the presence of nontuberculous flora and its antibiotic resistance, to determine the function of external respiration with the assessment of the reversibility of bronchial obstruction. Tobacco smoke affects mycobacteria, increasing the cases of mutations to produce antibiotic-resistant forms and activating their metabolism and the tendency to breed.

Specific chemotherapy should be strengthened. In the appointment of broad-spectrum antibiotics the peculiarities of their combination with the anti-TB drugs should be taken into account.

THE IMPACT OF HUMAN PAPILLOMAVIRUS ON A WOMAN'S REPRODUCTIVE FUNCTION

Velchenko E., Bugreeva T., Zeynalov O. - the 5th year students

Scientific leaders - Can.Med.Sc. D.S. Lysyak, E.A. Volosenkova

Human papillomavirus (HPV) is one of the most common, sexually transmitted diseases. According to the Center for Disease Control and Prevention, currently 10 million people are infected with the virus in our country, which exceeds the prevalence of other sexually transmitted infections. Every year there are 5 million new cases of HPV infection. HPV is a virus having a DNA double helix. There are over 100 different types of HPV, only 30 of which are sexually transmitted. In many women HPV infection is asymptomatic. Symptoms of the disease: papillomas are found on genital organs abnormalities in the Pap smears, precancerous and cancerous formations of uterus neck, vagina, external genitals and rectum. There are types of HPV with high and low risk of tumor development. Either type can cause the formation of visible warts on the external genitals, but most- 6 and 11 types. Papilloma are usually asymptomatic, but can be painful, itchy and reach a size that prevents intercourse. To determine the high-risk of HPV types a detailed test with nucleic acid of Pap smears is used. However, papillomas are found on the external genitals not in all of patients. High-risk HPV types (16, 18,31,33 and 35) are associated with the development of tumors in the first place - the cervix. Definition of high-risk HPV types is an indication for further investigation using a colposcopy and, if indicated, uterus neck biopsy. Treatment of localized precancerous and neoplastic growths using cryotherapy, electrosurgical excision sometimes leaves scarring that affects the mucus formations in the cervix and can prevent fertilization. Invasive tumor of the cervix can become a cause of loss of reproductive function. The treatment does not eliminate the virus dramatically, so in relation to HPV infection prevention is particularly important. Recent studies have shown that 3-fold vaccination against HPV-16 infection prevents the development of persistent HPV type 16 and associated cervical cancer in women college-aged for 17 months after vaccination. This discovery will undoubtedly lead to further development of a vaccine against all major types of high-risk HPV.

CONSEQUENCES OF EMERGENCY SITUATIONS AT TORNADOES IN RUSSIA AND THE AMUR REGION FOR 2016

Podgorbunskaya E. – the 2nd year student

Scientific leaders - Can.Biol.Sc. , Assoc.Prof. L.A.Guba, E.A.Volosenkova

Tornado is the atmospheric whirlwind arising in a cumulus and rain (storm) cloud with a diameter of tens and several hundreds meters.

In Russia they most often happen in the central regions, the Volga region, in the Urals, in Siberia, on the coast and in water areas of the Black, Azov, Caspian and Baltic seas.

In 2016 tornadoes were registered on May 15 in Volgodonsk, on July 13 in the Mozhaik and Ruza districts, on August 24 in Syktyvkar and on October 8 and 13 in Sevastopol. As a result the set of settlements was damaged, more than 500 houses remained without electricity, more than 200 buildings were damaged and several structures were demolished.

Owing to the tornadoes registered in the territory of the Amur region on July 16 in Blagoveshchensk and on August 12, 13 in the Bureya and Arkharinsky districts several people suffered, tens of trees and pylons of the power line were demolished and more than 150 houses were damaged.

This summer in Russia a periodic emergence of "inexplicable" tornadoes was registered in different corners of the country. Ecologists claim that a problem of global warming and jump of climate on Earth, shifts of natural zones on the planet should be discussed urgently at the international level, because it becomes more difficult to predict the phenomena, and to protect people from anger of the nature is harder and harder.

SUPERVISION OF PATIENTS WITH BRONCHIAL ASTHMA AND CHRONIC NICOTINE INTOXICATION DURING PREGNANCY

Salomatova E., Apyrshkina E. - the 5th year students

Scientific leaders - Doc. Med. Sc. O.B.Prikhodko, Assoc.Prof. E.I. Smorodina, E.A. Volosenkova.

The aim was to study the clinical features of bronchial asthma (BA) in pregnant women with chronic nicotine intoxication. The dynamics of asthma in the course of pregnancy: was determined in 13 (50%) - worsening with the lack of control during gestation, in 8 (30.7%) - without essential dynamics, in 5 (19.3%) - a lighter duration. The worsening of symptoms during pregnancy were noted in patients with non-allergic and mixed forms of moderate and severe asthma, especially who continued to smoke during gestation. In 38.4% of pregnant women there were repeated exacerbations of asthma during the gestational period. In the structure of the identified diseases of newborns: cerebral ischemia, intrauterine infection, impaired adaptation period, respiratory distress syndrome, intrauterine growth retardation prevailed.

Influence of active and passive smoking on the course of asthma has been studied in numerous works, while at the same time, taking into account the increase in the prevalence of smoking among pregnant women, observed in recent years, the study the clinical and functional characteristics of asthma in the gestation period in patients with chronic nicotine intoxication, with the definition of its impact on the level of asthma control, the development of gestational complications in fetus and newborn are of great interest. The aim is to study the clinical features of asthma in pregnant women with chronic nicotine intoxication.

COMPLICATIONS OF DIABETES

Kirillov I. – the 2nd year student

Scientific leaders – N.A. Feoktistova, E.A. Volosenkova

Diabetes mellitus – an endocrine disease is characterized by a chronic increase of sugar level in blood due to absolute or relative insulin deficiency - pancreatic hormone.

The disease leads to disruption of all types of metabolism, vascular, nervous system and other organs and systems damages.

Retinopathy, the most serious complication of diabetes and the most common cause of blindness, occurs in 60-80% of patients with diabetes mellitus. In the early stages basal retinopathy develops, which manifests as hemorrhages in the retina, retinal vascular expansion, edema, if the changes do not affect the macular, vision loss usually does not happen. In the future proliferative retinopathy may develop, which manifests as a neoplasm of blood vessels of the retina and vitreous. Fragility and high permeability of newly formed blood vessels lead to frequent bleeding in the retina or vitreous. At the site of blood clots fibrosis develops, leading to retinal detachment and blindness.

Nephropathy develops in about one third of patients with diabetes mellitus. Electron microscopic changes of the basic membrane in the glomeruli can be found already in the first year after making diagnosis. However in most patients clinical signs of diabetic nephropathy appear after 10-15 years of diabetes. A sign of the early stages of nephropathy is microalbuminuria (in the range of 30-300 mg / day), which later develops into a classic nephrotic syndrome characterized by high proteinuria, hypoalbuminemia and edema.

Diabetic angiopathy is primarily caused by the damage of the basal vascular membrane. At high concentrations of glucose in plasma proteoglycans, collagens, glycoproteins are glycosylated, metabolism is disturbed and as well as correlation between the components of the basal membranes, their structural organization is disrupted too.

Diabetic foot syndrome - a complex of anatomic and functional changes, developing on the background of diabetic neuropathy, micro- and macroangiopathy, osteoarthropathy, contributes to trauma and infection of the soft tissues of the foot, the development of purulent necrotic process and in severe cases leads to amputation.

SPHINGOLIPIDOSES

Alekseenko A. - the 2nd year student

Scientific leaders - N.A.Feoktistova, E.A. Volosenkova

Sphingolipids - is a class of lipids related to derivatives of aliphatic amine alcohol. They play an important role in cell signaling and cell recognition. Nervous tissue is especially rich in sphingolipids. According to the structure phospholipids and sphingolipids are similar, but a hydrophilic backbone is not represented by glycerol but serine. The basis of the sphingolipid is sphingosine.

There are 3 main types of sphingolipids:

1. Ceramides - are the simplest sphingolipids. They only contain sphingosine, connected with the fatty acid acyl residue.
2. Sphingomyelins contain charged polar group such as phosphocholine or phosphoethanolamine.
3. Glycosphingolipids contain ceramide etherificated on 1-hydroxy-group with the sugar residue. Depending on the sugar glycosphingolipids are subdivided into cerebrosides and gangliosides.

1. Cerebrosides contain sugar residues as glucose or galactose.
2. Gangliosides contain trisaccharide, one of them is always sialic acid.

Types of diseases associated with sphingolipids:

Sphingolipidoses - are lysosomal diseases, in which degradation of sphingomyelins is disturbed. The accumulation of lipids in tissues leads to the development of diseases.

Gaucher's disease. Among the lysosomal storage diseases the most common is Gaucher's disease that is inherited in an autosomal recessive type. The cause of the disease is deficiency of the enzyme of p-glucocerebrosidase. It leads to excessive accumulation of glucocerebroside in the brain, liver, bone marrow, spleen. In Gaucher's disease of type I (without lesions of the nervous system) enzyme replacement therapy is conducted, patients receive recombinant p-glucocerebrosidase. There is increase in the spleen and liver

Fabry's disease is a rare X-linked lysosomal disease in which there is a lack of A-galactocerebrosidase. It leads to the accumulation in the body globosides ceramidtrihexoside (globotriazilceramide). It affects the kidneys and the cardiovascular system, increases the risk of stroke. Since 2002, for the treatment of Fabry's disease enzyme replacement therapy using recombinant galactocerebrosidase is available. The symptoms are angiokeratoma, anhidrosis, the clouding of corneas and so on.

REGENERATION OF PANCREATIC B-CELLS

Gracheva E., Shevtcova Al. - the 2nd year students

Scientific leaders - Prof. Sayapina I.Y. Volosenkova E.A.

Physiological islet cell regeneration takes place mainly by updating intracellular organelles. The mitotic activity of the cells due to the high specialization is low. During the whole period of life, as in any tissue, growth and constant renewal of B-cells, take place and also their programmed death, besides the secretion of insulin can be reduced due to voltage and depletion of B-cells. When removing 80-90% of pancreas insulin secreting ability of the remaining cells retains in norm, for 4-5 weeks B-cells regenerate, although hyperglycemia persists. The ability of islets to regenerate was demonstrated in several experimental studies. G.C. Weir (1998) found B cells generated after 10 days after 90% pancreatectomy. In patients with obesity and without diabetes the greatest mass of B-cells is detected. In the pathology the progressive reduction in the number of B cells and the gradual extinction of their functions by 50% occur. In connection with the islet cells ability to regenerate the researchers of the University of Massachusetts have opened a way to run the regeneration of pancreatic beta cells which produce insulin. However, until now scientists did not understand how beta cells "feel" the increased need for insulin. Dr. Laura Alonso, found that cell proliferation is related to the stress effect on endoplasmic reticulum (ER). Thanks to it beta cells begin to proliferate actively and try to provide the body with the necessary insulin. We need only certain conditions. "As a result, of stress ER sends cell nucleus a chemical signal as ATF6 protein. Only mature insulin-producing beta-cells are able to "feel" the stress and to use this mechanism to regulate insulin production ", - says Alonso. In the light of recent discoveries it is necessary to consider not only the stress on the beta cells, but also research of scientists to create artificial pancreas.

ALKALOIDS. WHAT IS THE MATTER?

Dudko S. - the 2nd year student

Scientific leaders - N.A. Feoktistova, E.A. Volosenkova

Alkaloids - organic substances containing nitrogen in its composition (crystalline powder, odorless, bitter taste)

The first alkaloid discovered by scientists, was morphine. It was named in honor of the god of sleep Morpheus. Morphine was used at first as a sedative. And in the 19th

century xanthine, strychnine, atropine, caffeine, Konin, nicotine, cocaine were discovered. Alkaloid was first isolated in vitro in Germany.

Alkaloids are divided into large groups:

- 1 - True alkaloids (atropine, nicotine, morphine)
2. Protoalkaloids. (Mescaline, adrenaline and ephedrine)
3. Polyamine alkaloids (derivatives of putrescine, spermidine and spermine).
4. Peptide alkaloids
5. Purine alkaloids (caffeine, theobromine and theophylline)

Alkaloids of aliphatic structure are contained in the southern plants. Burning pepper contains capsaicin. It activates the blood circulation, is used in diseases of the joints. The famous ephedrine is obtained from a plant called Ephedra. It is used for the treatment of allergic diseases, as an activator of the brain in cases of poisoning by certain substances. The tea contains caffeine. Caffeine stimulates the processes of excitation in the cerebral cortex, helps to fight sleepiness, fatigue it invigorates, improves physical and mental activity. There are also alkaloids, normalizing body temperature, inhibiting vomiting, pain, affecting the condition of blood vessels, muscles.

There are alkaloids that are dangerous drugs and poisons.

MALFORMATIONS OF THE RECTUM AND ANUS

Mazaeva T. - the 1-st year student

Scientific leaders - A.E.Pavlova, E.A.Volosenkova

Malformations of the rectum and anus are relatively rare, in about 5-10 thousand infants, and in girls they are less common than in boys. Usually these defects are detected very early.

Anomalies of structure of the rectum and anus are quite diverse. We will describe only some of the main forms.

Complete atresia. The anal atresia is the most common. It is the absence of the anus with the normal development of the rectum. Usually there is a small depression covered with skin, or skin fold, which directly adjoins the gut, at the site of the anus.

Complete atresia of the anus with complete atresia of the rectum are rare. The latter due to the underdevelopment ends blindly at a greater or lesser distance from the anus, which also remains closed. The rectum may be completely absent, in extremely rare cases.

The anal atresia with a vaginal fistula is less common, when fistulous hole is located immediately behind the hymen or in the depth of the vagina. This form of atresia is much more severe because often the fistulous hole is not sufficiently wide for freely passing of hard stools. Extremely rare congenital fistula are combined with normal permeability of intestine and anus.

Recognition of atresia with fistula is not difficult. In case of an internal fistula, it is possible to specify the location, determine the size of the holes and the level at which the blind end of the intestine is located by vaginoscopy or probing.

RADIOLOGIC DIAGNOSTICS OF BREAST DISEASES

Eroputko S. – the 4th year student

Scientific leaders – Can.Med.Sc. O.A. Mazharova, E.A. Volosenkova

Currently, radiological examination plays a leading role in diagnosis of various pathological breast processes, in the detection of preclinical forms of diseases. The main methods of radiologic diagnosis are X-ray and ultrasound. CT, MRI, thermography, radionuclide method are used for special indications for solving particular problems. Mammography is a native plain radiography. It is necessary to make pictures of both breasts in direct and oblique projections. Additional radiographic techniques: X-ray sighting (direct image magnification to 1.5-2 times) axillography (radiography of soft tissue of axilla), ductography (X-ray study with the introduction of 0.5-2 ml of a water-soluble iodinated contrast agent) into the milk ducts through the nipple, pneumocystography (puncture cyst, liquid is removed from it, the air is introduced, and then the mammograms in direct and lateral projections are performed). Ultrasonic method has several advantages: safety, easiness, relative simplicity and quickness of research, the possibility of multiple repetitions. The accuracy of breast ultrasound is increased by using Doppler ultrasound. Thermography – a remote registration from the human body surface by means of thermal infrared radiation, reflecting the degree of bioenergetic processes in different parts of an organ. CT is used to identify separate metastases of breast cancer and to assess the prevalence of the local spread of the malignant process of breast. MRI is informative with contrast enhancement of image by intravenous introduction of paramagnetic agents. Radial methods of investigation should be carried out in the I phase of the menstrual cycle from the 5-6 day to the 12-14 day from the beginning of the menses. Ultrasound is performed for girls, young women, young men and men because this method allows to differentiate glandular tissue. This method is not ionizing and allows to differentiate clearly cystic masses. X-ray mammography is performed for women over 40-45 years and in case when fat component is expressed in the mammary gland. Doppler ultrasound is performed to clarify the blood flow in the formations and in breast tissue.

FEATURES OF PNEUMOCONIOSIS

Mirgyan M., Pchyolina K., Shpidonova R. - 4 th year students

Scientific leaders - Cand. Med. Sc. Kostrova I.V., Cand. Med. Sc. Goryacheva S.A., Volosenkova E.A.

A characteristic feature of the first stage of pneumoconiosis is a "mesh" in the lung and a small formation of nodular shadows. This is somewhat reduced lung capacity. In the second step symmetrically tissue damage, the number of nodules increases. On the radiograph they occupy almost all the space except the tops of the lungs. Symptomatic increases respiratory failure, there are signs of right heart dilatation.

At the third stage, the big blackout on the X-rays form a shaped "butterfly". Lymph nodes are enlarged, increasing the risk of developing pulmonary heart attack and death.

VEGETARIANISM AS A LIFESTYLE

Zvereva S., Gayna L. –the 2nd year students

Scientific leaders - Doc. Med. Sc. Prof. E.A. Borodin, E.A. Volosenkova

Today, vegetarianism is the way of life of many people. There are different reasons why people choose vegetarianism. It is a conscious choice, a way to change themselves and their lives. Some people believe that it will help them to be in a good form, someone keeps to the commandment "Do not kill!", while others stick to the moral and spiritual principles and others blindly follow fashion.

What is vegetarianism? Vegetarianism is a way of life, characterized, first of all, by meals, excluding the use of any animal flesh (i.e. meat, poultry, fish).

Nowadays, there are many disputes about the benefits and dangers of vegetarianism. Some believe that the complete rejection of meat leads to a deficiency of essential amino acids, while others argue that the power plant products completely fill the body's needs.

Animal and vegetable proteins are composed of the same chemical elements and compounds, but the meat diet contains more fat and polysaturated purine compounds which are difficult assimilated. It is believed that an excess of these substances in the internal environment of the organism leads to acidification of the blood and is the main cause of the accumulation of slag on the cellular level. Besides meat food involves a significant consumption of salt, also damages the chemical balance in the body. As for the plant food, it is, on the contrary, alkalizes blood and, along with the delivery of a number of plant proteins introduces natural vitamins and biologically active substances into the body.

If one completely eliminates from the diet all animal products (meat, milk, eggs), as vegans do, no vegetable protein will replace the animal one for the amino acid composition, or by assimilation. Of course, you can try to combine two or three vegetable products with different types of incomplete proteins to eventually get a complete one. But imagine how much "grass" you should eat!

According to doctors, a person can give up meat, but dairy products and eggs should be present in his diet. On the one hand, a person is not suffering from a lack of nutrients, on the other hand he is gradually getting rid of some diseases.

PHOTOAGING OF THE SKIN AND THE FORMATION OF MELANOMAS

Gayna L. – The 2nd year student

Scientific leaders - Doc. Med. Sc. Prof. N.P.Krasavina, E.A.Volosenkova

The skin consists of three layers: the epidermis, dermis and hypodermis. In the basal layer of the epidermis contains melanocyte that synthesize melanin, are contained.

Skin photoaging is the most common type of damage of the skin by sunlight. The process of photoaging of the skin has a special nature and is characterized by several clinical, histological and biochemical changes.

Modern fashionable women in the pursuit of attractiveness and beauty tend to cover their skin with the hot sun, for a long time being in the sunlight or in the solarium so they expose their skin to photoaging. The market of cosmetic products is quite saturated with special substances to protect the skin from the harmful effects of UV radiation and photoaging. However, despite the overall increase in life expectancy, the choice of a healthy lifestyle and active leisure does not reduce the tendency of increase in cases of photoaging of the skin, and this trend, according to experts, is becoming more apparent.

Melanoma of the skin is a malignant tumor, growing from the pigmented cells of moles. Most often this type of skin cancer is characterized by aggressiveness and poor prognosis. As a rule, malignant growths develops on intact skin. On the moles that exist for a long time, melanoma of the skin is found much less frequently.

The main risk factors for developing melanoma are: nevi, presence of dysplastic nevi, fair skin, freckles, family history, excessive exposure to ultraviolet radiation and suntan. Ultraviolet radiation can damage DNA. Most melanomas have abnormalities in chromosome damage makes the DNA less able to control the growth and division of cells.

The most important way to reduce the risk of melanoma is to reduce the time of presence under intense sunlight.

In the whole country over the last ten years (2002-2011) incidence of malignant skin tumors had a tendency to increase (from 98.4 to 99.0 per 100 000 population). Over the last ten years, the incidence among the female population exceeded that rate among the male population, and average indices for the country as a whole.

Melanoma has become the most frequent malignant neoplasm of the skin.

MODERN APPROACHES TO THE TREATMENT OF MYOCARDIAL INFARCTION

Razuvaeva E. - the 2nd year student

Scientific leaders - Doc. Med. Sc., Prof. N.P. Krasavina, E.A. Volosenkova

Myocardium - is the main part of the wall of the heart, namely the tunica presented by striated cardiomyocytes. The myocardium provides the rhythmic contractions of the heart, alternating with relaxation. An obstruction to the regeneration of the myocardium is the inability of the heart muscle cells to divide. Infarction is a pathology that requires regeneration of the myocardium. Myocardial infarction is a heart muscle necrosis due, to absolute or relative deficiency of its blood supply. The main cause of myocardial infarction are atherosclerotic plaques in blood vessels of the heart. There are four stages of myocardial infarction - ischemia, necrobiosis (damage), necrosis and scarring stage. Coronary artery bypass surgery is quite a serious operation. It is performed under general anesthesia using a machine for artificial circulation. Person's veins or arteries are sewn with one end to the aorta and the other to the coronary vessels supplying the heart. The term "stent" refers to an operation that means to install the stent inside the artery, resulting in the mechanical expansion of constricted portion and restoration of normal blood flow to the organ. Treatment of myocardial infarction with human stem cells, fully renews the heart muscle and coronary vessels, at the cellular level.

NOBEL PRIZE IN CHEMISTRY FOR 2016

Dashkova A., Razuvaeva L., Ryzij N. - the 2nd year students

Scientific leaders - Prof. E.A. Borodin, E.A. Volosenkova

The Royal Swedish Academy of Sciences has decided to award the Jean Pierre Sauvage, Jamie Fraser Stoddart and Bernard Feringa Nobel Prize in Chemistry for 2016. Nano car - molecular machine, designed by Bernard Feringa. Its characteristic features are a ring and pin which are not connected by covalent bonds, and are held either by weak intermolecular bonds or to the ends of the rod enormous molecules – stoppers are attached which do not mechanically produce slip of the ring. These cycles move the chain at the moment when an IAD occurs. The first steps towards the creation of molecular machines were made by Jean Pierre Sauvage in 1983. He was able to connect the two ring-shaped molecules in the chain - a compound called catenane. All molecules in catenanes are linked with light mechanical linkage. This allows the molecules to move freely relative to each other, which is a key moment for the proper work of molecular machines. In 1991, James Fraser Stoddart succeeded in synthesizing rotaxanet a compound consisting of a molecule of a dumbbell shape and a cyclic molecule, "worn" on it. He turned molecular ring down a thin molecular axis and showed that the ring is able to move along the axis. Then Stoddart managed to create a molecular model of the elevator, again on the basis of the rotaxane. It

allows you to control the movement of the matrix between the original "floors" located at a distance of 0,7nm apart. In 1999 Bernarzh Ferring developed molecular rotor blades, which rotate continuously in the same direction, namely on the basis of its nano car was obtained. Nano car consists of four motor components, which operate in pairs rotating in opposite directions, thereby providing motion of a machine along metal surface.

STEM CELLS - THE FUTURE OF MEDICINE

Dashkova A. - the 2nd year student

Scientific leaders - Doc. Med. Sc., Prof. N.P.Krasavina, E.A. Volosenkova

The discovery of stem cells (SC) is considered one of the greatest achievements of mankind. The term "stem cell" defines an individual cell or group of precursor cells having the ability to self-renewal and differentiation into specialized tissues. For the first time the term "stem cell" was coined in 1908 by Russian hematologist A. Maximov at the Congress of Hematology Society in Berlin. At present, interest significantly increased to cord blood as an alternative source of repopulating hematopoietic stem cells suitable for transplantation. The use of cord blood for transplantation has several advantages compared with other sources of hematopoietic stem cells: Collection of cord blood is a safe, easily performed technical procedure, without threat to mother and newborn health, and it does not require general anesthesia during the collection. Samples of cord blood, are on long-term storage in cryobanks, typed and can be directly used for transplantation. Frequency of development and severity of "graft reaction against a host" in transplantation of hematopoietic stem cells of cord blood is lower than in bone marrow transplantation. The principal disadvantage of umbilical cord blood is a small amount of hematopoietic stem cells, obtained by the collection and the impossibility of recollection. One of the first areas of clinical application of stem cells hematology became, namely hematological malignancies: acute leukemia, chronic myelogenous leukemia, multiple myeloma and several others. Discoveries have been made in cardiology: D.Ortik and his team caused damage of cardiomyocytes in mice by ligation of the left main coronary artery. The animals were then injected bone marrow stem cells into the affected wall of the left ventricle, which caused formation of cardiomyocytes, of endothelium and vascular smooth muscle cells. The use of stem cells in neurology and neurosurgery. G.Streinberg from Neurosurgery Department of the University of Stanford studied survival, migration, differentiation and functional properties of human embryonic neural SC administered to the rats with stroke model in three different areas of the body that differed in distance from the affected area of the cerebral cortex. In 5 weeks after the SC introduction cell migration was observed in the region of damage and their differentiation into neurons. The use of stem cells in endocrinology. Spanish researchers with genetic engineering received insulin-producing cells that were transplanted into diabetic mice. After 24 hours, the glucose content decreased in mice to normal.

MILITARY SURGERY. THE ORGANIZATION OF SURGICAL ACTIVITIES IN THE COMBAT

Startseva A., Aganina A. - the 2nd year students

Scientific leaders - Doc.Med.Sc., Assoc.Prof. I. V. Borozda, Doc.Med.Sc., Prof. E.A. Vanina., E.A.Volosenkova

Military surgery is a surgery section, which includes organization of surgical care and treatment of wounded and sick in war. Military surgery differs from surgery for a peaceful time by many aspects. In a mass surgical work in the war a certain amount of assistance is used. In military surgery all is regulated. Famous Moscow Professor Yudin said that surgery was born and gradually became isolated from the military surgery, not Vice versa. War has always been the driving force of progress in terms of development of warfare and in terms of the development of surgery: every war has given impetus to surgery. The same military surgery has features that distinguish it from peace surgery. The treatment should be carried out, including its features, it is a kind of "priority" in providing assistance.

Stage of medical evacuation are the forces and means of medical service, located in the path of the wounded from the battlefield to the rear for assistance.

On the battlefield, the nurse and medical orderly assist. They have in equipping a bag with individual dressing packs, sterile bandages for abdomen, chest; burns dressings (contour), vials of antidotes, drugs, hemostatic tourniquets.

In the BCH a paramedic works, he is also helping with the move: dresses a transport splint or completes immobilization with the help of improvised means, autoimmobilization.

From three battalions the wounded are evacuated to medical aid stations of the regiment: this tripling in the number of injured is called the flow of the wounded. MRS also has a doctor who can perform surgical procedures.

Catastrophe Medicine is founded on the principles of military surgery. Emergency medicine is the branch of medicine involving the development of strategy and tactics to provide immediate assistance to a large number of victims in extreme conditions with the acute shortage of forces and means of medical service.

It may happen in earthquakes, floods, explosions, collapses of transport.

MORPHOLOGICAL AND FUNCTIONAL CHARACTERISTICS OF B-CELLS OF PANCREATIC ISLETS IN HEALTH AND DIABETES MELLITUS OF TYPE I

Startseva A. - the 2nd year student

Scientific leaders - Prof. N. P. Krasavina, E.A. Volosenkova

The islets of Langerhans of the pancreas are clusters of endocrine cells that produce hormones.

B-cells are islets anatomically and functionally separated from pancreatic exocrine tissue.

B-cells constituting 60-80% of the pool of islet cells-secrete insulin (with the help of proteins-receptors) bring glucose inside the body cells and stimulate the synthesis of glycogen in liver and muscles ,inhibit gluconeogenesis.

After reducing the number of these cells in the organism there is a deficiency of insulin production, which leads to insulin-dependent diabetes.

The main cause of insulin-dependent diabetes of type 1 diabetes is the appearance of antibodies to the own tissues of the pancreas. Immune system meant to protect against external infectious threats begins to systematically kill the cells of this organ. For the development of this type of disease the presence of a genetic predisposition, is typical and often people begin to suffer from it at a young age, and even in childhood.

Lipid synthesis is insulin-dependent, and in insulin production disorder the absorption of end products of synthesis, and intermediates is disrupted. Thus, the

appearance of elevated amounts of ketone bodies in the urine, shows derangement of carbohydrate and fat metabolism. This is the most important diagnostic feature in diabetes.

The proliferative activity of cells of the pancreas is extremely low, therefore under physiological conditions renewal of the cells by intracellular regeneration occurs. Insulin therapy fails to achieve the degree of accuracy of regulation of glycemia, which is provided by normal islets of Langerhans. Too frequent episodes of hyperglycemia and hence protein glycation and late complications of diabetes happen. Initial changes may be reversible, but recurrent episodes of hyperglycemia lead to irreversible damages. Currently promising methods of treatment of diabetes are: transplantation of islets or B-cells; transplantation of genetically reconstructed cells; xenotransplantation; use of stem cells in the regeneration of pancreatic cells.

BIOCHEMISTRY OF ALCOHOL DEPENDENCE

Aganina A., Startseva A. - the 2nd year students

Scientific leaders – Doc. Med. Sc. Prof. E.A. Borodin, E.A. Volosenkova

In medicine, alcoholism and drug abuse have one common name – diseases of dependence. From a medical point of view alcoholism is a chronic, progressive disease, caused by the influence of alcohol as a drug substance. In the process of drug or alcohol abuse restructuring chemical processes (neurotransmitters) in the brain develops, i.e. derangements in metabolism, transmission of impulses and the relationship of the nerve cells occur. With long-term use of alcohol and drugs a deficiency of neurotransmitters, threatening life of the organism may develop.

As a mechanism to compensate this phenomenon the enhanced catecholamine synthesis and suppression of metabolic enzyme activity, primarily monoamine oxidase (MAO) and dopamine beta-hydroxylase (DBH), which controls the conversion of dopamine to norepinephrine occur. Stimulated by another intake of PAS ejection of catecholamines and their rapid, excessive destruction are combined with compensatory increased synthesis of these neurotransmitters. There is a rapid formation of the CA circuit. In case of discontinuation of the drug, i.e. during withdrawal, increased catecholamine release from the depot does not happen, but their synthesis is accelerated. Due to changes in enzyme activity in biological fluids and tissues (mainly in the brain) one of CA – dopamine accumulates.

This process leads to the development of basic clinical signs of withdrawal syndrome: high anxiety, tension, excitement, raising blood pressure, acceleration of heart rate, the emergence of other autonomic disorders, sleep disorders, the emergence of psychotic conditions, etc. These changes of neurochemical brain functions are the basis for the formation of physical dependence on psychoactive drugs. In alcoholism and drug addiction neurochemical changes in the brain are formed that may be a biological basis for the formation of a depressive syndrome.

RESPIRATORY EPITHELIUM AND ITS CHANGES DURING SMOKING

Rybina E, Rybina M - The 2nd year students

Scientific leaders - Prof. I.Yu. Sayapina, E. A. Volosenkova

The largest part of the airway is lined with multi-row ciliated columnar epithelium, which contains a rich population of goblet-like cells and is known as the respiratory epithelium. A number of factors, namely, chemical substances (acrolein, ammonia,

cyanohydrogen acid, nitrogen oxides, acetone, acetaldehyde, formic acid), the microorganisms, the temperature (ciliary activity) and dust. Have an effect on the respiratory epithelium another important factor is smoking. Smoking is the leading cause of cancer illness and death from this disease. It has a negative effect on the human respiratory system. Respiratory organs are the first organs which suffer from tobacco poisons.

At present, research has shown that when smoking 15 cigarettes a day, motor activity of the cilia of ciliated epithelium is stopped, resulting in impaired mucociliary clearance and a rapid colonization of the mucous membranes of the respiratory tract with bacterial flora. When smoking goblet-like cells are found even in the terminal bronchioles, the ratio of "ciliated: goblet-like cells" is changed to 5: 1 instead of 10: 1. It is assumed that Clara secretory cells may be converted to goblet-like cells in the development of the inflammatory process in the tracheobronchial tree. Ciliated cells are damaged and can not be restored again, leaving a "bald spots" on the surface of the mucosa.

During the study of respiratory epithelium, experimental studies have shown that in young smokers squamous metaplasia of epithelium in the respiratory tract, chronic inflammatory infiltrates and small increases in the connective tissue of airway walls were found. In older age groups, moreover atypical squamous metaplasia, has been identified.

Thus, smoking is a major risk factor for chronic respiratory diseases, especially for the 80% of patients with chronic bronchitis.

HEALTH SELF –APPRAISALL AND ANALYSIS OF BEHAVIORAL RISKS OF MEDICAL STUDENTS

Antonova I, Chirkova A. - the 5th year students, Cherednichenko O. - the 6th year student
Scientific leaders: Doc. Med. Sc. L.N. Voight, E.A. Volosenkova

250 senior students were the object of the study. An anonymous questionnaire of 98 questions was carried out. Every second respondent believes that he has good health, every third - satisfactory, and one in five has rated his health as poor. 19.2% of respondents noted that they are ill 3-4 times a year. Every third woman prefers to consult parents on issues of treatment. 58, 2% of girls said that the health condition after entering the university became worse; this index in guys remains stable. Only every fifth person goes in for sport .64% of respondents regularly spend time in the fresh air. Most of the students rest only from 1 to 3 hours per day (130, 52%), half of the students sleep 6-8 hours. 44% of respondents complain of sleep disorders as pathological sleepiness. Every second student has irregular meals. Every tenth student does not take liquid food. Every second student said that while studying at the academy he began to smoke more. Alcohol is used by 59.6% of respondents. Every tenth respondent believes that alcohol does not bring harm to the body. The problem of alcohol abuse and alcoholism is interesting for every other student. The tendency to deterioration of health indices is evident: every second respondent (52.5%, 131 persons) noted that before entering the academy his health was better. There is a decrease in the level of health culture in parallel with the increasing influence of negative environmental factors as lack of exercise, smoking and alcohol consumption.

CARBOHYDRATES IN SPORTS

Bivzyuk E., Bivzyuk V. - the 2nd year students
Scientific leaders - E.V. Egorshina, E.A. Volosenkova

Carbohydrates are the main source of energy. They are the main part of a ration of a person. Their standard daily rate depends on weight, age and the level of exercise stresses of a person and makes about 300-500 g. The standard daily rate of carbohydrates of athletes can be much bigger. For example, during preparation for competitions the ration of the famous American swimmer Michael Phelps of the general energy value of 10000 kcal a day includes about 1 kg of carbohydrates.

In bodybuilding and sports in which athletes are divided into weight categories the use of carbohydrates is limited and is selective because pancreas insulin is developed at sharp rising of a glucose in blood and it increases permeability of a membrane of cells of fatty tissue and promotes penetration of glucoses into a cell. In adipocytes dioxycetonphosphate formed as a result of glycolysis is restored to glycerophosphate. Acetyl-CoA formed in a cycle of tricarboxylic acids is used in synthesis of fatty acids. Triglycerides which are formed of a glycerophosphate and fatty acids are deposited in a fatty tissue. Therefore the "fast" carbohydrates causing sharp rising of level of glucose in blood are not used in such sports and bodybuilding. Monosaccharum and disaccharum are fast carbohydrates, they are contained in sweet and flour products, alcohol and energy drinks etc. The main source of carbohydrates for such athletes are complex carbohydrates which are slowly acquired, without causing sharp rising of a glucose in blood.

BILIFICATION AND BILIARY EXCRETION

Bivzyuk E. - the 2nd year student

Scientific leaders - Prof. N.P. Krasavina, E.A. Volosenkova

Bilification is the continuous process proceeding in the liver and a bile-excreting organ, connected with passive and active transportation of substances in the liver, secretory function of hepatocytes and ability of an epithelium of cholic ducts and a gall bladder to a liquid absorption.

Hepatocytes together with fatty acids secrete bilirubin and cholesterin which can't be filtered by kidneys, and various endogenic and exogenous substances: enzymes, immunoglobulins, hormones, toxins, medicinal subst ances. Products of biliary secretion (bile acids, bilirubin) are very toxic therefore there are processes of oxidation, methylation and conjugation of these substances (bile acids with taurine and glycine, and bilirubin from glucuroniltransferase), necessary for their inactivation, detoxicating and acquisition of ability to be dissolved in water. Disturbance of processes of egestion of bilirubin leads to various diseases which are characterized by existence of free bilirubin in blood. Underdevelopment of an agranular cytoplasmic reticulum of newborns is one of the common causes of it.

The bile-excreting organ also participates in bilification. The movement of bile in a bile- excreting organ is caused by the secretory pressure of biliation, a difference of pressure in its different parts and a duodenum and contractions of a smooth musculation of cholic ducts, the gall bladder and sphincters. The gall bladder plays an important role in the process of biliation: there is a secretion of mucus and mucin in bile, but its main function is in concentration of bile at 7-10 times due to water absorption from bile by epitheliocytes of the gall bladder. A deposition of normal and pathological components of bile leads to formation of gallstones which can obstruct the bile movement. The disturbance of bilirubin egestion may lead to its accumulation in an organism.

GASTROENTEROPANCREATIC ENDOCRINE SYSTEM (APUD-SYSTEM)

Bivzyuk V. - the 2nd year student

Scientific leaders - Prof. N.P. Krasavina, E.A. Volosenkova

In the human body, there are specialized endocrine glands, as well as single hormone producing cells, the totality of which is called diffuse endocrine system (APUD-system). 18 types of enterinocytes are distributed in the epithelium of the gastrointestinal tract (GIT) and carry out endocrine or paracrine secretion.

All endocrinocytes of stomach have a prismatic shape with low basophilic cytoplasm, moderate plate complex and granular endoplasmic reticulum and mitochondria. ECL-hormones (histamine) and G-cells (gastrin) induce dilation of capillaries and lowering blood pressure, increased permeability of the capillary walls, tissue swelling, increased gastric acid secretion, enzymes and other hormones.

In the small intestine, endocrine cells and narrow, have microvilli of irregular shape on the apical surface and small preferably of a circular shape, electron-dense granules in the basal part of the cytoplasm. I- (cholecystokinin) and S- (secretin) and K-cells (gastric inhibitory polypeptide) secrete hormones that regulate behavior and act as antidepressants, stimulate the secretion of bicarbonate and insulin, as well as regulate the digestive and motor activity of the gastrointestinal tract.

The endocrine system of ileum and large intestine is mainly represented by L-cells having round, electron-dense granules of medium size. Hormones of these cells (enteroglucagon and YY peptide) slow motility and secretion of the digestive tract and increase the secretion of insulin.

OCCUPATIONAL DISEASES, CLASSIFICATION

Dmitrieva D., Homenko K. – the 3-rd year students

Scientific leaders - Gosteva. L. Z., Volosenkova E. A.

Occupational diseases are diseases, which occur as result of the occupational hazard, effects on the human organism. Occupational hazards are factors of the working environment or the organization of work, which can have a detrimental effect on the performance and health of workers. Occupational hazards may be due to the nature of the labor process and the adverse industrial environment.

The relevance of our work is a problem in the production of disease at the present stage in our society.

MICROBIOLOGICAL DIAGNOSIS OF CANDIDIASIS

Dmitrieva D., Homenko K. – the 3-rd year students

Scientific leaders - Bubinets O. V., Volosenkova E. A.

Candidiasis (candidiasis) is an opportunistic infectious disease of the skin, mucous membranes and internal organs, caused by yeast fungi of the *Candida* genus of the Cryptococcaceae family of the Deuteromycetes class. The main causative agent is *Candida albicans*, rarely - *C. tropicales*, *C. krusei*, *C. guilliermondii*, *S. lusitaniae*. Microbiological diagnosis of candidiasis includes microscopy of pathological material, isolation of pure cultures of fungi, conducting serological tests and putting allergy tests. In local and systemic forms of the disease material for research is taken from affected areas - skin flakes, scrapes from nails, mucus, pus, sputum, urine, bile, cerebrospinal fluid, stool, in

generalized - blood, punctuates of abscesses, biopsy material from cadavers - blood from the heart, pieces of parenchymal organs.

The relevance of our work is the problem of candidiasis at the present stage in our society.

EUTHANASIA

Homenko K., Dmitrieva D. – 3rd year students

Scientific leaders - G. N. Marushchenko, E. A. Volosenkova

Euthanasia is the practice of termination of person`s life, suffering from an incurable disease, experiencing unbearable sufferings.

The term "euthanasia" is now used in a variety of senses: accelerating the death of those who are experiencing severe pain; termination of the life of "extra" people (for example, the program T-4); Care for the dying (eg, hospice); giving a person the opportunity to die.

Euthanasia may take the following forms:

- a) "mercy killing"
- b) "suicide, doctor`s assisting"
- c) "direct active euthanasia"

The relevance of our work is the problem of euthanasia at the present stage in our society.

ANTIPHOSPHOLIPID SYNDROME AS THE CAUSE OF STROKE

Gubchik D., Zubkov S. - the 4th - year students

Scientific leaders - Doc.Med.Sc. V.N. Karnaukh, E.A. Volosenkova

Antiphospholipid syndrome – is an autoimmune disease, with the development of arterial and venous thrombosis. Most APS occurs in women. APL are detected in 21% of young patients with myocardial infarction, and in 18-46% of patients with stroke. Now the presence of APL is considered as a risk factor for ischemic stroke. There are the following forms of APS: 1) Primary (develops in patients who do not have an autoimmune disease); 2) Secondary (develops in the background of: a) an autoimmune disease; b) cancers; c) medication; g) infections; e) other diseases); 3) Other variants. The pathogenesis consists of the following units: 1) inhibition of procoagulant activity of proteins; 2) inhibition of fibrinolysis: increase in plasminogen activator inhibitor, inhibition of factor II-dependent fibrinolysis; 3) activation / damage of the endothelial cells: increased procoagulant activity of endothelial cells, the enhancement of expression of tissue factor and adhesion molecules, disorder of prostacyclin synthesis, increased synthesis of Willebrand factor, induction of apoptosis; 4) platelet activation: increased synthesis of thromboxane and platelet aggregation factors, aggregation and disorder of the functional activity of platelets. This leads to an imbalance between coagulation and anticoagulation blood systems. The result is increased blood clotting, which is accompanied by the development of thrombosis. Laboratory criteria: 1) Thrombocytopenia; 2) The combination of thrombocytopenia with hemolytic anemia; 3) Detection of serum antibodies to cardiolipin via standardized IPM (2 times within 6 weeks); 4) Detection of immunoglobulin G and M in the medium to high titers; 5) Identification of lupus coagulant 2 times within 6 weeks by a standardized method in several stages. At the moment, there is no generally accepted international standards of treatment. It should include: 1) the prevention of recurrent thrombosis - anticoagulants of

indirect action, antiplatelet agents; 2) correction of hyperlipidemia with statins; 3) correction of hypertension with ACE inhibitors, b-blockers, calcium antagonists.

BREAKTHROUGH IN THE TREATMENT OF SCHIZOPHRENIA: A NEW DRUG "TREVIKTA"

Gubchik D., Ovchinnikov P. - the 4th – year students

Scientific leaders - Can.Med.Sc. R.A. Anokhina, N.G. Brash, E.A. Volosenkova

Moscow, October 17, 2016 - The company "Janssen" pharmaceutical division "Johnson & Johnson", announces the registration in Russia of a new drug "Trevikta" (paliperidone palmitate of long-acting) with the mode of administration once every three months) for the maintenance treatment of patients with schizophrenia, which can significantly increase the interval between doses and the use of antipsychotic medication four times a year instead of monthly, as in the application of injecting forms currently. "Trevikta" for today is antipsychotic of the longest interval between the two uses of all antipsychotic drugs registered in Russia, which maintains an optimal drug concentration in patient's blood and, consequently, the lowest rate of application. "Trevikta" is administered only to those patients whose condition was stable during therapy with the preceding "Kseplion" (paliperidone palmitate, used to treat schizophrenia once a month). Results of placebo of controlled study of the drug "Trevikta" showed that about 95% of the patients are stable for more than 1 year on the background of the therapy, and median time to relapse was 274 days. Schizophrenia is characterized by frequent hospitalizations (readmissions share was 40%) and higher disability of patients (people with disabilities share of the total number of schizophrenic patients is 66%) in the Russian Federation, according to recent data. More than 60% of the burden of schizophrenia in the Russian Federation the indirect costs make up, including loss of GDP, payments in connection with a temporary disability, monthly payments, disability pensions. According to the Moscow Scientific Research Institute (SRI) of psychiatry, only at the end of 2014 in the Russian Federation, the total number of registered patients with schizophrenia was 372.1 per 100 thousand population (total - 544 192 persons).

HIV MEDICINES: NEWS FROM THE UK

Gubchik D., Maretskiy R. - the 4th-year students

Scientific leaders - Can.Med.Sc. L.V. Kruglyakova, E.A. Volosenkova

The World Health Organization gives statistics about living in the world of 36, 7 million people diagnosed with HIV. Annually immunodeficiency virus kills more than half a million people. About 2, 2 million people are among the newly infected. In Russia, there are more than one million people with human immunodeficiency virus, but health care is given only to 37% of patients who are registered in a specialized medical institution, which is only 28% of the total number of patients. Now only a few cases of cure for HIV are known - a few infants and three adults. Three adults (one - patient of Medical University of Berlin, and two - Boston clinic patients) got rid of the human immunodeficiency virus after a bone marrow transplantation. Operations were carried out for medical reasons - all of these people had been diagnosed with brain cancer. "The Independent" reports on the development of a drug which is in the near future will be used for the treatment of HIV. This was done in a team of scientists from the 5 most famous UK universities - Oxford, Cambridge and Imperial, King's and University Colleges. New therapies are already

experienced on 50 volunteers who have been diagnosed with HIV. During the study one of them (male of 44 years) actually cured of HIV. After the therapy the virus in his blood was not detected. Already existing treatment regimen is not yet ready for use in a wide range of patients diagnosed with HIV. But a professor at Imperial College Sarah Fiedler says that in case of continuation of this research program a breakthrough in the treatment of HIV will be in the next five years.

POST-TRAUMATIC STRESS DISORDER IN CHILDREN AND ADOLESCENTS

Gubchik D., Che A. - the 4th-year students

Scientific leaders - N.G. Brash, E.A. Volosenkova

Children are exposed to a variety of traumatic events. Each child has its own reaction to injury. Some relatively painlessly tolerate shock, while in others post-traumatic disorder (PTID) may develop: anxiety, depression and other behavior problems. The characteristic symptoms of PTID according to the DSM-IV: 1) Constant feeling of re-experiencing the traumatic event; 2) persistent and recurring unpleasant memories of the traumatic event; 3) Ongoing discomfortable dreams about the event; 4) Action / feeling as if the event repeats; 5) Permanent avoidance of stimuli associated with the trauma, the indifference and insensitivity; 6) Persistent symptoms of increased arousal must occur at least with two of the following symptoms: difficulty with falling asleep or staying asleep, irritability or anger, difficulty in concentrating, extreme vigilance, excessive response to stimuli. Epidemiology and risk factors: the highest level of risk is determined in children and adolescents who have experienced war, political persecution and repression, and the lowest - among those who have suffered from a serious illness or injury. PTID can be accompanied by other mental disorders. The level of opposition protest related disorders (OPD), and attention deficit hyperactivity disorder (ADHD) increases in the presence of PTID diagnosis. Depression and anxiety may also occur as a result of childhood traumatic events and accompany PTID. For the diagnostic evaluation there exists a large number of screening and diagnostic tools. One of them is the questionnaire "list of pediatrics symptoms" filled with parents, it is used as a screening tool for symptoms of emotional and behavioral disorders in the primary care environment. Treatment: cognitive-behavioral therapy, focusing on trauma (CBT-T) is most commonly used. Validate a successful treatment option for PTID in adults, adolescents and children is prolonged exposure therapy. Psychotherapy child - parent was used as a method of treatment in preschool children, survivors of traumatic events.

THE EFFECTIVENESS OF HONEYSUCKLE IN THE FLU

Gubchik D., Polivanova E. - the 4th-year students

Scientific leaders - Can.Med.Sc. R.A. Anokhina, E.A. Volosenkova

Honeysuckle is used for centuries in traditional Chinese medicine, mainly in the form of infusion or tea. Recently, scientists have identified a molecule MIR2911 as part of this plant, which has a direct effect on influenza virus type A. The results were published by employees of Peking University (China) in Cell Research. Researchers have shown that "decoction of honeysuckle is an antiviral agent of wide spectrum of action". Molecule MIR2911 presents in honeysuckle even after drying and treatment with boiling water, a decoction of the plant so retains its properties. Laboratory mice were given decoction of honeysuckle, molecule MIR2911 is well distributed in organs, in particular the lungs. The

researchers showed MIR2911 inhibits influenza A virus by acting on two specific genes, PB2 and NS1, which play an important role in virus replication. Synthetic molecule MIR2911 and its natural form, contained in honeysuckle, effectively protects lab animals against infection with influenza H1N1 and other influenza viruses of type A. At the moment, Chinese scientists successfully tested the drug in mice. This is the first case for modern medicine, when a natural product has a direct antiviral effect. The authors draw attention to the fact that the flu virus mutates frequently, creating strains that are not treatable with old drugs. Therefore, the evolution of the virus maintains a high interest of pharmacologists to creation of universal antiviral drugs. Molecule MIR2911 has such properties. Its antiviral effect against influenza viruses H1N1, H5N1 and H7N9 has already been proven.

EFFECT OF STARTING SPACESHIPS AND ROCKET LAUNCHERS ON THE HUMAN BODY

Kirillov I, Orlova A. – The 2nd year students

Scientific leaders – Can. Med. Sc., Assoc. Prof. A.N. Miroshnichenko, E.A. Volosenkova

The rocket launchers use liquid or solid fuels. Liquid fuel includes two components - an oxidant and fuel. The oxygen is used as an oxidizer, as well as nitric acid, nitrogen tetroxide. Kerosene, unsymmetrical dimethylhydrazine (UDMH), and hydrogen are used as a fuel. Solid propellant also consists of the oxidant and fuel, but they are a mixture of solids.

Kerosene affects the central nervous system, irritates the mucous membranes of the upper respiratory tract. In case of poisoning with vapours of kerosene body temperature, blood pressure become lower, heart rate slows down. In prolonged inhalation of kerosene vapors headache, discomfort in the throat, cough, eye and nasal cavity irritation occur. Prolonged inhalation can cause dizziness, unsteady gait, mental stimulation.

Unsymmetrical dimethyl when exposed to the human body leads to the damage of the immune, cardiovascular, lymphatic and central nervous systems, gastrointestinal tract, blood, liver, skin, to the disorder of reproductive activity, the emergence of severe congenital malformations, intrauterine fetal underdevelopment and other pathological conditions.

Tetroxide of nitrogen (nitrogen tetroxide, amyl) has a toxic effect on the human body. There is a general weakness, fatigue, reduced efficiency, deteriorating appetite, a headache.

CORRECTION OF FOOD AT THERMAL IMPACT ON AN ORGANISM

Kutyunkina A., Kadeneva V. – the 3rd year students

Scientific leaders - E.A.Litovchenko, Doc.Med.Sc., Prof. N.V.Korshunova , E.A. Volosenkova

Range of change of temperatures in the Amur region is approximately from - 40C to + 40C. Possibilities of the person on preservation of a temperature homeostasis are limited in conditions of the environment both heating and cooling; a long tension of temperature mechanisms promotes early development of exhaustion, immunity oppression, development of diseases. The greatest losses of an organism happen with release of sweat liquid, micro macrocells and vitamins. Correction of food is focused on restoration of the lost liquid and various substances, according to the accompanying

symptoms. Correction is possible with medicines, for completion of the lost liquid, this is the introduction of water-salt solutions, glucose, and also vitamins. Further, adaptogens must be included in correction. Medicines are good because, they are readily available, grow in the territory of the Amur region, have practical lack of contraindications, and also have low cost. For example: medicines of a rhodiola pink increase resistance of all organism to external adverse factors of the environment: to the x-ray and ionizing radiation, increase life expectancy and volume of work. In food it is necessary to increase amount of the consumed liquid, not less than two liters of water and also various vitaminized drinks. At strongly high temperatures it is useful to pass to digestible diet, to use more fruits. Food provides our organism with nutrients which are required for it for development of energy and maintenance of activity. Therefore following several rules in nutrition, and inclusions in a diet of various adaptogens, it is possible to prevent development of various diseases.

HEALTH INSURANCE IN GERMANY

Plushch D., Vovk A. - the 5-th year students

Scientific leaders – Doc.Med.Sc., Prof. L.N.Voyt, E.A. Volosenkova.

Health insurance is compulsory for the whole population in Germany. Range of medical services under the state health insurance is reflected in the Fifth Book of Social Legislation (SGB V) and a number of restrictions are defined, which are reflected in §12 ABS. 1 SGB V). Salaried workers and employees whose income is below a certain level - almost 50,000 Euros per year are automatically enrolled into one of currently around 130 public non-profit "sickness funds" at common wage rate for all members, which is paid for with joint employer-employee contributions. Germany has a universal multi-payer system with two main types of health insurance. Germans are offered three mandatory health benefits, which are co-financed by employer and employee: health insurance, accident insurance, and long-term care insurance. There are two separate types of health insurance: public health insurance (Gesetzliche Krankenversicherung) and private insurance (Private Krankenversicherung). Germany has a reputation for having one of the best health care systems in the world, providing its residents with comprehensive health insurance coverage. Approximately 85% of the population are mandatory or voluntary members of the public health scheme while the rest have private health insurance. The costs of the German health care system are immense and rising due to demographics as well as medical cost inflation.

PRAXIS DISORDERS

Bazarsadueva N., Garaeva E. – the 2nd year students

Scientific leaders – A.E. Pavlova, E.A. Volosenkova

Praxis (action) is the ability to perform a sequence of movements to make targeted actions on a plan worked out.

Apraxia - loss of skills developed in the course of individual experience of complex targeted actions, without overt signs of central paresis or incoordination.

Ideational apraxia means a lost plan or idea of precise movements, disrupted sequence of individual movements (for example to show how light a cigarette, he strikes sharply cigarette on the box, then pulls out a match and holds it to his mouth). The ability to perform complex orders (to wag his finger, and so on), is lost but they can repeat them.

It occurs with the damage of supramarginal gyrus of the parietal lobe of the dominant hemisphere (in right-handers - left) and it is always-bilateral.

Constructive apraxia - the correct course of actions suffers: a patient cannot add up the figures. It occurs with the damage of the angular gyrus of the parietal lobe of the dominant hemisphere, bilateral.

Motor apraxia - spontaneous actions are damaged, actions on the instructions and imitation.

Spatial apraxia is a disorder of spatial relationships when performing complex motor acts. The lesion occurs in a zone of statokinetic analyzer (at the connection of parietal, temporal and occipital lobes). For example, the patient cannot give a horizontal position to hand, get to the point, draw a picture, in writing makes spatial errors, failing to correlate properly the complicated structure of letters and showing signs of a mirror writing.

Oral apraxia is combined with afferent motor aphasia. The patient cannot find the right corresponding sounds to pronounce, close in articulation sounds are mixed, the process of writing is broken.

DOWN SYNDROME

Sakhnova O., Nagiev M. – the 5th-year students

Scientific leaders - Can.Med.Sc. O.S.Yutkina, E.A.Volosenkova

Down syndrome (DS or DNS), also known as trisomy 21, is a genetic disorder caused by the presence of 47 instead of 46 normal chromosomes in the karyotype. It is typically associated with physical growth delays, characteristic facial features, and from mild to moderate intellectual disability.

Down syndrome is one of the most common chromosome abnormalities in humans. It occurs in about one per 1000 babies born each year.

The parents of the affected individual are typically genetically normal. Those who have one child with Down syndrome have about 1% risk of having a second child with the syndrome, if both parents are found to have normal karyotypes.

Down syndrome can be identified during pregnancy by prenatal screening followed by diagnostic testing, or after birth by direct observation and genetic testing.

The diagnosis can often be suspected based on the child's physical appearance at birth.

An analysis of the child's chromosomes is needed to confirm the diagnosis, and to determine if a translocation is present, as this may help determine the risk of the child's parents having further children with Down syndrome. Parents generally wish to know the possible diagnosis once it is suspected

There is no cure for Down syndrome. Education and proper care may improve quality of life. Life expectancy is from 50 to 60 years in the developed world with proper health care.

DNA DIAGNOSIS OF GENETIC DISEASES

Tursunbayev Sh. – the 4th year student

Scientific leaders - Can.Med.Sc. E. N. Zaritskaya, E.A.Volosenkova

The number of monogenic diseases, which are available for molecular diagnosis, has already exceeded 1000 and continues to grow rapidly. All new efficient

and versatile enough methods of DNA diagnostics are created and continuously improved.

DNA screening of aneuploidy of the fetus in the mother's blood has a significantly higher sensitivity and specificity compared to currently used standard combined screenings of the first and second trimesters of pregnancy. It can be carried out already with 10-11 weeks of pregnancy, and in women who are pregnant again. Favorable results of DNA screening can with high probability exclude aneuploidy of the fetus in the studied chromosomes, including solution of prolongation of early pregnancy in women with threatening and recurrent miscarriage. In identifying high-risk chromosomal abnormalities using DNA screening for the blood of the mother it is necessary to conduct genetic counseling and performing confirmatory diagnostic invasive procedures.

DNA analysis allows to define trisomy: T21- Down syndrome, T18- Edwards syndrome, T13- Patau syndrome. Numerical anomalies of sex chromosomes: Monosomy X - MX, Turner's syndrome, XXX- trisomy X, XXY- Klinefelter syndrome, XYY. Sex of the fetus XX or XY - helps in risk stratification for X-linked diseases such as hemophilia, Duchenne muscular dystrophy or congenital adrenal hyperplasia.

In general, the problem of DNA diagnostics of genetic diseases, and chromosomal, in fact, can be considered solved in principle. Its further progress may relate not only to the increase in the number of diagnosed diseases, but also transfer of the main gravity of research in the early postnatal period for screening newborns for predisposition to multifactorial (polygenic) diseases such as atherosclerosis, heart disease, diabetes, some tumors and neuropsychiatric diseases.

WORKAHOLISM

Tursunbayev Sh., Mosienko I. – the 4th year students

Scientific leaders - N.G. Brash

Workaholism has all the criteria of dependencies. People who work continuously without weekends, holidays, who come early and leave work late, are maniacs of work. When workaholics are deprived of the opportunity to work, it is strongly pronounced. So, they have emotional liability with a predominance of dysphoria, in other words, they feel lost. They also become evil and dismal without any reasons. Like alcoholics, workaholics kick over the traces to the last, denying the existing problems of dependency they have. A hard-working man has a goal, the result of his work is very important. The professional activity is just a part of his life. It is a way of self-expression and a method of self-dependence and wealth creation. But for workaholic, it doesn't. The result of the work doesn't make sense; work is a way of pastime for him. He focuses on the work activity. Workaholic considers that family relationships and the family itself are interference, which distracts from a work and it causes irritation and frustration. «The debt tyranny» of workaholic is instead «sense of duty» of a hard-working person. A specific feature of workaholics is the «daltonism of necessity». This daltonism prevents them to distinguish life values, normal human needs, its implementation and satisfaction, as the healthy man does. For this reason, productive life goes past. Workaholics recognize the value of health and the need to stay healthy only in words, but really doing nothing for this.

It is said that «workaholics live to work, but hard-working people work to live». Workaholism can be considered as one of the forms of psychasthenia (OCN). The working process only creates the impression of solution of some internal mental problems, but really it doesn't solve anything.

HYDRONEPHROSIS

Tursunbayev Sh., Mosienko I. – the 4th year students

Scientific leaders - Can.Med.Sc. D.N. Velichko, E.A.Volosenkova

Hydronephrosis develops as a result of disorders of the outflow of urine and is characterized by the expansion of the renal pelvis - calice system, pathological changes in the interstitial tissue of the kidney and atrophy of its parenchyma.

Causes of congenital hydronephrosis are destinesia of urinary tract; congenital anomaly of location of the renal artery and others Causes of acquired hydronephrosis are some urological diseases: urolithiasis, inflammatory changes of the urinary system, traumatic constrictions of the urinary tract, tumors, etc. Hydronephrosis is aseptic and infected. In the first case, the renal changes depend on the degree of obstruction and disease duration, in the second, on the degree of obstruction and duration of disease, and the virulence of the infection.

Hydronephrosis is manifested by pain in the lumbar region. Pain are in the nature of renal colic with typical localization and irradiation in the course of the ureter to the groin, scrotum in men and vulva in women, the thigh or crotch. The main symptom of hydronephrosis is hematuria. The increase in temperature during the amplification of pain in the lumbar region shows the accession of infection. A more informative method of research in hydronephrosis is chromoscopy.

Treatment of hydronephrosis is surgery. It is important to do it in the early period, when eliminating obstruction of the urinary tract, not only prevents further anatomical changes but also leads to improved renal function.

CREATINE

Tursunbayev Sh., Mosienko I. – the 4th year students

Scientific leaders - Can.Med.Sc. R.A. Anokhina, E.A.Volosenkova

Creatine is a natural substance found in muscles of humans and animals and is required for energy metabolism and motion. In the human body there are about 100 - 140 g of the substance serving as the energy source for the muscles. Daily consumption of creatine in normal conditions is approximately 2 g. Creatine is as important to life as protein, carbohydrates, fats, vitamins and minerals. Creatine can be synthesized by the body from 3 amino acids: glycine, arginine and methionine. These amino acids are components of protein.

In humans the enzymes involved in the synthesis of creatine, are localized in the liver, pancreas and kidneys. Creatine can be produced in any of these organs, and then transported by blood to muscles. Approximately 95% of the total pool of creatine is stored in skeletal tissue muscles.

With the increase in physical activity, consumption of creatine also increases, and the stock needs to be replenished through diet or by its own natural production by the body.

SHÖNLEIN (-HENOCH)'S DISEASE

Shalagina E. – the 5-th year student

Scientific leaders - O. S. Yutkina, E.A. Volosenkova

Hemorrhagic vasculitis (Shönlein (-Henoch)'s disease, allergic purpura, purpura rheumatica) is a system aseptic inflammation of vessels of the microcirculatory blood stream mainly affecting the skin, joints, gastrointestinal tract and kidney balls. Today hemorrhagic vasculitis is the most common, haemorrhagic disease. Essentially it is an allergic vasculitis of the superficial nature with a damage of small arterioles and venules, and capillaries. In the International classification of diseases hemorrhagic vasculitis is noted as allergic purple. Diagnostics of a hemorrhagic vasculitis is based on clinical symptoms, laboratory data (blood test, urine and electrocoagulation), the study of the digestive tract and kidneys. The basis of treatment of hemorrhagic vasculitis is therapy by anticoagulants (heparin). In hard cases extracorporeal haemocorrection, glucocorticoid therapy, anti-inflammatory and cytostatic treatment are applied.

GILBERT'S SYNDROME

Shalagina E., Sozonova Y. – the 5-th year students

Scientific leaders – I. P. Soluyanov, E.A. Volosenkova

Gilbert's syndrome is a genetically caused disorder of bilirubin metabolism that occurs due to a defect of the liver microsomal enzymes and leads to the development of benign unconjugated increase of bilirubin.

The main clinical symptom of Gilbert's syndrome is jaundice. Single or multiple xanthelasma of eyelids, the sense of heaviness in the right hypochondrium, the sense of discomfort in the abdomen, asthenovegetative disorders, dyspepsia may occur.

An ultrasound can detect a slight hepatomegaly due to the right lobe. Sizes of spleen are usually not changed, small splenomegaly is rarely detected. In the study of motor function of the gallbladder its dysfunction is often determined. During the morphological examination by light microscopy pathological changes in the liver are not detected except lipofuscinosis.

For the diagnosis of Gilbert's syndrome, there are many functional tests (hypocaloric, rifampicinum, with nicotinic acid, phenobarbital). The leading role is played by molecular diagnostics: Analysis of DNA of the gene responsible for the disease symptoms.

No specific treatment exists. Patients should follow the diet (eliminate fatty meats, fresh muffins, bacon, sorrel, ice cream, black coffee); eliminate heavy physical exertion; taking certain medications: antibiotics, anabolic steroids, alcohol and smoking. If the jaundice occurs: drugs of barbiturates; cholagogues; hepatoprotectors; cholagogues; phototherapy; digestive enzymes are prescribed

THE ANALYSIS OF THE FREQUENCY OF DISEASES OF THE CARDIOVASCULAR SYSTEM AND MORTALITY FROM THIS DISEASE

Sozonova Ya., Shalagina E. – the 5-th year students

Scientific leaders – O.A. Agarkova, Yu.V. Kvasnikova, E.A. Sundukova, E.A. Volosenkova

Diseases of the circulatory system are considered to be a significant medical and social problem due a high invalidization and mortality of the population. In our country about 1 million people die annually from diseases of the circulatory system . Mortality from cardiovascular diseases is about 50% of the total mortality. In recent years, the Russian Federation and Amur region have tendency to reduce morbidity and mortality from this disease. It is connected with the fact that at present the system of organization of medical care to patients with cardiovascular diseases is improved. There is regional vascular centre and three primary vascular departments equipped with modern diagnostic and medical equipment, training medical personnel has been conducted to use modern technologies of rendering of medical aid.

MUSCULAR DYSTROPHY OF DUCHENNE-BECKER

Sozonova Y. – the 5-th year student

Scientific leaders - O. S. Yutkina, E.A. Volosenkova

Muscular dystrophy of Duchenne-Becker - is a hereditary disease of the musculoskeletal system, characterized by progressive degenerative changes in the musculature without primary motor neuron pathology.

Genetically a single form of muscular dystrophy of Duchenne-Becker is clinically divided into Duchenne muscular dystrophy and Becker muscular dystrophy.

Becker muscular dystrophy benign form is explained by the fact that unlike the Duchenne muscular dystrophy synthesis of dystrophin is determined, but either the protein is produced in low of quantity or abnormal dystrophin is produced.

Diagnostics. Doctors suspect muscular dystrophy when progressive muscle weakness develops the concentration of creatine kinase in the blood increases.

Also muscle biopsy is appointed - through the microscope, usually dead tissue and abnormally large muscle fibers are visible. In the late stages of muscular dystrophy, the dead muscle tissue is replaced by fat and other tissues. The diagnosis of Duchenne muscular dystrophy is considered established if special tests show extremely low levels of dystrophin protein in muscle.

Treatment. This syndrome is incurable. Physical therapy and exercise help to prevent shortening of muscles around joints. Sometimes surgery is needed to lengthen the tendon painful muscles. Doctors use corticosteroid Prednisolone as a mean of temporarily reducing muscle weakness. The research phase also includes gene therapy, as a result of which the muscles could start to produce dystrophin.

SHERSHEVSKY-TURNER'S SYNDROME

Antonosyan T. – the 5-th year student

Scientific leaders - O. S. Yutkina, E.A. Volosenkova

Shershevsky-Turner's syndrome is the chromosomal pathology caused by partial or complete X-monosomy. Low stature, a hypogonadism, malformations (CHD, a horseshoe kidney, strabismus, etc.), lymphostasis, deformation of joints, wing-shaped folds of skin on a neck, etc. are clinical signs of a syndrome of Shershevsky-Turner. Characteristic clinical features, data of researches of sexual chromatin and karyotype serve as decisive arguments in diagnosis of a syndrome of Shershevsky-Turner. Prenatal diagnosis of pathology in a fetus is possible. Patients with Shershevsky-Turner's syndrome need

hormonal therapy (growth hormone, sex hormones), correction of congenital malformations and aesthetic defects.

AUTISM IN CHILDREN

Galaktionova S, Fomina V. - the 6-th year students, Zhevnova T.V.- resident
Scientific leaders - M.I. Bugrova, E.A Volosenkova

Autism is a common developmental disorder with the highest deficit of the scope of communication and emotions. The most common diagnosis is 3-5 years. Only in mild cases autism is first observed in adolescents and adults.

Signs of autism in children: disorder of social behavior, of communication, stereotypical behavior, impaired social interaction, missing or sharply broken contact "eye-to-eye". Poor facial expressions which are often not adequate to the situation. Autistic person usually has mask-like face, with occasional grimaces.

Gestures are used only to show the needs. Such persons are not able to understand the emotions of others. There is a lack of interest in peers, severe speech delay or its lack (mutism). Most children with autism have mild to moderate mental retardation. In milder forms of the disease and the dynamic development of speech, intelligence may be normal or even above average. The main feature of autism is the selective intelligence.

Diagnosis of autism. The first symptoms of autism parents notice. Testing with specific questionnaires: ADI-R, CARS, ABC, ATEC,CHAT. Instrumental methods: NSG, EEG. Hearing Test in audiologist

Conditions that imitate autism. Attention deficit and hyperactivity are often taken for the autistic symptoms (ADH). The main symptoms of attention deficit: restlessness, difficulties in school studies. Hearing loss - hearing loss of varying degrees; Schizophrenia, unlike autism, starts at a later age. Symptoms develop gradually. Parents notice oddities in the behavior of the child: the fears, obsessions, withdrawal, self-talk. Later delusions and hallucinations, join.

ORGANIZATION OF EARLY DETECTION OF TUBERCULOSIS IN CHILDREN

Fomina V. Galaktionova S.- the 6-th year student
Scientific leaders - O.A Karakulova, E.A Volosenkova

With a view to the early detection of tuberculosis in children tuberculosis diagnostics is performed for vaccinated against tuberculosis children from 12 months of age and up to the age of 18 years. Mantoux is put once a year, regardless of the result of the previous tests.

Annual coverage Mantoux children up to 14 years inclusive shall be at least 95%. Compulsory examined children from socially disadvantaged families and living on the territory of the Russian Federation, the children of foreign citizens, who arrived from troubled countries on tuberculosis.

Mantoux test is carried out 2 times a year for:

- Children not vaccinated against tuberculosis for medical contraindications, and are not vaccinated against tuberculosis because of the refusal of parents on the child's immunization until the child vaccination against tuberculosis;
- Children with chronic non-specific diseases of the respiratory system, gastrointestinal tract, diabetes mellitus;

- Children receiving corticosteroids, radiation and cytotoxic therapy;
- HIV-infected children.

Within 6 days from the time of Mantoux tests the following categories of children are sent for consultation to the TB hospital in the community:

- With newly diagnosed positive reaction (papule 5 mm or more), not related to a previous immunization against tuberculosis;
- With long-lasting (4 years) reaction (with infiltrate 12 mm or more);
- With increase of sensitivity to tuberculin in tuberculin positive children - increased infiltration by 6 mm or more;
- With an increase of less than 6 mm, but the size of the infiltrate is 12 mm or more;
- Overreaction to the tuberculin - infiltration is 17 mm or more;
- In case of vesicular, necrotic reaction and lymphangitis.

COURSE FEATURES OF PARATYPHOID C IN CHILDREN

Fomina V. - the 6-th year student

Scientific leader - P.K Soldatkin, E.A Volosenkova

In paratyphoid C colon is affected, destructive changes in the lymphatic intestinal apparatus are less pronounced. Changes in the liver, spleen, bone marrow, are less pronounced.

Typhus – like variants: fever, chills, headache, muscle and joint pain. Further weakness develops, possibly dimming of consciousness, delirium, are possible. The skin is jaundiced, there is roseolous, rarely petechial rash. In young children, some symptoms are not expressed or absent. In children of the first 3 years of life paratyphoid is milder than in adults, but often complications such as pneumonia, occur.

Gastroenteric variant of disease is accompanied by symptoms of poisoning. Stools are fluid, abundant, have a pungent smell, can often mark the presence of muddy mucus green content like "marsh mud." In children, especially young children, against this background, dehydration is developing. Often paratyphoid C in children takes place in the form of severe gastroenteritis, sometimes it looks like dysentery.

Septic paratyphoid variant C is more common in mixed infection (mixed infection) in children with reduced immunity, runs very hard: remitting fever (fluctuations within 1,5-2 ° C, but not reduced to the normal range), a serious condition, rash, purulent lesions in various organs (parenchymal hepatitis, purulent meningitis, osteomyelitis, etc.).

Diagnosis: clinical and epidemiological data (the patient from the source), are confirmed by bacteriology study, agglutination reaction.

Treatment: hospitalization is absolute. Antibacterial (chloramphenicol, ampicillin, etc.), detoxification (Ringers solution, 5% glucose) Plasma substitutes and (hemodes, is polydesis, reopolyglukin), desensitizing drugs, symptomatic drugs, hormones are indicated. Discharge must be not earlier than on the 21-23-day of temperature normalization after two negative bacteriological examination of feces and urine and single - duodenal contents. Prognosis is favorable.

HISTORY OF THE DEPARTMENT OF INFECTIOUS DISEASES WITH EPIDEMIOLOGY AND DERMATOVENEROLOGY

Galaktionova S. - the 6-th year student

Scientific leaders - P.K Soldatkin, E.A Volosenkova

The first base of the department was 120 - bed Hospital for Infectious Diseases, which was in a specially adapted for it 2-stored building. Currently, the department of infectious diseases with epidemiology and dermatovenereology is based in ARIH consisting of 5 departments: department of diagnostics, hepatic, intestinal infections in children, respiratory infections with beds for patients with HIV infection or AIDS related infections and intensive care unit, anaesthesiology and intensive care. The reception ward has the relevant boxes.

Paraclinical service includes: clinical, bacteriological biochemical, immunological, serological laboratory - PCR and HIV diagnosis, there is a X-ray room, laboratory for the diagnosis of viral hepatitis.

The main base of the department has 6 classrooms, rooms of the head of the department, professor, associate professors, and 2 laboratories. In general, clinic equipment allows to conduct classes at a high level.

CORONAROGRAPHY- THE GOLD STANDARD IN DIAGNOSTICS OF CORONARY HEART DISEASE

Alexandrova E., Naydanova D. – the 4th year students

Scientific leaders - Assoc. Prof., O. A. Tanchenko, E.A.Volosenkova

Coronarography –an x-ray contrast method of studying a coronary artery of the heart for diagnostics of coronary heart disease. The research allows to define the place and extent of narrowing a coronary artery. This research is conducted on an angiographic complex of Phillips-Integris-2000, allowing to carry out any kinds of endovascular interventions.

Today there are the following types of a coronarography: intervention coronarography; a computer tomography – a coronarography; ultrasonic coronarography.

The coronarography purpose – is to reveal narrowing or an occlusion of coronary vessels. The research allows to see the left and right coronary arteries departing from an aorta.

Coronarography scopes: heart surgery, therapy, cardiology.

Indications to a coronarography are: stenocardia with clinical manifestations, a state after a myocardial infarction; asymptomatic form of coronary heart disease; heart failure; atypical pains behind a breast bone; for the solution of a question of need of coronary shunting; during a preparation for surgery at heart diseases; for assessment of efficiency of drug and surgical treatment of heart troubles and an aorta. A coronarography in the following cases is vital: the first 6 hours from the moment of emergence of pains in case of an acute myocardial infarction; unstable stenocardia tolerant to medicinal therapy.

It is interesting to notice that absolute contraindications to carrying out a coronarography don't exist, but there are relative: uncontrollable arterial hypertonia, acute period of a stroke, internal bleedings (gastric, pulmonary), infectious diseases, non-compensated diabetes mellitus, feverish state, serious renal failure, intolerance of contrast agents, disturbance of coagulability of a blood.

Thus, a coronarography – the most informative and exact research of heart vessels, besides it is rather safe. When keeping all references of the doctor the risk of development of serious complications doesn't exceed 0,2%.

OCCURRENCE OF TICK-BORNE ENCEPHALITIS AND TICK-BORNE BORRELIOSIS IN THE RUSSIAN FEDERATION AND THE AMUR REGION FOR 2010-2015

Semdyankina Y. - 5th year student

Scientific leaders - A.V. Gavrilov., E.A. Volosenkova.

The unfavorable epidemiological situation on infections transmitted by ticks, in the Russian Federation and the Amur region is associated with high numbers of ticks, their infection with virus, lack of immunization of the population in endemic areas. Annual dynamics of morbidity is characterized by a pronounced seasonality associated with the period of carriers activity.

In order to prevent sucking ticks it is necessary to carry out preventive measures: quality clearing and landscaping, anti-tick-borne processing and deratization activities. As a kind of prophylaxis persons traveling to endemic areas for tick-borne encephalitis must be vaccinated against tick-borne encephalitis.

Thus, we can draw the following conclusion: the incidence of infections transmitted by ticks remains at a high level. The high incidence of tick-borne encephalitis is due to the fact that a greater number of cases of this pathology are the people who are not vaccinated against tick-borne viral encephalitis, citizens from professionally threatened contingents operating in the Russian Railways Company and living in endemic areas. The incidence of tick-borne borreliosis is associated with the processes that occur in natural foci (increase of the number of ticks, features of the circulation of the pathogen in natural foci, and others.), but at this time diagnosis of this disease has improved.

Natural focal infections require a comprehensive study using the complex of epidemiological, clinical, environmental and laboratory approaches.

RATIONAL COMBINATIONS IN THE TREATMENT OF ARTERIAL HYPERTENSION

Semdyankina Y., Telyakova A. – the 5th year students

Scientific leaders – Doc.Med.Sc, Prof. V. I. Pavlenko, E.A. Volosenkova.

Arterial hypertonia is a stable rising of systolic and diastolic arterial pressure at double measurement.

There are several approaches to use a combination therapy. The first approach — step (add-on approach). The second approach — the use of the fixed combined drugs in the form of advanced medicinal forms.

Now all possible combinations can be divided into several groups:

1. The most rational combinations: diuretic + β adrenoblocker, diuretic + APF inhibitor, beta adrenoblocker + antagonist of a calcium (dihydropyridinic), antagonist of a calcium + APF inhibitor.

2. Possible rational combinations: diuretic + blocker of AT1 receptors, beta adrenoblocker + α 1-adrenoblocker, antagonist of a calcium + blocker of AT1 receptors, antagonist of a calcium + agonist of imidazoline I1 receptors, APF inhibitor + agonist of imidazoline I1 receptors, diuretic + agonist of imidazoline receptors.

3. Possible, but less rational combinations: antagonist of a calcium + diuretic, beta adrenoblocker + APF inhibitor.

4. Irrational combinations: beta adrenoblocker + verapamil or diltiazem, APF inhibitor + potassium-sparing diuretics, antagonist of a calcium (dihydropyridinic) + α_1 -adrenoblocker.

5. Combinations which rationality demands specification: APF inhibitor + blocker of AT1 receptors, antagonist of a calcium (dihydropyridinic) + antagonist of a calcium (not dihydropyridinic), APF inhibitor + α_1 -adrenoblocker, antagonist of a calcium + blocker of AT1 receptors.

The choice of the initial scheme of medicamental correction of arterial hypertonia remains empirical. The choice of an optimum combination, sequence and priority of administration of the free and fixed combinations of anti-hypertensive agents must be carried out taking into account sex, age of a sick person, accompanying factors of risk and diseases. First of all the diabetes mellitus, gout, a renal failure, obesity, ischemic heart disease and a hyperparathyreosis refer to them.

EXTINCT TWIN SYNDROME

Yunaev E. - 5th year student

Scientific leaders – Assoc. Prof. Can. Med. Sc. E.V. Shulzhenko, E.A. Volosenkova

Syndrome of the extinct twin (first described in 1945) is a very rare syndrome characterized by multiple pregnancy with the subsequent disappearance of one or more embryos. This syndrome is often diagnosed by ultrasound.

The extinct twinsyndrome may occur through complete lysis and fetal reabsorption, «mummification» (fetal compression) and through the development of abnormalities in the placenta.

Time of occurrence of this syndrome significantly affects the viable outcome of a twin and pregnancy complications. For example, if the syndrome occurs in the second half of pregnancy, the fetus may develop cerebral palsy.

Chromosomal abnormalities often lead to a syndrome of the extinct twin. Constitution of A-plasma protein (PAPP-A) and free beta-HCG changes. AFP levels are often elevated. The rate of increase of human-beta chorionic gonadotropin is slow. The diagnosis is confirmed by detection of an empty gestational sac.

Simple extinct twin syndrome does not require any special medical treatment. Doctors should carefully monitor the pregnancy. Viable twin should receive specialized medical care.

SIAMESE TWINS

Eremenko V. - 5th year student

Scientific leaders – Assoc. Prof. Can. Med. Sc. E.V. Shulzhenko, E.A. Volosenkova

Fused or «Siamese» twins – a phenomenon when the complete separation of the embryo into two does not occur, whereby the developing twins are not separated. There are conjoined twins in 1 per 60.000 births. The earliest recorded case of the birth of Siamese twins in the western world dates back to the year 945.

Twins are formed, when at one of the stages of development of the embryo division into two parts occurs. If this separation occurs after 8 days of development, conjoined twins are formed. Fusion of twins may be in the region of head (janiceps), stomach (omphalopagi), coccyx (ischiopagi), breast (thoracopagi). Dicephali have a common body and two heads.

Prognosis for conjoined twins depends on the location, extent of connection and the associated malformations. For ascertaining the potential for the survival of children and their separation it is necessary to carry out echocardiography and magnetic resonance imaging.

In case of diagnosing intrauterine coalesced twins abortion is recommended in the early stages. But sometimes specialists adhere to expectant management until fetal viability. Conjoined twins are born by caesarean section.

Separating conjoined twins is rather a difficult task. Therefore, the problem involves not only medical problems but also legal, religious, and ethical aspects.

RENAL CORPUSCLES AND ITS ROLE IN THE FILTRATION OF URINE. DISTURBANCE OF GLOMERULAR FILTRATION

Khlybova D. – the 2nd year student

Scientific leader - Prof. I.Y. Sayapina

One of the important functions of the kidney is involved in the regulation of the concentration of osmotically active substances in the blood and other body fluids of the internal environment, which is ensured by ultrafiltration in glomeruli, reabsorption, and secretion of substances into the tubules, the synthesis of new compounds, the interaction with hormonal, neural, vascular and other body systems. One of the main functions of the kidneys is a long-lasting formation of urine. The main thing in this process is the renal corpuscle, as the first stage of urine formation - filtration - takes place in this part of the nephron.

The renal corpuscle consists of two structural components - vascular and glomerular capsule. The diameter of the renal corpuscles is an average of 200 microns. Vascular glomerulus consists of 40-50 loops of blood capillaries. Their endothelial cells have numerous pores and fenestra (diameter up to 100 nm), which occupy not less than 1/3 of the entire area of the endothelial lining of capillaries. Endothelial cells are arranged on the inner surface of the glomerular basement membrane. From the outside it is on the inner layer of the epithelium of the glomerular capsule.

Filtration barrier is almost impermeable to high-molecular substances. Normally, it does not pass through the blood cells and some blood plasma proteins - immune bodies, fibrinogen, etc., which have a higher relative molecular weight and a negative charge.

Under certain conditions, the kidney filter can be damaged. Disturbance of filtration can be expressed in its increase or decrease irrespectively of the volume of liquid received by the organism.

ALCOHOL – INDUCED LIVER INJURIES

Del V., Kablukova V. – the 2nd year students

Scientific leaders - Doc. Biol. Sc. I.Y. Sayapina, E.A. Volosenkova

There are three types of alcohol-induced liver injury: fatty liver (or fatty degeneration), alcohol-induced hepatitis and cirrhosis.

Fatty degeneration of liver.

Fatty liver is the first and most common finding in drunkards. It is characterized by the accumulation of triglycerides in the hepatocytes in the form of fat droplets. Fatty degeneration is asymptomatic and is usually detected by chance during biochemical studies, the results of which show abnormal liver function. The prognosis of fatty liver is

favorable, provided that patients refrain from drinking alcohol. However, approximately 30% of patients who continue to drink alcohol, it progresses to cirrhosis within 10 years. Alcohol-induced hepatitis.

It is caused by the toxic effects of alcohol on the liver cells. Histology is characterized by fatty degeneration of hepatocytes, neutrophil infiltration and proliferation of interlobular connective tissue. Similar symptoms are observed in other serious conditions, including diabetes and obesity, in which they are called "NASH". The course of alcohol-induced hepatitis can be asymptomatic but severe form manifests as jaundice.

Cirrhosis of the liver.

The most serious liver disease caused by alcohol is a cirrhosis. It is characterized by the following histology-pericellular fibrosis (proliferation of fibrous connective tissue in perisinusoidal spaces around hepatocytes). Patients have symptoms of a reduced liver synthetic function and symptoms of portal hypertension (increased blood pressure in the portal vein). The prognosis in alcoholic cirrhosis is unfavorable. Up to 90% of deaths among patients with alcoholic cirrhosis are associated with liver disease; of which 33% are caused by hepatocellular carcinoma.

APPLICATION FEATURES OF ADAPTOGENS

Donday-ool A., Hanmaa S – the 3rd year students

Scientific leaders - Doc.Med.Sc., Prof. N.V. Korshunova, E.A. Litovchenko, E.A. Volosenkova

Adaptogens are preparations of mineral, vegetable and animal origin, which are able to exert a powerful restorative effect, increase the tone of the organism, its performance, immunity and resistance to pathogenic agents and to all environmental factors: cold, heat, ionizing radiation, lack of oxygen, great exercise.

Adaptogens for children are recommended only in the form of drugs from natural plant materials. To strengthen the immune system, to maintain health in a bad environment and high mental, physical and mental stresses we recommend the following adaptogens for children: a Green Light, phytocalcimin, Siberian ginseng, ginseng, immunal, arbidol, galavit, aralias, ginger and buckthorn, ointments with bone tissues of deer horn, spotted deer, or blood and secrets of animals glands.

Application features:

1. A small effect of adaptogens given after 15-30 days of continuous use.
2. Produced in the form of syrups, tinctures, tablets, extracts, powders, capsules, ointments, suppositories, salves
3. Special attention should be paid to the choice of doses.
 - small doses of adaptogens when properly used cause general relaxation, certain lethargy, decrease general excitability
 - average doses cause a mild stimulating effect, create sense of vitality, energy, there is an emotional animation
 - excessive doses can cause excitement, the emergence of irritability, insomnia, excessive aggression.
4. Adaptogens are taken once a day. The intake of adaptogens several times a day and in the evening can trigger insomnia. Adaptogens intake 2-3 times a day in order to increase efficiency, may even significantly lower it.
5. Children under 16 years must consult a doctor because adaptogens accelerate puberty.

Conclusion: thus adaptogens are widely applicable in areas of extreme climatic conditions; adaptogens should be taken in the Far East respectively.

MORAL AND LEGAL PROBLEMS OF SURROGATE MATERNITY

Trebukhova A., Dorzhiev Z., Marushko L.-the 3-rd year students

Scientific leaders - A.I. Kovalenko, E.A. Volosenkova.

Surrogate maternity represents incubation and the child's birth under the agreement signed between surrogate mother and potential parents whose gametes were used for fertilization. For whom incubation and the birth of the child is impossible on medical indications. Surrogate maternity is burdened by complex moral problems. 1) In case of surrogacy the woman is simply alive incubator. Such situation is absolutely inadmissible as it encroaches on the human dignity of the woman and on her right to be mother. 2) In the case of surrogacy the child becomes an article. 3) Surrogacy is the gross violation of the rights of the child, first of all - on personal and family identity and specific communication with the mother. 4) Application of surrogacy has destructive influences on moral bases of institute of a family and fundamental moral bases of the society. 5) in case of the birth of the sick child customers of services of surrogacy have the right to refuse such child, as a certain "defective article". 6) Reference of surrogacy to the number of "methods of treatment of infertility" has no grounds. Because in surrogacy application infertility doesn't disappear. That is why everyone has the right to decide how to treat surrogacy. But it is necessary to recognize that surrogacy is just the fact which was, is and will be.

THE FOOT FORM IN PERSONS AT THE AGE OF 16-25 YEARS

Karpova M. Sadursky I. – the 2nd year students

Scientific leaders - Can.Med.Sc., Assoc.Prof S.S. Seliverstov, E.A. Volosenkova

Flat foot is a foot deformity characterized by flattening its arches. There is transverse and longitudinal flat foot, a combination of both forms is possible. Transverse flat foot in combination with other strains makes up 55.23%, a longitudinal flat foot combined with the other foot deformities make up 29.3%. Flat foot is a closely connected with the body weight: the more weight is and, consequently, the load on the feet, the more pronounced longitudinal flat foot. Longitudinal flat occurs most often between the ages of 16-25 years, the transverse flatfoot is between 35-50 years. The main symptoms of the longitudinal flat foot - pain in the foot, changing its shape.

In case of less pronounced flat foot (I degree) fatigue appears in the legs after exercise, with pressure on the foot pains appear. Gait becomes less plastic, often in the evening foot swells.

In persons suffering from flatfoot of the II degree pain focuses not only in the feet, but also extends to the ankles, shins. It is more severe and frequent. The muscles of the foot to a large extent lose elasticity, and gait – loses its smooth.

Finally, the III degree of flatfoot is a pronounced deformity of the foot. Often, patients only at this stage go to the doctor. After all the pain in the feet, lower legs, which are almost always swollen, in the knee joints it is felt constantly. Loin often hurts, painful headache appears. In case of the III degree of flatfoot sport becomes unavailable, ability to work, is greatly reduced even a quiet, short walking is difficult. In a common shoe people already can not walk.

Prevention. Forming the correct correct gait means to avoid dilution of toes when walking, so as not to overload the inner edge of the foot and supporting it ligaments, parallel putting the feet and rest from time to time on the outer edges of the supinated feet.

THE MORPHOLOGY OF THE LIVER IN AUTOIMMUNE HEPATITIS

Ostapenko Y. - the 2nd year student.

Scientific leaders - V. S. Kozlova, E.A. Volosenkova.

The liver is the largest internal organ, performing the vital functions.

Hepatitis is inflammatory liver disease. Morphological changes in hepatitis are associated with reactive changes. Usually the number of collagen fibers increases.

Autoimmune hepatitis is chronic and often corresponds to severe chronic hepatitis. The origin of autoimmune hepatitis, as of many other autoimmune diseases, is still completely unknown. The essence of the pathological process is reduced to a deficit of immune regulation. Along with the liver damage in the blood serum there is a broad range of autoantibodies (antinuclear, microsomal antigen of liver and kidney, a liver specific protein (LSP), and smooth muscle), and increased immunoglobulin G. Depending on the set of detectable antibodies there are currently 3 types of autoimmune hepatitis. Polymorphism of the hepatocytes and hydropic and balloon dystrophy are morphologically pronounced. Regenerating hepatocytes with two or more nuclei are determined. There are frequent focal (spotty) necroses of hepatocytes with lymphomacrophagal infiltration with a mixture of a large number of plasma cells and the appearance in the portal tracts of lymphoid follicles macrophage granuloma can be formed nearby. In autoimmune hepatitis, the frequency of conversion to cirrhosis of the liver is higher, and prognosis is worse than in patients with chronic viral hepatitis.

CAUSES OF NEONATAL JAUNDICE

Molchanov A. - the 2nd year student

Scientific leaders – N.A. Feoktistova, E.A. Volosenkova

The cause of hemolytic disease of the newborn is the incompatibility of the blood of the mother and fetus in the group or Rh factor. Ictericness of the skin is caused by the accumulation of hydrophobic form of bilirubin in the subcutaneous fat. However, the real danger is the accumulation of bilirubin in the gray matter of the nervous tissue and the nuclei of the brain stem with the development of «kernicterus» (bilirubin encephalopathy). The severe anemia, reticulocytosis, erythroblastosis and normoblastosis, hyperbilirubinemia due to indirect fractions of 100 to 342 mmol / l are detected in the blood, the direct fraction of bilirubin increases in the future. The level of bilirubin in the blood reaches the maximum level to 3-5 days of life. Physiological (transient) neonatal jaundice develops 3-4 days after birth due to decreased activity of UDP-glucuronosyltransferase in the first days of life, which is associated with increased degradation of fetal hemoglobin and low activity of biliary tract. Hemolysis and anemia are absent. The symptoms disappear within 1-2 weeks after birth. Serum concentration of indirect bilirubin is increased to 140- 240 mmol / l. Jaundice in preterm infants disappears in 3-4 weeks after birth. Increasing the concentration of indirect bilirubin in serum reaches the maximum level in 5-6 days after birth and is more pronounced as compared with physiological jaundice. Non-hemolytic neonatal hyperbilirubinemia caused by the mother's milk, is found in 1% of newborns. The cause is inhibition of the activity of UDP-

glucuronosyltransferase presumably with estrogens of breast milk. Diagnostic criteria: jaundice, sometimes with symptoms of CNS, increased indirect bilirubin concentration in blood serum.

ANOMALIES OF THE NERVOUS SYSTEM (ANATOMICAL MUSEUM MATERIALS OF THE AMUR STATE MEDICAL ACADEMY)

Molchanov A., Sergeeva A., Dzyuban M. - the 2nd year students

Scientific leaders – N.P. Ambroseva, E.A. Volosenkova

In the museum of the Department of Anatomy and Operative Surgery of ASMA the preparations having congenital malformations of the central nervous system were detected: 12 preparations with anencephaly, 4 - with hydrocephaly, 4 - with a brain hernia, and 2 - with a spinal hernia. Anencephaly - intrauterine fetal malformations which is formed during the early stages of pregnancy in 21-28 days (unclosed anterior neuropore of the neural tube). In 100% of cases this defect is fatal. Hydrocephalus - a disease characterized by excessive accumulation of cerebrospinal liquid in the ventricular system of the brain as a result of its difficulty to move from the place of secretion (ventricles of the brain) to the place of absorption into the circulatory system (subarachnoid space). The emergence of hydrocephalus in the newborn in most cases is caused by infectious diseases (CMV) during pregnancy, leading to disruption of the ventricular system of the fetal brain. Brain herniation (cephalocele) is a hernial protrusion in the cranial bone defect usually located in places of the bone union. Meningocele is a protrusion of the dura mater through the defect which is covered with the skin. The content of meningocele is cerebrospinal fluid. Spinal hernia are congenital malformations of the spine and spinal cord, in the form of the defect of the spinal canal through which the spinal cord sticks out. Thus its function is greatly disturbed. The disease causes a disturbance of the legs (rarely hands) movements, urinary and fecal incontinence and, consequently, causes the severe disability.

REPRODUCTIVE HEALTH OF MEN

Grigoriev D. - the 1st year student

Scientific leaders - Prof. E.N, Gordienko, E.A. Volosenkova.

Health - is a universal indicator of the quality of life. Questions of protection of health in men today are more relevant than ever, because men's health is an index of demographic, labor and defense capabilities. Despite the extremely poor state of men's health, experts until recent were not engaged in this issue. The scientific community's interests were mainly focused on the study of the problems of obstetrics and gynecology, so the research, the subject of which are components of the reproductive health of men, are rare. In science there are very little fundamental researches on men's health and reproductive health of men in particular, the consequences of its damage for the individual and society as a whole, moreover, a methodology for such studies is not developed.

Thus, it becomes increasingly clear that it is necessary to pay attention to men's health. The State must realize that the protection of men's health, including reproductive health, is a public safety task requiring legislative regulation.

HEREDITARY DISEASES – ASPECTS OF TREATMENT IN THE XXI CENTURY

Belyak Y. – the 1st year student

Scientific leaders – Doc.Med.Sc. E.N. Gordienko, O.I. Katina

Mucoviscidosis (cystic fibrosis) – is a systemic hereditary disease caused by a mutation of the gene of mucoviscidosis transmembrane regulator. It is characterized by lesions of exocrine glands and severe violations of respiratory function.

Mucoviscidosis is inherited in an autosomal recessive manner and is registered in the most European countries, with a frequency of 1: 2000 - 1: 2500 newborns. In Russia, the average frequency of disease is 1: 10,000 of newborns.

For the early detection the cystic fibrosis is included in the examination of newborns for hereditary and congenital diseases.

70% of cystic fibrosis cases are detected within the first two years of the child's life. With the introduction of neonatal screening the time of detection was greatly reduced.

There is a center of cystic fibrosis in the Republic of Tatarstan. At present, 73 patients are examined in the center. 13 of them are followed-up after an examination due to the positive neonatal screening. The prevalence, epidemiological, genetic and other characteristics of the disease are studied. With the introduction of neonatal screening the detection time was greatly increased.

2017 – THE YEAR OF THE ENVIRONMENT IN THE RUSSIAN FEDERATION

Konev A., Umarova N. – the 2nd-year students

Scientific leader – Cand.Biol.Sc. L.A. Guba

In order to attract public attention to the issues of the Russian Federation environmental development, the conservation of biological diversity and maintenance of ecological safety the Decree «Year of Ecology» has been announced in the Russian Federation in 2017.

For the environmental D-students "the coming year will be difficult. For those companies that already follow responsible environmental policy, there will be new opportunities for growth and long-term incentives to maintain the selected vector of development.... Positive changes will be visible to everyone! ".

The main tasks to be solved in 2017:

Improving the legal and regulatory framework, governing the sphere of ecology, and practical application of the amendments that have already been approved by a parliamentary body;

Improving the environmental performance indices;

Formation of active citizenship in the field of ecology in the Russian citizens;

The development of Russian nature reserves system.

Thus, 2017 will be the year of ecology at once of double volume - attention will be paid to both the improvement of environmental sphere as a whole and to the development of the system of nature reserves individually.

What kinds of prospects are waiting us? In 2017 a significant tightening of regulatory standards, governing the activities of state and commercial structures occurs in terms of their impact on the environment. The new conditions will have to encourage companies to be more responsible for the protection of all kinds of natural resources and for their preservation against any negative impact.

In particular, the amendments to the Federal Law "About Wastes" will come into operation in the part of the regulatory process of emissions and discharges of wastes into the atmosphere and into water bodies. The law will encourage businesses to use the best technologies available today, which cause the least harm to nature.

However, experts have expressed the hope that the Year of Ecology, which is also called a year of especially protected natural territories in Russia, yet will bring tangible benefits to nature. Thus, it is expected that substantial assistance will go to those objects located on the territory of our country, which are listed as UNESCO World Heritage Site.

If during the implementation of the action plan of the Year of Ecology (2017), proclaimed by the Decree of the President, there will be the beginning of solving these problems; the impact of this project can be assessed positively.

SUPPLEMENTS: TO FEAR OR NOT

Konev A., Ivashchenko V., Chernikova P., Mikhailova P. – the 2nd-year students
Scientific leader - Cand.Med.Sc. L.Ya. Etmanova

Substances added to food to improve its external qualities, taste, to increase the shelf life expiration of food are called supplements. In recent years, it has become increasingly difficult to find the products in which they are not contained. On the contrary, the number of food supplements is increasing, more and more often unfamiliar names appear.

Food supplements have different functions, on this basis they are divided into some groups.

Nutritional supplements improve nutrition value. They increase the content of vitamins, minerals, fiber, fats and carbohydrates.

The function of keeping food safe is associated with antioxidants. Thanks to them, food for a long time does not deteriorate and saves its appearance and taste.

There are specific nutritional supplements that help the products to acquire necessary appearance.

Due to the chelating agents and sequestrants cream is whipped into soft foam and milk coagulates into kefir.

Probably the most famous food supplements are preservatives. They preserve foods and prevent the loss of taste and nutritional qualities. In ancient times sugar, salt, smoke for smoking have been used as preservatives.

Another group of supplements, being a subject of much controversy is food grade dyes. Both natural and synthetic dyes are added into the food. In recent years, organic dyes have been used more frequently.

To improve the texture of products conditioners are used. Canned tomatoes remain strong due to the addition of calcium and phosphates make the texture of products softer.

To thicken liquid and semi-liquid products emulsifiers are used, and into bread and flour products an emulsifier which makes bread be soft and lush is added.

Sweeteners, flavors, thickeners, preservatives, dyes, and still many other substances are added to products. Debates about the need for these supplements are not stopped. Attitude to food supplements is different, but it is hard to find an indifferent person, because they have a certain influence on health. Some scientists have argued that nutritional supplements are harmless, while others consider them to be the cause of all diseases of mankind. We won't judge who is right and who is wrong, in any case, everyone should know the meaning of labels on packages, and the meaning of letterings.

HISTOLOGY OF THE ESOPHAGUS IN NORMAL CONDITION AND IN CANCER

Umarova N. – the 2nd-year student

Scientific leader – Cand.Med.Sc. D.A. Semenov

Esophagus (Latin *oesophagus*) is a part of the alimentary canal. It represents a hollow muscle tube flattened anteroposteriorly through which food goes from the pharynx to the stomach. The esophagus of an adult has a length of 25-30 cm. It is a continuation of the pharynx. It begins in the neck at the level of the VI-VII cervical vertebrae, and then passes through the thoracic cavity in the mediastinum and ends in the abdominal cavity at the X-XI thoracic vertebrae, falling into the stomach.

The esophagus consists of mucosa, submucosa, muscular and adventitia membranes. The mucosa and submucosa form in the esophagus 7-10 longitudinally extended folds, protruding into the lumen.

The mucous epithelium of esophagus includes private and muscle plates. The mucosal epithelium is multilayered, flat and not keratotic but at the elderly age its superficial cells may undergo keratinization. In the epithelial layer there are 20-25 cell layers. In human esophagus the flat cells of the surface layer of the epithelium contain a small amount of keratohyalin granules.

The submucous base of the esophagus provides greater mobility of the esophageal mucosa relative to muscle membrane. Together with the mucosa it forms numerous longitudinal folds that are straightened during the ingestion of food.

Cancer of the esophagus is mostly associated with its epithelial cells of mucosa (carcinoma).

PROBLEM OF EPONYMS IN THE STUDY OF INTERNAL MORPHOLOGY

Konev A. - 2nd-year student

Scientific leader - Cand.Med.Sc. Yu.A. Shakalo

In 1955, in Paris the VI International Congress of Anatomists for the first time in the history of science has taken the official list of the Latin anatomical terms - Nomina Anatomica, which was called the Paris anatomical nomenclature (PNA - Paris Nomina Anatomica). This list was presented to the Congress of Anatomists by the International Anatomical Nomenclature Committee that had held seven principles when preparing the nomenclature guidelines, the latter of which reads: "Do not use in the official nomenclature of descriptive and microscopic anatomy the eponyms (words derived from the [proper name](#) of a real or mythical person or place)." Such strict limitation is due to the complexity of adjustment the international list to numerous national nomenclatures since the same structures have alternative proper names in different countries.

Later (1972-1974), in the development of Russian anatomical nomenclature, the prohibition on the use of eponyms was not lifted, although something was mitigated. The eponyms were allowed us to be used in cases when they are the basis for the formation of clinical terms (maxillary sinus - sinusitis, Eustachian tube - evstahiit).

After the approval of the Russian version of equivalents of the International anatomical terms (1974) eponyms disappeared from the textbooks of anatomy, whereas in clinical practice, they are widely used. Moreover, the practitioners often replace the official names for the eponymous terms (crural arch, Douglas space, Willis circle Pacchionian

bodies, etc.). In the last edition of the International Anatomical Terminology (2003) with an official list of Russian equivalents there is an alpha index of eponyms (400 terms).

Since in the Medical Universities anatomy for future doctors is taught but not anatomy "in general", I believe it is important to answer the following questions: What variant of a term to prefer: eponymous or official "anonymous"? Do all the official terms have eponymous equivalents? Were there namesakes among the scientists whose names we use as to anatomical terminology? How did the double terms such as Pirogov-Waldeyer's ring appear? Are these results of the team-work or accidental occurrence?

And the most important question for a 1st-year student, how not to get lost in the global diversity of terminological units and to learn correct ones, is solved easily - learn official terms and remember those eponyms which are used in clinical practice. A list of the latter has been prepared for the students of Amur SMA. Also, brief biographies of the scientists who made a special contribution to the development of anatomy and whose names are used to determine different anatomical structures of the human body are presented.

TOOTH AS AN ORGAN. MORPHOFUNCTIONAL CHARACTERISTICS OF VARIOUS TOOTH PATHOLOGIES

Ivaschenko V. - 2nd-year student

Scientific leader – Cand.Med.Sc. D.A. Semenov

Everyone should know the components of his body and the teeth as well.

A tooth is composed primarily of the dentin and cavity, covered by enamel and cementum. The tooth has a characteristic shape and structure. It occupies a certain position in the dentition, built from special fabrics. It has its own nervous apparatus, blood and lymph vessels. Normally, a person has 28 to 32 teeth. The absence of third molars, called "wisdom teeth" is the norm, and the third molars are already considered by an increasing number of scientists to be a throwback, but it is currently a controversial moment. Inside the tooth there is loose connective tissue, filled with nerves and blood vessels (pulp). There are deciduous and permanent teeth - temporary and permanent occlusion. During the period of the temporary occlusion there are 8 incisors, 4 canines and 8 molars - a total of 20 teeth. Permanent dentition consists of 8 incisors, 4 canines, 8 premolars and molars (8-12), at that the third molars are considered to be abnormal and often they are a subject to removal. In children, the baby teeth begin to erupt at the age of 3 months. In the period from 6 to 13 years old deciduous teeth are gradually replaced by permanent.

As any organ the tooth has a number of functions: mechanical processing of food; withholding food; participation in the formation of speech sounds and aesthetic. The teeth play an important role in the mouth.

Teething in a man occurs twice: during the first period the eruption of 20 primary teeth lasts for 6 months of age till 24-30 months of age, the second period - from 5 to 14 years, when there is a change to the permanent teeth. Wisdom teeth erupt at 17-25 or they do not erupt at all. The terms of teething and the order of appearance can sometimes be violated. Most often they are associated with the pathology of eruption of wisdom teeth. There are cases where babies are born with already cut 1-2 baby teeth. Beginning with the second half of the XX century teething occurs earlier, it is associated with acceleration.

The development of human embryonic teeth begins at approximately 7 week. In the region of future alveolar processes a thickening of the epithelium takes place, which begins to grow into the mesenchyme in the form of a curved plate. Further, this plate is divided

into front and back, where the primordia of deciduous teeth are formed. Teeth primordia gradually separate from the surrounding tissue, and then in them the component parts of the tooth appear. The epithelial cells give rise to enamel. Dentin and pulp are formed from the mesenchymal tissue. Cementum and root sheath are developed from the surrounding mesenchyme.

Growing tooth pulp doesn't play only the role of a nutrient; in children it is also a source of stem cells that are important for the formation of dentine. Inhibition of pulp cells, and thus the growth of the teeth can occur in children under the effect of high doses of local anesthetics used in dentistry.

Human teeth are not regenerated while in some animals, such as sharks, they are updated continuously throughout life.

There are various dental diseases such as caries, pathological abrasion of teeth, pulpitis, periodontitis, parodontitis, dental tartar, hyperplasia of the tooth enamel and others. In order to prevent the development of diseases one must follow the dental hygiene. Oral hygiene is a means of prevention of dental caries, gingivitis, periodontal disease, bad smell from the mouth (halitosis) and other dental diseases. It includes both daily brushing habits and professionally cleaned teeth; the latter is carried out by a dentist.

This procedure involves the removal of dental tartar (mineralized plaque) that can be generated even with careful brushing and flossing.

To care for the first teeth of a child it is recommended to use special dental wipes.

Items of personal oral hygiene: toothbrushes, dental floss, a tongue scraper. Hygiene products: toothpastes, gels, rinses. But also do not forget to go to the dentist.

Thus, healthy, beautiful teeth are one of the constituent factors of natural beauty of a person.

THE USE OF AROMATASE INHIBITORS IN ONCOLOGY PRACTICE

Kurilova I., Kostenko K. - the 4th-year students

Scientific leader - Cand.Med.Sc. V.I. Tihanov

Aromatase inhibitors have been applied in Oncology practice in the 70-80-ies of XX century. Aromatase is a cytochrome P450-dependent enzyme responsible for the conversion of androgens to estrogens synthesizing in the adrenal cortex. Aromatase is present in various tissues and organs, including the ovaries, adipose tissue, skeletal muscle, liver. Inhibition of aromatase reduces the formation of estrogens in women. The lack of estrogens leads to the development of breast tumors.

The first and actually the only representative of aromatase inhibitors of the first generation is aminoglutethimide - a nonselective aromatase inhibitor.

The search for new medicines with greater selectivity, better tolerability and more convenient dosage regimen led to the development of aromatase inhibitors of the third generation. They include nonsteroidal (letrozole, anastrozole etc.) and steroidal (exemestane) compounds of this group.

The main indication for prescription of aromatase inhibitors is breast cancer in postmenopausal women.

MICROSCOPIC COLITIS: CURRENT STATE OF THE PROBLEM

Lushnikova A. – the 5th-year student

Scientific leaders – Doc.Med.Sc. V.I. Pavlenko, Cand.Med.Sc. I.A. Bibik

According to modern concepts, microscopic colitis (MC) is an inflammatory disease of intestine with unknown etiology which is characterized by chronic watery diarrhea, lack of macroscopic signs of lesions of the colon in the presence of specific pathological changes.

Currently, the prevalence of MC is about 100 cases per 100,000 of the population, which is comparable to other inflammatory diseases of bowel, such as ulcerative colitis and Crohn's disease. MC is predominant in women usually over the age of 50 years. It should be noted that 30-50% of patients with MC have at least one concomitant autoimmune disease (Sjögren's syndrome, Raynaud's syndrome, rheumatoid arthritis, psoriasis, celiac disease and hyper or hypothyroidism).

The etiology and pathogenesis of MC is not fully explored. The literature discusses various factors (smoking, drug effect), and the mechanisms potentially associated with the development of MC, including infectious and immunologic; malabsorption of bile acids; genetic predisposition; disorders of collagen metabolism.

The main goals of treatment of MC patients are induction of clinical remission and improvement of the life quality of patients. Currently, topical glucocorticosteroid budesonide is the only drug efficiency of which both of the induction and maintenance of remission for MC was proved in many clinical studies.

According to meta-analysis results, the induction of remission in patients treated with budesonide in a dose of 9 mg/day for 6-8 weeks is about 80%. Considering the high frequency of relapses after completion of induction therapy, which is 60-80%, it is advisable to consider the tactics of assigning the long-term maintenance therapy up to 6 months.

THE SUBSTANCE STIMULATING THE NERVOUS SYSTEM

Karyakin M, Savchenko V. – the 4th-year students

Scientific leader – Doc.Med.Sc., Prof. V.A. Dorovskikh

Caffeine is one of the best natural stimulant that can be addictive, if you regularly consume it in excess. This substance is called "the most popular legal drug in the world." The main sources of this substance are coffee, tea, mate and chocolate.

Why caffeine “invigorates”? First of all, getting into the body, caffeine mimics adenosine neurohormone that inhibits nerve impulses and causes drowsiness. Caffeine blocks adenosine receptors in the brain and other organs, not allowing this substance to communicate with them. Thus, it suppresses relaxation, increases the reaction rate and attention. Secondly, caffeine stimulates the secretion of epinephrine, the hormone which increases the heart rate and increases the pressure and increases blood flow to the muscles and triggers delivery of blood glucose in its depot in the liver. Thirdly, caffeine improves neurohormone dopamine in the brain. This substance is responsible for the sense of well being and happiness. That feeling of vitality and recovery after a good cup of coffee is the cause of addiction to caffeine.

When caffeine is safe? For most people a safe and healthy daily dose of caffeine is 300 mg (three small cups of strong coffee). Some people have high sensitivity to caffeine. 100 mg of the substance may cause unpleasant symptoms of an overdose.

A lethal dose of caffeine is from 10 to 20 g (100 cups of coffee).

A list of symptoms of a caffeine overdose includes: heart palpitations, increased anxiety, insomnia, diarrhea, frequent urination, dizziness, cramps in the stomach and intestines, flushed face, thirst, nausea, and headaches.

Sensitivity to caffeine: With age, sensitivity to caffeine is increased. Women are more sensitive to caffeine than men. Cardiovascular diseases increase the susceptibility to the effects of caffeine. The less people drink beverages rich in caffeine, the more they are sensitive to the substance. About the compatibility of drug with caffeine is usually written in the instructions for use; reduced weight increases the sensitivity to caffeine.

Abrupt cessation of the use of caffeinated beverages can cause withdrawal symptoms. The more caffeine a person consumes, the greater his chances of developing unpleasant symptoms caused by its absence. The first signs of "coffee withdrawal" begin in 12-14 hours after the last cup of coffee or an energy drink.

Symptoms of caffeine withdrawal syndrome: fever, decreased attention, depressed mood, concentration problems, drowsiness, headaches, irritability, muscle pain.

METHODS OF X-RAY EXAMINATIONS

Beglyanova A., Grishina M. - the 2nd-year students

Scientific leaders - L.G. Zherepa, Cand.Ped.Sc. Bibik

Techniques for radiographic examination are divided into: general and special.

General techniques are designed to examine any anatomical area and performed with general-purpose X-ray machines (fluoroscopy and radiography) sometimes these techniques are called specific.

Special techniques allow us to get an image with special devices designed to examine specific areas and organs. A large group of examinations belongs to special techniques. When involving images are obtained with the use of artificial contrast.

Special techniques:

Techniques with application of artificial contrasting are used in order to make organs which cannot be seen on usual images visual. Substances, which absorb or let radiation of greater or less intensity than the target organ pass, are introduced into the organism.

Air, carbon dioxide, nitrous oxides are used as contrast agents.

Techniques with the use of artificial contrasting are used to obtain ordinary images of organs or their parts invisible on ordinary images. They are bronchography, barium enema, cholecystography, cystography, fistulography and etc.

Technique of artificial contrasting is currently the leading X-ray examination of most of the internal organs.

Methods of artificial contrasting of organs.

There are two methods of artificial contrasting with the use of highly atomic substances.

1. Direct injection of contrast material into the cavity of an organ - the esophagus, stomach, intestines, bronchi, blood vessels or lymph vessels, cerebrospinal fluid spaces of the brain and spinal cord, etc.

2. The use of a specific ability of certain organs to concentrate some or other contrast agents. For example, the liver, gallbladder and kidneys concentrate and excrete an iodine compound introduced into the body. After administration such substances to a patient on the images within a given period the bile ducts, gall bladder, abdominal kidney system, ureter, and bladder can be seen.

Diagnostic pneumothorax - X-ray examination of the respiratory system after the introduction of gas in the pleural cavity.

Sialography - X-ray examination of channels of salivary glands after their filling with radiopaque medium.

Enterograph - X-ray examination of a small intestine after filling its loops with barium sulfate suspension.

Irrigoscopy - X-ray examination of a large intestine after filling its loops with barium sulfate suspension.

Aortography - X-ray examination of an aorta after introduction into its lumen radiopaque medium.

Phlebography - X-ray examination of veins after introduction into their lumen radiopaque medium.

DIABETES

Pavlovskaya M., Avetisyan Ya., Kabar M.- the 2nd-year students

Scientific leaders - Assoc.Prof., Doc.Med.Sc. L.G. Tertychnaya, N.A. Feoktistova, Cand.Ped.Sc. I.A. Bibik

The term "type 1 diabetes" is used to describe a group of disorders that develop as a result of the progressive destruction of pancreatic beta cells, which leads to a deficiency of proinsulin synthesis and hyperglycemia. The term "type 2 diabetes" refers to a disease developing in individuals with an excessive accumulation of adipose tissue with insulin resistance, so that there is an excess of insulin and amylin synthesis of pancreatic beta cells. The term "gestational diabetes" is used in a pathological state - hyperglycemia that occurs on a background of pregnancy in some women and usually disappear spontaneously after delivery. Other forms of diabetes: insulin abnormalities or its receptors, the disease of the exocrine pancreas, endocrine disease, Cushing syndrome, acromegaly, etc. There is a genetic predisposition to diabetes. If one of the parents is sick, then the probability to inherit diabetes of the first type is equal to 10%, and type II diabetes - 80%.

Regardless of development mechanisms, a common feature of all types of diabetes is to increase the level of glucose in the blood and disturbance of metabolism of body tissue, unable to absorb more glucose. This leads to increased catabolism of fat and protein with the development of ketoacidosis. Increasing the concentration of glucose in the blood increases the osmotic pressure of the blood, which causes serious loss of water and electrolytes in urine.

Respiratory system. Diabetes is often associated with pulmonary tuberculosis. In patients with diabetes, TB can occur as a result of infection or endogenous activation of hidden pockets.

The reproductive system. In diabetes the genitals are affected. In men diminished sexual libido or loss of libido and erectile dysfunction may often take place. In women infertility may occur, spontaneous abortion, premature delivery, intrauterine fetal death, amenorrhea, vulvitis, vaginitis may take place.

The nervous and muscular systems. There are the following forms of neuromuscular disorders in diabetes: symmetric polyneuropathy; single or multiple neuropathy; diabetic amyotrophy. The clinical picture distinguishes between two groups of symptoms: 1. Basic: polyuria (increased urine volume); polydipsia (constant unquenchable thirst); polyphagia (constant [unappeasable hunger](#)); weight loss. This symptom is caused by metabolic disorders, namely the inability of cells to absorb and process glucose in the absence of insulin (hunger in plenty of food).

2. Accessory: itching of the skin and mucous membranes; dry mouth; general muscle weakness; headache; blurred vision; the presence of acetone in the urine in diabetes type 1.

Diet for diabetes is a necessary part of treatment, as well as the use of hypoglycemic agents or insulin. Compensation of carbohydrate metabolism is not possible without dieting.

CONTEMPORARY ISSUES OF THYMUS REGENERATION

Kabar M. - 2nd year student

Scientific leader - Assoc. Prof. T.L. Ogorodnikova

The thymus gland is a central body of lymphopoiesis and immunogenesis. The size of the gland changes with age and loses its most important function, an involution of the organ takes place. The thymus consists of two lobes coated with capsular tissue and having a lobed structure, where in each lobe there is the cortex and medulla. The epithelial tissue, consisting of processed epithelioreticulocytes, is the base.

In the thymus there is its physiological regeneration, which is carried out by means of appearance of new lymphocytes. Its epithelium becomes populated with blood stem cells, which are differentiated into the cells of the thymus gland. An increasing number of thymus lymphocytes gives rise to T-lymphocytes.

In the thymic stroma there are two types of long processed cells - dendritic and interdigitating cells produced from precursors contained in the bone marrow. The thymic dendritic cells are formed from lymphoid precursor. They present their own antigens in a complex with molecules of the major histocompatibility complex I and II to autoreactive thymocytes. The autoantigens are connected by Fas-receptors. It leads to apoptosis of T-cells. This process is called negative selection of T-lymphocytes. It provides central immunotolerance. In using the low doses of toxins it is usually restored by reparative regeneration, but because of large doses the T-cells irreversibly disappear and atrophy of its stroma takes place.

Interesting information was obtained during an experiment to study microstructural changes in the thymus after stress. The results showed that after stress the cortex and medulla of lobules seem the same: they have almost no lymphocytes. High stress, intoxication and other pathogenic factors cause depletion of thymic lymphocytes, a violation of its stroma and loss of function.

Endogenous regeneration of the thymus can restore the immune system after stress, infectious diseases and other impacts, resource-depleting immune cells. The recovery mechanism is based on the action of interleukin-22 (IL-22). The study has shown that IL-22 introduction increased the thymic regeneration after total radiation exposure. IL-22 mainly acts on thymic epithelioreticulocytes, stimulating their proliferation and increasing their survivability in damaging effects. Expression of IL-22 is increased after the damage of thymus in the cells-inductors of lymphoid tissue resistant to radiation; it is regulated by IL-23.

The study of thymus involution contributed to the appearance of a new method of regeneration of the thymus gland. During the experiment, scientists have increased the level of protein FOXP1 in the body, produced by the thymus cells. Due to this protein there is activation and deactivation of the genes responsible for the control of the development of organ. The increase of the concentration of FOXP1 "reset" the thymus

cells. The thymus recovered and regained its structure and size, but above all, it restored the function of immunogenesis.

In conclusion we can say that the question of regeneration of the thymus is of great importance in the treatment of many diseases, the development of this research will make the greatest contribution primarily to the treatment of ontological diseases, HIV, autoimmune diseases, pathological conditions of the thymus and other equally serious diseases.

CORI CYCLE

Savostyanov D. – the 1st-year student

Scientific leader – N.A. Feoktistova

Cori cycle is a complex of biochemical and enzymatic processes of transporting lactate from muscles to the liver with further synthesis of glucose from lactate catalysed by enzymes of gluconeogenesis.

The biological significance.

In intensive muscular work and in the absence of mitochondria or in their insufficiency (e.g., in the erythrocytes or muscles) glucose enters the pathway of anaerobic glycolysis with lactate formation. Lactate can no longer be oxidized; it is accumulated (in its accumulation in the muscles the sensitive nerve endings are irritated causing a specific burning sensation in the muscles). With the bloodstream lactate is transported to the liver. The liver is the main place where the enzymes of gluconeogenesis are gathered (synthesis of glucose from non-carbohydrate compounds), and lactate participates in the synthesis of glucose. The reaction of conversion of lactate into pyruvate is catalyzed by lactate dehydrogenase. Further, pyruvate is subjected to oxidative decarboxylation, or can be subjected to fermentation.

INTESTINAL DISEASES ON SAKHALIN

Grishina M., Avetisyan Ya. - the 2nd-year students

Scientific leaders - Assoc.Prof. Can.Biol.Sc. L.A. Guba, Cand.Ped.Sc. I.A. Bibik

During the period from 08.07.2016 to 15.07.2016. In the Sakhalin region 120 cases of acute intestinal infections (83 of them in children under 17 years) were recorded. The incidence rate was 24.6 per 100,000 of population. Morbidity in Smirnykhovskiy (48.4), Poronaisk (40.5), Ulegorsk (31.3), Aniva (27.2), Tymovskiy (26.7), Nevel (25.3) districts and Yuzhno-Sakhalinsk (32.5) was recorded above the regional index. In Yuzhno-Sakhalinsk, 65 cases of acute intestinal infections (children under 17 years - 44 cases) were registered. The incidence rate was 32.5 per 100,000 of the population. In the Sakhalin region (in Yuzhno-Sakhalinsk) 16 cases of enterovirus infection (1 case among children under 1 year, 3 – among children from 1 to 2 years, 10 cases - among children from 3 to 6 years) were registered. The incidence rate was 3.3 per 100,000 population.

Disease level of enterovirus infection in the Sakhalin region was growing:

During the period from from 8 to 14 August 2016. In the Sakhalin region 128 cases of acute intestinal infections (97 of them among children under 17 years) were recorded. The incidence rate was 26.2% per 100,000 population, which is lower than in the previous week by 11.1%. Incidence in Nevelsk (50.7), Makarov (36.4), Poronaisk (27.0), Nogliki (26.2) districts and in Yuzhno-Sakhalinsk (41.0) were recorded above the regional index. So in the regional center 82 cases of acute intestinal infections, including children under

17 years - 66 cases were registered. The incidence rate in relation to the previous week was lower by 9.9%. As reported in the regional Rospotrebnadzor, activation of the epidemic process of enterovirus infection morbidity had been continued. During the period mentioned above in the region 50 cases of diseases were recorded (10.2 cases per 100,000 population), it was higher than in the previous week by 41.1%. FSHI "Center of Hygiene and Epidemiology in the Sakhalin region" found out pathogens of enterovirus infection in the waste water and surface water body used for bathing.

Enteritis ("gut" - Greek) is inflammation of the small intestine, resulting in chronic atrophy of the mucous membrane. The causative agents are enteroviruses belonging to the picornaviridae family.

ELDERLY PATIENTS IN PRACTICE OF THE THERAPIST

Dmitrieva N., Zyabrina A. – interns

Scientific leader – Cand.Med.Sc. L.I. Bugayeva

The main features of patients of the advanced and senile age are:

- presence of involution, functional and morphological changes in the various organs and systems;
- presence of several diseases in one patient (polymorbidity);
- predominantly chronic diseases;
- atypical clinical manifestations of disease;
- social-psychological maladjustment.

One of the characteristics of patients with middle and old age is polymorbidity, i.e. presence in most of them several diseases, each of which has its specific manifestations, peculiarities of the course of the disease, complications, a different outlook, differently effects on the quality of life and requires appropriate individualized therapy.

In Russia the specialty of geriatrician was introduced in 1994 and the place of the expert in the system of primary health care is not clearly defined, and his responsibilities are not fully realized. So most of the problems associated with diagnostics, treatment and rehabilitation of the elderly patients, still have to be solved by a therapist, who therefore should have a broad general clinical training, the ability to solve many related, cross-cutting issues.

The necessity of integrated doctor-patient relationship with the elderly patients on the base of the broad clinical training of a doctor can be most clearly illustrated by the example of managing a patient with diabetes. The character of the course of disease and the specific complications of the disease, along with frequent comorbidities require that a doctor has the related knowledge and skills not only in endocrinology (early diagnosis and selection of adequate therapy), but also in such clinical fields as cardiology, nephrology, urology, neurology, ophthalmology.

The main problems of drug therapy in elderly persons are:

- the need for the administration of more than one drug (forced polypharmacy);
- The need for prolonged use of drugs in connection with a chronic course of many diseases (heart failure, diseases of the musculoskeletal system, hypertension, and others.);
- violation of the pharmacodynamics and pharmacokinetics of drugs on the background of age involution of organs and systems, as well as the existing geriatric pathology;

- Compliance violence - insufficient or improper execution of prescribed drug therapy.

The early detection of adverse reactions to medication gets the importance in managing the elderly patients. One should not only focus on the detected changes during the examination or laboratory assessment, but also take into account the information obtained from the patient and his family about the quality of patient's life. Only the patient himself, of course, in the absence of gross cognitive impairment can estimate even the minimum disruption of quality of life, to which the doctor often does not pay special attention, evaluating only the closest effect (reduction of blood pressure, pain management, and so on).

PROPHYLAXIS OF ENTEROVIRUS INFECTION

Aksenova A - the 2nd-year student

Scientific leader - Cand.Biol.Sc. L.A. Guba, Cand.Ped.Sc. I.A. Bibik

Enterovirus infections (EVI) represent a group of acute diseases caused by enterovirus, characterized by a variety of clinical manifestations (from mild fevers to severe meningitis). Enteroviruses are resistant to the external environment for a long period of time and can be stored in the waste water, swimming pools, surface water bodies, household items, food products (milk, fruits, vegetables). The virus dies quickly when warming, boiling.

EVI is characterized by the rapid spread of the disease.

The source of infection: the sick and virus carriers.

Modes of transmission: airborne, community-acquired, through food and water. Symptoms: the body temperature of 39-40 degrees, severe headache, dizziness, vomiting, abdominal pain, convulsions, catarrh of the oropharynx and upper respiratory tract.

Prophylaxis: 1) maintain personal hygiene rules, 2) drink only boiled water, 3) wash fruits and vegetables thoroughly (then rinse them with boiling water).

ANALYSIS OF MORPHOLOGICAL CHANGES OF PLACENTA IN PATIENTS WITH BRONCHIAL ASTHMA

Liyasova A., Repina J. - the 6-th year students

Scientific leaders – Prikhodko O.B., Kostrova I.V., Goryacheva S.N.

Placental insufficiency - a symptom arising in many pregnancy complications, indicative about inhibition of gestational dominants. The development of placental insufficiency associated with impaired maternal hemodynamics, aided by the complicated course of pregnancy and extragenital pathology, including asthma.

The placenta has a large compensatory capacity, aimed at ensuring the normal development of the fetal life. It is known that in chronic allergic inflammation in the pathological process involves microvasculature placenta, thus disturbed the terms of its formation. Effects of pathological factors on the placenta does not pass unnoticed, as evidenced by the presence of pathological conditions such as inflammatory lesions, degenerative and circulatory changes.

Have been analyzed morphological examination of placenta 42 patients with asthma of varying severity. Group I consisted of 22 patients with asthma with acute exacerbation of the disease during gestation (with uncontrolled asthma), II group - 20 patients without exacerbations (partially or completely controlled asthma), III group - 26 pregnant women without bronchopulmonary disease (control group). In 50% of cases detected placental

insufficiency, while in 18% - sub- and decompensated, 8% of the observed breach of maturation of the placenta. These data suggest that placental insufficiency in patients with asthma ($p < 0,01$), in particular, uncontrolled, has developed more than in the comparison group ($p < 0,001$).

It is known that the development of placental insufficiency slows down the process of adaptation of the fetus and newborn, resulting to pathological conditions (predisposition to posthypoxic encephalopathy, birth asphyxia, the development of immunodeficiency).

In the placenta of women of all groups were more frequent circulatory changes ($p < 0,01$), rarely - degenerative and inflammatory. In patients with asthma in the placenta was dominated circulatory changes, combined with inflammatory and degenerative only with uncontrolled course of the disease - in 10 cases. In the II group of patients the frequency of circulatory and degenerative conditions placenta was close to the comparison group indicators.

Detected during morphological examination a large number of villi with degenerative changes of the stroma thereby reducing the permeability of placenta, fetal hypoxia, metabolic, hypotrophic disorders, the appearance of pulmonary distress syndrome.

The findings bring to the leading positions focal disorders of circulation in the placenta, especially during exacerbation of asthma - hemorrhage and thrombosis, infarction, necrosis, collapse intervillous space, uneven blood circulation and vascularization of the villi, stasis, promote the development of fetal hypoxia.

Among the inflammatory changes that promote hypoxic state, more than $\frac{1}{2}$ of cases was dominated basal deciduitis, intervilluzit, viluzit indicating disorders of utero-placental circulation. Rarely observed membrane deciduitis, mainly in the group with exacerbation of asthma during gestation ($p > 0,05$).

EARTHQUAKE ON SAKHALIN

Sergeeva A., Dzyuban M. – the 2nd-year students

Scientific leaders – Cand.Biol.Sc. L.A.Guba., Cand.Ped.Sc. I.A. Bibik

The strongest earthquake in modern history of Russia is the earthquake which happened in May 1995 on Sakhalin in the city of Neftegorsk. It is impossible to find this town on any map now. It was not rebuild after this catastrophe. All its houses were destroyed by nature. The number of victims in the town was 2,000. The memorial and the chapel were erected there. All the dead were buried near to them. According to the Richter scale the magnitude of earthquake was 7.6 degrees. The earthquake was on May 28, in 1995 at 1:04 a.m. on the island of Sakhalin. It destroyed the town of Neftegorsk for 17 seconds. According to the Ministry of Emergency Situations of Russia 5,400 people lived in Neftegorsk. 2040 of them died.

The earthquake on Sakhalin in the city of Nevelsk. 6.8-magnitude earthquake was on August 2, 2007 at 1:37 p.m. Emergency regimen was introduced in Nevelsk. The earthquake was accompanied by a seismic sea wave. The shoreline displacement towards the land was 1.5 m. The height of waves was from 10 to 20 m. Near Yasnomorsk the height of wave was about 2 m. As a result, two people died and 14 people were injured. There were cracks in the walls of the houses, facades were broken, and Culture House was destroyed. People left their homes, because they feared for their lives. Sakhalin is a very beautiful island, with rich nature and interesting history. But this island has a volcano, accordingly it has earthquakes.

STRUCTURE AND REGENERATION OF PANCREAS

Tozhimamatov A. – the 2nd-year student

Scientific leader – Assoc. Prof. T.L. Ogorodnikova

Human pancreas (Latin- páncreas) is the largest organ of the digestive system (the second largest after the liver), which plays a huge role in the digestive and metabolic processes. The pancreas is a complex alveolar-tubular body elongated grayish-pink color. Gland is covered with a thin connective tissue capsule. Under the capsule its lobed structure is seen. It consists of a plurality of irregularly shaped lobes, closely adjoining one another, separated from each other by the connective capsule. The pancreas contains exocrine and endocrine parts.

Exocrine part. Exocrine part of pancreas is presented with lobules which are located in the pancreatic acini and the tree-like system of excretory ducts: intercalary ducts and interlobular ducts and, finally, common pancreatic duct, which opens into the duodenum. The acinus of pancreas is a structural and functional unit of the organ. In shape acinus presents the rounded form with the size of 100-150 microns, in its structure it has a secretory department and intercalated duct, giving rise to the all duct system of the organ. Acini consist of two types of cells: secretory - exocrine pancreatitis in an amount of 8-12, and ductal - epithelial cells.

Intercalated ducts pass into interacinar ducts, which, in turn, flow into the larger intralobular. The latter continue into the interlobular ducts, which pass into the common duct of the pancreas.

The endocrine part. The endocrine part of the pancreas is formed by acini which lie between the pancreatic islets or islets of Langerhans. Islets are made up of cells - islet cells, among which, basing on the presence in them different, according to physical, chemical and morphological properties, granules, there are 5 main types:

- beta cells, synthesizing insulin;
- alpha-cells, producing glucagon;
- delta cells, forming cells somatostatin;
- D1-cells that produce vasoactive intestinal peptide (VIP);
- PP-cells, producing pancreatic polypeptide.

In addition, methods of immunocytochemistry and electron microscopy have shown the presence of a minor amount of cells containing gastrin, thyroliberin and somatoliberin in the islets.

The islets are a compact imbued with a dense network of fenestrated capillaries arranged in clusters or bunches of strands of endocrine cells. Cells surround the capillaries of islets layer by layer, being in close contact with the vessels; most of the endocrine cells contact with vessels either through cytoplasmic islands or through adjoining to them directly.

Function. Pancreas is an unusual organ. It performs at the same time two major functions: digestive and endocrine. On the one hand, it produces enzymes to digest food. On the other hand, it produces the well-known hormone insulin, the lack of which leads a person to diabetes.

Pancreatic regeneration. In embryogenesis islets grow due to the proliferation of the original progenitor cells and their differentiation into respective divergent cell differons. In adults, the physiological regeneration of the acinar and islet cells occurs mainly by intracellular updates of organelles. The mitotic activity of the cells due to the high

specialization is low. After resection of a part of the body or organ damage some increase in the proliferative activity of acinar cells, ducts and islets, the subsequent formation of new acini are noted. However, the leading form of regeneration of exocrine part of gland is regenerative hypertrophy. Restorative processes in endocrine part of the gland occur due to the proliferative activity of islet and ductal epithelial cells by acino-insular transformation.

ORGANIZATION OF SORTING BRIGADS. SORTING GROUPS.

Komissarov A. – the 2nd-year student

Scientific leader – A.N. Miroshnichenko

Medical triage is an important aspect in the medical and emergency measures, since it is important to provide (quickly and efficiently) assistance to the victims.

Sorting.

Medical triage is a method of distribution in the affected group on the basis of need in homogeneous medical and evacuation activities, depending on the medical indication and the specific situation. The sorting is based on three main sorting features: a danger to others; therapeutic indication; evacuation sign.

First, there is selective sorting, to identify diseased, dangerous to others.

Therapeutic indication is the degree of needs of victims of medical care.

Evacuation sign is the need, the order of evacuation, transport mode and the position of the affected transport.

Medical triage is one of the most important organizational methods aimed at a more successful implementation of the two-stage system of treating people in emergency situations.

LIVER REGENERATION

Altybaev Y. – the 2nd-year student

Scientific leader – Assoc. Prof. T.L. Ogorodnikova

Liver (Latin jecur, jecor, hepar.) is a vital exocrine gland of vertebrates, including humans, located in the abdominal cavity (abdomen) below the diaphragm and performing a wide variety of physiological functions. The liver is the largest gland of the digestive tract. The surface of the liver is covered by a connective tissue capsule, which is tightly fused with the piece of visceral peritoneum. Liver parenchyma is formed by the hepatic lobules. The hepatic lobule is structural and functional unit of the liver.

The liver is one of the few organs that can recover its original size even when you saved only 25% of normal tissue. In fact, regeneration is happening, but very slowly, and the quick return of the liver to its original dimensions occurs but mostly because of the increased volume of the remaining cells.

Liver regeneration is a complex of tightly regulated physiological processes implemented to maintain correct hepatocyte proliferation and nonparenchymal cells, as well as the restoration of the impaired organ function after injury. Factors produced by the liver and extrahepatic tissues and interacting with specific receptors of the cell membranes regulate this compensatory mechanism.

It is believed that in the absence of stimulation of growth the hepatocytes divide once or twice in their lifetime. After removal or damage of the liver the mechanism that leads to hyperplasia of the surviving cells, stromal recovery and hypertrophy of the

remaining part of the liver, which is regulated by a variety of factors, starts. Experiments have shown that the biosynthesis of proteins of several functional classes, including transcription factors and growth-signal transmitting proteins starts 5-6 hours after partial hepatectomy (phase G1). In 10-12 hours after surgery, the increased synthesis of DNA (phase S), reaching a maximum in about 24 hours is noted. In 7-10 days after restoration of the initial liver mass the process of regeneration stops.

Based on the above study, it can be said that the liver is a vital human body that can be regenerated more than 50% of its own tissues and after completion of the regeneration process, the organ doesn't lose its function.

EARTHQUAKES IN ITALY

Mongush A., Beglyanova A. – the 2nd-year students

Scientific leader – L.A. Guba

Seismically dangerous areas occupy about 50 % in Italy. About 3 million inhabitants live in the high risk zone. According to geologists, during just one year there are about 2 thousand earthquakes.

The largest earthquake of magnitude 6.0 was at the night of Wednesday, on August 25. Small towns Amatrice, Accumoli and Pescara del Tronto were most affected.

As to the population of these towns, it was increased due to travelers including children spending holidays there. According to the data there were 295 dead, over 400 injured and 55 people were in shock. More than 2500 people appeared to be homeless. All the victims were transported to hospitals by ambulances of the Rome.

This earthquake was the largest catastrophe in the history of the country since 2009 (that year when there was an earthquake in L'Aquila in the Abruzzo region claimed the lives more than 300 people).

In addition to the said above the devastating earthquake which destroyed the city and killed many lives was on the same day as the day-death of Pompey.

HOMOCYSTEINE IS A NEW RISK FACTOR OF ATHEROSCLEROSIS AND THROMBOSIS

Yakimenko S. – the 2nd-year student

Scientific leader – Cand.Biol.Sc., Assoc.Prof. G.K. Doroshenko

Cardiovascular diseases and especially coronary heart disease are among the leading causes of disability and mortality worldwide. The presence of hyperhomocysteinemia increases the risk of early development of atherosclerosis and thrombosis of the coronary, cerebral and peripheral arteries despite traditional risk factors and it is a predictor of mortality. In the pathogenesis of atherosclerosis sluggish inflammatory process in the vessel wall, which is manifested at all stages of development and damages the atherosclerotic plaque, plays an important role. Accumulating in the body, homocysteine begins to "attack" the inner wall of the artery - the intima, covered with endothelium. Endothelial damages, provoking clots and atherosclerotic plaques appear.

Homocysteine was discovered in 1932, when L. Butz and V. du Vigneau had received and described the previously unknown substance. It is a product of the conversion of amino acid methionine. In 1964 T. Gerritsen and H. Waisman described the genetic defect of one of the enzymes involved in the metabolism of homocysteine. Clinically, the disease was manifested by the increased levels of blood homocysteine and homocystinuria.

Homocysteine could appear in urine. Multiple lesions of vessels, thromboembolism, which led to an early death at the age of 30 years, took place.

A new stage in the study of homocysteine is associated with the understanding of the important role of this substance in the development of cardiovascular disease. In 1976, D. Wilcken and B. Wilcken were the first to discover the fact that in adult patients suffering from cardiac vascular disease (stenocardia), violations of homocysteine exchange are often found. Today hyperhomocysteinemia is considered to be a cause and a marker of hypertension.

Homocysteine is a sulfur-containing amino acid that does not occur in natural proteins consumed with food, but it is an intermediate in the methionine and cysteine metabolism. A new test was recently developed to measure the concentration of homocysteine, based on principles of immunoassay.

THE LARGEST PLANE CRASHES IN 2015-2016

Ivaschenko V., Klochkova V. - 2nd-year students

Scientific leader – Cand.Biol.Sc. L.A. Guba

Air transport is the quickest, but at the same time it is the most expensive way of traveling. The main scope of airline service is Passenger Transportation over distances of more than a thousand kilometers. There are also freight transportations, but they aren't so popular. In some regions, there is only air transport. That is why people have to use it. Nowadays, we often face crashes and people started to ask themselves: "How can we stay alive after such trips?"

When aircraft accidents happen, we can see destruction of the plane of different types. There are many multifatality accidents.

There are also many different reasons of crashes, but the most dangerous reasons, which we can face very often, are fires and explosions on the board of the plane. Rescue and emergency workers are always quick. They must evacuate people immediately, after the landing.

First aid is given to every victim immediately. The captain is in charge of all the work and everyone. Both a crew and passengers must follow his instructions.

A321 plane crash in Egypt. 224 dead. Airbus A321 took off on October 31 from the airport of Sharm el-Sheikh to St. Petersburg, and 20 minutes later disappeared from radar. The Egyptian authorities found the wreckage in the north of the Sinai Peninsula, in the mountains. The vast majority of the victims are the Russians. The main version of the crash is now called a technical fault.

Indonesia July 1, 2015. 141 human bodies were delivered to the hospital from the place of the crash of military transport aircraft C-130 Hercules. Among the dead both servicemen and local residents, the majority of victims were not identified. A large fire broke out at the crash area. The basic version of the crash is considered to be an engine failure.

24 March 2015 Airbus A-320, flying from Barcelona to Dusseldorf, crashed in the French Alps. On the board of the airbus there were 150 people, including six crew members. They all died. As it turned out, during the flight the pilot Andreas Lubitz locked the cockpit door and deliberately sent the airbus down.

MOSCOW, August 3, 2016, Emirates Airline plane caught fire while landing in one of the largest harbors in the world of air - Dubai International Airport. Unsuccessful landing made Boeing-777, performing flight EK521 from India Thiruvananthapuram. All passengers and crew were evacuated.

THE STRUCTURE AND PHYSIOLOGY OF RED BONE MARROW

Avetisyan Ya. – the 2nd-year student

Scientific leader - Assoc.Prof. T.L. Ogorodnikova, Cand.Ped.Sc. I.A. Bibik

The red bone marrow is a central organ of parenchymal blood, in which the formation of blood cells except for T- lymphocytes takes place. In the adult human the red bone marrow cells are located in cancellous bones (epiphysis of long bones and in the spongy flat bones). In children all bone marrow is red and at the age of 12-18 years in the diaphyses of long bones it is replaced by yellow (adipose tissue). In a healthy person as an adult the bone marrow is about 4.6% of total body weight, but only 1/3 of it remains in a physiologically active state and performs its functions to maintain and restore the normal blood. The yellow bone marrow is the stock from which the body draws on its recovery reserves in injuries and diseases.

There are 4 components of the red bone marrow:

- 1) Stromal component
- 2) Macrophagic component
- 3) The vascular component
- 4) Hemal component

Part of the stem cells of the red bone marrow can turn into one of the forms of blood cell elements. The red bone marrow is permeated with numerous fibers of the nervous system with the nerve endings, which are actively involved in the hematopoietic process. The yellow bone marrow can be transformed relatively quickly into its active form at high blood loss. Transformed into the red bone marrow, it begins to perform blood formation function. In fact, the yellow and red bone marrows are the same living tissue structure, existing in two different states: in “working” and in "standby." A living organism is constantly under attacks of microorganisms and in the process of life it loses its cells. It is constantly fighting against viruses, bacteria and microbes, continuously excreting the remains of dead cells and is engaged in the restoration of damaged tissues. All these processes occur in the blood. Therefore, the blood cells do not live long, even during normal operation of the body in a healthy condition; i. e. the red marrow is continuously executing the function of the blood update. But most clearly it is manifested in extreme cases: large blood loss, extensive thermal burns of the body, deep mechanical injuries, acute occurrence of infectious diseases, etc.

RESULTS OF OPTIC NERVE ELECTROSTIMULATION IN COMBINATION WITH THE USE OF MEDICATION CORTEXIN IN PATIENTS WITH GLAUCOMA

Bekker A. – the intern

Scientific leaders – Cand.Med.Sc., Prof. V.N. Krasnogorskaya, A.A. Petrova

Glaucoma is one of the most urgent and important problems in ophthalmology. The significant spread of glaucoma, difficulties of early detection and poor prognosis are the main reasons which have some effect on the attention of many researchers to the disease. A comprehensive treatment of stabilized open-angle glaucoma was provided by electrostimulation and neuroprotector cortexin. 32 patients (56 eyes) with stabilized open-angle glaucoma were observed at early stages. All patients were made injections with peptide neuroprotector cortexin in the dose of 10 mg (0.5 ml) under the conjunctiva in the

lower-outer quadrant, then electrical stimulation of the optic nerve was performed. To evaluate the results of treatment visometry, perimetry, tonometry were used and electrosensitivity and electrolability of the optic nerve were taken into account. The use of electrostimulation with neuroprotective therapy allows us to achieve an improvement in visual acuity up to 84% by 0.14 ± 0.06 , expansion of peripheral visual field by a mean of 60° (total degrees of 8 meridians) in 91% of patients. Comprehensive treatment of primary open-angle glaucoma improves visual function and stabilizes glaucomatous process during 6 months.

SURGICAL CORRECTION OF CONGENITAL AND ACQUIRED DEFORMITIES

Teplyashin D., Lomidze Yu. – the 3rd-year students

Scientific leaders – Prof. V.V. Grebenyuk, Cand.Ped.Sc. Bibik

In the world the number of people in need of surgical correction has significantly increased recently. Because of it the necessity of reconstructive surgery, mainly related to reconstruction of parts of the body, organs, skin damaged as a result of traumas and diseases, and congenital defects of the human body is increased.

In this paper we consider methods for correcting such deformities as cleft lip, cleft palate and reconstruction of the auricle. To eliminate the deformation of facial soft tissues and facial bones, surgeons widely use osteosynthesis with application of titanium plates, bone grafting, distraction devices, implants, tissue expansion, and various types of flaps and grafts.

Types of plastic surgery for the cleft palate are:

- veloplasty – correction of soft palate
- uranoplasty – correction of the hard palate.

When planning operation the degree of damage of the velopharyngeal shutter is taken into account, and the place from which the seized plastic material will be taken, is determined. In most cases, correction of the cleft is carried out with the use of grafts, isolated from the lateral portions of the hard palate. For large crevices the muscular and mucous layers, separated from the tongue or cheeks of the patient can be used.

Stages of reconstructive otoplasty:

- the Formation of a cartilaginous skeleton (donor tissue: rib or cartilage);
- Reconstruction of earlobes;
- the Establishment of the auricle (formed angle);
- the Creation of basic elements (tragus, antihelix, fossa).

Stages of reconstructive otoplasty are the individual interventions, between which there is a break of 1-4 months needed for healing.

The stages of uranoplasty are:

- Separation of the plastic material.
- Lengthening of the soft palate.
- Stitching a defect.
- Reduction of the middle part of the throat.
- Suturing.
- Antiseptic treatment.
- Plates overlaying on the soft palate.

RECOVERING OF A SPINAL CORD FROM A TRAUMA

Gromova A. – the 2nd-year student

Scientific leader – Assoc.Prof. T.L. Ogorodnikova, Cand.Ped.Sc. I.A. Bibik

The human spinal cord is able to restore its functions even after its damage to 90% of the volume of the spinal cord.

In cases of the complicated spine injury there is no complete diametral injury of a spinal cord with destruction of all its fibers. In most cases these patients become severely disabled with total absence of hopes for restoration of any lost function. There is a discrepancy between complete dysfunction of a spinal cord and preservation - after a trauma - of minimal but enough amounts of fibers.

At the time of damage a death of a part of axons, neurons and glia occurs, but at the same time the mechanisms of the secondary, delayed damage are started: vascular and inflammatory responses, development of apoptosis of the neurons and glia. A considerable number of conductors due to a trauma are demyelinated. In case of remyelination there is a considerable improvement of their conductivity. Prevention of secondary injury of axons, myelin, a stimulation of myelination can help to preserve the escaped part of functionally full-fledged fibers and to provide with their help a function restoration.

Functional regeneration of axons is their growth in length with establishment of contacts - synapses with cells-targets. During the usual course of traumatic process it is possible to observe a formation of new branches – the process has received the name of "sprouting". A source of these branches are cells of own conduction tracts of a spinal cord, the cells of sensitive ganglia. These intact cells give rise to collateral branches and form synapses with cells which have been connected with the long-tract axons injured after a trauma. Such changes can't be called true regeneration of the damaged cells, but they are compensatory reorganization of intercellular communications which under favorable conditions (lack of spinal cord compression, sufficient blood supply, a free flow of cerebrospinal fluid) can provide some reduction of neurologic deficit by 1-2 segments.

It is important as inclusion of functionally significant segments of a spinal cord, for example at the cervical level, can improve the quality of life of a patient considerably. Existence of sprouting indicates a potential possibility of axons growth. Theoretically the reasons of bad growth of axons can be either low potential abilities of axons to regeneration or the cellular environment, slowing down their growth.

VOLCANIC ERUPTIONS DURING LAST 5 YEARS

Mikhailova P., Chernikova P. – the 2nd-year students

Scientific leader – L.A. Guba, Ph.D.

Volcanoes are geological formations occurring over channels and cracks in the Earth's crust that erupt at the earth's surface. There are valid, which either continuously or intermittently erupt, dormant and extinct volcanoes, without any historical data. Almost 90% of active volcanoes are located in the so-called zone of Tierra del Fuego - the chain of seismically active zones and volcanoes, including underwater, stretching from the coast of Mexico to south through the Philippine and Indonesian archipelagoes and to New Zealand. According to various estimates, in the world there are about 1,000-1,500 active volcanoes.

There have been dozens of eruptions, including last five years:
2011. Grimsvotn - a volcano in Iceland.

2013. Paluweh – a volcano in Indonesia.

2014. Baurdabungla - a volcano in Iceland.

2014. Ontake - Japan volcano.

2016. Sinaung – a volcano in Indonesia.

2016. Klyuchevskoy – a volcano in Kamchatka.

Volcanoes can be exciting, challenging, but at the same time dangerous. Understanding how a volcano can affect - is the first step to mitigate its risk.

The consequences of volcanic eruptions:

1. Lava flows.
2. Pyroclastic flows.
3. Volcanic ashes.
4. Lahary.
5. Volcanic gases.

After analyzing the causes and consequences of some volcanic eruptions, we can evaluate the ravages of volcanoes in different parts of the world and learn how to navigate the global diversity of the seismically dangerous areas.

SYSTEM “MOTHER – FETUS”

Mikhailova P. – the 2nd-year student

Scientific leader - D.A. Semenov, Ph.D

The system “mother-placenta-fetus” is a single functional system, which is formed immediately after conception and ensures the maintenance of optimal conditions for development of the embryo and the fetus in pregnant women.

Features of the functional system “mother-fetus”:

1. The existence of this system is limited to a period of pregnancy
2. Only a woman's body is capable of formation of this functional system
3. In the process of formation and development of a functional system “mother-fetus” normal and pathological processes take place.
4. In its formation and development, there are "critical periods".
5. Functional system “mother-placenta-fetus” has its ultimate goal. It is not only the birth of alive, full-term and viable newborn but also an optimal adaptation of the woman's body to the gestational process.

The interaction of the mother and the fetus carries through the interaction of several functional systems of the body: the nervous, digestive, endocrine, immune, respiratory, cardio - vascular.

Thus, the functioning of the system “mother-fetus interaction” is provided by a number of functional systems both in a mother and a fetus. During its normal operation harmonious development of the fetus without harming health of the mother happens. Violations can lead to the abnormal development of the fetus and acute diseases of the mother, and in the worst case to miscarriage or death.

ENDOGENOUS OPIATE PEPTIDES

Mikhailova P., Chernikova P., Nevedomskaya O. – the 2nd-year students

Scientific leader – Cand.Med.Sc. I.V. Siyanova

Opioid peptides represent a group of neuropeptides, which are endogenous ligands for opioid receptors antagonists. These peptides consist of 10-15 compounds, each

molecule comprises from 5 to 31 amino acids. They include endorphins and enkephalins. Both are produced by the central nervous system and are involved in the regulation of behavior and pain by acting on opioid receptors.

Anatomical localization:

Endorphins are located near the back border of the anterior lobe and the nerve fibers in the posterior lobe of the pituitary gland of a man. Neurons, where biosynthesis of endorphins occurs, are located in the hypothalamus and have long processes, penetrating into other parts of the brain. For example, they penetrate into the parts of the brain associated with the limbic system. They contain significant amounts of immunoreactive β -endorphin which allows us to assume that it effects on memory, learning and emotions.

Enkephalins are situated in the spinal cord, in the digestive tract, in the adrenal chromaffin cells (stored in the secretory granules with catecholamines). Enkephalin release occurs as a part of the sympathetic response to stress.

Anesthesia:

β -endorphin. Electrical stimulation of brain regions involved in the transmission of pain impulses (periventricular gray area) results in pain relief, followed by an increase in the concentration of endorphins and enkephalins in the cerebrospinal fluid.

Enkephalin. In the dorsal horn of the spinal cord it is released by interoceptive neurons, which interact with afferent fibers (associated with sensation of pain) extending from the periphery. These fibers transmitting pain impulses form synapses in the gray matter of the posterior horn of the second set of neurons. These fibers extend upwards through the spinal cord and cross it, forming the lateral spinothalamic pathway. The release of enkephalins inhibits the release of substance P (neurotransmitter mediating the transmission of pain impulses) from afferent fibers included in the dorsal horn.

Thermogenesis. Peptides, similar to endorphin and encoded in the precursor molecule, such as α -Melanocyte stimulating hormone (α -MSH), cause a rapid decrease in body temperature.

Reducing stress. High levels of serum ACTH and cortisol during the stress are accompanied by the increased secretion of β -endorphin and β -lipotropic hormone.

Interactions with the immune system.

Endogenous opiates provide a biochemical link between the brain, the neuroendocrine system and the immune system and can serve as an explanation of the concept that emotional stress is accompanied by violation of the immune response.

Blood pressure and shock. Severe hypotension or shock stimulate the release of β -endorphin from the pituitary gland.

Other physiological effects are seizures, regulation of body temperature, appetite control, reproductive function, sexual behavior, the release of hormones of the hypothalamus / pituitary, memory change, regulation of breathing.

Clinical significance. After researching nature and properties of the endogenous opiates information about the treatment of mental illness, the pain associated with reproductive function, appetite control, obesity, drug addiction can be obtained.

INCURABLE PATIENTS – EXPEDIENCE OF THE PALLIATIVE SURGERY

Lashuk A., Matrahova A., Cherenkova A. – the 3rd-year students

Scientific leader – Prof., Doc.Med.Sc. V.V. Grebenyuk, Cand.Ped.Sc. I.A. Bibik

Relevance of the research topic: The increase of number of incurable patients that need palliative care and medical social assistance has been noted in different countries of the world in the last decade.

Aims and objectives: To explain the meaning of the terms “incurable patient” and “palliative surgery”. On the basis of questionnaire to learn students' attitudes to incurable patients and to the problem of providing palliative care.

An incurable patient is a patient who at a certain stage of treatment, when to ease symptoms is the only possible type of medical care, was recognized as not curable. The main purpose of palliative care is improving quality of patient's life despite low life expectancy. The main principle is no matter which disease a patient suffers from, no matter how serious illness is, no matter what means of treatment were used for patient's treatment, there always will be some ways to increase the quality of patient's life on his remaining days. Palliative surgery is a type of surgery which is used in oncology due to a late diagnosis of cancer and impossibility of radical therapy due to last stages of the disease.

According to the survey, positive attitude to providing palliative surgeries dominates among the third year students of Amur State Medical Academy. Students think that surgery for incurable patients is necessary in spite of the stage of disease. Decision about the relevance of palliative care and performing sparing and organ-modeling operations should be based on the individual assessment of patient's condition. If it is technically possible, there should be chosen a method aimed at preserving quality of patient's life.

PROTEOLYSIS. UBIQUITIN-PROTEASOME SYSTEM.

Mikhailova P., Nevedomskaya O. – the 2nd-year students

Scientific leader – Prof. E.A. Borodin

Proteolysis is a process of hydrolysis of peptide bonds catalyzed by proteolytic enzymes (proteases).

In place of the substrate molecule attacks proteolytic enzymes are divided into endopeptidases and exopeptidases:

1. Endopeptidase or proteases cleave peptide bonds within the peptide chain.
2. Exopeptidases hydrolyze peptides from the end of the chain: aminopeptidase - N-terminal end with carboxypeptidase — C-terminus.

Proteases are also classified by their mechanism of action and by types of catalysis (serine proteases, aspartic proteases, cysteine proteases, metalloproteases).

The action of proteolytic enzymes can be divided into two categories:

1. Limited proteolysis in which protease specifically cleaves one or more peptide bonds in the target protein, which usually leads to a change in the functional state of the latter: the enzymes, for example, become active at the same time, converting into prohormones and hormones;

2. Unlimited or total proteolysis when proteins are broken down into single amino acids. Proteolysis occurs by complete removal from the body of abnormal proteins produced by mutation and due to biosynthetic errors.

Ubiquitin-dependent proteolysis is the process of hydrolysis of abnormal proteins. The process involves two stages: the covalent attachment of ubiquitin chains of the protein molecules and proteosome degradation.

Ubiquitin is a peptide consisting of 76 amino acids.

The main primary and secondary signals for attachment of ubiquitin can be classified as follows: the conformation of the peptide N-terminal region, particularly the presence of

"destabilizing» N-terminal or another free; α -amino group ("N-end rule") or specifically positioned lysine substrate; certain short sequence motifs in the amino acid residue (rather than an entire three-dimensional structure of the protein molecule); violations of the secondary structure of the protein (abnormal clotting) polypeptide chain; damage to the side chains of amino acid residues, including their oxidation (e.g. oxidation of methionine residues); excessive glycosylation of proteins and peptides.

Its attachment to the protein takes place in three stages, with the participation of the three groups of enzymes E1, E2 and E3.

hydrolysis stages:

1. Activation of PU (PU-activating enzyme E1);
2. Binding of activated PU (PU-bearing enzyme E2);
3. The formation of a specific complex between the PU - E3 ubiquitin-protein ligase;
4. The transfer of PU activated protein without the participation of E3;
5. Ubiquitin binding to the protein and formation of multi-PU chains with the release of free E2;
6. Degradation of the ubiquitinated protein 26S by proteasome;
7. Removal of the PU of "erroneously" ubiquitinated proteins by isopeptidase;
8. Release of the PU of degraded protein;

Thus, proteolysis plays a significant role in these processes in the body:

1. Splitting food proteins into amino acids through their action on digestive enzymes in the stomach and small intestine;
2. Splitting their own proteins during metabolism;
3. Formation of enzymes, hormones and bioactive peptides from their inactive precursors;
4. In plants proteolysis is involved in the mobilization of seed storage proteins during germination.

Modification of ubiquitin plays an important role in the regulation of gene expression of the cell cycle and cell division, to cell stress response, in DNA repair, apoptosis, in biogenesis of the mitochondria and ribosomes, as well as in the removal of normal and mutant proteins short-lived.

THE ROLE OF INTESTINAL MICROFLORA IN OBESITY

Karapetyan E. – the 3rd-year student

Scientific leader – Prof., Doc.Med.Sc. G.I. Chubenko

Intestinal microflora has important metabolic functions, such as the destruction of food toxins and carcinogens, the synthesis of micronutrients, enzymatic digestion of food components, participation in the absorption of certain electrolytes and microcells, the impact on growth and differentiation of enterocytes and colonocytes as well as their metabolic activity which contributes to the "extraction" of calories from the absorbed nutrients and helps to store this energy in the body fat depots.

Recent research has shown that obese people and people with normal body weight may have different intestinal microflora, which plays an important role in the regulation of body weight and may cause the development of obesity in some people.

It was found that in the intestines of obese people there are fewer bacteria of family Bacteroidaceae and more bacteria of the Firmicutes family in comparison with people with normal body weight.

In research on experimental animals the mechanisms mediating the effect of intestinal microflora on the accumulation of energy of food was investigated.

The microflora was shown to ensure absorption of monosaccharides from the intestine and to increase lipogenesis in the liver. These effects are mediated by two signaling proteins - ChREBP (Carbohydrate Response Element-Binding Protein) and SREBP-1 (Sterol Regulatory Element-Binding Protein type-1).

Besides the intestinal microflora suppresses intestinal FIAF (Fasting-Induced Adipose factor), which firstly leads to the increase of lipoprotein lipase activity in adipocytes that promotes fat accumulation in fat depots and, secondly, suppresses the production of PPAR γ -coactivator that increases the expression of gene regulators of mitochondrial fatty acid oxidation.

Thus, the intestinal microflora affects both the extraction of energy from the consumed nutrients, and the expression of genes regulating the energy consumption and the energy storage.

Another possible mechanism, linking gut microbiota to obesity is based on the fact that LPS (endotoxin) of gram-negative bacteria of the GIT can serve as a link between inflammation and metabolic syndrome.

In experimental animal studies the higher-fat dietary interventions were shown to increase endotoxemia. And chronic endotoxemia induced the expression of proinflammatory cytokines such as TNF- α , interleukin-1, interleukin-6, plasminogen activator inhibitor type 1 that promote obesity, insulin resistance and diabetes

Thus, the existing data provide a basis for further research of the role of intestinal microflora in the pathogenesis of obesity, and also point to its potential modifications in a comprehensive treatment of this disease.

DOWN SYNDROME

Alatortseva M. – the 1st-year student

Scientific leader – V.A. Naumenko

Is Down syndrome a disease?

Down syndrome is a genetic abnormality and a congenital chromosomal disorder that appears as a result of increasing number of chromosomes.

Such a violation is very frequent in 1 child out of 650 newborns. The term «Down syndrome» implies a certain set of characteristics and traits, which were described by an English physician John Downey in 1866.

Causes of Down syndrome

In 1959, a French scientist Gerard Lejeune revealed the true cause of the syndrome - the appearance of an extra chromosome. The cells of a human body contain 46 chromosomes. In the children born with Down syndrome, the 21st pair has an extra chromosome, resulting in presence of 47 chromosomes. So, this is the main cause of Down syndrome.

Symptoms of Down syndrome

You can see symptoms of Down syndrome after the birth of a baby. There are pronounced physical differences: flat face, oblique slant of palpebral fissures, abnormal skull shape, short upper and lower limbs and short fingers.

Unusual children, usually they are called "children of the Sun" often have heart defects, mental retardation, decreased muscle tone, violation of movements coordination. These

children start to walk, talk later, but many of them have an ear for music and they are very merry, kind and helpful.

The forms of Down syndrome

1. *Trisomy* means the presence of 3 chromosomes instead of 2.
2. *Translocation Down syndrome* is gene transfer or transfer of a chromosome fragment to a different location in the same or another chromosome.
3. *Mosaicism* is a third type of chromosomal abnormalities. It is expressed by the presence of normal quantity of chromosome - 46 in some cells and in other - 47 chromosomes, i.e. there is trisomy of the 21st chromosome.

Down Syndrome treatment

Down syndrome is considered to be incurable.

Science has made a leap forward and now the introduction of stem cells allows us to effect on all systems of a child's body positively and to strengthen the immune system, to treat the damaged tissues. This treatment significantly normalizes the growth of bone; restores functions and develops the brain. The treatment should be timely; it must begin immediately after birth.

HELMINTH INFECTIONS AND DIARRHEAL SYNDROME

Cherepenko A. – the 5th-year student

Scientific leader – P.K. Soldatkin

Helminthiasis is a parasitic disease caused by various types of parasitic worms.

Enterobius vermicularis is a pathogenic agent of Enterobiasis. Its early symptom is perianal itching. Initially itching appears periodically and becomes unbearable when a massive invasion occurs. It causes insomnia, severe neurasthenia, and loss of working capacity. Children become fractious, irritable, their memory and academic performance are getting worse and they suffer from sleep disturbances and epileptic seizures. In the areas of itching inflammations, abrasions, fractures and eczema appear. And then the signs of the secondary infection which lead to the development of pyoderma become evident. Frequent, loose stools with an admixture of mucus may appear.

Trichocephalus trichirus is a pathogen of Trichocephalosis. The first clinical symptoms are a decreased appetite, nausea, vomiting, bloating, severe cramping in the abdomen sometimes without specific localization. The chronic diarrhea, tenesmi, weight loss may appear. Stool is muco-bloody, sticky with very thick and viscous mucus.

Ascaris lumbricoides is a pathogen of Ascariasis. Allergic reactions appear: cough, running nose, hives, and itching, low-grade fever. There are signs of pneumonia and bronchitis. Asthmatic attacks are possible. There is combination of eosinophiliae and migrating infiltrations in the lungs (Loeffler's syndrome). Symptoms of intestinal stages are changes in appetite (usually food refusal), nausea, belching, heartburn, sometimes vomiting, pain and bloating. There are frequent diarrheas or alternating between diarrhea and constipation. Due to the toxic effect on the central nervous system there are hysterical attacks, epileptiform convulsions, meningitis, as well as the violation of functions of organs of vision.

Thus knowledge of the clinical picture of helminth infections contributes to the timely implementation of the specific therapies that are beneficial in the course of the diseases and their prognoses.

CLINICAL FEATURES OF VIRAL DIARRHOEAS

Saaya N. – the 5th-year student

Scientific leader - P.K. Soldatkin

The features of viral diarrhoeas are: acute onset, rapid spread in different foci, the high resistance of the pathogen in the environment and its high infectiousness, asymptomatic carriage and continued abjection of the originator into the environment after clinical recovery.

Rotavirus (rota (*lat.*) – a wheel, rotatory - rolling). The incubation period continues from 15 hours to 3-5 days. An acute onset is typical. The main clinical symptoms are: fever, repeated profuse vomiting and diarrhea. Abdominal pains localized in the epigastric, umbilical areas are noted. Stools are frequent, copious, watery, frothy, yellow or yellow-green color with a pungent smell.

Norovirus infection (“cup” - Latin). The incubation period is 12-24 hours. The clinical picture is characterized by a triad of symptoms: fever, vomiting, diarrhea. Vomiting is usually a predominant symptom in children, and diarrhea in adults. The disease begins abruptly with the appearance of abdominal pain, nausea. Then vomiting and diarrhea join. Stools are frequent, watery. The disease is usually mild. In children of the first year of life the absence of a feverish reaction is noted.

Adenovirus infection often strikes young children. The incubation period is from 8 to 10 days. A special feature of enteropathogenic adenovirus is the absence of nasopharyngitis and keratoconjunctivitis. The main clinical symptoms are: watery diarrhea, vomiting, fever up to 37.5-38.5 ° C, drowsiness, lethargy. Sometimes in toddlers gastroenteritis may occur with mesenteric adenitis, which gives a picture of acute abdomen and leads to intussusception.

Thus, knowledge of the clinical and epidemiological picture of viral diarrhea will contribute to the timely and adequate therapy. It will favorably impact on the course of disease and its prognosis.

AMUR REGION HERBAL REMEDIES TO COMBAT OBESITY

Menovschikova O., Suvorova A., Timofeeva A. - the 4th-year students.

Scientific leader - Can.Med.Sc. V. I. Tihanov

The World Health Organization announced that the increase in body weight (hereinafter obesity) has become a global epidemic, and poses a serious threat to public health due to the high prevalence. Thus with increasing body weight occur heart disease, blood vessels, liver, leading to chronic illness and premature death.

In addition to a healthy diet and lifestyle protected from excess weight are the alkaloids, plants with effects:

1. anorectic (sage, peppermint, dandelion ordinary, swede);
 2. lipolytic (elder flowers, birch leaves, burdock root);
 3. saharozameschayuschy (chokeberry Aronia, blueberries bog);
 4. normalizing cholesterol, sugar, and triglycerides (onion, garlic, nettle, yam, hawthorn).
- Herbal medicine with the use of the above plants Amur region to prevent and to conduct prevention of complications such as type 2 diabetes, hypertension, atherosclerosis, coronary heart disease and other diseases, and helps to improve the condition of patients.

THE STORY OF THE APPEARANCE OF THE X-RAYS

Kalmykova A., Boldyreva V. - the 1st-year students

Scientific leaders - L.G. Zherepa, Cand.Ped.Sc. I.A. Bibik

The story of the appearance of the X-rays is associated with the name of German physicist Wilhelm Conrad Roentgen. The discovery of the X-rays was accidental and happened because of great watchfulness. A cathode ray tube was wrapped with black paper. On the table there was a green-paperboard, coated with a layer of cyanoplatinite barium. Studying the phenomenon of the passage of electric current through special tube Roentgen noticed that every time the screen lighted up brightly. So the X-rays were discovered; they are capable to pass through the bodies, impenetrable to the visible light. It happened on 8 November 1895. Basing on X-ray data, a Russian inventor A.S.Popov constructed the X-ray tube and a first X-ray [machine](#). It served as an impetus for further use of X-rays in medicine.

V.M.Bekhterev wrote:"... as it became known that some solutions don't allow roentgen rays to pass through them, the cerebral vessels may be photographed in situ. In general, I think, the use of X-rays in the nervous and mental pathologies could be considered as a perspective work.

Taking into account the Roentgen`s merits in Leningrad (now St. Petersburg) the first world's monument was erected, and one of the streets was named after him as well as the institute of radiology.

MORPHOLOGICAL STUDENT PASSPORT AS A FORM OF ACTIVATION OF INTEREST IN A HEALTHY LIFESTYLE

Mayorova A., Sulitseva E. – the 1st-year students

Scientific leaders – L.G. Zherepa, Cand.Ped.Sc. I.A. Bibik

The process of creation of «the morphological passport» includes a study of the anthropometric characteristics according to the particular scheme (growth, weigh, chest circumference), calculation of Quetelet and Pinye indices, determination of harmony of development and somatotype, thickness of a fat roll, proportionality of extremities segments and their form, description of the skin “drawing” of fingers, iris of an eye, size of the pelvis, determination of the arch of the foot and many other things carried out by a student.

It should be noted that platypodia is a deformation of foot which is characterized by consolidation of the arches of feet. Today it is one of diseases which is very widespread among people.

The examination of iris of an eye attracts great interest of students because it is a reflector of the congenital deficiencies fixed in a genotype.

Experience shows that morphological certification of students is rather a progressive way of study of anatomy through "the interest in one`s own body", and also one of important factors of influence on the motivation for further physical perfecting and maintaining a healthy lifestyle.

CHOLERA: FROM "A" TO "Z"

Lushnikova A. – the 5th-year student

Scientific leaders – P. K. Soldatkin, Cand.Ped.Sc. I.A. Bibik

In the world structure of morbidity the highest proportion of cases of cholera is associated with the African continent - 76.27%. In the Americas it is 18.97%, in Asia - 4.76%, and in Europe - 0.001%.

In Asia, the epidemic process of cholera was characterized by: gradual spread of infection on the continent; seasonality; increase of the risk of spread of cholera due to the contamination of water sources and water management, unsanitary conditions; intensification of epidemic manifestations in a camp for displaced civilians during armed conflict. Epidemics and outbreaks in Asia caused by strains of *V. cholerae* 01 biovar El Tor, Serovar Ogawa with cholera toxin of classical biovar (CTX) and allele-7 *ctxB* gene. *V. cholerae* strains characterized by multiple antibiotic resistances were identified in Nepal.

Africa. The dynamics of morbidity showed a tendency to decrease in 2014. All regions of the continent were found to be affected by cholera. The endemic areas, where the epidemic manifestations took place, appeared due to emergency situations of natural and mainly of social nature. The epidemiological situation has been caused by: the continuation of epidemics since November 2013; the rapid spread of infection, high morbidity and mortality; domestic and interstate migration, creation of critical situations due to scarcity of water sources, low sanitary conditions in the camps for displaced persons, their overcrowding; social risk factors: lack of adequate sanitation, safe drinking water, participation in the burials of the dead from cholera; drinking water with causative agent of cholera from open reservoirs; natural factors; an insufficient number of medical personnel, lack of medicines and other resources.

America. Caribbean countries: reduction of morbidity was found in 2014. Haiti: despite the decline of morbidity, there are still conditions for the spread of the disease: lack of access to safe drinking water and poor sanitation. Cuba: there were the following factors of pathogen transmission: eating food bought from street vendors and lack of access to safe drinking water. Europe. Only sporadic importation of cholera infection was noted. Except for the Ukraine (2011) the spread of infection wasn't observed in Europe. CIS countries. Cholera is marked in Kazakhstan, the Ukraine and the Donetsk region.

Russia. Importation of *V. cholerae* 01, biovar El Tor, Serovar Ogawa serotype into Murmansk Oblast and into Moscow from India and into the Tver region, and Moscow from Tajikistan are typical. Importation of cholera caused by non-toxigenic *Vibrio cholerae* 01 biovar El Tor, Serovar Ogawa serotype into the Rostov region from Tajikistan was marked. In connection with the release of toxigenic strains from the water objects the operational plan of sanitary and anti-epidemic measures for the elimination of cholera was implemented.

Thus, in the world since the beginning of the XXI century an intensive and large-scale spread of infection in Africa, Asia, America with the importation of infection into Europe, Australia and Oceania, the Americas, the United States and Canada related to emergency situations of natural and social nature has been established. Along with the epidemics and outbreaks of *V. cholerae* 01 El Tor and multi-resistant strains with multi-resistance to antibiotics, in the countries of Southeast Asia outbreaks of *V. cholerae* 0139 serogroup take place. Prediction of cholera in the world remains poor. It speaks in favour of the fact that there is a possibility of importation of infection into Russia.

THE LEVEL OF ALEXITHYMIA IN CHILDREN OF SECONDARY SCHOOL AGE ACCORDING TO THEIR LEVEL OF PHYSICAL DEVELOPMENT

Lushnikova A., Kiselko M. – the 5th-year students

Scientific leaders – Can.Med.Sc. O.S. Yutkina, Cand.Ped.Sc. I.A. Bibik

The problem of the study of alexithymia in modern science has polydisciplinary nature. The main direction of the study of this phenomenon doesn't give an unambiguous interpretation of its formation and development mechanisms. It is commonly postulated by the authors that alexithymia should be considered to be non-specific risk factors of psychosomatic diseases.

The aim of the study is to identify the phenomenon of alexithymia in children of secondary school age depending on their level of physical development.

The research was conducted on the basis of secondary school №5, among the children of the secondary school age (16-17 years), using a procedure called Toronto alexithymia scale.

Results of the study. The study involved 60 participants. Among them 11 people had mikro-somatotype, 32 – mezo-sometotype and 17 – makro-somatotype. Of the total number of children with mezo-somatotype non-alexithymic type of the personality had 31.25%; with mikro-somatotype – 27.27% and with makro-somatotype 47.06%. The risk group included 37.5% of children with mezo-somatotype, 27.27% with mikro-somatotype, 47.06% - with makro-somatotype. The group with alexithymia amounted to 45.46% of children with low level of physical development; 31.25% with average physical development and 5.88% with high level of physical development. At the same time, as to the distribution of personality types based on gender, in the group of children with mezo-somatotype the alexithymic type and the risk group consisted mostly of girls - 50% and 58.33%, respectively. Girls (alexithymic personality type) accounted to 100% in the group of the children with mikro-somatotype and girls accounted to 66.67% in the risk group as well. Among the children with makro-somatotype (the risk group) and alexithymic personality type there were boys (100% and 62.5% respectively).

Thus, children with alexithymia mostly can be present in the group of children with mikro-somatotype, at the same time girls appeared to be the main part of this group. For them it is difficult to recognize and express their feelings and emotions. Most of the children with makro-somatotype are characterized by a decrease of the ability of verbalization referring to emotional states, which means they are in risk group. Moreover, the boys dominate in this group. It must be noted that the risk group, though it doesn't refer to an "alexithymic" type of personality, but it is associated with the borderline level and, basing on our results, the percentage of children with non-alexithymic personality type is much less than percentage of children with alexithymia and less than percentage of those who are members of the risk group as a whole.

Based on these data we can conclude that alexithymia is actually combined with a variety of factors, including the level of physical development. It can serve as a ground for the development of psychosomatic disorders, indicating a need for diagnostic and preventive measures for children in order to correct their physical development and psychological adjustment.

ABNORMALITIES OF THE URINARY SYSTEM (ACCORDING TO THE DATA OF THE ANATOMICAL MUSEUM OF ASMA)

Yakimenko S., Rozuvaeva M., Snegirev D. – the 2nd-year students
Scientific leader – N.P. Ambroseva

Abnormalities of the urinary tract are the most common defects of human development. Anomalies of the kidneys make up about 40% of all the vices of human development. Malformations of the kidneys and urinary tract may be single or multiple. In

most cases, in kidney abnormalities a violation of the outflow of urine from the body, and this violation of renal hemodynamics, which is a pathogenic factor for the development of pyelonephritis, stone formation, hydronephrosis and other pathological processes take place. The origin of human malformations remains unclear. Usually there are causal and formal genesis of malformations of all organs and systems, which can be considered, respectively, as the etiology and pathogenesis of malformations. In respect to the organs of the urinary system between the causal genesis and etiology an equal sign can be put, whereas the formal genesis of kidney defect is not always its pathogenetic mechanism. Originally, the causal genesis of all the vices of kidney development is divided into congenital and hereditary. Birth defects are the consequence of fetal diseases and are most commonly associated with exogenous damaging factors such as exposure to ionizing radiation, drugs and chemical agents, steroid hormones. Hereditary malformations are associated with abnormal chromosomal apparatus. There are about 40 types of kidney malformations related to hereditary. Formal genesis of vice kidney development is considered in connection with the embryogenesis of the body. Different malformations are determined at pronephros stages, at the archinephron one and at the stage of the formation of permanent kidney. It should be remembered that the kidney and upper urinary tract develop from completely different anlagen that initially are not connected with each other. Many authors explain the extraordinary diversity of kidney malformations pointing to these circumstances. In the Anatomical Museum of ASMA there are the following preparations: a kidney with two ureters - 4 samples, doubling of the renal pelvis system - 3 samples, fused kidney - 3 samples, horseshoe kidney - 3 samples, lobed kidney - 2 samples. It should be stressed that they make up a large percentage of abnormalities of the urinary system.

THE LEVEL OF ANXIETY IN CHILDREN OF OLDER SCHOOL AGE DEPENDING ON THEIR PHYSICAL CONDITIONS

Lushnikova A., Kiselko M. – the 5th-year students

Scientific leaders – Can.Med.Sc. O.S. Yutkina, Cand.Med.Sc. I.A. Bibik

Anxiety as a stable personality trait is being formed mainly in adolescence. Based on this, school age, with its problems of adaptation, is making greatest interest for the study of specific manifestations of the anxiety phenomenon in connection with problems of psychoprophylaxis, psychocorrection of different states of maladjustment, which, as known, can be a risk factor in the development of somatic pathology.

The aim of this study is to investigate the level of anxiety in children of older school age and different physical conditions.

The hypothesis of the study based on the assumption that the level of physical development of a child affects on the existence of the anxiety with certain psychological content.

Materials and methods. The study was conducted on the basis of secondary school №5, among children of senior school age (15-17 years), using a procedure - Multidimensional assessment of children's anxiety (MSCA).

Results and its discussion. Totally 56 respondents participated, 29 boys (mezosomatotype - 12 makrosomatotype - 17) and 22 girls (mezosomatotype - 15 makrosomatotype - 7). Girls (mezosomatotype) having a low level of anxiety constitute 3.33%, average - 90%, high - 6.67%. At the same time the girls (makrosomatotype) with low levels of anxiety - 7.14%, average - 64.29% and high - 28.57%. The boys (mezosomatotype) with low levels of anxiety - 16.67%, average - 75% high - 8.33%. The

boys (makrosomatotype) with low - 26.46%, average - 52.95%, high - 17.65% and the extremely high level of anxiety - 2.94%.

Thus, analyzing the results of the evaluation of gender-specific and physical features of the dynamics of anxiety in older children it can be said that the research hypothesis is confirmed - the level of physical development of a child affects on the existence of the anxiety with certain psychological content. It can serve as a ground for the development of psychosomatic disorders, indicating a need for diagnostic and preventive measures for children in order to correct their physical development and psychological adjustment.

FLOODING IN PRIMORSKY KRAI IN 2016

Ivanova E., Fakeeva M. – the 2nd-year students

Scientific leader – Assoc.Prof. L.A. Guba

A typhoon resulted in the terrible consequences in Primorye in 2016. Despite the fact that the people in general are accustomed to flooding, which happens in late August - early September, the current flooding at the scale of floods was the most horrific in a long time.

The typhoon "Namtuen" made the locals think of the sad, as it poured in the form of new rainfalls, which largely led to an increase in water level in rivers.

Experts promised that typhoon "Namteun" would pour to 1.5-month norm of precipitation on the affected areas of Primorye. The worst consequences of the disaster were in Dalnegorsk city district, Partisansky, Olginsky and Terneisky districts.

In particular, on 5 and 6 September 2016 heavy rains were in the region. Forecasters had predicted the formation of the second wave of floods, increasing the length and depth of flooding plains with located on them the objects of economy and infrastructure.

Besides post-typhoon (typhoon "Lionrock") *damage* surveys *determined* the reconstruction of houses and other objects would cost 1.2 billion rubles.

According to the operational calculations, after the typhoon "Lionrock" more than one thousand people were evacuated from their places of residence. Most of the locals are still in temporary accommodation.

USE OF VAGINAL RINGS CONTAINING DAPIVIRINE FOR HIV-1 PREVENTION IN WOMEN

Soyotova N. - the 4th-year student

Scientific leader - Cand.Med.Sc. R.A.Anokhina

More than half of the 35 million persons currently living with human immunodeficiency virus type 1 (HIV-1) infection are women. A majority of these women reside in sub-Saharan Africa, a region that has some of the highest incidences of HIV-1 infection in any population worldwide. The use of antiretroviral medications as pre-exposure prophylaxis is a promising approach to the prevention of HIV-1 acquisition. Several clinical trials of the antiretroviral tenofovir showed such protection against HIV-1. However, in three trials involving African women, adherence to tenofovir-containing pills and vaginal gels was low, and HIV-1 protection was not shown.

Vaginal rings can provide sustained and controlled release of medications. For example, rings containing exogenous hormones are licensed for contraception and estrogen replacement. For HIV-1 prevention, an antiretroviral-containing vaginal ring could provide long-acting HIV-1 protection while reducing systemic exposure to the active pharmaceutical ingredient and delivering the anti-HIV-1 agent at the site of viral

transmission. Dapivirine is a non-nucleoside HIV-1 reverse-transcriptase inhibitor that has activity against a broad range of HIV-1 subtypes. In two trials, genital biopsy tissue samples obtained from women using dapivirine vaginally in the form of a ring, films, and gels were substantially less susceptible to HIV-1 when challenged *ex vivo* than were tissue samples obtained from placebo-treated women. A monthly vaginal ring containing dapivirine was found to be safe and acceptable in phase 1 and 2 studies, with typical plasma levels of the drug that were lower by a factor of 1000 than levels in women receiving oral dapivirine.

INVOLUTION OF THE THYMUS

Sholokhova I. – the 2nd-year student

Scientific leader – Assoc.Prof. T.L. Ogorodnikova, Cand.Ped.Sc. I.A. Bibik

The thymus is the central organ of the immune defense and lymphocytopoiesis. It reaches its maximum development in early childhood. In the period from 3 to 20 years a stabilization of its mass is observed. After 20 years, the process of age-related thymus involution of the thymus has to happen (reverse development). This process is a gradual transformation of the thymus into the “fat” body. This is accompanied by a decrease of the number of lymphocytes, particularly in the cortex, the appearance of lipid inclusions in the cells of the connective tissue and the development of adipose tissue. The stratified epithelial corpuscles persist much longer.

If the body is stressed, involution is temporary, quick or accidental. When stress-reactions occur the emission of T-lymphocytes into the blood and the mass destruction of lymphocytes in the body itself, especially in the cortex take place. This involution may occur due to different affects on the body of extremely strong stimuli (trauma, intoxication, infection, starvation, etc.).

If the involution occurs, it leads to glucocorticoids deficiency of the adrenal cortex. This leads to reduced resistance to infections and intoxications. Especially the risk of appearance of tumors increases.

Thus, the thymus is an important organ in the human body and in violation of its functions the resistance of a human body to viruses and infections is weakening.

MODERN ASPECTS OF A FACE TRANSPLANT

Babicheva E., Karapetyan E., Shishmaryova V. – the 3rd-year students

Scientific leader – Prof., Doc.Med.Sc. V.V. Grebenyuk

Face transplant has already stopped being the transaction available only to characters of fantastic movies. Plastic surgery reached improbable heights. Now doctors can sew the ends of nervous fibers thanks to that people get their new ears, noses, tongues and other organs which are successfully performing the functions in the found body.

Transplant surgery is an operation during which a patient by means of the method of transplanting receives an entirely new face.

The first-ever face transplant surgery was performed in France in 2005 for a woman aged 38 years. Surgery was performed successfully. Now on her face a long scar and partial deformation of the right cheek are still noted.

In general in the world about 20 face transplants, mostly in the USA and in France were performed. To transplant a face more than ten doctors and nurses are required, a surgery is being performed for 24-36 hours. In Russia face transplant is impossible because

of the law "About Organ Transplantation and (or) Tissues of the Person". It permits to change fabrics only of one type while the human face is the whole complex of fabrics. The patient who endured a face transplant won't look completely like the donor. The shape of skull and facial muscles which are unique for each person will emphasize the difference. For this reason the transplant face won't be similar to the donor's one.

Face transplant begins with the search for a donor having a similar genetic code. A face is taken from a dead man. The resuscitators who fix death cause a crew of specialists. A forensic scientist and a doctor on duty pronounce death. If from the legal point of view there are no problems and there is an availability of a consent of relatives to transplantation, the face is withdrawn and delivered to the place of surgery.

Before transplanting the new face to a patient an integument, muscular and fatty tissue, cartilages of a nose and ears will be removed alternately. Then a surgeon in the reverse order will replace the donor material, sewing some details, some pasting, processing a part of them with a special laser.

The most famous cases of successful face transplant:

-In 2006, a resident of China, survived a fight with a bear, got a new right side of his face from a man who died in a car accident.

-In 2007, the doctors saved a patient suffering from tumor. He received the face transplant, and he got normal mouth, nose and throat.

-In 2010, In Spain a face transplant was performed for a man who due to a gunshot injury was missing the lower half of the face. A week later stubble on man's face started growing back.

-In 2011, 25-year-old American received a complete face transplant after severe burns.

ADVANCES IN CLINICAL USE OF UMBILICAL CORD STEM CELLS

Yakimenko S. – the 2nd-year student

Scientific leader – Cand.Med.Sc. T.L. Ogorodnikova

Stem-progenitor cells are cells which are capable of unlimited proliferation and regeneration into absolutely any cells. From stem cells such cells as cells of bones, muscles, blood cells and cells of skin can be obtained. 100 ml of cord blood contains the same number of hematopoietic stem cells as generally a liter of the bone marrow has. The procedure of collecting umbilical cord blood is completely safe for both mother and child, painless; it can be carried out at the natural childbirth and during caesarean section and it is simple.

After administration of stem cells an infarct area is reduced by 29%. Stem cells restore the damaged heart tissue prescription of up to 8.5 years. Umbilical cord stem cells have a protective effect on neurons. There are successful results of the 10-year study on the effectiveness of immunosuppressive therapy and hematopoietic stem cell transplantation in the treatment of multiple sclerosis, in the treatment of cerebral palsy and other diseases of the nervous system in children. Preparation of lung tissue stem cells can be used in regenerative therapy of respiratory diseases: emphysema, chronic bronchitis, asthma, lung fibrosis. Transplantation of umbilical cord stem cells is used in autoimmune intestinal diseases (Crohn's disease, nonspecific ulcerative colitis). Many studies show the effectiveness of stem cells in the treatment of liver cirrhosis. As a result of the use of stem cells the majority of patients had regression of diabetes and stopped to use insulin. Stem cells are used in the treatment of congenital defects of vision, retinitis pigmentosa, optic

atrophy, retinal degeneration, eye burns. In dentistry a tooth germ, the same as in the embryo, is grown and implanted into the gums. Two months later a new tooth will take roots and erupt. Determination of osteogenic potential of stem cells of these cells showed that 500 mg of mesenchymal stem cells may form 3 kg of bony tissue.

It is possible that the stem cells will help in the treatment of such diseases as blood diseases: lymphoma, hemoglobinuria, and refractory aplastic anemia, sickle cell anemia, paroxysmal nocturnal hemoglobinuria, acute and chronic leukemia, Fanconi anemia, macroglobulinemia, myelodysplasia; autoimmune diseases: rheumatoid arthritis, Alzheimer's disease, systemic sclerosis, Parkinson's disease; cancer: neuroblastoma, cancer (breast, kidney, ovarian, testicular), small cell lung cancer, Ewing's sarcoma, rhabdomyosarcoma, brain tumors and other congenital and acquired diseases: with metabolic disorders, immunodeficiency, muscular dystrophy, liver cirrhosis, AIDS, histiocytosis, amyloidosis.

Delayed immune recovery after umbilical cord transplantation is one of the most serious obstacles to the widespread use of umbilical cord transplantation. The future of stem cell transplantation is the following: the combined advances in chemotherapy and immunotherapy to increase the survival of stem cells and reduce morbidity.

INTESTINAL DISEASES IN PRIMORYE

Viktorskiy V., Kabar M. - 2nd-year students

Scientific leader – Assoc.Prof. L.A. Guba

According to the 2015 data when registering multiple foci of AII (acute intestinal infection) infections of viral etiology accounted for 82.6 %, 2014 - 69.2%. Collectively, for the first half of 2016 the epidemic situation of acute intestinal infections is registered as not well due to the high incidence of AII of viral etiology. It is the infection rate, which exceeds the long-term annual average rate by 2.9% and it is above the level of 2015 by 1.5%.

According to an analysis the highest indices rates belonged to Salmonella – 1328 cases (755,9 per 100,000 of population), group D Salmonella having accounted for 88.6% and group B Salmonella -8.2%, group C - 3.1 % other – 0.1 %.

Dynamics of incidence of salmonellosis in all groups during 2004-2014

Groups	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
All residents	35	73	113	95	139	72	165	113	216	187	120	1328
	20.26	42.24	64.04	56.37	88.15	45.89	90.40	62.95	118.2	102.2	65.21	755.9
Adults over 18	35	73	45	43	63	36	84	54	100	66	58	657
	20.26	42.24	31.49	31.71	50.37	28.71	56.99	36.99	67.0	44.97	39.62	451.3
People under 17 years	0	0	68	52	76	36	81	59	116	121	62	671
			202.8	157.8	233.1	114.4	230.7	176.1	325.2	334.6	164.9	1939.5
Urban residents	35	73	113	95	138	65	136		203	173	115	1242
	20.26	42.24	64.04	56.37	87.51	41.43	87.71	62.28	128.8	109.7	72.25	772.6
Rural people	0	0	0	0	1	7	29	17	13	14	5	86
							105.6	67.03	51.68	55.48	20.13	

Analysis of longitudinal dynamics of morbidity of viral hepatitis A showed a tendency to decrease – the average rate of decline amounted to 40.8%.

Incidence of VHA (viral hepatitis A) in groups during 2004-2014

Groups	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
All residents	179	56	17	2	8	8	3	2	1	2	3	281
	103.6	32.40	9.63	1.19	5.07	5.10	1,64	1.11	0.55	1.09	1.63	163.0
Adults aged 18 and over	179	56	8	2	2	2	3	1		2	1	256
	103.6	32.40	5,60	1.48	1.60	1.59	2.04	0.68		1.36	0,68	151.0
People under 17 years	0	0	9	0	6	6	0	1	1	0	2	25
			26,84		18,40	19.06		2,98	2.80		5,32	75.41
Urban residents	179	56	17	2	8	8	3	2	1	2	2	280
	103.6	32.40	9.63	1.19	5.07	5.10	1.93	1.30	0.63	1.27	1.26	163.4
Rural people	0	0	0	0	0	0	0	0	0	0	1	1
											4,03	4,03

Analysis of longitudinal dynamics of AII morbidity caused by rotavirus infection showed a strong tendency to growth – the average growth rate amounted to 18.5%. In the structure of cases child population predominates (99.7 percent). The adult population is 0.3%.

Dynamics of AII morbidity caused by rotavirus infection in populations during 2004-2014

Groups	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	total
All residents	0	0	0	0	17	267	120	93	141	151	75	864
	0.00	0.00	0.00	0.00	10.78	170.2	65.75	51.81	77.13	82.54	40,76	499.0
Adults aged 18 and over	0	0	0	0	0	1	0	0	0	0	1	2
	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.68	1.48
People under 17 years	0	0	0	0	17	266	120	93	141	151	74	862
	0.00	0.00	0.00	0.00	52.14	845.0	341.8	277.6	395.3	417.5	196.8	2526.1
Urban residents	0	0	0	0	17	242	104	78	127	140	71	779
	0.00	0.00	0.00	0.00	10.78	154.3	67.08	50.60	80.56	88.77	44.61	496.7
Rural people	0	0	0	0	0	25	16	15	14	11	4	85
	0.00	0.00	0.00	0.00	0.00	-	58.25	59.15	55.65	43.59	16.10	-

EXCHANGE OF TYROSINE

Sat M., Lobanova N. – the 2nd-year students

Scientific leaders – Assoc. Prof. L.Ya. Etmanova, Cand. Ped. Sc. I.A. Bibik

Phenylalanine is an essential amino acid. It is used in the body only in 2 processes: working as a substrate for protein synthesis and in the process of converting into tyrosine.

About 90% of phenylalanine is converted into tyrosine: conversion of phenylalanine to tyrosine is a first response of phenylalanine metabolic pathway. All further transformations taking place in the body are connected with tyrosine.

In violation of transformation of phenylalanine into tyrosine a disorder - phenylketonuria (phenylpyruvate oligophrenia) occurs.

Due to the impossibility of conversion of phenylalanine to tyrosine, phenylalanine catabolism proceeds involving an alternate path, the content of phenylalanine and metabolites of alternate pathway (phenylpyruvate, fenillaktata, fenilatsetatai and ets.) increasing in the blood and urina.

Symptoms: Sharp violation of the mental and physical development, convulsive disorder, "mouse" smell as well as violation of skin pigmentation occur.

When phenylalanine and its derivatives exceed, they have toxic effects on brain cells as they limit tyrosine and tryptophan transport across the blood-brain barrier and inhibit the synthesis of neurotransmitters (dopamine, norepinephrine, serotonin). Without treatment patients with PKU won't live to 30 years. The disease is inherited according to an autosomal recessive pattern. There are 2 forms of phenylketonuria:

1. Classical phenylketonuria:

The reason: a hereditary defect of the enzyme called phenylalanine hydroxylase.

The frequency of the disease: 1 in 10,000 infants.

2. Variant phenylketonuria (cofactor-dependent, hyperphenylalaninemia):

Reason: mutations in genes that control metabolism of H4-biopterin.

The incidence: 1-2 cases per 1 million of newborns.

In this form of the disease there are severe neurological damages and early deaths.

Treatment of phenylketonuria: a diet with almost total exclusion of phenylalanine from the food.

To diagnose phenylketonuria determination of the concentration of phenylalanine and abnormal metabolites in the blood and urine of a patient is needed.

In hereditary gene defect of enzyme of dioxygenase (homogentisic acid) Alkaptonuria ("black urine" disease) occurs. In this disease a large amount of homogentisic acid is excreted with the urine.

With its air oxidation by O₂ alkaptons are formed - dark pigments.

Symptoms: 1. The urine becomes black.

2. Ochronosis - black spots in the cartilages. (On the tip of the nose and in the earlobes);

The incidence: 2-5 cases per 1 million of newborns.

The disease is inherited according to an autosomal recessive pattern.

VIDEO GAME ADDICTION

Karyakin M, Egorov K. – the 4th-year students

Scientific leader – N.G. Brash

Video game addiction is a form of psychological dependence, which manifests itself in obsessive fascination with video games and computer games. A man obsessed with computer games, begins to confuse reality with the virtual world. In severe cases, cyberspace becomes the main medium of existence. On the symptomatology the game addiction is similar to alcoholism and narcomania. Computer game dependence erases personal features, the person ceases to exist, and virtual existence of a character dominates. A person with computer game dependence becomes "a disabled person" socially, thinking gains autistic character. The fact is that there is no medication for the treatment of the game

dependence. And it is a real problem. Therefore a series of medical institutions and programs performing treatment for the game dependence and paying attention to the prophylaxis appeared. Their aim is not to give access to games during a certain time, and also to slow the Internet gradually that may lead to the impossibility of the process of playing.

STATISTICS OF DIABETES TYPE I IN CHILDREN IN THE CITY OF BLAGOVESCHENSK

Parshakov D., Sorokina E. - the 4th-year students
Scientific leader - Can.Med.Sc. O.A. Tanchenko

Today diabetes is one of the leading medical and social problems. Millions of people worldwide suffer from this disease. Despite intensive research, diabetes mellitus is a chronic disease that requires ongoing monitoring to prevent complications and premature disability.

We are interested in this problem, and we decided to analyze the incidence of type 1 diabetes in children and teenagers of Blagoveschensk. According to the hospital archives the highest percentage of the incidence of type 1 diabetes (T1D) among the children aged 0-14, which was registered in 2015, is 0.09% per 41740 individuals and among aged 15-17 years, which was registered in 2013, is 0.33% per 8374 individuals. The maximum number of type 1 diabetics among the children with disabilities aged 0-14 years, which was registered in 2014, is 0.08% per 39931 individuals. Among the teenagers aged 15-17 years the peak of incidence, which was revealed in 2013, is 0.26% per 8374 individuals.

Thus, diabetes is a global problem, which is growing every year. According to the statistics, diabetes is now a disease that affects 371 million people worldwide; it is 7% of the world population.

POSTPARTUM DEPRESSION

Lobanova E., Poh V. - the 4th-year students
Scientific leader - N.G. Brash

Postpartum depression is a violation of the psycho-emotional sphere, which occurs in postpartum period and is characterized by marked deterioration in mood.

The relevance of this topic is due to the high prevalence of this disorder which occurs in 10-15% of women who gave birth.

Currently, the so-called polyetiological hypothesis of any depression, including postpartum is most justified. There are three main factors: heredity, psychological trauma and somatic disorders. According to this hypothesis, the combination of the mentioned factors is considered to play a significant role in the development of depressed state.

Typically, postpartum depression is a slight and temporary conduct disorder, which occurs on the third or fourth day after birth and reaches its climax on the fourth or fifth day. The most common symptom of postpartum depression is crying for no reason. Also not ruled out sudden energy and love for others, which are replaced by melancholy and despair. Other symptoms are mild irritability, anger and hostility, chronic headaches, a feeling of unreality, exhaustion and devastation, as well as the relentless anxiety. The list of symptoms also includes sleep disorders - irreplaceable companions of women in the postpartum depression.

The manifestations of postpartum depression should be treated very seriously. Its timely identification will allow us to take appropriate measures, which will effect both on the health of a newborn and a mother herself.

There are two treatment landscapes: psychotherapy and medication-assisted treatment. The best option is the use of psychotherapeutic approach, and in most cases, psychotherapy shows good, positive results. Medicines are used in cases when the severity of depression is significant or therapy is not effective enough.

VASCULAR DEMENTIA

Poh V., Lobanova E. - the 4th-year students

Scientific leader - Doc.Med.Sc. V.N. Karnaukh

The problem of dementia is one of the most significant health and socio-economic problems of the present time, as the disease is not only impairs the quality of life of patients, but also leads to large economic losses. Vascular lesions of the brain are considered to be the second most common cause of dementia in the elderly (about 20% of all dementias).

Vascular dementia (VD) is a cognitive decline as a result of ischemic or hemorrhagic brain damage due to chronic pathologies or cerebral stroke. To diagnose dementia it is necessary to conduct neurodevelopmental testing. Diagnosis of VD is based on three criteria: 1) the presence of dementia (psychodiagnostic testing); 2) the presence of cerebrovascular disease, which has been confirmed by clinical, biochemical data as well as results of a Doppler ultrasonography test of the blood vessels of the brain, CT data, findings on MRI scan of the brain; 3) feedback based on 1 and 2 criteria.

The leading role in the formation of vascular dementia in the brain lesions plays the damage of the white matter of the brain and basal ganglia, thalamus, leading to communication disorders in the frontal areas and subcortical structures. The main pathogenic factor in the development of this phenomenon is hypertension, which leads to changes in the vessel wall, thereby developing arteriolosclerosis. This vascular pathology leads to a decreased perfusion, the occurrence of ischemic white matter in the brain and development of multiple lacunar infarcts. As a result of their cumulative effect a loss of brain tissue, which results in brain atrophy take place. In patients with vascular dementia lifetime characteristic changes in the brain are detected using modern methods of neuroimaging.

A feature of vascular dementia is the variety of clinical disorders, and often a combination of several neurological and neuropsychological syndromes in a patient. Patients with vascular dementia are characterized by a slowdown, rigidity of the mental processes and their lability, a narrow range of interests. In patients with marked cognitive decline and difficulties in carrying out the functions of activities of daily living, the loss of social skills, and adequate assessment of the disease. Firstly, among the cognitive deficits, memory and attention disorders, which are marked at the stage of initial vascular dementia and have been steadily progressing, are noted. In the later stages disorders of abstract thinking and judgment may develop. Most often there are signs of semantic aphasia and amnesic forms. More than half of patients with vascular dementia have the so-called "emotional incontinence" and some patients have depression. The development of mood disorders, psychotic symptoms are possible. In addition to cognitive impairment patients with vascular dementia have neurological manifestations such as pyramidal, subcortical, pseudobulbar, cerebellar syndromes, paresis of muscles of the limbs – more often not rough as well as gait disturbance by apraxia-ataxia type or parkinsonian type. In most patients,

especially the elderly, there are violations of control of the pelvic functions. Often paroxysmal states such as falls, seizures, syncopal states are noted. It is the combination of cognitive and neurological disorders that let us differ vascular dementia from Alzheimer's disease.

Treatment of vascular dementia should include interventions aimed at the underlying disease, against which it develops, basic therapy, correction of the major syndromes, effects on cerebral hemodynamics, metabolic therapy.

PSYCHOEMOTIONAL LEVEL CHANGE IN THE 5th-YEAR STUDENTS DURING TAKING STANDARDIZED IMITATIONAL MODULE

Kozhechenkov K. – the 5th-year student

Scientific adviser – Assoc.Prof., Cand.Med.Sc. O.S. Yutkina

It is not a secret that in order to become a successful doctor, you need to have a great practical experience. Precisely in order to work out all the necessary skills and to develop abilities without risks to a patient the Centers for simulation and certification are being created. These are institutions carrying out testing and certification of students, residents, graduate students and doctors using simulation training technologies. The basis of these centers is made up of classes in various specialties and training that takes place with the use of simulation equipment with different realism levels.

Despite the feeling of tension and sometimes even actual stress while working with a virtual simulator, students prefer to see immediate results after treatment or manipulation, rather than just reading about them in books or listening to lectures. The greatest value of this method of learning is that students have the opportunity to make mistakes and learn from them in a safe learning environment.

This article contains analysis of the studying methods of the psycho-emotional level and tolerance to uncertainty in the 5th-year students while taking a standard simulation module "Acute constrictive laryngotracheitis".

PHARMACOTHERAPY IN PULMONARY EDEMA

Egorov K. – the 4th-years student

Scientific leader - Can.Med.Sc. V.I. Tihanov

Acute heart failure can clinically be manifested by a pulmonary edema. The pulmonary edema is subdivided into interstitial and alveolar. In case of the former liquid does not come out into the alveoli, and in the latter comes out. The first state in clinical practice is called cardiac asthma, and the second – fluid lungs. The cardiogenic pulmonary edema arises because of poor contracting ability of a left ventricle. In the treatment of this pathology it is necessary to prevent oxygen deficiency and to eliminate the foam from the respiratory tracts (oxygen with ethanol vapors), to remove the liquid out of the lungs (furosemidum), to decrease the load on the heart, pressure within the pulmonary circulation and the peripheral resistance of the vessels (nitroglycerine), to eliminate a pain syndrome (morphinum), to stop psychomotor exaltation (droperidolum), to normalize cardiac emission (strophanthin).

FEATURES OF THE LOWER LIMB BONE STRUCTURE OF A NEWBORN

Chelombitko A., Malygina Yu. – the 1st-years students

Scientific leader – A.E. Pavlova

A newborn pelvis is situated high, reaching the 3rd lumbar segment. The form of it reminds a narrow and high funnel. The wings of the iliac bone are not expanded. The sacropromotory is not expressed. The sagittal diameter of the pelvic cavity prevails over the transverse diameter. The sexual differences of the pelvis are already marked in the intra-uterine period.

A feature of the pelvic bone of newborns is shallow depth of the coxal cavity that leads to the increased mobility of the hip joint. Free newborn's lower limbs are in a bent position and can not be straightened. It happens due to a short length of the muscles, especially the tendons, which seem to tighten the limbs.

The femur of newborns is short and relatively thick, curled stronger than that of an adult, making it easier to bring the bent legs to the trunk. A neonatal foot is flat and it is in the supine position. The arch of a foot is formed during the first two years of life due to the development of its support function and strengthening of the ligamentous apparatus.

DIABETES COMPLICATIONS

Mikhailov P. - the 5th-year student

Scientific leader - Assoc. Prof. O.A. Tanchenko

All forms of diabetes increase the risk of long-term complications. They usually develop after 10 to 20 years, but may be the first symptoms in those who have otherwise not received a diagnosis before that time.

The major long-term complications relate to damage to blood vessels. Diabetes doubles the risk of cardiovascular disease and about 75% of deaths in diabetics are due to coronary artery disease. Other "macrovascular" diseases are stroke, and peripheral vascular disease.

The primary complications of diabetes due to damage in small blood vessels include damage to the eyes, kidneys, and nerves. Damage to the eyes, known as diabetic retinopathy, is caused by damage to the blood vessels in the retina of the eye, and can result in gradual vision loss and blindness. Damage to the kidneys, known as diabetic nephropathy, can lead to tissue scarring, urine protein loss, and eventually chronic kidney disease, sometimes requiring dialysis or kidney transplant. Damage to the nerves of the body, known as diabetic neuropathy, is the most common complication in diabetes. The symptoms can include numbness, tingling, pain, and altered pain sensation, which can lead to damage to the skin. Diabetes-related foot problems (such as diabetic foot ulcers) may occur, and can be difficult to treat, occasionally requiring amputation. Additionally, proximal diabetic neuropathy causes painful muscle wasting and weakness.

There is a link between cognitive deficit and diabetes. Compared to those without diabetes, those with the disease have a 1.2 to 1.5-fold greater rate of decline in cognitive function.

PSEUDOMEMBRANOUS COLITIS

Mikhailov P. - the 5th-year student

Scientific leader - P.K. Soldatkin

C.difficile is a strictly anaerobic gram-positive spore-forming bacterium that is a part of the normal residual intestinal microflora. The appearance of pseudomembranous colitis is the result of a variety of predisposing factors, such as antibiotic therapy or surgery.

In milder forms of diarrhea and cramping abdominal pain is observed. Stools are copious, watery, with mucus. General toxicity manifests as fever, weakness, fatigue, headache, nausea and vomiting. All symptoms disappear after the abolition of antibiotics. In moderate and severe forms, patients are suffering from debilitating diarrhea. In the stools of patients an admixture of mucus and blood are revealed. Dehydration and demineralization are developing. Convulsions are also possible.

During the height of the disease leukocytosis, neutrophilia and ESR acceleration are being marked in the blood. In moderate and severe forms the following is observed: hypoproteinemia, hypoalbuminemia, hypokalemia, and in the terminal stages may be azotemia. Charcot-Leyden crystals might be found in the stools.

In endoscopy there are plaques (membranes) with a diameter of 0.2-1.5 cm, densely welded into the mucous; when you try to remove them blood appears.

PMC Treatments include: etiotropic therapy, sorption therapy, intestinal microbial ecosystem restoration; elimination of dehydration and correction of violations of water-electrolyte balance.

FEATURES OF CLINICAL PROGRESSION OF RARE FORMS OF ERYSIPELAS

Shpinyov A. – the 5th-year student

Scientific leader - T.A. Dolgih

Erysipelas - (Polish “roza” - rose) - anthroponotic infectious disease caused by a B - hemolytic streptococcus group A, occurring in the acute (primary) or chronic (recurrent) form with the expressed intoxication syndrome, skin manifestations and lymphadenitis.

According to statistics, currently the incidence of erysipelas in the European part of Russia is 150-200 per 10,000. In recent years there has been the rise of the incidence in the United States and some European countries. The majority of patients are those aged 50 years and older (up to 60-70% of all cases). It should be stressed that the mortality rate of newborns from erysipelas is extremely high. Erysipelas is dangerous for children in the first year of life as well.

The incubation period lasts from a few hours to 3-5 days. The disease begins with headache, general weakness, fever, myalgia, nausea and vomiting (25-30% of patients). During the first hours the temperature increases up to 38-40 ° C. After 1-2 days, symptoms of the disease are at their peak.

The severity of intoxication and the prevalence of the local process are considered to be the criteria of the severity of erysipelas.

PECULIARITIES OF CLINICAL COURSE OF HAEMOPHILIC MENINGITIS IN CHILDREN

Pakhomov S. – the 5th year student

Scientific leaders - T.A. Dolgih, O.I.Katina

Haemophilic meningitis – is an acute anthroponosis infectious disease with aerosol mechanism of transmission. It is characterized by a primary lesion of the respiratory tract and the brain membranes.

The urgency of the problem of haemophilic meningitis is due to the fact that this pathology takes the second place in the structure of bacterial meningitis in children under

5 years. There is often a long and undulating course of the disease and a high incidence of residual effects and adverse effects, such as the progression of hydrocephalic-hypertensive syndrome and hearing loss. Certain value has a relatively late appearance of meningeal syndrome leading to diagnostic difficulties and frequent hospitalization in non-core hospitals.

The causative agent - is the bacterium *Haemophilus influenzae* type of *Haemophilus* (Pasteurellaceae family). The sources of infection – are patients with any clinical form of Hib-infection, as well as healthy carriers. Susceptibility is due to the lack of human immunity and the anatomical and physiological characteristics of children under 5 years.

Haemophilic meningitis develops most often on the burdened premorbid background: organic CNS lesions - 42.7%, frequent acute respiratory diseases - 34.8%, pathology of pregnancy and childbirth - 20.3%. The disease begins subacute: a cough, runny nose, and increase of body temperature to 38-39 ° C. In some patients in the initial period dyspepsia may dominate. This period lasts from several hours to 2-4 days. Then the child's condition worsens: enhanced intoxication syndrome, disorders of consciousness, convulsions, and in 1-2 days - focal symptoms, body temperature reaches 39-41 ° C, increasing headache, vomiting, meningeal symptoms. Fever in Haemophilic meningitis is often remittent or irregular. It is registered even on the background of antibacterial therapy, the average duration 10-14 days. Catarrhal symptoms in the form of pharyngitis are noted in more than 80% of patients. Often there is hepatosplenomegaly, lack of appetite, confusion of consciousness, weakness. Focal neurological symptoms are seen at least in 50% of patients. Often there is paresis of cranial nerves, hearing impairment, focal seizures, ataxia, muscle tone disorders for extrapyramidal type, rarely paresis of the extremities. Meningeal syndrome (e.g. protrusion of cerebellum) and hanging symptom are expressed moderately. Neck stiffness of muscles is usually typical for children older than 1 year. And Brudzinsky and Kernig symptoms in some patients are mild or absent.

The most accurate diagnosis is to identify the causative agent from blood and CSF during bacteriological examination, RAL and PCR.

Drugs of choice for the treatment of Haemophilic meningitis are Ceftriaxone and Meronem. In the absence of the effect fluoroquinolones of the second generation (Pefloxacin, Ciprofloxacin, Ofloxacin) or a combination of cephalosporin (Ceftriaxone) and fluoroquinolones are administered.

Thus, considering the prolonged and sinuous course of the disease, a high risk of residual effects and adverse effects, it is necessary to pay more attention to timely vaccination of the disease.

DENTAL SYSYEM

Sholokhova I. - the 2nd-year student

Scientific leaders – Assoc.Prof. S.S. Selivyorstov, Cand.Ped.Sc. I.A. Bibik

Dental system is a complex functional system that combines functional subsystems such as teeth, periodontium, jaws, muscles, joints, salivary glands.

This subject is very topical today, as there are many people who suffer from dental diseases.

Diseases of the dental system are very diverse and numerous. The most common are diseases of dental hard tissues (caries and some non-carious lesions)

Caries (tooth decay) is a pathological process manifesting in demineralization and progressive destruction of the hard tooth tissue with formation of a defect in the form of a

cavity. This is one of the most common lesions of the teeth, which, according to WHO, affecting up to 90% of the world population.

Non-carious lesions of the dental hard tissues are associated with wedge-shaped defects, fluorosis, dental erosion and acid necrosis.

Wedge-shaped defects are defects of the hard dental tissues, which are located on the vestibular surface of the teeth, usually canines and premolars.

Fluorosis (hyperfluorosis, mottling of enamel) is a disease that develops in prolonged and excessive fluorine entering the body and accompanied not only by dental injury, but also by damage of many organs.

Dental erosion is the progressive decline of the cup-shaped enamel and dentin on the buccal surface of the first incisors, and then canines and premolars of the upper jaw.

Acid necrosis of the dental hard tissue is an occupational disease occurring in people working in the field of inorganic acids production.

Along with the damage of the hard tooth tissue at the age of 18 to 25 years most common are diseases associated with the appearance of the third molar.

The third molar is the 8th and last tooth in the row (colloquial name - "the eighth"). It usually erupts between the age of 18-25 years (sometimes later, sometimes earlier, sometimes doesn't erupt).

Thus, dental diseases are very common. The teeth should be treated as they fulfill the primary function of food processing. And if it is broken, the process of digestion will be disturbed.

APPLES ARE A PANTRY OF HEALTH

Mitrofanova T. - 1st-year student

Scientific leaders – A.F. Sapyanova, Cand.Ped.Sc. I.A. Bibik

Vitamins are group of low-molecular substances of manifold nature. They are required for biochemical reactions providing growth, survival and reproduction of an organism. Usually, vitamins play the role of co-enzymes - molecules, which take part in the work of enzymes. Vitamins are called the flame of life, because life without them is impossible.

Apples are a valuable natural source of vitamins. They contain rich complex of vitamins (e.g. A,B,C,D, etc.), broad spectrum of minerals (e.g. Ca, Mn, Mg, Zn, F, Fe), of course, nutritious and health-giving substances (e.g. antioxidants, pectins, organic acids, sugar and cellular tissue), which are needed for an organism of a man, particularly in winter

Experience of doctors and clinical supervisions indicate the existence of series of specific diseases, which appear because of defects of nutrition. Experiences of participants of the long travels are evidence in favor of it. For example, scurvy was a terrible whip for sailors for a long time. The number of people died of scurvy was bigger than from wars.

Despite the fact that requirement daily intake of vitamins is milligrams and micrograms, an organism of a man or animal must get vitamins every day, because it can't synthesize vitamins itself or synthesize them in small quantity, so we (or animals) get them with food. Vitamins are assimilated by organism, forming different compounds (e.g. etheric, amide, nucleotide etc). Many vitamins can unite with proteins and then they form enzymes - typical biological contact substances, which promote quick current of reactions of synthesis, breakage and restructuring. Because of that we can say that apples are irreplaceable products in a diet of every person

BATTLE OF THE CENTURY: CRISPR / Cas9 vs HIV

Leonov D., Ustinov E. –the 1st-year students

Scientific leaders – Assoc.Prof. E.N. Gordienko, Cand.Ped.Sc. I.A. Bibik

HIV is a causative agent of acquired immunodeficiency syndrome (AIDS) - related to the Lentivirus genus of the Retroviridae family whose genome is represented by two copies of single-stranded RNA, wherein the two ends are long terminal repeats.

Even 5 years ago, no one could believe that there will be such a revolutionary approach to the treatment for diseases. The furore in the world of science has made the system of clustered regularly interspaced short palindromic repeats CRISPR / Cas9. The system was discovered almost thirty years ago in bacteria and then in archaea. In the genome of microorganisms repetitive DNA segments (20-50 nucleotides in length) were found. Genes of various proteins, cutting and splicing DNA (cas genes) were in close proximity to these repeats. Genetic analysis has shown that these unique regions of DNA are homologous to different DNA sites (protospacers) of bacteriophages and plasmids - the enemies of bacteria. Moreover, with the corresponding spacer a bacterium becomes resistant to the penetration of a foreign DNA. Thus, it was shown that CRISPR / Cas system is a kind of bacterial "immunity" system.

In 2014, such research was conducted by American scientists on microglial cells, macrophages and monocytes, having confirmed the success of this therapy. In addition, the scientists were able to immunize cells against HIV: they made the cells keep CRISPR / Cas9 system with an appropriate RNA directed against HIV (i.e. integrated into the genome) constantly. The cells were not disturbed, and after it HIV infection, integration into the genome and virus replication didn't occur in them.

The proposed system of gene alteration is not as wonderful as it might seem at first glance. One main problem of this method is its effectiveness. Often, the work over the targeted change in one site requires a lot of time and money, but does not lead to a 100% result: not all the targets can be found and altered. Another problem is the correction of other DNA segments, similar to those with the desired order, or so-called off-target-effects which may affect the gene, even if we do not want to change it. And finally there is a problem of delivery of CRISPR / Cas9 system.

Thus, the rapidly developing gene therapy using the CRISPR / Cas9 is the key to getting rid of HIV infection and associated diseases and complications. But it's hard to expect that such a medicine will appear on the shelves of pharmacies tomorrow. It is still worth thinking about the ways to develop a truly effective and safe treatment.

HORMONAL CONTRACEPTIVES OF NEW GENERATION

Poh V., Lobanova E. - the 4th-year students

Scientific leader - Cand.Med.Sc. V.I. Tikhanov

According to the definition of WHO experts today means of hormonal contraception are considered to be the most effective and highly reliable for prevention of undesirable pregnancy. Therefore it is no wonder that according to WHO data more than 70 million women use hormonal contraceptives.

Hormonal contraceptives prevent pregnancy by suppressing ovulation and increasing the viscosity of vaginal mucus, which is released by the cervix that further prevents the penetration of sperm into the uterus and, accordingly, the process of fertilization. They also contribute to slowing down of peristalsis of the fallopian tubes.

Modern hormonal contraceptives are differentiated according to the content of hormones. They are divided into combined (composition contains estrogens and gestagens) and noncombined (consisting of only gestagens). Combined, in turn, are divided into monophasic (containing 21 tablet – a dose of estrogen and progestogen in each tablet is stable) and the polyphase (with variable ratio of estrogen and progestogen - an estrogen dose is almost stable in all 21 tablets, while the progestogen is administered in increasing dosage, i.e. according to phases, being increased by the end of medication taking by a factor of 2-3 times (phase 2 and phase 3 drugs)).

Today, the most popular contraceptive drugs of the new generation are the following:

Yarina is a combined monophasic contraceptive next-generation drug - low-dose. The underlying substance is drospirenone (a synthetic hormone with properties similar to natural progesterone - a derivative of 17 α -spironolactone). Its pharmacological properties are similar to endogenous progesterone, and it has gestagenic, antiandrogenic and antiminerocorticoid effects.

Jeanine is a new monophasic preparation possessing antiandrogenic effect - low-dose. In the women taking these drugs the establishment of a regular menstrual cycle, reducing the number of painful menstruations, the intensity and duration of the bleeding are marked. Besides, there are data of reducing the risk of ovarian cancer and endometrial cancer.

Regulon is a monophasic preparation of a new generation. It refers to low-dose birth control pills. It is suitable for young nulliparous and parous women and for those who have regular sex, as well as for women of late reproductive age.

HUNTINGTON'S CHOREA

Bayrak T., Bashtannik A. – the 3rd-year students

Scientific leader – Doc.Biol.Sc. N.A. Ishutina

Huntington's chorea is a hereditary neurodegenerative disease characterized by gradual onset, usual onset age of 35-50, a combination of progressive trochaic hyperkinesia and mental disorders (dementia). It was described by Huntington in 1872.

The disease is inherited according to an autosomal dominant pattern with high penetrance. Men suffer from it more often.

Pathogenesis is the following: the evolving death of nerve cells with a pronounced reduction in the content of neurotransmitters in the basal ganglia, the marked reduction of mitochondrial respiratory chain activity in the caudate nucleus. Violations of dopamine metabolism are not excluded. Grossly brain atrophy is detected. In the basal ganglia, mainly in the shell and caudate nucleus, gross degenerative changes of both small and large cells, a decrease in their numbers, and the proliferation of glial cells are determined.

The disease usually begins to manifest itself at the age of 30 years and older. The first symptoms of the disorder can be intellectual disorders and then gradually dementia can occur. At the same time there can be trochaic hyperkinesia: rapid, spasmodic, erratic movements in different muscle groups. Implementation of voluntary movements is hampered due to hyperkinesia, and it is accompanied by a number of unnecessary movements. However, even when hyperkinesia is expressed, especially early in the disease process, they can consciously suppress hyperkinesia. To speak is difficult and the process is also accompanied by excessive movements. Muscle tone is reduced.

It can be difficult to make a diagnosis in atypical cases of Huntington's chorea. The family nature of disease, identification of other focal symptoms of brain damage, the character of the course of disease, some changes in the cerebrospinal fluid and other

diagnostic criteria are of great importance. In using computerized tomography scanner the signs of cortical atrophy are revealed. On the basis of studies of sensitivity of the blood lymphocytes to X-rays there are instructions of possible early, pre-clinical, diagnosis of the disease.

It is necessary to distinguish Huntington's chorea from trochaic syndrome appearing in brain tumors, syphilis, encephalitis, Alzheimer's disease, vascular disease, as well as age-related (senile) atherosclerotic chorea.

Specific treatment is not available. To treat hyperkinesias the dopamine antagonists are administered: Haloperidolum 1 mg twice a day, with increasing doses every 3-4 days until a therapeutic effect.

CEPHALOSPORINS

Obvintseva A., Bitkivskaya A. – the 4th-year students

Scientific leader – Cand.Med.Sc. V.I.Tikhanov

Cephalosporins are a class of β -lactam antibiotics based on 7-aminocephalosporanic acid (7-ACA). The main features of cephalosporins are great resistance to β lactamases - enzymes produced by microorganisms.

Cephalosporins have bactericidal effect. The mechanism of this action is associated with damage of bacteria cell membranes (suppression of peptidoglycan synthesis) which are in the stage of reproduction, and release of autolytic enzymes, that leads to their death.

There are 5 generations of cephalosporins, depending on their antibacterial activity.

The preparations of the 5th generation.

Ceftobiprole (Zeftera) is a drug, a semisynthetic antibiotic cephalosporin of the Vth generation, of broad-spectrum for parenteral administration.

Indications: Treatment of complicated infections of the skin, including infected diabetic foot without concomitant osteomyelitis.

Contraindications: hypersensitivity to ceftobiprole, any auxiliary substance of the drug and other cephalosporins. Patients who have allergic reaction to beta-lactam antibiotics. Children under 18 years old.

Side effects: nausea, vomit, diarrhea, dyspepsia; fungal infection of the mouth and skin; hives, itchy rash and drug hypersensitivity, pruritus, dizziness, headache, dysgeusia; hyponatremia; increased levels of liver enzymes; skin reactions at the infusion site.

Pharmacological properties:

It has bactericidal activity against a broad spectrum of gram-positive bacteria, including methicillin-resistant species of *Staphylococcus*, penicillin-resistant *Streptococcus pneumoniae*, and ampicillin-sensitive *Enterococcus faecalis*. Ceftobiprole is also active against many gram-negative bacteria, including many strains of the family *Enterobacter* spp. and *Pseudomonas aeruginosa*.

Ceftobiprole is associated with many essential penicillin binding proteins (PBPs) both gram-positive and gram-negative bacteria. Ceftobiprole has a bactericidal activity against *Staphylococcus* spp., which are resistant to methicillin, caused by binding with staphylococcus PBP2a, including methicillin-resistant *Staphylococcus aureus*.

Ceftobiprole is resistant to hydrolysis by penicillines *Staphylococcus aureus* and by many beta-lactamases of class C and class A produced by gram-negative bacteria. Like most cephalosporins ceftobiprole hydrolyses by beta-lactamases of broad-spectrum, carbapenemases and metallo-beta-lactamases. In vitro selection of high-level resistance to staphylococci, streptococci, and *Haemophilus influenzae* wasn't observed.

Dosage and administration:

For infections that are caused by Gram-negative bacteria and Gram-positive bacteria with an infected diabetic foot without concomitant osteomyelitis, the recommended dose of the drug Zeftera is 500 mg. every 8 hours.

In infections caused by Gram-positive bacteria the dose is 500 mg. every 12 h. This dosage regimen wasn't studied in patients with infected diabetic foot.

For patients with severe renal function a dose of ceftobiprole should be 250 mg. «Zeftera» should be prescribed with caution for patients with severe renal insufficiency.

Conclusion.

Cephalosporin antibiotics have been used in clinical practice since 60s. During this period more than 50 drugs of this group were synthesized. Today cephalosporins are occupying a leading position in the treatment of nosocomial infections of various localization. A broad-spectrum of antibacterial activity, good pharmacokinetic characteristics, low toxicity, good compatibility with other antibacterial agents do cephalosporins the drags of choice for many infections.

SIDE EFFECTS OF TRANQUILIZER

Naumova D., Chermyanina N. - the 4th year students

Scientific leaders - Ph.D. Simon N.V., Katina O.I.

Various anxiety-phobic syndromes of non-psychotic level are considered to be the main aim for the use of tranquilizers. These syndromes may be both acute and chronic, developing within the framework of the so-called borderline states. And the side effects, occurring on the background of their use, are usually associated with the excess of the pharmacological effects of these drugs (anxiolytic, sedative, muscle relaxant, anticonvulsant effect).

The main side effects of tranquilizers include: 1. Hypersedation phenomena - subjectively noted, daytime sleepiness, decreased level of consciousness, impaired concentration, forgetfulness, etc. 2. Miorelaxation - general weakness and the weakness in various groups of muscles. 3. "Behavioral toxicity" - objectively marked in neuropsychological testing, and light impairments of cognitive and psychomotor skills are manifested even at the minimum dosages. 4. "Paradoxical" reactions – increase in agitation and aggression, sleep disturbance (usually disappear spontaneously or with dose reduction). 5. Mental and physical dependence - occurs when long-term use (6-12 months of continuous reception) and is manifested with phenomena similar to neurotic anxiety.

Do not forget that the tranquilizers freely penetrate the placental barrier and can depress the respiratory activity of a child, as well as disrupt the proper development of a fetus. So they are not recommended for use during pregnancy and lactation

BODY IMAGE DISORDER

Naumova D., Chermyanina N. - the 4th year students

Scientific leaders - Brash N.G., Katina O.I.

Disorders of the body scheme are expressed in violation of the usual idea of the size and shape of your body or parts of it, about their location or position of the body. For example, it seems to the patient that his head became huge and does not fit not only on the pillow but also in the room, his lower extremities start right from the head, and there is no trunk. As a rule such modified impression of the shape, size and position of his own body

or parts of it disappear under the vision control. The patient sees his body in the usual and familiar form. But as soon as he closes his eyes, his head again becomes excessively large, etc. Disorders of body scheme are often accompanied with metamorphopsia - distorted perception of shapes of surrounding objects. Also, a distorted perception of surrounding objects reflects in the fact that they seem to a sick person less or greater than their actual size (micropsia, macropsia). Their number increases (poliopsia). They move (optical allesthesia) and fall on the patient, pressed into him, and are in the turbulent motion (optical storm). Sometimes not only the size and shape of objects in a roughly modified form are perceived, but and spatial relationships: it seems to the patient that the walls of the room become close, crash, and fall on him. Or, on the contrary, the walls move apart, the floor becomes wavy, and the space seems to sever. Metamorphopsia and related symptoms are different from illusions by the adequacy. They differ from the hallucinations that in a distorted way the patient still perceives actually existing things, and not what exists in reality.

MODERN IDEAS ABOUT ALZHEIMER'S DISEASE

Naumova D., Chermyanina N. – the 4th year students

Scientific leaders – Cand. Med. Sc. Karnaukh A.I., Katina O.I.

Alzheimer's disease is the most common of all degenerative diseases. It occurs in the elderly. The loss of neurons is primarily in the associative areas of the frontal, temporal and parietal cortex of both hemispheres. In addition to the disappearance of neurons there is the deposition of amyloid in senile plaques and thickening of neurofibrillary structures of degenerating neurons. There are cases when dementia resembles Alzheimer's disease by the clinical picture and its course, but such great number of plaques and glomeruli is not revealed. Blood supply of atrophied zone is reduced, but it may be the adaptation response to the disappearance of neurons. The changes, characterizing Alzheimer's disease, are found in Down syndrome more often. This is due to excessive production of amyloid precursor protein encoded in the triple chromosome 21.

Dementia syndrome is the most accurate portrait of Alzheimer's disease. It begins slowly, usually with memory impairment. As the disease progresses there is the violation of other higher brain functions. Speech becomes halting, accompanied by difficulty in finding words. Thinking is retarded. There are errors in counting. Visual-spatial orientation is impaired. In the later stages of the disease the study of mental functions reveals disorientation, amnesia, aphasia, apraxia and agnosia. Walking troubles are only in the final stages of the disease; reflexes, sensitivity, hearing, sight, eye movement and other functions of the brain stem remains in the normal range. As the disease progresses involuntary grasping and sucking reflexes become more expressed. Step is shortened. Moderate rigidity and slowness of movement is revealed.

OMPHALITIS

Dorozhkova E., Moiseenko A. – the 3rd year students

Scientific leaders – Ivanova E.P., Katina O.I.

Omphalitis - is a disease of newborns characterized by inflammation of the skin and subcutaneous tissue in the area of umbilical wound.

The development of omphalitis is associated with the ingress of infection through the unhealed umbilical wound. This can occur in case of neglect of hygienic norms and

rules of newborn care and treatment of the umbilical wound. Most often the infection occurs between 2 and 12 days of life.

Staphylococcus aureus and *Escherichia coli* are the most common causative agents of omphalitis. The source of infection may be the skin of a baby, contaminated with urine, stool, and pyogenic flora; the objects of care, the hands of the nursing staff.

There are several forms of omphalitis: simple, phlegmonous and necrotic.

Common symptoms of omphalitis: fever, crying, the child is restless or languid, poor appetite, decrease in weight gain. Local manifestations: the discharge from the wound is of different color, redness of the umbilical ring, swelling of the skin around the navel, red stripes.

General treatment: antibiotics, vitamin therapy, in severe cases intravenous injection of glucose is needed in order to reduce the intoxication, and medicines forcing the immune system. Local treatment: to remove the discharge and processing of umbilical wound with antiseptic solutions, in case of purulent form the antibacterial ointments, wound drainage, and excision of necrotic tissue are administered; physiotherapy.

In phlegmonous form the broad-spectrum antibiotics are injected intramuscularly for 10-14 days. Great importance is the feeding with the breast milk. In necrotic form of omphalitis the surgical intervention along with general treatment is required.

Serious complications may occur: the umbilical inflammation of the lymphatic vessels, inflammation of the arteries and veins, inflammation of the intestines, peritonitis, liver abscess, hematogenous osteomyelitis, and suppuration of the lungs that develops on the background of sepsis.

After the birth of a child it is necessary to have a daily process of the umbilical wound with a solution of hydrogen peroxide. Then the dry wound is treated with brilliant green or alcohol (treatment frequency — 3-4 times per day).

PSEUDOMONAS AERUGINOSA AS THE CAUSATIVE AGENT OF NOSOCOMIAL INFECTION

Repyeva E. - the 3rd year student

Scientific leaders - Cand.Med.Sc. A.V.Prokopenko, O.I. Katina

Pseudomonas infection is quite dangerous and aggressive, with a high frequency of occurrence in the population. Up to 20% of or hospital-acquired or nosocomial infections are caused by *Pseudomonas aeruginosa*. 35% of urinary tract infections as well as 25% of purulent surgical processes are caused by this bacillus. A quarter of cases of primary bacteremia are also caused by *P. aeruginosa*.

Pseudomonas aeruginosa is widespread in the environment. It is a regular inhabitant of the intestines of humans and animals. It is found on the skin and mucous membranes. This is a small mobile Gram negative rod. It does not form spores and capsules. This is an obligate aerobe that grows on ordinary nutrient media. Its optimum growth temperature is 37 ° C, pH 7.2-7.5. In liquid medium it forms a opacity and film. There are medium-sized and large colonies (2-5 mm) of round, translucent, blue-gray, pearl shade on a plane agar. A characteristic feature of *Ps. aeruginosa* is chromo- and aromagenesis due to which nutrient media are stained in blue-green color during the growth of the microbe and have a characteristic smell of jasmine. *Pseudomonas aeruginosa* ferments only glucose with an acid formation. The proteolytic activity is high: it dilutes gelatin and coagulated serum, curdles milk, and cause erythrocyte hemolysis. Many strains produce substances belonging to the group of bacteriocins - piocines. 25 types of O-antigen of *Ps. aeruginosa* and 8 groups

of H-antigens were described. It is resistant to antibiotics. It produces exotoxin. Microbe is quite resistant to various external influences: it survives for 2 weeks in dust premises and sustains ultraviolet radiation. It dies at 60° C for 15 minutes.

The basic method of laboratory diagnostic is bacteriological one during which an important diagnostic feature is the ability to chromogenesis. In recent years the agglutinative O-serum were obtained to serotype isolates.

Pseudomonas aeruginosa causes severe pseudomonal sepsis in burned patients. In this regard a group of doctors conducted a study of the use of antipseudomonas vaccine for the prevention and treatment of nosocomial infections in patients with severe burn injuries (journal "Clinical Microbiology, Antimicrobial Chemotherapy" 2015 t.17 №4). As the study showed "Pseudovak" vaccine reduced the mortality rate of patients, the amount of antibiotics and other drugs used for treatment. And the number of bed - days spent by patients in the hospital was also reduced.

The problem of complications caused by *Ps. aeruginosa* is still current. The use of "Pseudovak" vaccine for the prevention and treatment of infections caused by *P. aeruginosa* in burn patients is safe and can help to reduce the consumption of antimicrobials. Since the infections caused by *Pseudomonas aeruginosa* are poorly treated with antibiotics, the use of the vaccine is the best addition to the treatment.

FEATURES OF CURRENT CORONARY SYNDROME WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Usupova N., Repeyeva E. - the 3rd year students

Scientific leaders – Ph.D. I.G. Menshikova, Cand.Med.Sc I.V Sklar , Katina O.I.

Coronary heart disease (CHD) refers to the most common diseases associated with chronic obstructive pulmonary disease (COPD). COPD increases the risk of cardiovascular disease in 2-3 times. According to some authors, the presence of COPD can be considered as an independent risk factor for CHD along with age, smoking, hypertension, and hypercholesterolemia. Despite the large amount of inheritance, the data on COPD and CHD relationship remains controversial.

The aim of our research is to study the features of acute coronary syndrome (ACS) course in patients with COPD. A retrospective analysis of 26 case histories of patients with ACS in conjunction with COPD who were treated in the department for patients with acute myocardial infarction GAHI AR "Blagoveshchensk City Hospital". There were 22 men - (84.6%) and 4 women - (15.4%). The average age of men and women did not differ and was about 75.4 years. The duration of COPD was 19.7 years, stable angina - 7.2 years. Myocardial infarction (MI) with Q- wave was diagnosed in 8 (30.8%) patients, MI without Q- wave was in 6 (23%) persons, unstable angina - in 12 (46.2%) patients. In the analysis of the prevalence of co-morbidities it was revealed that arterial hypertension – in 20 (76.9%) patients, acute violation of cerebral circulation – in 3 (11.5%) cases, postmyocardial infarction cardiosclerosis – in 4 (15.4%) persons, chronic heart failure – in 18 (69.2%) patients, and hypercholesterolemia – in 12 (46.2%) patients were the most common disorders. Among studied patients there were 19 smoking men (86.4%) and 1 smoking woman (3.9%). Analysis of smoking was 63.5% pack/year. Overweight was observed in 13 (50%) patients. The combination of pain in the heart and dyspnea were noticed in 20 (76.9%) patients due to the presence of both pulmonary and cardiac component. On admission to the hospital the sinus rhythm on an ECG was recorded in 15 (57.7%) patients, atrial fibrillation was in 4 (15.3%) patients, and arrhythmia was in 7 (27%)

cases. Heart rate (HR) was on average 95.6 beats per 1 minute. Anterior MI was revealed in 6 (44.5%) patients, the lower MI – in 7 (49.2%), circular MI – in 1 (6.1%). In echocardiography a violation of left ventricular systolic function was observed in 9 (33.9%) patients.

A combination of shortness of breath and pain, tachycardia, heart rhythm disturbance is seen in patients with an acute coronary syndrome and COPD.

MASTITIS OF NEWBORNS

Moiseenko A., Dorozhkova E. – the 3rd year students

Scientific leaders – A.V. Sergienko, O.I. Katina

Mastitis is a purulent disease of mammary glands. The disease occurs not only in girls but in boys. Mastitis pathogens are Streptococcus, Staphylococcus, Escherichia coli. Purulent mastitis of newborns develops on the background of engorgement of the mammary glands (during transport of estrogen hormones from mother to fetus). Usually physiological swelling of the glands appears in the first 2-3 weeks of life of the newborn.

Most often mastitis of newborns develops because of a poor care (intertrigo, omphalitis, pustular skin lesions). The infection enters the gland of the baby through the skin or hematogenous.

In the diagnosis of infiltrative condition and phase of the disease the child should be in a hospital and get treatment under the supervision of a physician. Thus, the conservative therapy with the use of Vishnevsky ointment is administered. Also the compresses with Ichthyol ointment or compresses based on an alcohol substance are applied. If mastitis of newborns still persists and an abscess develops, the surgery is needed. The cuts are made in the radial direction of the beam so as not to affect the channels and axillary space of the girl. If the nipple is depressed, the incision is made away from the margin of the mamillary fundus. It is 3-4 mm from the circumference of the areola.

The wound drain is impossible as the scars can remain, not allowing the breast skin to stretch. As a result, the growing mammary gland may be deformed or incorrectly formed.

After the operation the child stays in the hospital for at least 2 weeks. A bandage is put on the chest to soak the wound with a solution of sodium chloride for 3 hours. The rest of the time a bandage with levomekol ointment is applied. Immediately after surgery the dose of antibiotic is injected for the destruction of residual bacteria that can affect the nearby area of the mammary gland.

PHARMACODINAMICS OF MELDONIUM

Eroputko A., Lyubitskiy G. – the 4th year students

Scientific leaders - Simonova N.V., Katina O.I.

Meldonium (mildronate) is a metabolic drug, normalizing energetic metabolism of cells, suffered from hypoxia and ischemia. Meldonium supports the energetic metabolism of heart and other organs.

Meldonium inhibits an enzyme gamma-butyrobetaine hydroxylase that is responsible for synthesis of carnitine. It transports fatty acids through the membranes of mitochondria. Due to it the concentration of carnitine in organism becomes less and process of transporting of fatty acids through mitochondria membranes of cardiomyocytes becomes slower. Such deceleration is very important during hypoxia, because when supply of fatty acids is normal, but there is a lack of oxygen, the process of fatty acids oxidation is

defective. In this case bad products, which block transporting of ATP to cells, accumulate in cardiac muscle.

In parallel with deceleration of fatty acids metabolism, the speed of carbohydrate metabolism grows, cytoprotective effect occurs and production of ATP becomes more effective. Besides, meldonium activates glycolysis by itself, strengthening expression of hexokinase, which catalyzes transformation of glucose into glucose-6-phosphat.

Along with these processes, while using meldonium there is an increase of gamma-butyrobetaine concentration, which dilates vessels. In case of myocardial infarction the use of this drug slows the growth of necrotic zone, shortens the rehabilitation period, improves blood circulation in focus of ischemia, and promotes the redistribution of blood in favor of ischemia zone.

In case of heart failure the drug increases contractility of cardiac muscle and resistance for physical activity, reduces the frequency of heart attacks.

Mildronate increases ability to work, reduces symptoms of physical and psychical overstress, eliminates alcohol abuse withdrawal symptoms.

SYRINGOMYELIA

Lyubitskiy G. – the 4th year student

Scientific leaders – Cand.Med.Sc. A.I. Karnauh, O.I. Katina

Syringomyelia is a slowly progressing neurological disease characterizing by occurrence of cavities in spinal cord or less often in medulla oblongata (syringobulbia).

There are two basic forms of the disease: communicable and non-communicable. Of these two forms non-communicable syringomyelia is the most common. It is related to occurrence of cysts in thickness of the spinal cord. It can be the result of injuries, tumors or inflammations of the spinal cord. Communicable syringomyelia is a dilatation of central canal of the spinal cord, which is often connected with such developmental anomalies as Arnold–Chiari malformation, Dandy–Walker syndrome.

Symptoms: the beginning of the disease manifests with disorders of superficial sensitivity, located in dermatome, which appropriated with damaged segment of the spinal cord. If the disease develops, it causes motor and trophic disorders in muscles of appropriated myotome because the cyst presses anterior horns of the spinal cord. Deep sensitivity is saved.

Diagnostics is based on findings received with the help of MRI and positive myelography.

Treatment: in prolonged and severe pain analgesics, combined with antidepressants and antipsychotic drugs, are administered. In some cases the surgical treatment is needed. Surgery can contribute the elimination of pain and gradual regeneration of lost sensitivity, but full healing happens rarely.

TREATMENT OF PARKINSON'S DISEASE

Savelieva K., Danko K. – the 4th year students

Scientific leaders – R.A. Anokhina, O.I. Katina

In 1817 English physician James Parkinson published "An Essay on the shaking palsy". He described six patients, focusing on such typical symptoms as tremor of rest, abnormal gait and postural instability, muscle rigidity and other.

The main theory in the pathogenesis of Parkinson's disease is "dopamine theory". According to it the black substance of the midbrain is responsible for a dopamine production. It has a braking effect on the striate structures of the brain. For a number of reasons there is damage of the black substance that leads to disinhibition of the striate system and imbalances between the dopaminergic and glutamatergic systems in the brain. Also the dominant influence of the cholinergic system forms. These changes lead to the formation of the clinical picture of akinetic-rigid syndrome.

This treatment is symptomatic. Antiparkinsonian drugs are divided into the following groups:

- I. Substances which activate dopaminergic effects
 1. The precursor of dopamine (levodopa)
 2. Agents that stimulate dopamine receptors or dopaminomimetics (Bromocriptine, ropinirole)
- II. Monoamine oxidase inhibitors (selegiline)
- III. Substances that suppress glutamatergic effects (midantan)
- IV. Substances that suppress the cholinergic effects (trihexyphenidyl)

There are surgical methods of treatment:

1. Thalamo - and pallidotomy
2. Stimulation of the deep structures of the brain or neurostimulation

The most promising technique for the treatment of Parkinson's disease will soon become the stem therapy. Its results have already impressed in their ambition. In 2009 during the experiment on the transplantation of nerve cells into the brain the positive results were observed in 80% of patients. Nerve cells have replaced the dead cells. After that, the function of the black substance was restored.

And earlier in 2003, a man with Parkinson's disease was introduced the genetic vectors in the subthalamic nucleus. These vectors contained the gene responsible for the synthesis of glutamatdecarboxylase. That reduced glutamatergic influence and gave a positive therapeutic effect.

THE PATHOGENESIS OF SPONGIFORME ENCEPHALOPATHIES

Danko K., Savelieva K. – the 4th year students

Scientific leaders – Cand.Med.Sc. V.N. Karnaukh, O.I. Katina

Prions are a special class of infectious agents. They are proteins with an abnormal tertiary structure and without nucleic acids.

The leading role in the pathogenesis of spongiforme encephalopathies is supposed to belong to changes in body proteins of man and animals. As a result the prion proteins PrP transform from normal and vital PrPc into changed PrPSc. Replication of prions is an extremely complex process. The first molecule of the pathogenic form PrPSc forms due to mutation of the gene PRNP (encoding the normal PrPc) or penetrates into the body from an exogenous source. It initiates a chain reaction of conversion of PrPc to PrPSc. The interaction between PrPc and PrPSc is revealed to be the basis of prions number increasing.

There is a direct interaction of prions with the DNA of the cell, directed to the region that controls the replication of mitochondrial DNA. A decrease of replicative processes in mitochondria was observed in a progressive amyloidosis associated with exposure to prions. The consequence of the basic mechanism of action of prions in cells is vacuolization and death of neurons. In case of vacuolization of the gray matter of the brain, it looks like a sponge (spongiforme rebirth). This basic process is accompanied with proliferation of

glial tissue (astrogliosis) and the death of the fibers of the white matter (leukospongiosis). Known prion diseases differ in the intensity of the spongiosis, amyloidosis and gliosis in the brain tissue.

The following diseases are noted among the most known in this group:

1. Kuru
2. Disease Creutzfeldt-Jakob
3. Syndrome Gerstmann-Straussler-Sheinker;
4. Fatal insomnia.

THEORIES OF ALZHEIMER'S DISEASE

Tiku D., Savelieva K., Danko K. – the 4th year students
Scientific leaders – Brush N.G., Katina O.I

The pathogenesis of Alzheimer's disease is shrouded in mist and there is still no exact understanding of its structure. But there are 3 main theories existing in our time. They are the basis of modern therapy of this pathology.

1) Chronologically, the cholinergic hypothesis was the first. According to it the disease is caused by reduced synthesis of the neurotransmitter acetylcholine. Currently, this hypothesis is supposed to be unlikely, as acetylcholine therapy is not very effective.

2) In 1991 the "amyloid hypothesis" was proposed. It assumes that the basic cause of the disease is deposits of beta-amyloid (A β). The gene encoding protein (APP), which formed beta-amyloid, is located on chromosome 21. An interesting fact in support of the amyloid hypothesis is the fact that almost all people suffering from Down's syndrome surviving to 40 years of old (an extra copy of chromosome 21 or her segment) have Alzheimer's-like pathology. Besides APOE4, the main genetic risk factor of Alzheimer's disease, leads to excessive accumulation of amyloid in the brain before the onset of symptoms. At present, the amyloid hypothesis is considered to be the main one. But it is not possible to explain all the diversity of phenomena in Alzheimer's disease. The accumulation of beta-amyloid is considered to be not only the direct cause of the disease but a trigger promoting the sequence of neurodegenerative changes. Many of them, including Tau-protein pathology and death of neurons, manifest themselves only years later.

3) There is Tau hypothesis, according to which a cascade of violations is triggered by abnormalities in the structure of Tau protein. Presumably, the threads of the hyperphosphorylate Tau protein begin to unite among themselves, forming eventually neurofibrillary tangles inside the nerve cells. It causes the disintegration of microtubules and the collapse of the transport system inside the neuron. First it leads to the disturbance of the biochemical signaling between cells and then to the death of cells.

PHARMACODYNAMICS OF ERYTHROPOIETIN

Gamylin K. – the 4th year student
Scientific leaders - N.V. Simonova, O.I. Katina

Erythropoietin is the physiological stimulator of erythropoiesis. It secretes in kidneys and in perisinusoidal cells of the liver. The production of erythropoietin by liver predominates in embryonic and prenatal period, but the renal production prevails during adulthood. It activates the mitosis and ripening of erythrocytes from progenitor of erythrocyte series. The secretion of erythropoietin by kidney increases during the blood

loss, different anemic conditions (deficiency of iron, folic acid, B12 and anemia which is connected with affection of marrow, etc.), ischemia of the kidney (for example, at the period of traumatic shock), hypoxic conditions under the influence of glucocorticoids. It leads to fast increasing of hemoglobin level and oxygen-supplying ability of blood during the stress situations. Hemoglobin level and number of erythrocytes in blood increase in several hours after an injection of exogenous erythropoietin.

Erythropoietin promotes intensive consumption of iron, copper, vitamin B12 and folic acid by marrow. It causes the reduction of iron level, copper level and vitamin B12 in the blood plasma, and the reduction of transport protein level: ferritin and transcobalamin.

Erythropoietin increases arterial pressure. It also enhances blood viscosity by increasing the proportion of erythrocyte mass to blood plasma.

Oxygenous condition of the whole organism and of the kidney is determinant in the production of erythropoietin. Cytochrom is the structural base for this function.

Stimulation of erythropoietin production is affected by activation of ferments (phospholipase increases the activity of prostaglandins).

In fact, erythropoietin works by the connecting with erythropoietin receptor (EpoR).

Intensive manifestation of erythropoietin receptor can determine the location of progenitor erythroid cells.

Progenitor cells have a high level of erythropoietin susceptibility. However, there are some facts that erythropoietin receptors are located in others tissues (heart, muscle, kidney, nerve tissue). But trustworthiness of researching results is distorted by having anti-EpoR. Investigations conducted in controlled conditions have not proved the location of receptor in these tissues. In blood erythrocytes do not react to erythropoietin receptor. Nevertheless, there is the dependence of erythrocytes lifespan in blood on erythropoietin level in the blood plasma.

EXPERIENCE OF TREATMENT WITH PROTON PUMP INHIBITORS

Solodova O., Zeinalov O., Bugreeva T. - the 5th year students

Scientific leaders - Cand.Med.Sc. O.M .Goncharova, O.I. Katina

Objective: To evaluate the clinical efficacy and tolerability of Omeprazole in patients with peptic ulcer.

The result of inoculation: The study involved 20 patients (10 patients with gastric ulcer, 10 patients with duodenal ulcer) aged 43-67 years old; the average age was 49.2 years. All patients before their treatment appointments were conducted a standard clinical examination in outpatient departments and polyclinics. The patients (20) received comprehensive treatment of anti-ulcer drugs (IPP- Omeprazole 20 mg 2 times a day; and in the case of contamination of *Helicobacter pylori* they took two antibacterial drugs - Clarithromycin 500 mg 2 times a day and Amoxicillin 1000 mg 2 times a day). The course of treatment was on average 2 - 4 weeks. Treatment safety was assessed by monitoring the changes in the physical condition, changes in vital signs of life, the results of laboratory tests.

Monitoring the process of scarring carried out endoscopically. As a result of the treatment there was a significant positive dynamics in patients of both groups. It characterized by the disappearance of asthenovegetative and pain syndromes (88.2% - 86.5% respectively). Epigastric pain disappeared in 2 or 4 days, and dyspepsia (heartburn, regurgitation) - 3-5 days. Dryness and bitterness in the mouth, constipation and bloating

following treatment remained at 2.8% of patients. Manifestation of asthenovegetative syndrome was observed in 3.2% of patients after the treatment. The average healing time of the ulcer in patients with GU and DU was 21.2 and 18.6 days, respectively. Excellent treatment results were observed in 4% and 5.4% respectively patients, satisfactory – in 5.8% and 5.1%, poor – in 2% and 1%.

Conclusion: The findings suggest that a good therapeutic effect, convenient form, and the multiplicity of purpose allow to recommend Omeprazole for the treatment of exacerbations of peptic ulcer disease and the prevention of recurrence of the disease in outpatient conditions.

FEATURE COURSE OF HEPATITIS IN CHILDREN

Dementieva N., Zeinalov O., Bugreeva T. - the 5th year students
Scientific leaders - Cand.Med.Sc. O.S.Yutkina, O.I. Katina

The prevalence of viral hepatitis is huge. Every year 2 million people die from diseases associated with hepatitis B virus.

The etiological structure of viral hepatitis in children of the 1st year of life: the CAA in this age group account 8.8% of cases, HBV - 57.8%, HCV - 20.6%, cytomegalovirus hepatitis - 5.8% and in 7% the etiology cannot be deciphered. In 38% of these children the primarily chronic hepatitis develops.

One of the most severe outcomes of acute viral hepatitis is fulminant forms, manifested with acute liver failure. The frequency of their development is different: in viral hepatitis A it is 0.01%, viral hepatitis B - 1%, viral hepatitis C - up to 15%, viral hepatitis D - 30%, viral hepatitis G - 50%, viral hepatitis E to 25%.

The second major outcome of viral hepatitis is the development of chronic liver disease with subsequent transition to cirrhosis and hepatic carcinoma.

The chance of developing the chronic liver disease with HBV-infection increases rapidly when infected in utero, and in infancy and early childhood. When infected at the 1st year of life the chronicity rate reaches 70-90%, in 2-3 years - 40-70%, 4-6 years - 10-40%, and for children older than 7 years - 6-10%.

When HCV, the chronicity of the disease occurs in 70-90% of patients with an acute form of the disease. At present, HCV for most children is considered to be lighter and more durable if compared with the infection acquired in adulthood. According to various sources the development of liver cirrhosis with HCV in children in 3 - 7 years after the infection ranges from 0% to 8%.

The main feature of HDV-superinfection is its predominant cirrhosis. It develops in 60-70% of patients with chronic hepatitis D.

Hepatitis B transmission through the placenta is in 10-50% of cases. Infection of the newborn is possible during the passage through the birth canal, breast-feeding with blood of cracked nipples.

Unlike HBV, the risk of transmission HCV from mother to fetus does not exceed 1-6%. Infection occurs both during labor and cesarean section.

The course of acute viral hepatitis A is usually favorable. In the majority of patients the liver functions return to normal within 6 months. However, there is information according to which the CAA may have a prolonged duration. Transplacental and parenteral way of transmission is possible. In children more than 80% of the CAA is associated with contact with other children. Viral hepatitis E is the viral hepatitis with the enteral transmission. Transmission of the virus occurs mainly through contaminated water and

food. Young people aged 15 to 30 years are infected more often. In most cases hepatitis E has a favorable course. The possibility of process synchronization is not described. But there may be fulminant course and almost exclusively in women in the III trimester of pregnancy. Thus the mortality may reach 25%. Hepatitis E in most cases leads to abortion.

PECULIARITIES OF ARTERIAL HYPERTENSION AT A YOUNG AGE

Kurilova I., Kostenko K. - the 4th year students

Scientific leaders - Cand. Med. Sc. O. A. Tanchenko, O.I. Katina

Currently, on the background of the extremely high prevalence of arterial hypertension (AH) among the population there is a steady tendency of increasing the proportion of persons of young age in the structure of AH. The prevalence of hypertension among young people under 30 years of age varies from 3.4% to 40.7%.

Etiology. According to international studies the most frequent precipitating factors of hypertension include: diabetes (35-75%), smoking (45%), frequent alcohol use (36%), physical inactivity (34%), inflammation of the kidneys (nephritis) (34 to 60%), excessive use of salt (11%), stress (10%). There is a high role of hereditary predisposition. The prevalence of hypertension in adolescents and young adults with burdened anamnesis is noted in 25-65% of cases.

Pathogenesis. Blood pressure in humans depends on a complex of various factors making up a functional system. This system maintains the constancy of blood pressure according to the principle of self-regulation. In hypertension the increased blood pressure is caused by a complex interaction of genetic, psycho-social factors, maladjustment of physiological mechanisms, and violations of the mechanisms of autoregulation of central hemodynamics. Normally there are mechanisms of cerebral autoregulation supporting the balance between cardiac output and peripheral vascular resistance. For example, increasing cardiac output during physical activity the total peripheral vascular resistance is reduced. In contrast, while increasing the total peripheral vascular resistance, a reflex decrease in cardiac output occurs. Systemic arterial pressure begins to rise either with the depletion of antihypertensive homeostatic mechanisms or in excessive gain of vasoconstrictor and antinatriuretic neurohumoral systems (angiotensin II, norepinephrine, endothelin-I, insulin). Violation of the activity of the renin-angiotensin-aldosterone system. Renin is a protease synthesized in juxtaglomerular apparatus of the kidneys, particularly the adrenal cortex. Renin cleaves a protein angiotenzinoguen molecule, turning it into angiotensin I. It is not biologically active, but after the exposure with angiotensin converting enzyme (ACE) it becomes an active octapeptide called angiotensin II. ACE is released by cells of the lungs and blood vessels. Angiotensin II causes the constriction of blood vessels (vasoconstriction) and also stimulates aldosterone secretion by the adrenal cortex, resulting in increased sodium reabsorption in the kidney tubular cells with subsequent increase in circulating plasma and increased blood pressure. Atrial natriuretic factor is a powerful mean of inhibiting the secretion of aldosterone. Increased activity of the renin-angiotensin-aldosterone system in the bloodstream and tissues plays an important role in the pathogenesis of hypertension. In epidemiological studies it is shown that the plasma renin level is an independent prognostic factor of arterial hypertension. In increased renin levels a risk of complications of hypertension is 6 times higher. It is interesting to note that in treatment of hypertension in young people inhibitors of angiotensin-converting enzyme (ACE inhibitors) (lisinopril, captopril, enalapril), and blockers of receptors of angiotensin

II (ARBS) (lorista, ibertan), calcium antagonists (verapamil, nifedipine), and diuretics (hydrochlorothiazide, indapamide) are used the most frequently.

Thus to prevent the development of vascular events (acute cerebrovascular disease and acute myocardial infarction) it is reasonable to conduct further examination of patients: daily blood pressure monitoring, Doppler study of heart vessels and kidneys, and measuring the metabolic processes indexes (carbohydrate and lipid), as well as timely correction of risk factors of these diseases.

THE SPIRAL ORGAN. ORGAN OF CORTI

Nevedomskaya O., Mikhailov I. – the 2nd year students

Scientific leaders – V.S. Kozlova, O.I. Katina

The inner ear is located in the temporal bone where the organ of hearing is. The latter one is represented by 2.5 cochlea curl and equilibrium organ. The organ of Corti is in the membranous labyrinth. The compound part of the membranous labyrinth is Reysner's membrane. And vascular layer presented by multi-nuclear epithelium is located on the spiral ligament.

Spiral organ is located on the basilar plate.

The columnar cells form a tunnel on the basal membrane. In the basal part the form of the cells is enlarged, and in the apical one – it is narrowed. There are nerve fibers in the tunnel extending from the hair cells. It separates the inner from the outer hair and supporting cells.

Internal supporting phalangeal cells are in one row. There are a lot of tonofibrils in their cytoplasm. These cells have digital growths that separate hair cells from each other.

Outer phalangeal cells are arranged in 3-4 rows. They are the same as the internal ones but there are some differences. They have a prismatic shape. There is a cup-shaped indentation in the outer epithelial cells where the outer hair cells are. One process is the longest and reaches the upper surface of the helical body. Depending on the location from the tunnel the cells have the definite names. The first cell from the tunnel is Deiters cell, the second one is Hensen cell, and Claudius cells are the third.

The inner hair cells (sensoepitelial) are located on the outer supporting cells in one row. They have the shape of jug. The apical surface has a reticular plate where microvilli (stereocilia) are. The apical and basal surfaces have actin and myosin myofilaments. Afferent nerve fibers are near the basal surface.

The outer hair cells are lined in 3-5 rows in dents of external supporting cells. They are the same as the internal ones, but there are differences. Their shape is cylindrical, stereocilia have V-form. Innervation is by efferent fibers. The outer hair cells are more sensitive to sounds.

Stereocilia of hair cells contact with the covering membrane. It is a Blends Ribbon plate of jelly-like consistency and consists of collagen and glycosaminoglycans.

Considering histophysiology of the organ of Corti, it is possible to conclude that the process of perception of sound waves begins with the locator system. The auricle traps a sound and it moves to the tympanic membrane. Then it passes to the hammer, anvil, and stirrup. Through the oval window it falls into perilymph, basilar membrane and the cover plate. The fluctuation occurs and passes to the hair cells by the stereocilia. There is the plasmolemma depolarization. Neurotransmitter – glutamate isolates affecting the afferent fibers of the auditory ganglion. This information is transmitted to the central part of the acoustic analyzer by the auditory nerve.

Pathology.

When syphilis the treatment with antibiotics is administered. As a result, thinning and destruction of the microvilli occur. The vibrations transmitted to coating membrane are not perceived by hair cells. Consequently, the polarization will not occur. And there will not be any nerve impulse. So it will not be passed in the cortical center of hearing. Syphilitics become deaf in a result of the treatment. Violation of circulation and the chemical composition of the endolymph and perilymph result in Meniere's disease, cochlear neuritis, age-related hearing loss, acoustic trauma, late stage of otosclerosis, etc.

ANTIBIOTICS AT PREGNANCY

Podtoptannaia A., Chenchenko V. – the 4th year students
Scientific leaders – Ph.D. N. V. Simonova, O. I. Katina

Any drugs which a woman takes during her pregnancy can negatively affect a health of her future child. And antibiotics aren't an exception. There is a group of antibiotics that are strictly contraindicative to future mother as they are capable to result in anomalies of a fetus. However the statistics demonstrates that antibiotics at pregnancy are prescribed to every second woman. As many diseases can't be cured in another way.

What antibiotics may be used at pregnancy? All drugs included in this list can be taken during pregnancy. But it is necessary to consider that in anyway antibiotics are strong drugs. And it is forbidden to accept them without administrations of a doctor. So, the antibiotics resolved at pregnancy are:

- Penicillinum and its analogs (ampicillin, amoxicillin, amoxiclav) – are capable to pass through a placenta. However, they don't have negative impact on a fetus as a rule. During pregnancy they are quite quickly excreted from an organism by kidneys;

- Cephalosporins (Cefazolinum, Ceftriaxone, Cefalexinum, Cefixime, Cefuroxime, Cefotaxime, Cefoperazone, Cefepime, Ceftazidime) – during incubation are used without restrictions. They pass through a placenta in a low concentration. The negative impact on a fetus isn't noticed;

- Macrolides (Eritromycin, Josamycin, Spiramycin) – these antibiotics as well as cephalosporins are allowed for use at pregnancy. They pass through a placental barrier in insignificant quantity. However, they don't cause disturbances of development and congenital anomalies of a fetus.

MODERN VIEWS ON THE ETIOLOGY AND PATHOGENESIS OF INFLAMMATORY BOWEL DISEASES

Abuldinov A., Abuldinova O. – the 6th year students
Scientific leaders – Ph.D. V.I. Pavlenko, O.I. Katina

Inflammatory bowel diseases (IBD) are characterized by the presence of inflammatory-destructive processes in the intestine and the recurrent course. They are: ulcerative colitis, Crohn's disease, collagenous colitis, lymphocytic colitis and atypical microscopic colitis.

Etiopathogenetic factors of inflammatory bowel diseases are not fully studied. However, in accordance with modern concepts bacterial antigens (Ag) play an important role in pathogenesis. The gastrointestinal tract is affected by a plurality of Ag: nutritional components, bacteria, viruses and fungi. In the colon up to 60% of the total stool weight consists of bacteria: each gram of feces contains from 10^{10} to 10^{12} bacteria (about 400–

500 species belonging to about 30 genera). Ag and viscera are separated only by a thin layer of cells. Mucosal immune system continuously interacts with intestinal contents providing tolerance of nutrients and bacteria specific for the locality.

In the last decades a possible participation of various pathogens in the development of IBD was discussed. Among them are Mycobacterium paratuberculosis, Listeria monocytogenes, Chlamydia trachomatis, cytomegalovirus, measles virus, Saccharomyces cerevisiae, some strains of Escherichia coli, Yersinia enterocolitica and Yersinia pseudotuberculosis. However, these data have not been confirmed yet.

Recently it has been suggested that the symbiotic microflora also plays an important role in the development of IBD. This is confirmed by the following facts: surgical deactivation of loops of small bowel, leading to loss of contact with the intestinal content, may lead to the disappearance of inflammatory changes in these segments of the intestine; the reduction of lactobacilli or anaerobes is observed in active Crohn's disease but not in remission.

Increased intestinal permeability is often observed in patients with IBD. It is associated with the reduction of the so-called "locking zones". This may be due to the association of IBD with gene loci, such as DLG5 or OCTN, occurring in some patients.

Today it is proved that at least 9 different loci are associated with IBD. The NOD2/CARD15 gene is the most studied. This may be is just a contributing factor. But it is quite likely that NOD2/CARD15 modulates the secretion of defensins. These are endogenous antimicrobial proteins produced by epithelial cells of the mucosa.

In this model of IBD the start of the inflammatory cascade begins with the exposure of Ag in the intestine. Macrophages and dendritic cells phagocytose Ag partially destroying them. And ultimately they present Ag on the surface to the special immune cells. This leads to the activation of proinflammatory cytokines and as a result to the destruction of the intestinal mucosa. Patients with IBD has imbalance between pro- and antiinflammatory cytokines. Pathological increased longevity of T-lymphocytes, supporting the pathological process in Crohn's disease, leads to chronicity of the disease.

Thus, inflammatory bowel diseases are not associated with a weakening of the immune system but with excessive and hyper-prolonged activation of the intestinal immune system. Therefore, the main task of immunomodulatory therapy in IBD is the suppression of this pathological activity and the restore of the normal balance of the immune system.

Modern views on the IBD etiopathogenesis and the results of scientific research explain the effectiveness of proven drug regimens (using 5-aminosalicylic acid drugs (mesalazine), systemic corticosteroids, azathioprine) and form a theoretical basis for new types of immunomodulatory therapy (topical corticosteroid budesonide, IL-10 monoclonal antibody).

INGUINAL HERNIA REPAIR

Suhanova K., Pristapchuk E. – the 3rd year students

Scientific leaders – Cand.Med.Sc. A.V.Sergienko, O.I.Katina

Martynov's suture

The lower flap of aponeurosis of the external oblique muscle is applied over the upper one and fix with a few sutures without the tension, in order not to narrow the surface opening of the inguinal canal. The muscles are not seized in the suture.

Kimbarovsky's suture

The outer flap of aponeurosis is stitched above the inner flap. After the processing and cutting of the hernia sac the inner flap of dissected aponeurosis and the underlying muscles are stitched from outside to inside margins departing 1 cm from the cut edge.

Girard—Spasokukotsky suture

The internal oblique and transverse muscles with the upper flap of the aponeurosis of external oblique abdominal muscles are sutured simultaneously above the seminal cord to the inguinal ligament. The lower flap is fixed on the upper one making duplication.

Bassini's suture

The spermatic cord is pulled up, and the lower edges of the internal oblique and transverse muscles with inguinal ligament are connected under it.

FOREIGN BODY OF THE STOMACH IN CHILDREN

Pristapchuk E., Suhanova K. – the 3rd year students

Scientific leaders – E.P. Ivanova, O.I. Katina

Foreign body of the stomach – is a foreign object trapped in the stomach due to ingestion, penetrating wounds, surgery and other reasons.

Foreign bodies of the stomach present a significant risk to human health. Untimely detection and removal of foreign bodies can cause their migration, bleeding, perforation of the stomach with the development of peritonitis, mediastinitis, formation of infiltrates and abscesses in the soft tissues of the thoracic and abdominal cavity. The presence of a foreign body in the cavity of the stomach is accompanied by temporary or permanent disability, and sometimes it is even fatal.

Causes and types of foreign bodies of the stomach:

- accidentally or intentionally swallowed objects (young children often swallow small objects such as coins, buttons, mosaic tiles, and designer, disc batteries, seeds from berries, toys, etc.);

- formed stones in the body (gastric bezoars, gallstones);

- subjects caught in the stomach because of trauma (as a result of wounds or open injuries: shrapnel, bullets, pieces of glass, wood);

- objects left in surgical interventions (not absorbable ligatures, brackets, clips, sutures, swabs).

Bezoars stones are foreign bodies of the stomach produced from fruit seeds, plant fibers, wool, hair, resins, fats, blood clots and other indigestible substrates. Hair balls (trichobezoar), stones of vegetable (phytobezoar) and animal (stylobate) origin, organic bezoars (by mineralization of varnishes, resins, blood clots), foreign bodies of embryonic origin (of dermoid cyst of the stomach), and bezoars of mixed origin (polybutane) can form in the stomach. Gallstones can migrate into the stomach in case of the formation of a fistula inolecystopathies penetration of gastric ulcer or gallstones.

The symptoms of foreign bodies of the stomach

Foreign bodies of the stomach of small size and rounded shape can excrete during defecation. Objects fixed in the stomach provoke a pain in the epigastrium: constant pains are dull and aching in nature. After a meal there may be heaviness in the stomach, nausea, metallic taste in mouth, hypersalivation, increased pain. Multiple foreign bodies of the stomach cause unbearable pain in the upper abdomen, dyspepsia - nausea, vomiting, belching, loss of appetite.

When gall stones enter into the stomach symptoms of the leading diseases are prevalent (calculous cholecystitis or gastric ulcer). Foreign bodies of the stomach of a traumatic origin cause massive bleeding and peritonitis.

Long-term presence of a foreign body in the stomach causes electrolyte disturbances (gipohloremia, hypokalemia) and metabolic alkalosis.

Diagnostic of foreign bodies of the stomach

-Plain radiography of abdominal cavity

-With the help of endoscopy the final diagnosis is established; number, size and shape of foreign bodies of the stomach are estimated.

Treatment of foreign bodies of the stomach

Treatment of foreign bodies of the stomach is determined by their shape, size and quantity. About 80-95% of accidentally swallowed items are excreted in the process of defecation.

Large foreign bodies of the stomach and bezoars can be endoscopically removed through the manipulation channel of the gastroscope. For extraction of objects endoscopic forceps or a special wire loop are used. Endoscopic removal of foreign bodies of the stomach is contraindicated in perforation of the walls of the body.

In case of presence in the stomach such items that can't be excreted and be removed during endoscopy, the operation of gastrotomy and removal of the foreign body is administered. When there is the formation of holecystopathies fistula and ingestion of gallstones into the stomach, a cholecystectomy or gastric resection is performed.

Removal of foreign bodies of the stomach caused by a penetrating wound of the abdomen is performed as a separate stage in the process of revision laparotomy.

Prevention of ingress of foreign bodies into the stomach

To prevent accidental ingestion of the items one needs to supervise carefully for young children, prevent the use of toys with small parts, storing small items out of reach of children. One should abandon the habit to hold in the mouth a variety of items, be in a hurry and talk while eating.

To exclude iatrogenic ingress of foreign bodies in the stomach it is required to use absorbable suture material in the operation process, carrying out a thorough revision of the wound before suturing.

MODERN CONCEPTS OF CORDOCENTESIS

Naumova D., Gamylin K. - the 4th year students

Scientific leaders – Cand.Med.Sc. E.V. Shulzhenko, O.I. Katina

Cordocentesis (CC) - is intrauterine puncture of the umbilical cord vessels for taking the fetus blood during pregnancy and its research. The main indications for CC are: fetal karyotyping, diagnosis of monogenic diseases, diagnosis of congenital and hereditary diseases, and diagnosis of hemolytic disease of the fetus arising as a result of the mother Rh-immunization. There are several technically different variants of the fetus blood sampling via the CC. Historically, the earliest one is a transabdominal puncture of umbilical cord vessels in its "root" with a free hand method. Methods may include the technique of "free hand" or the use of the puncture adapter to the ultrasonic sensor to track the advancement of the needle on the monitor screen of ultrasound scanner. Umbilical vein puncture is preferred due to fewer complications for a fetus if compared to fetal blood aspiration from arteries. It is also the method of choice for the diagnosis and assessment of

severity of hemolytic disease. Transfusion of blood to the fetus via the CC allows to treat the severe forms of the disease.

The risk of complications when the CC is minimal, but it should not be underestimated. Bleeding from the puncture site of the umbilical cord vessels is observed approximately in 40% of cases. In a few cases bruising at the puncture site is described. There is an increase of alpha-fetoprotein level in the blood of pregnant women after CC more than in 40% of cases. It indicates the development of fetus-maternal microhemotransfusions.

Thus, the CC is a modern method of diagnosis of various complications in the fetus and congenital hereditary diseases.

DIC SYNDROME IN CHILDREN IN THE NEONATAL PERIOD

Mongush S., Repyeva E. - the 3rd year students

Scientific leaders - Cand.Med.Sc. N.R. Levchenko, O.I. Katina

Disseminated intravascular coagulation (DIC) syndrome is a complex general pathological process that develops in many disease conditions. It is accompanied with a widespread coagulation of blood in the circulatory bed and development of blockade of microcirculation, tissue hypoxia, and impaired functioning of organs. It is a frequent and serious complication of a variety of pathological processes in perinatal and neonatal periods. DIC is the cause of 36-50% of all perinatal deaths. DIC in infants often occurs in acute and lightning form.

There are four stages of DIC syndrome: 1) hypercoagulative stage, this is a stage of increased clotting when platelets "glued"; 2) hypocoagulative stage is characterized by decreased clotting, blood is not able to clot; 3) fibrinolytic stage, clotting is almost absent, it is the most critical stage; 4) recovery stage, death occurs at an unfavorable course of the disease.

Moments provoking DIC syndrome in the perinatal and neonatal periods are: damage of the central nervous system, premature birth, fetal anoxia, septic infection, immunological situation during pregnancy. There is a link between severe hypoxic damage of the nervous system, prematurity and deep hemostasis disorders. Excessive activation of blood coagulation caused by etiological factors leads to the formation of blood clots of common tiny blood vessels. It results in the development of microcirculatory blockade of parenchymatous organs and their ischemia, depletion of plasma coagulation factors and platelets. Excessive activation of coagulation induces fibrinolysis, exacerbating bleeding. Profuse bleeding and total blood incoagulability may occur due to the depletion of coagulation factors, platelet deficiency and the development of secondary depression of fibrinolysis. There are the predisposed factors contributing to the DIC development in newborns. They are underdevelopment of the reticuloendothelial system that ensures the removal of the intermediate coagulation products, inadequate vascularisation at the microcirculatory level, and the lack of ability of compensatory synthesis of clotting factors, vitamin K-dependent factors, AT-III, and plasminogen by the liver.

Timely elimination of the causes of DIC, the correct treatment of the general disease, less traumatic surgical intervention, the fight against incipient shock and microcirculation disorders – are the most important conditions for preventing DIC and reducing child mortality.

IDENTIFICATION OF RISK GROUPS OF DEGENERATIVE-DYSTROPHIC DISEASES OF THE SPINE AMONG THE IV YEAR STUDENTS OF THE AMUR STATE MEDICAL ACADEMY

Suvorova A., Kostenko K. - the 4th year students

Scientific leaders – Ph.D. V. N. Karnaukh, O.I. Katina

The study presents data on anonymous surveys of 4th year students of the Amur State Medical Academy. The study was made to identify the risk of degenerative-dystrophic diseases of the spine, to determine the causes of their development, and to form the action for further prevention.

The survey involved 141 students, 55 boys and 86 girls. Due to the analysis of the questionnaires 98 people (69.5%) have pain in the back. In 82.65% of the cases (81 people) it is a periodic pain and in 17.35% (17 people) it has a permanent character. 43 persons (30.5%) have not focused their attention on it.

In the majority of cases there was a pain in the lumbar region of the spine (54.1 per cent/53 persons), in cervical part it was in 25 persons (25.5%), 9 patients suffer it in the thoracic part (9.2%) and 11 people (11.2%) marked tenderness in the cervical and lumbar parts of the spine. By the intensity the pain was described as a discomfort (52%/51 persons), moderate (41.8%/41 persons) and painful (1%/1 person). 5 respondents (5.2 %) felt morbidity in the form of discomfort and moderate pain. As for the character it was aching (64.2%/63 persons), dull (19.3%/19 people), boring (10.3%/10 persons), pressing (5.2%/5 people) and acute (1%/1 person). In 10 students it radiates to the leg or to the head. Frequency of occurrence: 42 respondents (42.9%) feel it 1 time a week, 34 (34.6%) have it 1-2 times per month, 14 (14.4%) - once in 2-3 months, 8 (8.1%) – 1-2 times a year. The onset of pain is associated with a long stay in one position (62.2%/61 persons), physical activity (21.4%/21 people), somatic diseases (6.1%/6 respondents) and diseases of the musculoskeletal system (10.3%/10 persons).

Among 98 students noting soreness in the back there are 42 (42.9%) who go in for sports (dancing, athletics, weightlifting, basketball, swimming and wrestling).

56 respondents (57.1%) do not relieve pain, 20 persons (20.4%) take analgetics, 14 people (14.4%) change their posture, have a rest, and sleep on a hard surface, 2 individuals (2%) go to physical therapy and 6 persons (6.1%) have massage.

Only 13 people (13.3%) were examined by specialists, where they were diagnosed scoliosis of the cervical and thoracic parts of the spine – 2%; osteochondrosis – 10.3%; rotational mobility of the C1 – 1%. Other 85 respondents (86.7%) were not examined.

Thus, most of the respondents (69.5%) had pain in the back, and 54.1% - in the lumbar region. This is due to long inactivity of the majority of students (long-hour study of students, sedentary lifestyle) on a background of weakness of the muscles and ligaments of the spine. The causes of pain in another group of students are the grueling hours of load in sports and their improper distribution of the load on the spine.

As most of doctors, the younger generation of professionals apply to their health leniently (86.7% of students were not examined). Therefore, they need to think now about their health as further progression of the pain syndrome will affect their lives.

SOMATOTROPIC HORMONE - GROWTH HORMONE

Chashina M., Zlobina A., Praskova A. – the 2nd year students

Scientific leaders – Cand.Biol.Sc. G.K. Doroshenko, O.I. Katina

Growth hormone is produced in the anterior pituitary and affects the growth and development of the human body. Its production depends on the activity of the hypothalamus, which produces neurohormones - somatoliberin and somatostatin. Somatoliberin increase the production of growth hormone by pituitary body, and somatostatin - inhibit it. The neurohormones ensure the production of growth hormone not only in a certain amount, but at a certain time, handling the daily fluctuations of its level in the blood.

Growth hormone is anabolic. It facilitates the processes of synthesis in the body and activates protein, lipid, carbohydrate and mineral exchanges.

Growth hormone performs its action with the support of other biologically active substances.

Deficiency of GH in children is a serious violation that can cause not only stunted growth, but and delayed sexual maturation, general physical development, and in certain cases, dwarfism. Insufficient level of somatotropin in the adult human body affects the overall state of metabolism.

The excess of growth hormone leads to acromegaly and gigantism. In children there is an excessive growth in length, in adults – characteristic changes in the appearance. Acromegaly is accompanied by disorders of lipid, carbohydrate, protein, and water metabolism. This disease is often complicated by cardiovascular pathologies.

FASHION INFLUENCE ON HEALTH

Busarova A., Praskova A., Zlobina A. – the 2nd year students

Scientific leaders – L.G.Zherepa, O.I.Katina

Often, using these or other fashion trends in everyday life, a person does not think about their impact on health. However, many fashion items negatively affect the general state of the organism.

Frequent using of headphones may be the cause of permanent damage of the ear. While repeated impact of the loud noise, there is a death of eardrum's sensory nerve endings membrane through which a person can hear.

Chemical wave of hair spoils their structure, contributes the hair loss. After a perm hairs become dull due to a damage of theirs external layer, they get too dry and flogged.

In the sunroom we get a large amount of concentrated UV rays to get a quick tan. In case of abuse it can lead to serious diseases such as skin cancer.

Tight pants at the hips press the nerve endings, tighten the abdomen, and squeeze internal organs. It leads to burning and various diseases of the pelvic organs.

Frequent wearing of high heel shoes leads to chronic strain on the muscles and tendons, resulting in development of a posture violation, pain in the back and feet.

Miniskirt is the way to cellulite and inflammations of the female organs as because of the cold the blood circulation is disrupted and the body increases fat layer in self-defense.

APPROACH TO LOW ANTERIOR RESECTION SYNDROME CORRECTION

Borisov V., Zeinalov O., Bugreeva T. - the 5th year students

Scientific leaders - Cand. Med. Sc. S.V. Anikin, O.I. Katina

Anorectal region is functionally and anatomically complicated mechanism including rectal ampulla and sphincter, parietal peritoneum and pelvic muscles with its

receptors, anorectal angle, functional O'Beirne-Pirogov-Muthye's sphincter, etc. This is not surprising that the so-called low anterior resection syndrome (LARS) occurs in 18 (46.5%) cases after low rectal resection because of these all or only few organs functions damage. The manifestations of this syndrome are variable and include anal incontinence, constipation or frequent defecation, stool fragmentation, tenesmus, urgency. LARS causes dysadaptation in patients and quite negatively influences to patients' quality of life. A lot of methods of "neorectum" creation could be used for LARS correction.

The purpose – is to improve patients' life quality after low anterior resection of the rectum.

Materials and methods.

The investigation is based on analysis of 40 cases of low rectal resection with neorectum creation by ileoascendocecal transposition complex with its reversion.

We described a new method of investigation by the computer – tomography - the so-called computer tomography peservoir defecography.

We used this method in 3,6,12 months after the surgery.

The mean age was 57 years. The mean distance between anal verge and anastomosis was 4.5 ± 1.1 cm. The clinical investigation was made by questionnaire conducted in 3, 6, 12 months after the surgery.

STRUCTURE OF KIDNEY AND ROLE OF FILTRATION BARRIER IN THE DEVELOPMENT OF THE PATHOLOGY

Nevedomskaya O., Mihailov I. – the 2nd year students

Scientific leaders – V.S. Kozlova, O.I. Katina

The kidney is made up of the cortex and medulla. The nephron is structural and functional unit of the kidney. The structure of the nephron consists of: kidney body (Shumlyansky- Bowman's capsule) and glomerular capillary; proximal convoluted tubule; Henle's loop; distal convoluted tubule; front end of the nephron.

Kidney filter consists of three layers: the first layer - is the capillary endothelium, the second one - is the basement membrane of Bowman's capsule, and the third layer of the inner layer of Bowman's capsule is formed by podocytes. The capillary endothelium belongs to the fenestrated type and forms pores (fenestrae). It is covered with a layer of glycocalyx and is formed by proteoglycans forming a negative surface charge. So the proteins do not pass through the kidney filter due to their large size and the electrostatic repulsion of the podocytes. The basal membrane is a mesh structure formed by very thin collagen threads. Podocytes cover the basal membrane with intertwined legs, between which there are wide gaps. The permeability of the kidney filter depends on the pore formed by the basal membrane. Low molecular weight substances are easily filtered through the renal filter. Their content in the filtrate is the same as that in plasma. With increasing of molecular weight the solutes pass through the pores becomes difficult and the molecular sieving occurs. Filterability of Hb molecules is about 3%, and plasma albumin – is less than 1%. Ultrafiltrate passes through the proximal tubules, Henle's loop, distal tubules, collecting ducts and collective tubules. Here is the selective reabsorption of water (97-98% of the glomerular filtrate), electrolytes and other components, resulting in final formation of urine.

Acute renal failure (ARF) – is a reversible decrease in the glomerular filtration rate, impaired ability to regulate water and electrolyte metabolism, acid-base status and excrete metabolic products. There are several forms of acute renal failure. One of them is

connected with the violation of the filtration apparatus of the kidney - prerenal form. It is caused by a significant reduction in renal blood flow and decreased glomerular filtration rate. Causes are associated with a decreased cardiac output; general decrease in the circulating blood volume in the body; pulmonary embolism; surgery and trauma, accompanied by significant blood loss; extensive burns; dehydration caused by diarrhea, vomiting; receiving diuretics; sudden decrease in vascular tone.

Glomerular proteinuria is due to an increase in the filtration of plasma proteins through the glomerular capillaries. It depends on the structural and functional condition of the walls of the glomerular capillaries; properties of the protein molecules; pressure and flow rate, determining the glomerular filtration rate. In the pathology the size of "pores" increases. And deposition of immune complexes cause local changes in the capillary walls and increase its permeability to macromolecules. Electrostatic factors are also important. In normal conditions, the negative charge of the glomerular filter repels anions - negatively charged molecules (including molecules of albumin). Change of the charge contributes the albumin filtration. Tubular proteinuria is due to the inability of the proximal tubules to reabsorb plasma low molecular weight proteins filtered in normal glomeruli.

EFFECTS OF FIRE IN THE AMUR REGION FOR 2015-2016 YEAR

Gorobets M. – the 2nd year student

Scientific leaders - O.I. Katina

According to official statistics, there were 701 fires in the first half of 2016 in the Amur region. It is 67 fires less than in the same period of 2015. This year 3657 small fires were registered. In 2015 it numbered 3807. For the first six months of 2016 there were 38 deaths due to the fire, and in 2015 - 41. The number of victims in 2016 is 29 persons. While in 2015 it amounted 46 people.

The number of people, dead in fires in 2016, increased in 3% if compared with the last year. In this regard, it was decided to strengthen the work with the population on fire safety and provide the conditions for the taking of water from all available sources.

According to the results of 10 months in 2016 the increase in the number of deaths in fires was registered in 12 municipalities of the region. 70% of fires occur in residential buildings. And the main causes of death of people during fires are: careless handling of fire - 62%; violation of rules of operation with furnace heating - 7%; violation of the operation rules with electrical equipment and household appliances - 24%.

TRANSCRANIAL DIRECT CURRENT STIMULATION

Shashlova E. – the 2nd year student, Yatcenko E. – the 5th year student

Scientific leaders - O.I. Katina

Trans Cranial Direct Current Stimulation (tDCS) – is a form of neurostimulation, in which a certain area is affected by a low current (0.5 - 2 mA). This method is designed to help patients with brain injuries, for example after a stroke. However, there is a positive effect in healthy people too. For example, they experience the improvement of the linguistic and mathematical abilities, stability of attention, problem solving, memory, and coordination. tDCS also successfully helps in the treatment of depression.

tDCS acts directly on the nervous tissue – a system of interconnected nerve cells and glia that provide specific functions of the perception of stimuli, excitement, nerve impulse generation and transmission of it. One of the components of the nervous system is

the neuroglia or simply glia - a set of supporting cells of the nervous tissue. This is a micro-environment for neuronal components performing support, trophic, secretory, separating and protection functions. The second component is the neurons. These are electrically excitable cells that process, keep and transmit information by electrical and chemical signaling.

During tDCS experiments it was found that these cells respond to direct current changing the form and molecular expression of some proteins. Axons length increases and the orientation is shifted toward the cathode. Microglial cells increase the expression of cyclooxygenase-2. Astrocytes take an elongated shape and orient perpendicularly to the DC electric field.

THE 60 ANNIVERSARY OF NEUROLOGIC SERVICE IN THE AMUR REGION

Votyakov A. – the 4th year student

Scientific leaders – Ph.D. V.I. Karnaukh, O. I. Katina

The establishment of neurologic service in the Amur region is considered to be 1956. This year the first building of the regional hospital was erected and the organization of the regional hospital began its work. 35 neurologic beds were given under the leadership of Ya.V. Voytsekhovskaya and L.A. Solomina. In 5 years the self-contained neurological unit was organized on this base. In the same years the outpatient appointments in polyclinics of Blagoveshchensk and in other districts of the region were opened.

1956 is also considered to be one of turning points in the history of neurologic service of the Amur region because the chair of nervous diseases with a course of neurosurgery was organized. It became the main base of training of neurologists in the Amur region. Professor Grigory Yakovlevich Liberzon was its institutor and the first head. In the same year the scientific society of neurologists and psychiatrists was made under the leadership of G. Ya. Liberzon. It was the branch of the All-Russian society of neurologists and psychiatrists where annual regional clinical conferences, monthly intramural and extramural seminars on topical issues of neurology were organized. And the students' scientific circle began to work.

Then, after G.Ya. Liberzon departure, professor, Ph.D Zinaida Andreevna Ushakova was the head of the chair from 1962 to 2000. She also administered the work of society of neurologists. Medical activity of neurologic patients was conducted earlier. In the forties years of 20th century the outpatient appointment of patients with diseases of nervous system was made for the first time.

In different years highly qualified specialists trained medical arts for future neurologists - Usmanova A. F., Lobova A. A., Markevich L. I., Sirik L. M., Kudrin A. G., Eremenko V. I., Homenko E. I., Barabash I. A. were the teachers of the department.

Since 2000 and till present time the honored doctor of the Russian Federation, professor Alexander Ivanovich Karnaukh is the head of the department.

Now the staff of the department is actively engaged in organizational and methodical work tutoring not only students, but doctors. Scientific work on clinic-epidemiological studying of a number of neurologic diseases is constantly conducted.

VACCINAL PREVENTION IN QUESTIONS AND ANSWERS

Poplavskaya A., Yatsenko E. - the 5th year students

Scientific leaders - O.S. Utkina, O.I. Katina

Vaccinal prevention – is the only method of fight with the most dangerous infectious diseases. At present there are obviously no more effective preventive medicine programs than vaccination. Unfortunately, at the present time the number of unjustified denials of vaccinations has increased. This is related to antivaccinal mood of parents. This report is constructed in the form of questions and answers that will help to deal with the problem.

Why vaccinate a child, if you can just limit the contact with sick people and strengthen the immune system?

A child cannot be isolated from the society - it is a well-known fact. Moreover, the parents go to work every day, where an infection is “waiting” for them. Thus, we can infect the child! Unvaccinated child suffers any disease much heavier. And hardening and strengthening the immune system is simply useless against such diseases as tetanus, measles and diphtheria.

Why vaccinate a child against diseases that almost never occur in our country, such as polio, diphtheria, whooping cough?

Some children infections are really diagnosed quite rare, but only thanks to vaccination. Without the vaccine (and therefore without the immune) the child is unarmed before the disease and risks to be infected after the first contact with a carrier.

Is it true that vaccines contain preservatives, such as thiomersal, dangerous to children's health?

Thiomersal - is an organic mercury compound that is no longer used in the production of vaccines included in the routine childhood immunization schedule. A small amount of mercury was used in the production of vaccines to their best safety. Thus, thimerosal was not accumulated in the body and was fully excreted from it within 3 days by the gastrointestinal tract.

May simultaneous inoculations provoke an increased load on the child's immune system?

Despite the fact that after the birth the immune system continues to form for some time, it is able to take vaccines appropriate to the schedule. Vaccines not only affect but help the immune system to expand its capabilities.

MODERN METHODS OF GONORRHEA DIAGNOSIS

Chudnov D., Klyachin K., Pernitsky S. – the 3rd year students

Scientific leaders – Cand.Med.Sc. A.V. Prokopenko, O.I. Katina

Gonorrhea is a serious sexually transmitted disease that can eventually lead to chronic inflammatory conditions of the genitourinary system and infertility. The agent of the disease is the gonococcus.

The disease itself can be overt quite a long time. Therefore, patients may not even suspect the existence of gonorrhea. It is a disease of an infectious nature, which is sexually transmitted. Often the symptoms appear very quickly in one sexual partner. That is why the early detection of the disease in the early stages of development is important.

Diagnosis of gonorrhea is to analyze the patient's complaints, his examination and laboratory studies of the material. Laboratory diagnosis of gonorrhea allows to detect effectively the presence of gonorrhea in the material. History of life of the patient plays a significant role in the diagnosis. They are his lifestyle, sex, the presence or absence of a permanent partner.

Prevention of the disease is in timely and qualified diagnostics, and complex treatment of gonorrhoea. It is forbidden to treat the disease by yourself, to apply the methods of traditional medicine, to treat the disease at home without a medical supervision.

PANCREAS

Klyachin K., Chudnov D., Pernitsky S. – the 3rd year students

Scientific leaders – Cand.Med.Sc. A.V. Sergienko, O.I. Katina

The pancreas is located retroperitoneal, behind the stomach in the upper abdomen. Functionally and anatomically it is connected with the duodenum, liver and stomach. Pancreas is projected on the anterior abdominal wall in the horizontal line connecting the ends of the VII-VIII ribs, or in horizontal line passing through the middle of the distance between the xiphoid process and the umbilicus, which corresponds to the level of the body of the I lumbar vertebra.

The pancreas form is elongated, arcuate, hammer shaped and angulate.

Conventionally it is divided into three sections: the head, body, and tail.

There is also the area between the head and the body - neck of the pancreas.

Pathogenesis. Despite a large number of causes of acute pancreatitis, the disease develops the same way. The self-digestion of the gland takes place under the influence of aggressive enzymes: trypsin and peptidase break down proteins, lipase and phospholipase - fats, amylase - carbohydrates. Edematous pancreatitis develops first. It runs without consequences due to timely treatment. In severe cases the swelling progresses, compresses the blood vessels that feed the body resulting in the formation of foci of necrosis and the development of necrotizing pancreatitis. This form of the disease in the small focal necrosis is relatively mild. With large focal necrosis it has a severe character. And in total necrosis pancreatitis proceeds at lightning speed, all tissue of the gland sphacelate and the patient usually dies. Mild forms of the disease occur more often, so the mortality in acute pancreatitis is low.

LASER TREATMENT OF WOUND

Pernitsky S., Chudnov D., Klyachin K. – the 3rd year students

Scientific leaders – E.P. Ivanova, O.I. Katina

In recent years the method of influence on the wound with the light energy of the optical quantum generator (laser) - the laser is quite intensively studied in the experiment and is already used in the clinic. Several types of laser systems of different capacities (helium-neon laser (LH-36, LH-75), a laser-based CO₂) are used in the clinic.

For the prevention of wound infection and purulent wound treatment the laser is used in two ways. The first one – is a laser scalpel. This is a focused beam of high-power CO₂ laser. Surgical treatment of a wound or the purulent focus is bloodless, leads to a rapid and complete removal of damaged tissues and almost completely relieves the wound from microorganisms. The antimicrobial effect of CO₂ laser beam is caused by the direct microbocidal action of the beam. Clinical and bacteriological effects of laser scalpel use are favorable. However, according to the available observations the prolonged impairment of circulation in the viable tissue of walls and bottom of the wound caused by the laser at the drift of microorganisms can lead to festering of wounds.

UMBILICAL HERNIA IN NEWBORNS

Loiko A., Golubnichaya A. – the 3rd year students

Scientific leaders – A.V.Sergienko, O.I. Katina

The navel of the newborn is formed at the location of the umbilical ring. In the period of intrauterine development of the fetus the elements of the umbilical cord (umbilical artery, umbilical vein and urinary duct) has passed through the umbilical ring. After the baby's birth and the umbilical ligation (and its further intersection), the umbilical ring in most cases becomes obliterating with the formation of a solid scar. In some cases the scar formation is either slow or it is not formed efficiently. In these children a protrusion called an umbilical hernia is formed in the region of the umbilical ring with an increase of intra-abdominal pressure. This protrusion may occur during the early period after the birth or after a short time after the birth. Its size can vary from a small pea to a tremendous plum.

Reasons for a long uncovering of the umbilical ring can be the following:

- the child was born premature or with low weight;
- hernia can occur within the first year of life, violations will be frequent constipation, bloating or a long hysterical cry;
- sometimes the umbilical hernia in newborns is formed without any apparent reasons, but in this case it is again a consequence of violation of the rules and norms of behavior of a pregnant woman.

Recommendations to parents:

1. At the slightest delay of a stool looks for ways to norm the work of intestines.
2. You should also closely monitor the child's diet.
3. Lay the baby on his tummy as often as possible and do massage.
4. To do physical therapy with the child.

HISTOPHYSIOLOGY OF SPINAL CORD AT NORM AND TRAUMATIC DISEASE

Iazykova A. – the 2nd year student

Scientific leaders – V.S. Kozlova, O.I. Katina

The spinal cord - is a part of our central nervous system. It coordinates the work of muscles and organs, carries to the brain the information from all parts of the body. The spinal cord is made up of two symmetrical parts separated forward by an anterior intermediate slot, in the back – by the posterior intermediate groove. It is characterize by a segmental structure. In the spinal cord there is a gray substance located in its central part and a white substance that lies along the periphery.

Gray matter in cross section has the form of a butterfly and includes twin anterior, lateral and posterior horns. Gray matter horns of both symmetrical parts of the spinal cord are connected to each other in the area of anterior and posterior gray commissure. The gray substance of the spinal cord consists of neurons bodies, unmyelinic and thin myelinic fibers.

The cells similar in structure, size and functional significance lie in the gray matter in groups, which are called nuclei. There is a spongy layer, gelatinous substance, the proper substance of the posterior horn and thorasic nucleus in the posterior horns. In lateral sides there are medial intermediate core and lateral intermediate nucleus. In the anterior horns they distinguish dorsomedial, ventrolateral, central, dorsolateral and ventromedial nuclei.

White matter of the spinal cord is a collection of longitudinally oriented mainly myelinic fibers forming the ascending and descending paths. White substance is divided by anterior and posterior roots into the symmetrical dorsal, ventral and lateral cords. The connection between all departments of the central nervous system occurs along the conducting paths formed by white matter that is located around the gray one.

External border glial membrane consisting of fused flattened processes of astrocytes forms the outer boundary of the white matter of the spinal cord. It separates the central nervous system from the peripheral nervous system. This membrane is pierced by nerve fibers comprising the anterior and posterior roots.

The spinal cord is divided into segments. Each of 31 segments branches into the pair of anterior and posterior roots. The anterior roots are responsible for motor function and the posterior ones - for sensitive function. Each segment of the spinal cord is established to innervate three transverse sections (metameres) – its own, upper one and lower one. This is a unique safety factor. In case of damage of one or two metameres all functions remain. The control for the work of individual organs or muscles and transmission of counter information will stop if three neighboring segments are damaged simultaneously.

Damage of the spinal cord is the defeat because of injury, illness of any part of the spinal cord or nerves of the spinal canal. These injuries often cause impairment or loss of motor or sensory functions. Severe injury of the spinal cord causes severe traumatic lesion of the spinal cord with the formation of cysts, coarse fiber glial scar, collapse of the myelin coats of damaged fibers of spinal canal and prolonged (up to 130 days) inflammatory reaction.

Enhanced development of modern biomedical technologies, the development of methods of cultivation of somatic and stem cells as well as the modified cell lines opened the prospect to use the possibilities of cell and tissue substitution therapy and the effects of spinal cord injury. Transdifferentiation of mesenchymal bone marrow stem cells in the neuronal direction and their early transplantation into the damaged area may be the best way of surgical rehabilitation of patients with severe spinal cord injury.

Neural transplantation – is a promising method for the treatment of traumatic spinal cord injuries. It is based on the possibility of replacing the lost cellular elements and stimulation of compensatory and regenerative processes. Embryonic neural stem cells are kept and divided in tissue culture in vitro and then are used for transplantation to restore the functions of damaged brain and spinal cord.

THE CAUSATIVE AGENTS OF CATHETER-RELATED INFECTIONS

Goncharova A., Alkhimova N. – the 3rd year students

Scientific leaders - A. V. Prokopenko, O.I. Katina

There is great number of operations performed every day. Most of the operations require the necessity to keep in body cavities drainages and catheters for a long time. But they being in contact with the external environment become infected. All catheters can be colonized by bacteria as a result of destruction of the skin in the injection area, contamination during insertion or maintenance of catheters and bacteremia in patients with distant foci of infection.

Patients receiving parenteral nutrition are more sensitive as a high concentration of glucose promotes the growth of microorganisms.

Most often in catheter – associated infections are:

1. Coagulase-negative staphylococci (*S. epidermidis*, *S. Saprophyticus*) – 34-49.1%;

2. *Staphylococcus aureus* is 11.9-17%. Staphylococcal infections are acute bacterial anthroponosis diseases with different mechanisms of transmission, characterized by a polymorphic clinical picture. Among them coagulase-negative staphylococci (*S. epidermidis*, *S. Saprophyticus*) and coagulasepositive (*S.aureus*) cause catheter – associated infections. Staphylococci – are fixed gram-positive cocci, the cell diameter is from 0.6 to 1.2 microns. *S.aureus* spreads by air-droplets and by contact-household. It is pathogenic for the organism. Due to coagulase activity there is an early blockade of lymphatic vessels that leads to limiting the spread of infection and clinically is manifested by the appearance of the infiltrative necrotic and suppurative inflammation. Epidermal *Staphylococcus* is an opportunistic. It inhabits all mucous membranes or any area of the skin. The vast majority of infections occur in weakened people. Through vascular and urethral catheters it pierces the body and can cause blood poisoning and endocarditis. *S. aureus* is an opportunistic microorganism. It often causes inflammation of the bladder (sometimes kidney) in women.

3. *Enterococcus* spp.(*Enterococcus faecalis*) – 5.9-6%. The genus *Enterococcus* belongs to the facultative anaerobic asporogenous chemoorganotrophic gram-positive bacteria. These bacteria are consorbents of human intestines. They survive in the soil and food products and multiply at room temperature. The spece *E. Faecalis* is of primary importance in human pathology as it causes sepsis, inflamation of the urinary and digestive pathways and organs, skin and subcutaneous tissue in a weakened organism. Strain *E. faecalis* is antagonist for other pathogens.

4. *Candida* spp. (*Candida Albicans*, *Candida Parapsilosis*) – 7.2-9%. Fungi of the genus *Candida* consist of oval budding yeast cells (4-8 µm), pseudohyphas and septate hyphas. *C. albicans* forms chlamydo spores. Incorrect prescription of antibiotics, immune deficiencies, increased skin moisture, damage of the skin and mucous membranes facilitate the development of candidosis. Candidiasis is often caused by *C. albicans* producing proteases and integrirovanie molecules for adhesion to extracellular matrix proteins and other virulence factors. *Candida* cause visceral candidiasis (candidiasis of the urinary system), candidiasis of skin and nails, allergies to the antigens *Candida*.

5. *Pseudomonas* spp. (*P. Aeruginosa*) is 4.9-6%. These are gram-negative motile aerobic microorganisms (0.5-0.6 x 1.5 microns) in the form of sticks with a flagellum without a distinct capsule. *P. aeruginosa* grows better in a humid environment and can accumulate in the hospital dust. The pathogenic effect of *P. aeruginosa* is implemented using the complex of exoproducts: pigments, enzymes, toxins. Boric and formic acids, potassium permanganate affect it destructively.

6. *Enterobacteriaceae* (*Escherichia coli*) is 1-2%. *E. coli* are gram-negative rods (2-6 microns), paraneoplasia, facultative anaerobic bacteria. Source of infection is sick people or a carrier. It is pathogenic and highly virulent.

Diagnosis. In order to obtain material for microbiological examination of catheters without removing them a special nylon brushes attached to the conductor were developed. They allow to collect the bioenvelop from the inner surface of the catheter. As a shortcut method it is also proposed to conduct the microscopy of blood samples stained by the gram stain or acridine orange, obtained from the suspected catheter. The study of the precipitate obtained during centrifugation of native blood is also possible.

Catheter colonization was defined as growth of less than 10⁵ CFU/ml. Infection of the catheter is determined with the growth of more than 10⁵ CFU/ml without signs of

systemic infection and in case of negative results of blood culture. Cattery sepsis is defined when the growth of 10⁵ or more CFU/ml in a patient with positive results of blood culture, signs of sepsis or both of these indicators. And this tube should be either removed or replaced with a new one.

Treatment. When proven catheter infection, the treatment should continue from 7 to 15 days. In patients with impaired immunity or patients with sepsis it may take a longer period. If within 48-72 hours the patient does not respond to the treatment, the catheter should be removed and sent for inoculation. And scheme of antibiotic therapy should be corrected.

Prevention. Hand washing or their treatment using products based on alcohol (the 2% solution of chlorhexidine gluconate) as before the catheter's appliance so as during manipulations with it are the most important measures that can significantly reduce the spread of infection. Maximal amount of aseptic technique during catheterization is proved to reduce the incidence of catheter-related infections significantly.

Conclusion. Recognition of the relevance of the problem, development of organizational - methodological guidance and standards for cannulation and care of the catheters, training of medical personnel on these issues will reduce the number of emerging catheter-related infections.

COUVELAIRE UTERUS

Geras'kina E., Enzak A. – the 5th year students

Scientific leaders – Doc.Med.Sc. D.S. Lysyak, O.I. Katina

Couvelaire uterus occurs in premature detachment of the placenta. In placenta abruption zone the blood seeps into the myometrium and perimetric fat. Bloodlogged uterus loses its ability to contract and is accompanied by DIC. Fetus dies due to acute hypoxia. And also the mother may die because of an acute bleeding.

The decision about the tactics of conducting a patient is made taking into account her clinical condition. Couvelaire uterus is not an absolute indication for hysterectomy. Modern medicine has effective pharmacological hemostatic drugs and there are surgical ablative methods to stop bleeding. It is recommended to start with the local and systemic appliance of uterotonics. If the uterus does not contract and hemostasis is not achieved, the ligation of internal iliac arteries, suturing, or embolization of uterine vessels are performed. Only in the absence of effective organ-saved methods the hysterectomy is made.

The first ligation of tubal arteries was performed by Waters in 1952. Uterine artery embolization is proposed by Dr. Jacques Ravina in 1995. The embolization drug is injected through a catheter under the control of angiography. Its particles occlude the vessels. Stitching of compression sutures on the uterus was first described by B-Lynch and his colleagues in 1997. This method was used for cesarean section and uterine atony not amenable to pruning treatment. The key role is for the implementation of the uterine compression when tightening knots. These methods allow to stop uterine bleeding to preserve a woman's fertility function.

To save the life of the woman in childbirth in addition to stopping the bleeding an adequate replenishment of blood loss, anti-hemorrhagic shock and DIC are very important. System for continuous autotransfusion of blood cellsever offers an alternative to the conventional surgery using donor blood. Autotransfusion of blood is used in abundant blood loss during surgery.

Autoplazmodonating. The essence of the method is in the collection, freezing and storage of woman's plasma for later transfusion of it during or after the delivery in order to recover the volume of circulating plasma and clotting factors, as well as to relief or treat the DIC.

Thus, modern technologies to stop bleeding or blood-implementation allow to save not only the life of the patient, but also hers fertile function.

HISTOPHYSIOLOGY STOMACH IN NORMAL AND IN GASTRIC ULCER

Zlobina A. – the 2nd year student

Scientific leaders – V.S. Kozlova, O.I. Katina

At present the problem of gastric diseases becomes important. Diseases of the stomach play a significant role among all illnesses of the gastrointestinal tract.

In the body the stomach has a number of important functions: secretion, which consists in the producing of gastric juice by glands. There are enzymes pepsin, rennin, lipase, gastriksin and hydrochloric acid, mucus, water, bicarbonates, chlorides, sulfates, phosphates in its composition. Also, the stomach performs mechanical, endocrine, suction, antianemic factor, and other functions.

The wall of the stomach consists of mucosa, submucosa, muscular coat and serosa. The mucosa is represented by a single layer of prismatic glandular epithelium, lamina propria where gastric glands with laminae loose of connective tissue between them are located, and muscular plate formed by smooth muscle tissue. Submucosa consists of loose connective tissue containing elastic fibers. The muscular layer is formed by smooth muscle cells. Serous membrane of the stomach forms its external part.

The glands of the stomach have the isthmus, cervix and the main part represented by the body and the bottom. There are own stomach glands. They are simple, not branched tubular glands. These glands contain a major exocrine cells, parietal exocrine cells, mucocytes and not specialized epithelial cells. Pyloric glands are located rarer. They are highly branched, have wide gaps and lack of parietal cells. Cardial glands are highly branched. They include gastrointestinal endocrinocytes. They are divided into several types and produce biologically active substances.

Physiological regeneration occurs in the bottom of the stomach by the proliferation of cervical cells. And in the pyloric part of the stomach - due to the proliferation of pit cells. Reparative regeneration in acute lesions of the gastric mucosa is carried out by restitution type with the full restoration of the structure and function due to the proliferation of not specialized cells. At pathological regeneration gastric metaplasia may occur. This is a disease associated with structural changes of the epithelium. As a result it becomes similar to the mucosal tissues of small or large intestine.

At present the most common pathology with the mucosal lesion of gastric walls is gastritis of various etiologies. The most dangerous pathology is the peptic ulcer. It is a chronic disease in which there is the formation of ulcers of the gastric mucosa. The main etiological factor in the formation of gastric ulcer is infection with *Helicobacter pylori*. The primary substrate of ulcers occurrence is the erosion. This is a superficial damage of gastric epithelium emerging on the backdrop of mucosal necrosis. Acute ulcer is formed in the propagation of the pathological process deeper into mucosa. Progression and strengthening of inflammatory processes in ulcerative area lead to increased formation of cicatrical tissue. Due to this process the bottom and edges of chronic ulcers become

dense and differ in color from the surrounding healthy tissues. Chronic ulcer tends to increase and deepen during the exacerbation. When remission it is reduced in size.

HYPOVOLEMIC SHOCK

Goncharova A., Alkhimova N. – the 3rd year students

Scientific leaders - M. E. Ostyakova, O.I. Katina

The problem of the shock remains to be relevant at all times as military conflicts and acts of terrorism, natural and manmade disasters do not stop, the number of patients with infectious diseases does not decrease, and destructive diseases of internal organs become "younger".

Shock is an acute syndrome characterized by a sudden decrease of capillary blood flow in various organs, an insufficient supply of oxygen, inadequate removal of metabolic products from tissues. It manifests in severe disturbances of functions of the body.

Hypovolemia is the basis of hypovolemic shock. It is a decrease of circulating fluid volume.

According to the etiology there are:

1. Hemorrhagic shock - in bleeding with minimal tissue injury (an intensive bleeding in the short term - pulmonary, gastric, when damaged arteries).

2. Dehydration – losses of fluid with stool, vomit, urine, insufficient fluid intake, massive burns due to the plasma loss.

The pathogenesis of shock is identical for all types of shock, as it is a nonspecific, general pathological reaction of an organism in response to acute blood circulation disorders and metabolic disorders. The main pathogenetic link is hypovolemia either absolute (blood loss) or relative (decrease of minute blood volume and venous return to the heart).

General pathophysiological aspects of shock:

- Pathophysiological shock means a disturbance of microcirculation, the decrease in perfusion of organs and tissues, oxygen and energy substrates delivery. It leads to the transition of aerobic metabolism to anaerobic.

- Acidosis increases in the cells. Due to insufficient formation of energy there is the disturbance in the work of potassium/sodium pump and ions of hydrogen and sodium enter the cell holding several water molecules. And potassium ions leave the cell and are excreted from the body with the urine.

- A number of mediators contribute to the increased permeability of the endothelium with the movement of plasma proteins and water into the interstitial space.

- Reperfusion is a mandatory result of the treatment of all circulatory disorders. The more expressed and longer was the period of hypoxia, the harder reperfusion is. Therefore, the earlier and more effective treatment of impaired circulation, the less the secondary damage caused by reperfusion.

- Direct hypoxic damages and reperfusion are the cause of the organ dysfunction. If dysfunction affects two or more organs, they suspect the development of multiple organ failure.

The most important compensatory response in hypovolemia is the centralization of blood circulation. Developed hypovolemia sequentially activates two types of compensatory – adaptive reactions:

Vasoconstrictor type: activation of sympathoadrenal and pituitary-adrenal systems. Hypovolemia leads to a decrease in blood pressure, baroreceptors are irritated. This

mechanism is triggered by the CNS. The release of catecholamines and corticosteroids occurs.

Vasodilatory type: mechanisms are directed on elimination of ischemia. Vasoactive amines, polypeptides, etc. are formed. Decompensation develops and the shock becomes more severe.

Conclusions:

- in critical conditions violations are typically of a mixed nature. It requires a dynamic laboratory monitoring of the electrolyte composition of erythrocytes, plasma and urine;

- selection of the volume and composition of infusion measures is carried out individually basing on the kind of dyshydris;

- the BCC deficit is the cause of reduced venous return blood to the right heart and, consequently, to the left one;

- a decrease in cardiac output is accompanied by a decrease in blood pressure in the systemic circulation and in the microvasculature. In this regard the delivery of oxygen to cells decreases and aerobic metabolism impairs.

HISTOPHYSIOLOGY OF THE LIVER AT NORM AND ITS MORPHOLOGICAL CHANGES WHEN HEPATITIS OF VARIOUS ETIOLOGY

Praskova A. – the 2nd year student

Scientific leaders – V.S. Kozlova, O.I. Katina

Nowadays liver diseases are an urgent problem for medicine as they take a leading place among all diseases of the gastrointestinal tract.

The liver – is a vitally important exocrine gland performing over 500 metabolic functions.

The structural and functional unit of the liver –is a hepatic lobe. It has a shape of hexagonal pyramid. There is a central vein in the center of it. Lobe is represented by strands of hepatocytes. Hepatocyte has an irregular polygonal shape, 20% of the cells contain two nuclei. The cell has two sides: biliary (forms the wall of bile capillary) and vascular (facing the sine wave). Hepatocyte cytoplasm differs in a high content of ribonucleoproteins, inclusions of glycogen, lipids, lipofuscin. It contains all compartments.

The wall of the sinusoid is represented by fenestrated endothelial cells connecting the capillary lumen with the space of Disse. There are Kupffer cells - macrophages between the endothelial cells. They take part in the protective reaction of the liver. Patching cells are adjacent to the endothelium. They have killer activity and the ability to stimulate the proliferation of liver cells. There are Ito cells in the space of Disse. They are capable to deposit fat-soluble vitamins. Mixed blood flows in the sinusoids. They get it from the portal vein and the hepatic artery, branching in the liver parenchyma on small vessels and merging together. The outflow of blood goes through a central vein into the inferior vena cava.

The liver has a high ability to physiological and reparative regeneration. Regeneration process occurs through hypertrophy and proliferation of hepatocytes.

Affect of toxins or viruses on the liver causes alteration – the hepatocyte necrosis, degeneration development and release of inflammatory mediators. It results in poor circulation, formation of exudate and inflammatory cell infiltration. Integration of hepatocytes is violated. There the amount of glycogen reduces and phagocytic activity of hepatic macrophages is suppressed. Then, the cell proliferation occurs resulting in growth

of connective tissue in the area of hepatocytes spot loss. All of these changes are in the cause of hepatitis. Most often the exposure to hepatotropic viruses (viral hepatitis) and alcohol (alcoholic hepatitis) results in it. Viral hepatitis is of three types: A, B and C. Viral hepatitis B is characterized by cellular infiltration of the stroma penetrating into the lobule and leading to the development of balloon degeneration and necrosis of hepatocytes. Regenerative processes are violated and there is a reorganization of the liver tissue. At alcoholic hepatitis there is a large number of alcoholic hyaline in the cytoplasm of hepatocytes. It leads to cell death. Changes often occur on the background of fatty degeneration and infiltration of the stroma. Cirrhosis may be the outcome of the progression of these changes. It is the fibrous degeneration of the liver parenchyma.

HISTOPHYSIOLOGY OF ADRENAL MEDULLA AT NORM AND PATHOLOGY

Saryglar Ch. – the 2nd year student

Scientific leaders - V.S. Kozlova, O.I.Katina

The adrenal glands – are paired organs of endocrine glands. The adrenal glands are covered by a capsule of dense fibrous connective tissue. The cortex located on the periphery is clearly seen in the gland parenchyma. The cortex consists of bands of epithelial cells. The connective tissue layers carrying blood vessels and nerve fibers determine the shape and arrangement of them. And between there are the bands of epithelial glandular cells arranged perpendicular to the capsule.

There are 3 zones in the cortex: glomerular, beam, and net.

There is a glomerular zone under the capsule. Here mineralocorticoids (aldosterone that stimulates an inflammatory response, wound healing due to the repair of connective tissue) are produced. Hormones regulate water-salt metabolism. Aldosterone promotes sodium reabsorption in kidney.

Beam zone is the widest area. In this zone glucocorticoid hormones (cortisol, cortisone, hydrocortisone, corticosteroids) are produced. They increase metabolism, energy metabolism, and stabilize the membranes. They inhibit the inflammatory process, reduce immunity, destroy lymphocytes and eosinophils, cause the atrophy of the glomerular layer and the loss of adrenal cortex.

Sex hormones (androgens being the substances - precursors of estrogens) are produced in net zone. These hormones play a different role than the hormones secreted by sexual glands.

The medulla is separated from the cortex by a thin layer of loose connective tissue containing sinusoidal capillaries and veins. And between them there are chromaffin cells. These are glandular rounded cells containing large secretory granules. They produce and secrete into the bloodstream hormones-catecholamines (epinephrine and norepinephrine). These substances stimulate the metabolism, namely catabolism, energy production and heart activity. They cause a spasm of the arteries and increased blood pressure. Adrenaline enhances vessels of brain and skeletal muscles. Norepinephrine – is the mediator of the sympathetic nervous system.

In the medulla there are multipolar neurons of the autonomic nervous system. Paraganglia, as the adrenal medulla, are composed of chromaffin tissue that develops from simpatoblasts of the neural crest. There are abdominal, aortic, carotid, and intraorganic paraganglia. Outside they are surrounded by a connective tissue layer which penetrates between the bands of granular endocrines. The later being 10-15 mm in diameter are oval

or round in shape and contain specific granules of different sizes. Here the catecholamines are.

ST.LUKE - PROFESSOR, PHYSICIAN, ARCHBISHOP

Nikolaenko Y., Khlebnikova T., Tkacheva A. - the 3rd year students
Scientific leaders – Doc.Med.Sc. S.I. Piskun, O.I.Katina

Valentin Feleksovich was born in April 27, 1877 in Kerch, in the family of a zealous Catholic from a Polish noble family. He was fond of painting, but the desire to become a doctor overcame, and in 1898 he entered the Medical Faculty of the University of Kiev. Under the influence of his Orthodox mother the future saint becomes Orthodox consciously, having finished with a brief gust of Leo Tolstoy ideas. During the Russian-Japanese War he worked as a surgeon in Chita.

He was the Professor of the Tashkent Medical Institute and the Archbishop. St. Luke was one of the few whose bronze bust was installed in vivo in the gallery of outstanding surgeons of our country at the Sklifosovsky Institute of Emergency Care in Moscow. And he was the prominent church leader entered in the list of the higher clergy of the Russian Orthodox Church. He is the author of "Sketches of purulent surgery" that awarded the first post-war USSR State Prize in 1946, and a religious treatise "The Spirit of Samuel the prophet". He was the doctor brilliantly aware in the anatomy of the human body and the priest who believed that the soul was placed in the center of the heart. A lot of extraordinary and controversial things coexisted in the outlook and life of Valentine Feliksovich Voyno-Yasenetsky. He made a great contribution to the anesthesiology. In 1915 he published his first monograph "Regional anesthesia" in Petrograd. In 1916 he successfully defended his doctoral thesis "On the regional anesthesia of the second branch of the trigeminal nerve." He was the first who described the anesthesia of the trigeminal nerve by introducing ethanol directly into the trunks of its branches (orbital, mandibular and maxillary), as well as in Gasser's ganglion.

St. Luke was a physician who treated ordinary people, many of which are still alive; professor delivered lectures to ordinary students, practicing physicians at present; the political prisoner who passed prisons and tortures ... and became the winner of the Stalin Prize; the surgeon who saved hundreds of people from blindness and who lost his sight at the end of life. He was the brilliant doctor and a talented preacher who often oscillated between these two vocations, Christian of enormous willpower, integrity and fearless faith, but who could not avoid serious mistakes in his path. A real man. Shepherd. Scientist. Saint.

This remarkable man died in June 11, 1961 on Sunday, the day of All Saints Resplendent in the Russian Land.

ADIPOSITY

Tkacheva A., Nikolaenko Y., Khlebnikova T. - the 3rd year students
Scientific leaders – Doc.Med.Sc. N.A. Ishutina, O.I. Katina

Lipids are heterogeneous in chemical composition organic substances that are insoluble in water but soluble in nonpolar solvents.

One of the standard forms of pathology of lipid metabolism is obesity. The challenge of obesity in the world is very acute today.

Obesity is an excessive accumulation of lipids in the body in the form of triglycerides. It refers to the stromal-vascular fatty degeneration. Adipose tissue may be preserved as in areas of physiological depots, so as in the area of breast, thighs, and abdomen.

Depending on the degree of weight gain there are three degrees of obesity. The I grade of obesity - body mass index is of 25-29.9. Grade II – BMI is 30-39.9. Grade III - a body mass index is above 40.

According to the predominant localization of adipose tissue they distinguish general obesity (equable) and local (local lipohypertrophy). There are two varieties of local obesity. Female type (gynoid) – the excess fat is mainly in the thighs and buttocks. Male type (android or abdominal) – the accumulation of fat is predominantly in the abdominal area.

On the genesis of obesity they isolated its primary and secondary forms. The cause of primary obesity is a violation of the regulation of the functioning of the system of lipid metabolism. Secondary obesity develops when excess caloric food intake and a reduced level of energy consumption of the body.

There are neurogenic, endocrine and metabolic mechanisms of obesity. The reasons may be different: a mental disorders manifesting in a constant, sometimes irresistible, desire of food intake, damage of the hypothalamus neurons, lack or excess production of certain hormones.

In today's world the problem of obesity is very urgent. According to some research it is known that overweight people along with obesity acquire a predisposition to serious diseases such as diabetes, hypertension, myocardial infarction and cancer. Adiposity is directly connected to some of the most common diseases including hypertension, coronary heart disease, arthritis, cholecystitis, cancer of breast, prostate and colon. Many obese people have low self-esteem, depression, neuroses and other psychological problems.

To solve the obesity problem one must consult a doctor, such as an endocrinologist and nutritionist, to be examined and then to take treatment administered by an expert.

NUTRITIONAL STATUS AS AN INDICATOR OF POPULATION HEALTH

Khlebnicova T., Nikolaenko Y., Tkacheva A. – the 3rd year students

Scientific leaders - D.A. Semenov, O.I. Katina

The study of nutritional status is based on a study of the health status of an individual as an indicator of the adequacy of nutrition. Generalized characteristics of the health and dietary habits of a particular person is required to determine the volume and nature of the medical-diagnostic, dietary and hygienic measures. Methodology for assessing nutritional status includes the definition of indexes of nutritional function, food adequacy (identification of signs of food deficiency, excess or imbalance in the diet) and disease.

Incidence is closely connected with nutritional status and various disorders caused by food intake in particular to insufficient or excessive feeding.

The body needs to receive a huge amount of certain substances from which the cells, tissues and organs are built. Food should contain proteins, fats, carbohydrates, vitamins, minerals, water, cellulose, enzymes, flavorings and extractives, minor components - bioflavonoids, indoles antocyanins, isoflavones and many others.

The need in the amount of nutrients varies among individuals and depends on sex, age, physical activity, metabolic state and health.

The basic law for a balanced diet calls the necessity to match the levels of income and consumption of energy. The reduction of energy consumption leads to a decrease in

the volume of food consumed. However, in this case the second law of nutrition is violated: diet of modern man sufficient in calories is not able to cover the body's need for vitamins and other essential substances.

Thus, it is a violation of the nutritional status that explains the presence in the population of a large number of persons with overweight and obesity - a leading risk factor for such diseases as atherosclerosis, coronary heart disease, hypertension, diabetes mellitus on the one hand; and on the other hand - with reduced immunoreactivity and resistance to radiation and chemical nature of the contaminants.

B 12-DEFICIENCY ANEMIA

Bak E., Grivtsova M., Makogon K.- the 6th year students

Scientific leaders – Doc.Med.Sc. V.V. Voitsekhovskiy, Cand.Med.Sc. S.A. Goryacheva, O.I. Katina

B12-deficiency anemia (megaloblastic, pernicious) - is a pathological condition caused by a deficiency of vitamin B12 in the organism. It leads to a violation of the synthesis of DNA in hemopoietic cells. And it is characterized by the occurrence of megaloblasts in the marrow and intramedullary destruction of erythrocytes. As a result hematopoiesis is ineffective. There is an anemia progress combined with thrombocytopenia and leukopenia. Moreover, cyanocobalamin is a coenzyme in the conversion reaction of methylmalonyl-CoA to succinyl-CoA. This reaction is required for the metabolism of myelin in the nervous system. Thereby, with the deficiency of cyanocobalamin the defeat of the nervous system is marked along with megaloblastic anemia.

The main reasons for the development of B12-deficiency anemia are:

- Malabsorption of vitamin B12 (atrophic gastritis, gastric cancer, gastrectomy surgery, resection of the small intestine, celiac disease);
- Increased need in vitamin B12 (tapeworm infestation wide, diverticulosis of the colon, intestinal dysbiosis, the rapid growth in children, hyperthyroidism, chronic liver disease);
- Violation of transport of vitamin B12 (deficiency of transcobalamin II (autosomal-recessive inherited defect manifesting in early childhood);
- Violation of use when taking some medications (PASK, neomycin, metformin);
- Alimentary deficiency (a rare cause), mostly in childhood with a prolonged parenteral nutrition without additional supply of vitamins.

Clinical presentation. Anemic syndrome manifests with weakness, fatigue, shortness of breath, palpitations.

The syndrome of bone marrow haemolysis - mild jaundice develops as a result of increased destruction of erythroid cells (ineffective erythropoiesis) due to indirect bilirubin.

Dyspeptic syndrome manifests with anorexia, glossitis, and "varnished" tongue. There is the reduction of gastric secretion and atrophic gastritis. As a result of lesion of the peripheral nervous system (myelosis funicularis) ataxia, paresthesia, hyporeflexia, Babinski reflex, in severe cases coma and clonus appear. In children of early age hypotrophy, growth retardation, irritability, chronic diarrheas, susceptibility to infections develop.

Criteria of B12-deficiency anemia: a high color index; macrocytosis, megalocytosis; erythrocytes with remnants of the nuclei (Jolly bodies, Cabot's ring bodies);

reticulocytopenia; neutrophils hypersegmentation; leukopenia (neutropenia); thrombocytopenia; megaloblastic hematopoiesis in bone marrow; neurological disorders and psychiatric disorders.

Treatment. If specific cause of vitamin B12-deficiency is determined, there is an indispensable etiotropic treatment (dehelminthisation, surgical removal of the gastric tumors, the treatment of intestinal diseases, dysbacteriosis correction in particular, etc.).

Pathogenetic therapy: when confirmed diagnosis of B12-deficiency anemia, a long-term treatment with vitamin B12 preparations is administered (cyanocobalamin, hydroxocobalamin). Initially, the drug is injected intramuscular of 1000 mg daily to normalization of hemoglobin. And a week later the response to therapy is expected as reticulocyte crisis. Subsequently the supportive therapy 1000-500 mg (1-2 times per month) is performed.

HISTOPHYSIOLOGY OF LUNG AIRWAYS AT NORM AND AT THE DEVELOPMENT OF MICROCELLULAR CANCER

Urmancheeva V. – the 2nd year student

Scientific leaders - V. S. Kozlova, O.I.Katina

The airways are the system of tubes and cavities including the nasal cavity with paranasal sinuses, larynx, trachea and bronchial tree.

These organs are unified by: the presence of cavities, laminar structure of the wall; the presence of fibro-cartilaginous stroma in the wall that provides yawning lumen; mucosa is lined with ciliated epithelium; there are special accessories for the producing of inhaled air (mucous glands, lymphoid formations, blood vascular plexus), ciliated epithelium.

In the initial stage a microcellular lung cancer presents the infiltration of the submucosal layer manifesting in disappearance of mucosal folding of the main bronchus. In the later stages a microcellular lung cancer is a gray-yellow node with soft consistency; in incision multiple foci of necrosis are defined.

During the histological study of tumor node the absence of the layers formation of tumor parenchyma in the main bronchi is determined. Instead, microcellular lung cancer is composed of small tumor cells of round or fusoid form.

There are often necroses in the tumor. Mitotic activity of microcellular lung cancer is approximately 10 mitosis in sight when a significantly increased.

Tumor cells grow by layers, bands, sometimes with the formation of structures resembling rosula and glands. The stroma is lean. Infiltration with lymphoid cells is usually absent. There are areas of necrosis.

There are cells in the tumor without manifestations of tissue-specific differentiation - undifferentiated cells, and cells with specific differentiation features - endocrine, glandular, planocellular.

THE PROJECTION OF VERMIFORM PROCESS AGAINST THE BODY TYPE

Barannikov S., Damchat A., Kungaa A. – the 3rd year students

Scientific leaders – Cand.Med.Sc. S.I. Piskun, O.I. Katina

Topographic-anatomical features of structure and location of ileocecal angle are of great practical interest as differences in position of the vermiform process impact the clinical symptomatology and course of the disease. The study of anatomic variants in appendix's location in the practical medicine helps to interpret the data of clinical

examination and optimize operational and technical tasks. Anatomical variability correlates with the individual body type.

There are following types of body structures by V. N. Shevkunenko:

1) Dolichomorphic type is characterized by high stature, weak muscles and skeleton, minimal fat;

2) Mesomorphic type – a person has an average stature, well developed skeleton and muscles, the best proportions of the body, limbs and head, weak deposition of subcutaneous fat;

3) Brachymorphic type is characterized by medium or low stature, short neck and large size of the head, short limbs, a broad chest and a tendency to the deposition of subcutaneous fat.

The most people have a mixed form of constitution.

In individuals with dolichomorphic somatotype the location of the appendix is:

- 56.25 % retrocecal location - the appendix lies behind the cecum;
- 31.25 % upward or subhepatic location - the appendix's tip has an upward position, often to the subhepatic recess;
- 12.5 % — retroperitoneal location.

Individuals with brachymorphic somatotype most often have pelvic or downward location of the appendix. The process is directed downward into the pelvic cavity.

In persons with the mesomorphic type the location of the appendix is typical.

Acute appendicitis remains to be the most frequent cause of “acute abdomen” requiring surgical intervention. In Russia surgical intervention for acute appendicitis is performed to 1-1.5 million patients yearly.

It is usually assumed that the base of the vermiform process is projected at the Mak-Burnea point or Lanza point. In fact, due to differences of the appendix and the caecum locations the projection is only 7.6 % at the Mak-Burnea point (on the border of lower and middle thirds of the line connecting the umbilicus with the anterior upper spine of the ilium). And it is 20 % at the Lanza point (on the border of middle and right third of the line Biiliaca) (V. I. Kolesov, 1972). In 29% the base of the appendix is 3.25 cm above the point of Mak-Burnea, and in 70% it is 2.8 cm below this benchmark (Maksimov A. N., 1972).

Thus, it is necessary to take into account the body type of the patient during surgical intervention.

LIPID PEROXIDATION (LPO). LPO IN PREGNANCY

Damchat A., Barannikov S., Kungaa A. – the 3rd year students

Scientific leaders – Doc. Med. Sc. N.A. Ishutina, O.I. Katina

The reactions of lipid peroxidation (LPO) are free radical reactions and they are constantly occurred in the body. Fatty acids containing double links located through CH₂-group are the most vulnerable to the action of active oxygen forms. Free radical (initiator of oxidation) easily takes an electron from CH₂-group and transforms a lipid containing this acid in a free radical.

Stages of lipid peroxidation:

1) Initiation: the formation of free radical (L•)

Hydroxyl radical most often initiates the reaction. It takes hydrogen from the CH₂-groups of polyene acid, which leads to the formation of a lipid radical.

2) Development of chain:

The development of the chain is due to the adjoining of O₂. As a result lipoperoxiradical LOO• or lipid peroxide LOOH are formed.

LPO is a free radical chain reactions, i.e. each formed radical initiates the formation of several others.

3) Destruction of the lipid structure.

The final products of peroxide oxidation of polyene acids are malonic dialdehyde and the acid hydroperoxide.

4) Chain termination – an interaction of radicals among themselves.

Hydroperoxides of lipids, free fatty acids and phospholipids-amphiphile are accumulated as a result of activation of lipoperoxide reactions and hydrolases. Accumulated products are fixed in the hydrophobic and hydrophilic areas of a membrane. It leads to the formation of the vast amphiphilic clusters, to the microreserve and destruction of the membrane.

In physiological conditions LPO is a necessary mechanism to update the phospholipids of membrane structures.

Significant increase of the peroxidation level in comparison with the norm is a characteristic symptom of many diseases: muscular dystrophy (Duchenne's disease), Parkinson's disease, etc.

Also the increasing of LPO levels occurs in women during pregnancy, as there is a significant restructuring of women's organism activity during pregnancy. It is associated with changes in the system of blood, endocrine, immune systems and with the change of total state of an organism. The number of radicals affecting the tissues and organs of a pregnant woman, as well as cells of the placenta and embryo increases.

The reasons for the free radicals increase during pregnancy are:

- Participation of free radicals in the progesterone synthesis;
- Hypoxia;
- Disorder of oxidation-reduction processes;
- Inhibition of antiperoxidative protection mechanisms;
- Increase in the number of Pro-oxidants;
- Excitation of adrenergic structures of the hypothalamus during stress (adrenaline, cortisol) that leads to a decrease of blood antioxidant capacity;
- Exposure of adverse environmental factors: air pollution, tobacco smoke, UV radiation etc.;
- Pregnancy pathologies: herpes, chronic nonspecific lung diseases, iron deficiency anemia, preeclampsia, extragenital diseases.

SAMPLING OF AIR AS METHOD OF HYGIENIC LABORATORY RESEARCH

Kungaa A., Barannikov S., Damchat A. – the 3rd year students

Scientific leaders – Cand. Med. Sc. D.A. Semenov, O.I. Katina

Sampling of air requires the presence of qualified specialists of laboratory service. But to assure the quality of these studies in a number of provisions there is a need in participation of hygienists.

Depending on the magnitude of substances concentrations determined in air, sampling can be carried out without pre-concentration or with pre-concentration with the help of special devices. The choice of option is determined by the sensitivity of using methods and analytical instruments.

If the concentration of a substance in air is in a sensitivity range of the measuring complex (method + device), it is enough to provide selection the required amount (volume) of air samples according to the regulated procedure. If the concentration of a substance in the air is much smaller than the lower bound of the sensitivity of the method, one should catch (concentrate) the substance in a selective environment by pumping large volumes of air. Only after this the analysis is performed by the regulated method. And the calculation of concentration is performed basing on conditions of carried out sampling.

Sampling of air in the production premises is carried out directly in the breathing zone, i.e. at a height of 1.5 m from the floor surface. However, for expanded view about the character of migration of toxic components, it is advisable to carry out sampling of air in addition - at the same point, at heights of 0.25 m and 1.7 m. During the study of several workplaces in one manufacturing room it would be advisable to perform additional sampling in the "background" point equidistant from all sources of air pollution of the working area. It allows assess more objectively the condition of the air environment in the workplace.

Sampling the air without pre-concentration.

Sampling the air without pre-concentration may be carried out in gas syringes and pipettes by injecting or pumping the probed air through the aspirator. Also the air must be skipped through the vessel in amount no less than in 10 times more than the volume of the intake device. During sampling air with a syringe it is necessary to perform the same number of dummy pumping.

Sampling air in a similar way may be produced in sealed plastic containers and bags of required capacity. Such bags must be manufactured from materials having minimum sorption capacity of the inner surface and reaction-ability, good integrity, allowing for hours to keep the air sample without significant changes in its composition and properties.

For making gas chromatographic studies of aromatic hydrocarbons the sampling of air can be produced in steel tanks. As in this case it is registered their smaller sorption on the surface of the vessels in comparison with glass container. In this case, it is expedient to use for the discharge air the membranous compressor.

The selection of air samples with pre-concentration.

Sampling air with pre-defined concentration of substances in gaseous or vaporous state can be captured by several methods. Recovery through absorption devices filled with liquid absorbing areas is most traditional.

Solid sorbents can be used as sinks. Chemicals contained in the air as aerosols can be focused using filters. If the analyzed substance is at the same time in form of aerosol or steam in the air, it is needed to install an optional filter on the input before the absorption device. Further on the substance from filter and absorber are selected and defined comprehensively. Choice of concentration technology should be based on desire to ensure maximum absorption of the analyze substance.

BASIC DATA OF ONCOUROLOGICAL SITUATION IN THE AMUR REGION

Murashko S. – the 5th year student

Scientific leaders - Prof. L.N. Voight, O.I. Katina

Malignant tumors (MT) of the genitourinary system organs are not leading in the structure of cancer incidence. But the increase in the absolute number of cases and a significant growth rate of pathology of this type cannot be ignored.

Malignant neoplasms are one of the leading causes of death and disability in the population of Russia and in the Amur region for the last 15 years. Currently the Ministry of Health of the Russian Federation and the Russian Association of Oncologists has taken serious steps for the protection of health among the population of our country, particularly in the development of oncology service.

Oncology – is a multidisciplinary part of medicine that deals with the doctors of different specialties. Among the total cancer incidence in the Russian Federation neoplasms of the urogenital system (kidneys, bladder, prostate gland) comprise 11.5%. In comparison with 2010 there is a registered increase in 17.5% of the absolute number of cases. In the Amur region 567 people died of cancer of the genitourinary system in 2010 – 2015 years. That is 8.0% of the total number of deaths from cancer over this time period.

From 2010 till 2015 1166 new cases of the genitourinary system malignancies (cancer of the kidneys - in 455 persons, prostate cancer - in 363 and bladder cancer - in 348 people) were diagnosed in the region.

Kidney cancer is detected in 40% of patients in the general structure of cancer incidence in the Amur region. The difference in number between the male and female population with kidney cancer is virtually unchanged for the last five years. It ranges from 40.7% in 2010 to 51.2% in 2015 in women and from 48.8% in 2010 to 59.3% in 2015 in men. The proportion of patients of reproductive age is 3.5%. The peak of incidence occurs in the 45-55 years old (67.9%).

Indicator of bladder cancer was 10.1 per 100 thousand of population. Among all the cases male patients prevailed. The peak of incidence occurs in the 50-59 years old (71.3%).

Prostate cancer is registered in 363 men during this period. The incidence of this type of MT increased from 17.5 in 2010 to 21.3 per 100 thousand of population in 2015. The peak of incidence is in 55-65 years old (63.7%).

COMPARATIVE CHARACTERISTICS OF THE HEALTH CARE SYSTEM IN RUSSIA AND SOME FOREIGN COUNTRIES

Blokhina E., Solonin A. – the 5th year students

Scientific leaders – Doc. Med. Sc. L.N. Voight, O.I. Katina

Modern Russian health care system is constantly exposed to harsh criticism: free medicine is less effective, and the paid one – is more corrupt. Some drug prices are too increased and to get some imported medicines is almost impossible. According to many experts Russia should take foreign experience and conduct health care reform using the examples of other countries. But if it is necessary to follow the examples of health care systems of foreign countries?

The health care system in each country is a product of its unique characteristics, history, political process, and the national character of the people. Many of these systems undergo great reforms at present.

Now most countries face with the problem of rising costs on the health care system. This in turn leads to an increase of taxes and increase in the cost for health insurance.

A careful study of the situation shows that the health care system in almost all countries of the world are facing with the problems of rising costs and inaccessibility of health care for the part of the population.

In those countries focusing the governmental control over health care system citizens are most likely to face a "waiting list", valuation services, restrictions on the choice of the doctor and other obstacles in the field of health care.

The presence of health insurance does not mean the overall access to health services. In practice, in many countries almost every citizen has insurance but medical services are “metered” within this insurance or people have to wait for treatment in line for a long time.

Countries with more effective health care systems achieve a similar result by eliminating the centralized state control and reliance on market mechanisms - competition, separation costs, market prices and choice for consumers. This is not the abolition of universal health insurance. But a departure from the centralized state control and passage of public health to a market basis should be recognized as the dominant global trend.

PALMITIC ACID

Ionova N. – the 2nd year student

Scientific leaders – Cand.Biol.Sc. G.K. Doroshenko, O.I. Katina

Palmitic acid or hexadecanoic acid in IUPAC nomenclature is the most common fatty acid (saturated) found in animals, plants and microorganisms. Its chemical formula is CH₃-(CH₂)-14COOH. As its name indicates, this acid is the major component of the oil from palm trees (palm oil). But it can also be found in meat, cheeses, butter, and dairy products. Palmitate is a term for the salts and esters of palmitic acid. The palmitate anion is the observed form of palmitic acid at physiologic pH (7.4).

Aluminium salts of palmitic acid and naphthenic acid were combined during World War II to produce napalm. The word "napalm" is derived from the words naphthenic acid and palmitic acid.

Palmitic acid is naturally produced by a wide range of other plants and organisms, typically at low levels. It naturally presents in butter, cheese, milk and meat as well as in cocoa butter, soybean oil and sunflower oil. The cetyl ester of palmitic acid (cetyl palmitate) occurs in spermaceti.

According to the World Health Organization evidence is "convincing" that consumption of palmitic acid increases the risk of developing of cardiovascular diseases. Theses evidences are based on the results of studies indicating that palmitic acid may increase LDL levels in the blood. Retinyl palmitate is an antioxidant and a source of vitamin A added to low fat milk to replace the vitamin content lost through the removal of milk fat. Palmitate is attached to the alcohol form of vitamin A and retinol to make vitamin A stable in milk.

Rats fed in a diet of 20% palmitic acid and 80% carbohydrate for extended periods showed alterations in central nervous system control of insulin secretion, and suppression of the body's natural appetite-suppressing signals from leptin and insulin (the key hormones involved in weight regulation).

MELANOMA METASTASIS

Chernushevich D. - the 3rd year student

Scientific leaders – Doc.Med.Sc. I.Y. Makarov, A.I. Patrakov, O.I.Katina

Ways of development and types of melanoma metastases.

Melanoma metastases are known to affect any organs while spreading. But according to the observations of oncologists there are organs exposed to degeneration more often than other organs. That is why speaking of metastasis we mean primarily the melanoma metastases in the lymph nodes and lungs. A little less than these organs (but still often enough) liver and the brain are exposed to metastasis.

Physicians identified the following ways of metastasis of melanoma:

- lymphogenous;
- hematogenous;
- mixed.

For nodal metastasis the infiltration of tumor cells into the lymphatic vessel is characteristic. Further on with the lymph flow they spread in distant and near lymph nodes. This way of scattering is the most characteristic for melanoma.

Hematogenous way, i.e. the spread of cancer cells of the affected organ in a healthy one through the blood flow, contributes to the spread of the affected cells in various distant organs: liver, lungs, brain, bones, kidneys, adrenal glands. There are varieties of melanoma with high malignancy potential and tendency to early hematogenous metastasis.

Types of metastases:

1. Satellites. They look like multiple rashes spots of color of the tumor, which are located in close proximity to the initial focus of the disease (or at a slight distance from it).

2. Nodular form. In this form cutaneous metastases appear as multiple subcutaneous nodes of different sizes. They can be located at any distance from the initial tumor.

3. Erysipelatous form. This kind of skin metastases presents area of swelling bluish-red skin that surrounds the tumor.

4. Trombotsitopatya form. This is a radially extending painful seal with an enlarged superficial veins and swelling of the skin around the melanoma.

Recurrence of melanoma metastasis.

Metastases in melanoma tend to be cyclical in growth and expansion. While the first case may completely regress (to fade) and it even will not be detected on repeated examination. Observations of physicians showed that if the thickness of each of the metastases is less than 0.7 mm, there is a high expectancy that these metastases will not further progress. If the thickness of the metastases has reached the size of 1.5 mm, this may indicate that the patient is at risk. In such cases the relapse usually manifests in the first three years. Therefore, it is so important for patients with melanoma to undergo regular checkups with an oncologist after he was diagnosed melanoma metastases.

LEAD POISONING

Lopsan A. – the 4th year student

Scientific leaders – Cand.Med.Sc. S.A.Goryacheva, O.I.Katina

Lead is malleable and relatively refractory metal with silvery shimmer. Lead and many of its compounds are used in industry, in the production of crystal glass, as well as paints (white ceruse, red lead), and others. They can be found in everyday life during food intake that was kept in ceramic ware for a long time. Professions with an increased risk of lead poisoning include: agriculturists, ore miners, lead smelters, Battery attendants, lead powder millers, lead products chasers and solder workers. Lead affects the nerve cells and the myelin coat. It blocks the activity of these cells (replaces the calcium and magnesium in the processes of cell metabolism and cell reproduction process, the myelin sheath disappears). Accordingly, the nerve cells suffer from a lack of nutrition, dies off quickly and the nerve impulses are carried slower.

Laboratory signs of chronic lead poisoning: reticulocytosis, reduce of red blood cell levels, basophilic stippling of red blood cells, and the appearance of coproporphyrin and aminolevulinic acid in the urine, an increase of the concentration of erythrocyte protoporphyrin, aminoaciduria, glucosuria and high lead level in blood and urine.

For the treatment of chronic lead intoxication chelators are used - sodium calcium edetate and Pentacinum. During the initial forms of intoxication, after finishing the treatment it is recommended temporary transfer to a work without a contact with the lead for 1-2 months, then – the return to the former work. At the expressed forms of intoxication, even after the complete regression of the saturnism manifestations after the conducted hospital treatment, the contact with the lead must be ceased permanently.

TRISOMY 8

Demko A. - the 5th year student

Scientific leaders – Cand. Med.Sc. E.L.Chupac, O.I.Katina

At present there is an observed increase in the frequency of chromosomal diseases in Russia. Among children population it was 0.6% in 2014. Chromosomal mutations are often the result of newly emerging genomic mutations at the blastula stage. Its frequency is random and does not depend on any factors. Diagnosis is difficult due to the faintness of the clinical picture. Trisomy of chromosome 8 is referred to such diseases. The frequency of such chromosomal abnormalities in newborns is 1:5000 with a predominance of boys.

For this disease the most characteristic abnormalities are in the facial structure of musculoskeletal system and defects of the genitourinary system. In clinical examination of newborns the multiple stigmas of dysembryogenesis (for example, deep-set eyes, hypertelorism of eyes and nipples, high palate, thick lips, inverted lower lip, big ears with thick leather, etc.) are revealed. According to additional studies there are malformations of the urogenital system and the heart, and in x-ray diagnostics the defects of the skeletal system are seen.

Clinical case

The child was admitted from the maternity hospital to the hospital department of pathology of newborns and preterm infants at a 3 day of his life with a diagnosis of: Omphalitis. He had mitral valve insufficiency of II degree, the syndrome of depression, multiple stigmas of dysembryogenesis, and polycystic kidney disease.

Pregnancy was with toxicosis and gestational edema. Timely delivery with uterine inertia. Cesarean section. Full-term fetus was born with an Apgar score of 6 points, weight 3200.

At admission the infant: does not suck, poorly keeps heat, requires additional oxygenation, has convulsive syndrome, in the heart systolic noise is auscultated. The child has a long body and limbs, prominent forehead, flat occiput, short neck, broad nasal bridge, large nose, full lips, inverted lower lip, high arch of the sky, micrognathia, low-set and deformed ears, hypertelorism nipples, fourfingery crease on right palm, hypertrichosis, wide hands and feet, camptodactylia, aplasia of patella, contractures in the joints, inguinal hernia, cryptorchidism, hypoplasia of the prepuce.

Ultrasound examination revealed: the change of architectonics of the kidneys, enlargement of the left hilus, defects of the interventricular septum and the expansion of the ventricles of the brain.

Basing on the combination of multiple stigmas of dysembryogenesis with internal malformations of the circulatory and urogenital systems the presence of chromosomal pathology in a newborn was suggested. The cytogenetic survey was made. The genotype 47XY, +8/46, XY, was identified. The ratio of clones was 75:25. Diagnosis: Trisomy 8. Mosaic form.

In 2 months the child was transported to the neurological department for further treatment.

The prognosis for this disease is unfavorable. Further mental retardation, hydrocephalus, cryptorchidism, contractures, aplasia of the corpus callosum and other changes develop.

After diagnosis of a genetic disease it is necessary to arrange medical-genetic consultation to a family. There are no restrictions for a further delivery as a chance of birth of children with this form and other chromosomal diseases in such parents is not increased. However, if the woman's age at next pregnancy exceeds 35 years, the prenatal diagnosis at age reasons is necessary – ultrasound and cytogenetic examination of the fetus.

BORDERLINE NEUROSIS

Chenchenko V., Lopsan A. – the 4th year students

Scientific leaders – M.I. Bugrova, O.I. Katina

Neurosis is a condition caused in most cases by a long and hard experienced stressful situations that tearing the psychological adaptation cause depletion of the nervous system (a combination of irritability and fatigue), anxiety and vegetative disorders (sweating, palpitations, malfunction of the stomach, etc.).

The main manifestations of neurosis: high sensitivity to stress – people react with despair or aggression, tearfulness, resentment, vulnerability, anxiety, quick tiredness at work – reduced memory, attention, thinking ability, sensitivity to loud sounds, bright light, temperature changes, sleep disorders. Very often it is difficult for a person to sleep well because of overexcitation; sleep is superficial, anxious, not bringing relief; there is often drowsiness in the morning.

Vegetative disturbances: sweating, rapid heartbeat, fluctuations in blood pressure (usually downward), a disorder of the stomach, sometimes – decreased libido and potency. People of creative professions, mainly actors, are more susceptible to neurosis due to the frequent changes of the images of their characters. Ranking members, athletes, military officers, teams of special purpose may also be exposed to it.

Restorative therapy, physiotherapy, and vitamin therapy take an important place in complex treatment of neuroses. Nootropic drugs (nootropics aminalon) were widely used for the treatment of asthenic states in the last decades. Many neurotic symptoms are well cropped with various tranquilizers (phenazepam, Librium, valium, tazepam) or small doses of some neuroleptics (chlorpromazine, neuleptil), with drug therapy, diet therapy, music therapy, bibliotherapy.

CONSEQUENCES OF EMERGENCY SITUATIONS AT TYPHOONS

Kross D. – the 2nd year student

Scientific leaders - O.I.Katina

Typhoon – is a type of tropical cyclone typical for the north-western part of the Pacific Ocean. In the central part of typhoons the largest decline of air pressure on the surface of the sea is observed. It reaches 650 mm Hg.

As a rule typhoons are puffed to the shores of the Russian Far East after Korea, Japan and the Ryukyu Islands have taken their main blow. Kuril Islands, Sakhalin, Kamchatka and Primorsky Krai are most susceptible to typhoons.

Typhoon "Layonrok" Japan 2016.

Due to the typhoon in Japan 110 domestic flights were canceled. Thousands of houses in the north-western part of the country were without light. In 920 schools classes were canceled. Due to the bad weather ferry service between Honshu and Hokkaido was also temporarily suspended.

Typhoon "Layonrok" Primorsky Krai 2016.

Typhoon "Layonrok" struck the Primorsky region, led to the loss of the three-month norm of precipitation in the east and south of the region. As a result homes were flooded, bridges and roads were damaged. Influence of typhoon "Layonrok" on Primorsky weather lasted four days. The damage from the typhoon was 1.2 bln. rubles.

Typhoon "Megi" Taiwan 2016

The victims of typhoon "Megi" in Taiwan were 4 people, 527 were injured, 11500 people were evacuated, and nearly 3000 of them were housed in temporary shelters. Element has left 3.8 million homes without electricity and 300000 homes were without water. And in China Typhoon "Megi" brought torrential rains to the eastern provinces. In many areas there were floods and landslides.

Typhoon "Goni" Ussuriisk 2016.

15 houses and more than 380 town houses were flooded. Five villages were under the water and about 500 homes were flooded. More than 100 people were evacuated from villages. Fortunately there were no human victims.

USE OF SUCCINATES IN SPORT

Dubeiko I., Lopsan A. – the 4th year students

Scientific leaders – Doc.Biol.Sc. N.V.Simonova, O.I.Katina

Succinic acid –is limiting dibasic carboxylic acid, colourless crystals soluble in water and alcohol. It is used in food industry for food production. Foods with succinic acid is intended for people exposed to high loads - athletes, miners, pilots, sailors, machinists, drivers, artists, and those who adhere to a healthy way of life. Currently, in order to achieve the athletic goal — an Olympic medal or a perfect physical form — just the training process is not enough as physical exertions have reached a high level in modern sport.

The use of drugs is shown to improve the immune system and help to adapt to physical stress, accelerate recovery processes, prevention and treatment of functional disorders. In addition, it has beneficial effects on the heart providing it with the necessary energy and oxygen. But there are contra-indications for the use of this remedy. It is forbidden when high acidity, severe kidney disease, stomach ulcers.

A course should be started with 500 mg of succinates every day in the morning after eating, so as not to irritate the mucous membrane of the stomach. Athletes, assessing their physical condition and emotional status, often choose individual succinates doses. During the course of application of succinic acid it is necessary to arrange pauses in certain days (for example, 1-2 days of pause in every 3 days of usage). This method of application of the drug allows to extend the course, and hence the effect of it.

ANTHRAX IN YAMAL

Skrypnik A., Murashov E., Abdulazyanov D. – the 2nd year students

Scientific leaders – Cand.Biol.Sc. L.A. Guba, O.I. Katina

From 29 July specialists of chemical protection units found and burned the remains of 2572 animals that died from anthrax. The soldiers also carried out disinfection of contaminated soil with bleach over an area of 225 square kilometers.

In 16 August 74 people, delivered earlier from the quarantine zone, were discharged from Salekhard District Hospital.

4429 district dwellers and 149000 animals were vaccinated till 15 August.

About 500 people and 60 engineering units were involved to eradicate the epidemic of anthrax.

July 25 there was quarantine due to anthrax in Yamal region. More than 2.3 thousand deer died of it. 90 people were hospitalized in Salekhard district hospital with disease suspicion. The diagnosis was confirmed in 20 of them.

The presumed cause of infection was abnormally high temperature for the region. It was known about the death of 12-year-old boy from the intestinal form of the disease in August 1. The focus of the disease was localized in August 2.

Anyone can be vaccinated against anthrax: ninety thousand doses of vaccine were taken to the region. However, nomadic herders refused to consider anthrax as a real threat.

CHOLELITHIASIS

Subonov G., Murashov E. – the 2nd year students

Scientific leaders – L.G. Tertichnaya, O.I. Katina

Cholelithiasis is a disease characterizing with formation of stones in gallbladder, rare in bile ducts.

Cholelithiasis is a wide – spread disease. According to pathoanatomical research every fifth woman and every tenth man, who died of different reasons, have the stones in gallbladder. But clinical manifestations of this disease are found only in 10% percent of people, mostly in woman at the age of 40.

Considerably cholelithiasis is often met among fat women. Passive lifestyle, pregnancy, systematic overeating, and various factors contribute the stagnation in the gallbladder and lead to the stones formation in a gall bladder. Cholelithiasis often occurs in people who have had infectious hepatitis.

There are three main groups of stones. They differ in chemical compounds. Cholesterol stones are usually single and have white or yellowish colour, round or oval shape. In the incision they are of radiant structure due to radial location of cholesterol crystals. Pigment stones consisting of bilirubin and calcium carbonate are also met. They are small and numerous, have various shape, thick but fragile. If staying in the gallbladder for a long time, the stones may lead to atrophy and sclerosis of the gallbladder due to mechanical effect to the mucosa.

Etiology and pathogenesis. Cholelithiasis must be seen as a metabolism violation. And its formation is as a result of these disturbances. The problem of stone formation mechanisms is not decisively solved. At present cholelithiasis development is thought to be caused due to three factors: destroy of metabolism, infection and bile stasis. As a rule the stones contain calcium bilirubinate, cholesterol monohydrate, amorphous and crystal carbonate calcium. But various people have different content of these substances. Hypercholesteremia and increased concentration of cholesterol in bile is proved to contribute the formation of cholesterol stones. Formation of pigment stones is often met (in 30-70% situations) because of hemolytic processes in the body.

Prevention of cholelithiasis is in eliminating the causes contributing to bile stasis and metabolic disorders. So, regular foods, gymnastics, remove constipations, timely treatment of inflammatory diseases of bile excretory system is recommended.

ZIKA FEVER

Zeinalov O., Bugreeva T. - the 5th year students

Scientific leaders - A.V. Gavrilov , O.I. Katina

According to the WHO the epidemic situation by Zika fever was complicated in Brazil and other South American countries since March 2015. At 25.03.2016 the infection was registered in 46 countries of the North America, South America and Asia-Pacific Region. 16.02.2016 the first case of the Zika fever was confirmed in Russia. It was a 36 years-old woman from Moscow who had vacations with the family in the Dominican Republic. At the same time the first case of Zika fever was registered in China. In 2015 they reported about first 3 laboratory-confirmed deaths from the disease in Brazil.

Zika fever – is an acute anthro-po-zoonotic, natural-focal, arbovirus, transmitted diseases caused by ZIKV. It proceeds with moderate intoxication and specific exanthema. Carriers of the virus are mosquitoes of Aedes genera. Reservoir: apes and humans. The fact of the sexual transmission of the virus from a person to person was determined (in 2009 in the United States from Africa, in 2016 in France from Brazil). There is a high degree of probability of vertical transmission (transplacental). The infection is supposed to occur through blood transfusions.

The incubation period of the first disease caused by ZIKV is up to 10 days.

The first signs of Zika fever: headache, pain in muscles and joints, pain in the eye orbits, conjunctivitis, intolerance of bright light, raising the temperature to 38.5 C and progressive itchy maculo-papular rash. At first, the rash appears on the face and neck. Then it spreads throughout the body. New eruptions continue for the first three days and the fever lasts about five days. The temperature is then normalized and there is only a rash, which also gradually disappear. Generally, the disease has mild (80%) or moderate (20%) clinical form and terminate with the recovery. Zika virus affects the human fetus in utero.

Infection of women with Zika fever in the first three or four months of pregnancy leads to fetal abnormalities, including microcephaly of newborns. During the epidemic in French Polynesia 73 cases of Guillain-Barre syndrome and other neurological disorders were revealed. They may be associated with the Zika virus.

Diagnosis is based on clinical and epidemiological data, and serological tests: ELISA, PCR. At present there are no specific methods of treatment and prevention of the disease. But active investigations are carried on, including in Russia. Due to the high population migration, especially during the holidays, and the active development of tourism the fact of emergency of the virus in the Far East and in the Amur region, in particular, is not excluded.

EFFECTIVENESS OF COXARTHROSIS AND GONARTHROSIS TREATMENT IN THE AMUR REGIONAL CLINICAL HOSPITAL

Bugreeva T., Zeinalov O. -the 5th year students

Scientific leaders - Cand. Med. Sc .E.A.Sundukova, O.I. Katina

Degenerative-dystrophic lesions of large joints are among the most common diseases. And their frequency shows a tendency to further increase.

The reason for this is not only an increased life expectancy of mainly developed countries, but also hypodynamia, overweight, emotional stress, and reduces of the compensatory capacity of the organism. Previously a deforming arthrosis considered to be a share of elderly people. Now this view is subjected to serious review. 30% of patients with osteoarthritis are only 40 year old. At the age of 60, osteoarthritis occurs in every tenth man, but after 70 years it is in every fifth.

In 2013, the department timely and accurately fulfilled the state order to provide high-tech medical care for orthopedic patients through Federal quotas (140 quotas). As a result 110 extra endoprosthetic appliances of hip and knee joints were made. And 30 reconstructive plastic surgeries were performed. Complications occurred in 10 patients (10%).

In 2014, the department also fulfilled the state order to provide VMP to orthopedic patients by Federal quotas (150 quotas) timely and accurately. This year 130 extra endoprosthetic appliances of hip and knee joints and 30 reconstructive plastic surgeries were made. In 2014 the total number of operations performed was 172 endoprosthetic appliances of hip and knee joints. It is 44 endoprosthetic appliances more than in the previous year. Complications were observed in 5 patients (3.3%).

It should be noted that a number of quotas was increased in 9.3% in 2014. The number of complications was reduced to 3.3%.

In 2015, the department timely and accurately performed the state order to provide VMP to orthopedic patients by Federal quotas (150 quotas), resulting in additional 110 endoprosthetic appliances of hip and knee joints. Also 40 reconstructive plastic surgeries were done. Complications were observed in 3 patients (2.1%). It is worth noting a positive trend in reducing the number of complications.

Thus, the experience of endoprosthetic appliances may be considered as positive. And proximate results up to 5 years of primary endoprosthetic appliances of hip arthroplasty are satisfactory.

COMPARATIVE CHARACTERISTICS OF DEPRESSION LEVELS OF THE FIRST AND FIFTH YEAR STUDENTS OF FSEI HE AMUR SMA MH RF

Yatsenko E., Poplavskaja A. – the 5th year students

Scientific leaders - Cand.Med.Sc. E.A. Sundukova, O.I. Katina

State of health of university students attracts an increased attention of specialists from various fields of medicine. This is due to the role played by this social group in the society. Among the problems related to the protection of health of students a significant place is occupied by the neuro-psychiatric disorders. When comparing the mental health of different groups of the population it turned out that the problem is most acute in relation to students.

The intense way of life and learning has high requirements to the compensatory mechanisms of the psyche. Their failure leads to stress, psychological and social conflicts, and depression. Do not forget about the time factor, because the educational maladjustment, even on a relatively non-durable period, results in permanent retard with training schedule and, therefore, to a prolonged depression. In terms of prevalence the anxiety and depressive disorders rank first among mental disorders and occur in 10-12% of the general population; 4% of the population suffers from chronic forms of this type of pathology.

We decided to evaluate and compare the levels of depression in students of the first and fifth year of FSEI HE Amur State Medical Academy of the RF Ministry of Health.

In the Amur State Medical Academy students of the first and fifth year were tested by Beck Depression Inventory. The total number comprised 80 students, including 40 students of the 1 course and 40 students of the 5th year of study. Assessment of the level of depression was carried out on a voluntary basis and was absolutely anonymous. Each respondent was informed in advance about the rules of filling in the Beck Depression Scale. After receiving the results of the test (0-9 - no depressive symptoms, 10-15 - mild depression, 16-19 - moderate depression, 20-29 - severe depression, 30-63 - severe depression) we conducted a statistical analysis of the material.

According to the results of Beck Depression Scale it was revealed that:

There were no significant differences in levels of depression between the first and the fifth year students ($p > 0.05$). It may be associated with a small sample of the study. While according to the literature an increased tendency to depression is diagnosed in the first year students because of the strain of compensatory mechanisms of neuro-psychological regulation, followed by their depletion in senior years.

Basing on the calculation and analysis we obtained the following:

1. The absence of depression was found in 37 persons out of 80 - 46.25% of the tested. 19 students were exposed to mild depression - 23.75%. Moderate depression was noticed in 6 students - 7.5%. Expressed depression was in 10 people - 12.5%. Severe depression was in 1 student - 1.25%.

2. Results for 1st year students:

Of the 40 tested students 13 of them had no signs of depression - 32.5%, in 14 persons a mild depression was stated - 35%, moderate depression was in 3 individuals - 7.5%, expressed one was in 9 cases - 22.5%, severe persisted in 1 student - 2.5% .

3. Students of the 5th year:

In 24 of the 40 tested students no signs of depression were marked - 60%, 8 persons revealed a mild depression - 20%, moderate depression was in 5 people - 12.5%, expressed one was in 3 individuals - 7.5%, there was no severe depression in any of the investigated students - 0%.

Comparing the results of the 1 and 5 year students it is seen that the first year students are more exposed to depression than students of the 5th course.

INFARCTION OF THE LUNG. CAUSES AND CONSEQUENCES

Triukhan V., Gubershtro Y. - the 3rd year students

Scientific leaders – A.I. Patrokov, O.I. Katina

Pulmonary infarction is a complication that develops as a result of the effect of certain causes - thrombotic occlusions in the system of pulmonary blood flow. Pulmonary infarction is accompanied by the rapid development of the process.

The main cause for the development of pulmonary infarction is an enhanced thrombus formation in the blood vessels of the body. The most frequent reasons leading to pulmonary infarction are numerous thrombophlebitis, thrombosis of the vasculature of veins of the lower extremities, traumatic lesion of tubular bones that can cause fat embolism of certain vessels of the pulmonary network. Surgeries, especially on the veins of the limbs, can also easily lead to ischemia of the lung and heart attack.

If the occlusion appears in a major pulmonary vessel, most often thromboembolic, it leads to the death of the patient. If there is no timely stop and treatment of an attack of pulmonary infarction, complications may be quite severe. Pneumonia is the most frequent complication of pulmonary infarction as on its background the necrotic changes are formed in the lung. Thereby it creates favorable conditions for the growth and multiplication of various pathogenic microorganisms. Abscesses develop — filling with purulent and necrotic masses of the lung tissue cavities. There is the threat of its rupture and entering of the content in healthy parts of the organ. Also myocardial abscesses can lead to spontaneous pneumothorax that leads to pathological changes of respiratory function. The lung abscess is considered to be the most severe consequence of heart attack.

The classic consequence of pulmonary infarction is the scarring of the lung. In some time the area exposed to severe hypoxia is supplied by connective tissue. This results in the formation of post-infarction scars. Dense connective tissue is formed from 3 to 4 months after the attack. After that the patient suffers from: stertorous inhalation; severe shortness of breath in slight exertion; cyanosis of the skin under the nose; dry rales. If do nothing for a long time, the disease will develop into cardio-pulmonary insufficiency. And it will significantly worsen the quality of life of the patient.

Pulmonary infarction may be complicated by the formation of abscesses. Being of small sizes and small quantities they disappear within 7-10 days. Large abscesses do not disappear themselves, they lead to the formation of fibrosis. Hemorrhagic pleurisy is often considered to be the main complication. It is an inflammation of the pleura accompanied by the formation of a blood clot in its cavity. The disease has severe clinical manifestations and is treated for quite a long time. Also lungs hypostasis and their swelling are thought to be possible complications. This complication is characterized by problems with breathing, shortness of breath, pain in the chest and other symptoms that poses a threat to the life of the patient.

DIET AS AN EXTERNAL FACTOR IN THE PATHOGENESIS OF PHENYLKETONURIA

Gubershtro Y., Triukhan V. - the 3rd year students

Scientific leaders – Doc.Biol.Sc. A.V. Krylov, O.I. Katina

Classic Phenylketonuria (PKU) – is a rare hereditary disease associated with impaired metabolism of amino acids. A person with phenylketonuria is not able to break down the amino acid phenylalanine that comes from protein foods. As a result, compounds poisoning the nervous system and the brain in particular accumulate in the tissues. Mental retardation up to idiocy develops. In connection with this the illness received another name - phenylpyruvic oligophrenia. However, among all the hereditary diseases phenylketonuria is the only one that can be completely neutralized. Today a child born with symptoms of PKU can grow perfectly healthy. To protect the baby's brain is possible using a special diet. Due to this diet it is possible to cure the child during the first 2-3 years. Children with PKU are born completely healthy. Therefore, if detect the disease during the first days of life and keep to the diet, it is possible to prevent the destruction of the child's brain.

If the moment is missed, and the child eats protein foods rich in phenylalanine, symptoms of lesion of the central nervous system appear. First the changes are insignificant in patients with phenylketonuria. It's a weakness and anxiety. The kid never smiles and moves a little, the child is poorly responsive, does not recognize the mother. Phenylalanine and its derivatives are excreted in urine and sweat. They cause a specific musty smell. If

phenylketonuria is untreated, the patient's condition will deteriorate. It is necessary to exclude completely from the diet the animal proteins in order to get the nerve cells of the child not to be exposed to toxic effects of phenylalanine and its derivatives. If this is done in the first weeks of life, the brain will remain completely healthy. If you start to limit protein at a later age, it is possible to pause the arrest of development. But to return a health to the nervous system and to eradicate the changes in the nerve cells will fail. All necessary for growth and development amino acids enter the body from specialized medical products. Usually they are a powder, a dry mixture of amino acids, nutritional means, the peptides (shaded enzymes milk proteins); free amino acids (tyrosine, tryptophan, cystine, histidine and taurine). Children of patients with PKU can be breastfed. But nursing mothers need to keep a special diet. In the diet of preschool and school-aged children protein foods are completely excluded from the menu. In the list of allowed foods are vegetables, fruits. So to build cells and growth of the body the child needs 120 mg of tyrosine per kilogram of mass per day. Vitamins C, B6 and B1, folic acid, iron, calcium and magnesium are also prescribed. The number of calories should be increased in 30% compared with the daily norm of their contemporaries.

TREATMENT OF HEMOLYTIC DISEASE OF THE NEWBORN

Pernecky S., Pushkov A. – the 3rd year students

Scientific leaders - E.P.Ivanova, O.I. Katina

Early exchange blood transfusion is the most important means for the treatment of hemolytic disease of the newborn. It should be made in the first 12-24 hours after birth. This includes the timely diagnosis. With exchange blood transfusion hemolyzing antibodies circulating in the bloodstream of the child, the destroyed red blood cells and bilirubinemia are eliminated. Bilirubin is toxic. It prevents cell respiration and the synthesis of phosphorus that is abundant in energy required for the process of respiration. At the same time the child receives fresh red blood cells that are not affected by antibodies remaining in the circulation and antibodies entering from the tissues. By introducing fresh citrate blood the child's body and especially his brain is provided with oxygen.

Blood transfusion should be made with fresh citrate Rh-negative blood of the same group, and, in exceptional cases, with conserved blood with the lapse of time no more than 3-4 days. Stored blood should not be transfused, as it increases the level of potassium. There are some other changes in the balance of electrolytes that can lead to seizures or states of tetanic hyperexcitability. It is better to transfuse heparinized blood as this avoids hyperkalemia and hypocalcemia.

Exchange blood transfusion made in the first 24 hours reduces the mortality rate to 3.5%. Timely exchange transfusion helps greatly to prevent the severe brain damages. After exchange transfusion reasonable hyperregenerative anemia without hemolysis signs often appears. To fight against dehydration a child is prescribed enough fluids orally or parenterally in the first days. Thus they prevent the formation of X-protein. At hemolytic disease of the newborn Shaban recommends to inject 1-2 ml of liver extract with 3 ml of 5% dextrose daily. In addition, and 3 mg of vitamin K, 100-200 mg of vitamin C, 10 mg of vitamin Bi- and 10-20 mcg of vitamin B12 are prescribed. The oxygen is of great importance. After exchange blood transfusion the baby is placed in incubator or has complete rest. On the first day the child is oftengiven 5% glucose with saline solution.

VIOLATION OF PROTEIN METABOLISM AS THE CAUSE OF HEREDITARY DISEASES

Pushkov, A., Park E. – the 3rd year students

Scientific leaders - Doc.Bio.Sc. A.V. Krylov, O.I. Katina

Violation of the metabolism of certain proteins-enzymes or structural proteins is the basis of different hereditary diseases: hemoglobinase, albinism, phenylketonuria, galactosemia, hemophilia, and many others. Violation of any of the enzymatic functions is often associated with not only the lack of the corresponding protein - enzyme, but with the formation of pathologically changed inactive product.

Determination of the activity of many enzymes in the blood, urine, cerebrospinal, seminal and other body fluids is used for diagnosis of several diseases. With the help of this analysis of the blood serum it is possible to detect myocardial infarction, viral hepatitis, pancreatitis, nephritis and other diseases at an early stage.

Abnormalities in the structure of mRNA and tRNA mutations can cause the formation of abnormal proteins. As a result inadequate amino acid affiliates to tRNA and is included in the polypeptide chain during its adjustment (such as in the formation of hemoglobin).

The absence, reduction or excess of activity of any enzyme in humans leads to diseases or death of the organism. So, in the basis of phenylketonuria is the process of turning the amino acid phenylalanine into tyrosine.

The process of translation is complex. Violation of the function of any enzyme may lead to the process when one or the other of the mRNA does not transmit encoded information.

It is very important to detect the disease at an early stage. Therefore, during the first days of life there is a survey - screening of newborns. Most of the diseases associated with the violation of the structure of amino acids or proteins can be successfully treated with a specific diet. Due to this the child will grow healthy. For example, with the detection of elevated levels of phenylalanine and other substances the cause is determined. If it is phenylketonuria, the child is administered a treatment in the form of a special diet. Also it is possible to use the replacement therapy aimed at changing of the metabolism. Special sweep without phenylalanine are made for children.

PATHOMORPHISM OF DIC IN NEWBORNS

Krasilnikova V. – the 3rd year student

Scientific leaders – Doc.Med.Sc. I. Yu. Makarov, A.I. Petrakov, O.I. Katina

DIC (disseminated intravascular coagulation, consumption coagulopathy, thrombohemorrhagic syndrome) — is an impaired blood clotting because of the massive release of thromboplastic substances from tissues. For this pathology blood coagulation with the formation of aggregates of blood cells and microclots, blocking blood circulation, is characteristic.

Violation of hemostasis in the system mother-fetus occur more often when placental abruption, amniotic fluid embolism, eclampsia and pre-eclampsia, induced abortion, fetal death, intrauterine infection, molar, rupture of the uterus, prolonged childbirth different etiology, transfusion insufficient blood, significant placental bleeding, etc.

There are predisposing factors contributing to the development of DIC in newborns: the underdevelopment of the reticuloendothelial system, the lack of vascularization in the

microcirculatory level, the lack of ability of liver compensatory synthesis of coagulation factors of the blood of fibrogenesis, vitamin K-dependent factors, AT-III and plasminogen.

The morphological changes in DIC consist in the presence of fibrin thrombi and emboli in blood vessels of various organs, especially in small arteries, veins and capillaries. Blood clots are in the vessels of the brain, lung, kidney, placenta, and occasionally in the blood vessels of the gastrointestinal tract, the thymus gland. The walls of small arteries are exposed to mucoid swelling and fibrinoid change. Coagulation necrosis and desquamation of endothelium occur. There may be the thrombosis of large vessels. For example, there is often the thrombosis of the sinuses of the dura mater, thrombosis of the arterial duct extending in the aorta, and thrombosis of renal veins.

DIC is a frequent and severe complication of various pathological processes of the perinatal and neonatal periods. It is noted in 36-50% of all cases of perinatal death.

CRYING CAT SYNDROME

Krasilnikova V., Chernushevich D. - the 3rd year students

Scientific leaders – Doc.Biol.Sc. A.V. Krylov. O.I. Katina

The crying cat syndrome (purring) or Lejeune's syndrome (cri du chat syndrome) (1963) – is a rare genetic disorder provoked by the absence of a fragment of the 5th chromosome. Karyotype 46 XX or XY, 5P-. The French pediatrician Jean Lejeune studied the disease in details. Thus a newborn has an unusual cry, which is similar to meowing of a cat. Lejeune's syndrome – is a rare disease often occurring in girls. Any damaging factors acting either on the reproductive cells of the parents, or to a fertilized egg during its fragmentation and the formation of the zygote can cause a mutation that leads to the development of the cri du chat syndrome.

Pregnancy with a child who has a crying cat syndrome may be completely normal. The disease is diagnosed on the basis of the complex of characteristics and cytogenetic studies. It is the "cat cry" that is a symptom characteristic only for the Lejeune's syndrome. It is heard in the first days of life, as the defect of the larynx was formed during the fetal development. The cry has more high tones than in normal children. And, according to the description of pediatricians and parents, it resembles the meowing of a hungry kitten.

The prognosis is usually unfavorable. But with an adequate education children can learn to read and write, and perform simple tasks.

FOOT GANGRENE AS A COMPLICATION OF DIABETES

Rodionenko K., Askerova A. - the 3rd year students

Scientific leaders – Doc.Med.Sc. I.Y. Makarov, O.I. Katina

Diabetes is one of those pathologies against which a variety of complications and secondary diseases often develop. Disappointing medical statistics shows that every second patient attending endocrinologist for diabetes has a number of related problems in his medical history.

One of the most difficult late complications in diabetes – is gangrene: local necrosis due to deterioration of the peripheral circulation.

Causes of gangrene in diabetes and factors associated with the appearance of gangrene in diabetes may be as follows:

- embolism due to atherosclerosis and ischemia;

- slow regeneration in diabetic patients. Due to this even small wounds become infected that contributes to the development of infectious gangrene;
- polyneuropathy developing as a result of disruption of glucose metabolism (lose the functionality of the microvessels of the nerve trunks, because of what cells are affected to premature aging and necrosis);
- violation of bone formation process (this leads to osteoporosis and aseptic necrosis);
- reduced immune status;
- the excess weight;
- tight uncomfortable shoes;
- smoking.

Typically, diabetic patients have reduced pain threshold. And they cannot notice the appearance of ulcers and wounds, cracks, calluses on the body. Meanwhile, there are pathological processes in the affected area - infection with pathogenic bacteria and fungi, seizure of larger area of tissue. Sensitivity loss is due to chronically elevated levels of sugar. It leads to poisoning of the organism and death of nerve endings that transmit pain signals and control sensitivity.

Nerves responsible for sweating also perish. That leads to constant dryness of the skin, the appearance of cracks and promotes active proliferation of pathogenic organisms.

If left untreated due to complications on internal organs, gangrene is fatal. But sometimes even the timely reference to the doctor does not help to save the dead tissue. In uncared cases there is only one method of radical treatment of gangrene - amputation of the affected limb. Relatively successful clinical situations are those when at diabetic gangrene surgeons have to amputate only a finger phalanx. Sometimes amputation of the affected foot is exposed to the knee or higher.

When gangrene the lower limbs are mostly affected, rarely other areas of the body - arms or trunk are affected.

EUTHANASIA - PROS AND CONS

Makarova A., Yaroslavtseva A. - the 3rd year students

Scientific leaders – V.V Grebenyuk, O.I. Katina

Euthanasia is the practice of termination of human life, suffering from an incurable disease and experiencing unbearable sufferings.

In Russia euthanasia is prohibited and is qualified as murder.

Where is euthanasia officially authorized? There are four places where this resolution operates - Nederland, two parts of America, and the Northern Territory of Australia. Only in Northern Territory euthanasia is officially permitted by law, Oregon (statute) and the two parts of the United States (decisions of the Appeal Courts of the Second Circuit (New York, etc.) and the Ninth Circuit (California, Oregon, and others.) ousting prohibitions established by law), a doctor may prescribe the drugs causing the death to the patient, but he is not allowed to give them by himself. In the Netherlands, physician-assisted suicide and active (voluntary) euthanasia is prohibited by statute, but allowed in practice. According to the Court, the doctor euthanatized (or contributed to suicide) his patients in certain circumstances is admitted to be not guilty. These laws and policies set three conditions:

- 1) euthanasia must be voluntary,
- 2) only a doctor can provide assistance or carry out euthanasia,

3) state of the patient should be medically unsatisfactory.

Among the students of the Amur State Medical Academy a questioning aimed to reveal the attitude of medical students to euthanasia was conducted. They were asked to answer three questions:

- What is your attitude towards euthanasia?
- Would you be able to carry out euthanasia legally?
- Is it advisable to permit euthanasia in our country?

On the first question 41% of respondents answered positively and 59% are opposed to euthanasia.

On the second question 37% of respondents answered "yes", explaining it this way: "with the consent of the patient; if the situation is hopeless, to eliminate the suffering of a patient". 63% replied negatively, explaining it as follows: "No, because we are doctors and must heal, but not kill; no one has the right to decide whether to live or die; because it is a murder; because of religious beliefs".

On the third question 4% of the students agreed that euthanasia should be permitted in our country. And 96% answered against allowing euthanasia, explaining it by the fact that our country is not ready for this.

On the basis of the study it can be concluded that the majority is against euthanasia and consider it to be unacceptable. The essence of euthanasia contradicts to the Hippocratic Oath: "I will not let anybody a deadly drug if asked me and will not show the way for such a plan".

ISCHEMIA

Hertek S. – the 3rd year student

Scientific leaders – M. E. Ostykova, O. I. Katina

Ischemia is an imbalance between the inflow of arterial blood to the tissues and organs and the need for it. The need in blood supply is always higher than the actual flow of blood through the arteries. The cause of ischemia may be: compression of blood vessels, narrowing or occlusion of the lumen from inside, the action of vasoconstrictor biologically active substances as well as the influence of chemicals able to cause the contraction of arterial smooth muscles and narrowing of the artery.

Clinical signs of ischemia are the decrease in the number and diameter of visible blood vessels and decrease of their blood quantity, blanching of organ tissue due to decreased volume of arterial blood, decreased pulsations power of blood vessels, reduction of lymph formation, decreased volume of an organ, changing in the diameter of microcirculatory vessels.

Consequences of ischemia are hypoxia and excess in the tissues of the products of disturbed metabolism, ions, biologically active substances formed during ischemia. Ischemia of such organs as the brain, heart, kidneys can lead to the death of the organism.

COMPARATIVE STATISTICS OF THE INTERNET USE BY SCHOLARS IN THE AMUR REGION AND THE JEWISH AUTONOMOUS REGION

Salomatova E., Trofim V. - the 5th year students

Scientific leaders – Doc.Med.Sc. L.N. Voight, O.I. Katina

Internet addiction disorder is often called the problematic Internet use (PIU). It is determined as excessive computer use that interferes with daily life.

Problematic Internet use is also called compulsive Internet use (CIU), or pathological computer use, or Internet addiction disorder.

Epidemiology

Over the past decade, the concept of Internet addiction has increased in terms of its affiliation as a legitimate clinical disorder that often requires treatment. Researchers argue over whether Internet addiction is a substantive disorder or a symptom of another underlying disorder. There is also debate over whether it should be classified as an impulse-control disorder or an obsessive-compulsive disorder rather than an addiction.

While the existence of Internet addiction is debated, self-proclaimed sufferers use the courts for compensation.

About 25% of users have criteria of Internet addiction within the first six months of using the Internet. Many individuals initially report of being psyched by the computer but gradually they feel a sense of "competency and exhilaration from mastering the technology and desire to learn quick navigation between the applications by visual stimulation".

Public concern, interest and the study with the use of Internet may be due to the fact that it has become increasingly difficult to distinguish between the online and offline worlds. The Internet has tremendous potential to affect the emotions of humans and so to alter our self-perception and anxiety levels.

According to Maressa Orzack, director of the Computer Addiction Study at Harvard University's McLean Hospital, between 5% and 10% of Web surfers have some form of Web addiction.

According to the Center for Internet Addiction Recovery, "Internet addicts suffer from emotional problems such as depression and anxiety-related disorders and often use the fantasy world of the Internet to psychologically escape unpleasant feelings or stressful situations". More than half of them are also addicted to alcohol, drugs, tobacco, or sex.

Scientists have found that compulsive Internet use can produce morphological changes in the structure of the brain.

DIET IN HOT CLIMATES

Azadov S., Makarova A. – the 3rd year students
Scientific leaders - N.V. Korshunova, O.I. Katina

Lack of knowledge about the mechanisms of adaptation and acclimatization in regions with hot climates may be hazardous for the health, especially for those who visit tropics and subtropics. At low latitudes the formation of as specific diseases - heat losses so as an increase in the number of cases occurring in all climate zones is possible. Particularly these are neuropsychiatric disorders, diseases of the skin, trauma, urolithiasis, ARVI, diseases of the cardiovascular system, especially in persons over 45 years.

Rational diet takes an important place in the complex of measures for adapting to the heat.

Food: diet should take into account the peculiarities of the action of heat on the human body. In hot climates the body has to release heat to ensure thermal balance. Therefore, the basal metabolic rate is reduced as by the decrease of caloric intake so as by the decrease of heat production.

While thinking of a diet in a hot climate one should especially consider the metabolism of protein and minerals. If you are in the desert or semi-desert, first of all

protect yourself from UV rays by all possible means. They affect the metabolism and may become a cause of poor work of digestive glands and reduce the acidity of gastric juice. If you are intended to get rid of extra kilos, remember that in the summer it is more easily to lose weight.

Ration in hot climates should contain the optimum amount of proteins, water soluble vitamins and minerals, and less saturated fat. At the same time, in hot climates, try to reduce protein intake, otherwise it will lead to excessive heat load and increase thirst.

Conversely carbohydrate intake is considered to be useful as they reduce the need for protein, the body overheats slowly, and due to reduction of urination the organism will lose less moisture. It is also important to increase endurance. It can be done with the help of special tools and drugs.

But the fact that high temperatures reduce appetite is not secret. Delicious food, spices and various hot dishes and snacks, green tea half an hour before the main meal will help you to increase appetite. Also remember that it is advisable to keep strictly to the diet and eat at a certain time.

REGENERATION. ITS IMPORTANCE FOR THE ORGANISM

Oorzhak Ch., Damchat A., Kungaa A. – the 3rd year students

Scientific leaders – S.S. Perfilieva, O.I. Katina

The report is devoted to the study of general information about the regenerative processes, its types and mechanisms of occurrence in different levels of the organization, violations of regeneration progress.

It should be noted that the regeneration is the ability of living organisms eventually repair the damaged tissues and organs. It is of two kinds: physiological and reparative.

The report describes in detail as the physiological regeneration due to which it is always possible for a body to perform various functions and reparative regeneration responsible for the recovery of organs and tissues destroyed during injury or pathological changes.

The main aim of the work is to reveal the processes of regeneration at all levels of organization of living matter: molecular, subcellular, cellular, tissue and organ levels.

The study of regeneration is very important in our time. Knowledge of regulation mechanisms of the regenerative ability of organs and tissues gives the prospects for the development of scientific bases of stimulation and control over the recovery processes.

CHILDREN'S HEALTH GROUPS

Barabash A. – 3rd year student

Scientific leaders – Prof. N.V. Korshynova, O.I. Katina

Every day the hospital admits a large number of children. In order to assess human health adequately, to provide him with necessary medical care and optimal range of medical services health groups were developed. Their criteria take into account the state of health of the younger population. Health groups represent a scale that is used in determining the state of the body and the development of a growing person. Each item of this scale also counts the risk factors that affect or influence the condition. In accordance with this scale a preliminary forecast for the future is done. But the health group given by a local pediatrician may be changed in a time.

CARDIAL LIVER CIRRHOSIS

Lytsuk V., Barabash A. – the 3rd year students

Scientific leaders – Doc.Med.Sc. I.Y. Makarov, A.I. Patrakov, O.I. Katina

Liver cirrhosis is a chronic disease accompanied by irreversible replacement of the parenchymal tissue of the liver by fibrous connective tissue or stroma. One of the secondary liver cirrhosis is cardiac one. Etiological factor in the development of this type was not a primary liver pathology but the diseases of another organ – in this case the hearts. Heart failure in its last stages leads to liver cirrhosis. They distinguish left and right ventricular failures of the heart. Whereby, the stagnation in the systemic circulation develops. In the result of it there is the development of this disease. It is difficult to identify the signs of cardiac cirrhosis at an early stage. It is almost impossible to establish the cause of cirrhosis by the symptoms. This type of cirrhosis is characterized with the same signs as other types. Macroscopically the liver is enlarged, dense, its edges are rounded, and the cut surface is mottled, gray-yellow. Microscopically there is a remarkable increase of periportal areas with fibrosis around the proliferating cholangioma, intralobular fibrosis around intralobular cholangioma with dissociation of the liver cells. Mainly in cardiac cirrhosis the outcome is not favorable. In most cases the period of life of the patient is no more than 3 years.

PATHOPHYSIOLOGY OF STRESS

Kolesov B., Volodina I. – the 3rd year students

Scientific leaders – Doc.Biol.Sc. N.A. Ishutina, O.I. Katina

Stress is a set of protective and damaging body reactions appearing due to neuroendocrinal and metabolic changes in response to the emergency or pathological factors manifested in the adaptation syndrome.

Factors causing stress reactions are called stressors. They vary in the strength, duration and specificity. But their primary role in vivo is to mobilize non-specific biological response, i.e. stress.

Stress arises not only under the influence of strong or extraordinary stimuli, but also weak, long and recurrent.

When stress, the sympathetic-adrenal system is initially activated resulting in an increase of catecholamines (adrenaline and noradrenaline) in blood levels. They provide a rapid transition of an organism from a calm state into a state of excitement, often of quite prolonged duration.

At present stress is established to be accompanied with functional (neuroendocrine, metabolic) and morphological changes. The role of stress as the main etiological factor of ulcerative lesions of the gastric mucosa, hypertension, atherosclerosis, disorders of structure and function of the heart, formation of immunodeficiency states and malignant tumors, metabolic disorders was proved.

Tranquilizers are widely used in stress situations and their prevention. Benzodiazepines and anti-oxidants, the food antioxidant ionol, and vitamin E inhibit the lipid peroxidation so characteristic for stress.

HYGIENE OF WORK OF HEALTH PROFESSIONALS

Yaroslavtseva A., Volodina I., Kolesov B. – the 3rd year students

Scientific leaders – Cand.Med.Sc. D. A. Semenov, O. I. Katina

The work of doctors has its specificity as daily and night duties, absence of fixed lunch breaks, busiest working day, violation of working, resting and feeding regimens.

The professional activities of doctors are indicated with great nervous and emotional stress associated with the responsibility for the life of the patient and the need to take immediate important decisions for the life of patients.

But there are new hazardous factors for doctors: ionizing, laser and ultraviolet radiation, ultrasound and ultra-high-frequency fields, high and low atmospheric pressure, as well as the impact of aerosol antibiotics, anesthetics and other drugs.

Each specialty has its professional diseases. But there are some common disorders which degree varies slightly with the specialty.

The leader on the detection is viral infections that can be caught anywhere. Second place among the professional disorders of medical staff is for allergic diseases. The third place among the professional disease of doctors is divided between intoxication and diseases of the musculoskeletal system.

The main prevention areas: optimization of work and rest (especially the staff of health facilities of hospitals, surgical nurses), creating of optimal microclimate conditions, prevention of air pollution, radiation safety. When the occupational disease risk, a health worker should change a specialty.

GANGRENE

Makarova E., Volodina I., Kolesov B. – the 3rd year students
Scientific leaders – S.S Perfilieva , O.I. Katina

Gangrene is tissue necrosis contacting with the external environment. The tissue becomes gray-brown or black. It is associated with the conversion of blood pigments into iron sulfide. There are dry and wet gangrene.

When dry gangrene the dead tissue exposed to air becomes dry, consolidate crimple. It reminds a mummy cloth. Therefore dry gangrene is also called mummification. Dry gangrene occurs in tissues poor with moisture. For example: dry gangrene of the limbs in atherosclerosis and thrombosis of its arteries (atherosclerotic gangrene), with frostbite or burns, dry gangrene of fingers in Raynaud's disease or vibration disease, skin - in infections (thypus) accompanied by profound disturbances of trophicity.

In wet gangrene the dead tissue is exposed to putrid microorganisms (*Bac. perfringens*, *fusiformis*, *putrificans*, *histolyticus*, *proteus*.). It swells, becomes edematous and emits a fetid odor. Wet gangrene usually develops in the tissues that are rich in moisture. Its emergence is stimulated by blood circulation disorders (venous stasis) and lymph (lymphostasis, swelling). Wet gangrene occurs in the lungs worsening the inflammatory processes (pneumonia), in the gut with obstruction of mesenteric arteries (thrombosis, embolism). In children suppressed by infectious disease (usually measles) wet gangrene of the soft tissues of the cheeks, the perineum may develop. It is called noma (from the Greek *nome* – water cancer).

Anaerobic gangrene should be distinguished from the dry and wet gangrene. It is an independent infectious disease caused by a group of certain microorganisms (especially *Bac. perfringens*). It often occurs with gunshot and other wounds accompanied by massive destruction of muscles and crushing of bones.

Bedsore is defined as a kind of gangrene - necrosis of the superficial areas of the body (skin, soft tissue) exposed to pressure. Therefore, bedsore usually appear in the area of sacrum, spinous processes of the vertebrae, the greater trochanter of the femur.

PHENYLKETONURIA

Yusupova N., Shishmaref V. – the 3rd year students

Scientific leaders – Cand.Med.Sc. N.N. Dorofienko, O. I.Katina

Phenylketonuria (PKU) is a serious hereditary disease occurring due to a congenital defect of the enzyme responsible for the normal metabolism of phenylalanine (phenylalanine is one of essential amino acids included in the protein). The disease is inherited in an autosomal recessive type.

The etiology and pathogenesis. As a result of mutations of the gene controlling the synthesis of phenylalaninehydroxylase, the metabolic block at the stage of conversion of phenylalanine into tyrosine develops. So the basic way of phenylalanine conversion becomes deamination and the synthesis of toxic derivatives - phenylpyruvic, phenyl-lactic and phenylacetic acids. The content of phenylalanine significantly increases in the blood and tissues (0.2 g/l or more at the rate of 0.01-0.02 g/l). A significant role in the pathogenesis of the disease is insufficient synthesis of tyrosine that is a progenitor of catecholamines and melanin.

Treatment. The main method of treatment is diet restricting the intake of phenylalanine; it must be kept immediately after diagnosis. With early diagnosis it guarantees the normal psychological development of a child. Keeping to the diet in the later stage will not return a normal intellect to a child. If this disease is diagnosed on mental retardation but not immediately at birth, it cannot be cured.

Prevention of phenylketonuria:

1. The detection of heterozygous carriers. The special supervision of families at risk is of great importance, i.e. such families where there were already children with phenylketonuria. Newborns of these families should be subjected to mandatory biochemical studies and the indications for early treatment.

2. The introduction of mass screening of newborns for early detection of phenylketonuria and the timely administration of the diet. The identification and treatment of children in mass screening also allows to prevent the development of severe mental disability.

3. Prenatal diagnosis: the DNA-probe for prenatal diagnosis of PKU in families at high risk is proposed.

Phenylketonuria is a serious genetic disease that is not common in our country, but sometimes it still occurs. So, with the early detection of disease and proper diet the child with PKU can grow perfectly healthy.

CONSEQUENCES OF FLOOD IN THE FAR EAST IN 2016

Bryunina S., Bugera R. – the 2nd year students

Scientific leaders – Cand.Biol.Sc. L.A.Guba, O.I.Katina

The flood lasted from July to August.

In Seleznevo district 48 areas were flooded. It resulted in river spill.

In Birobidzhan the cause of flooding was a fast uprise of water level in the Tom River due to the displacement of the peak of the rain flood. 47 areas were flooded.

After abundant rainfalls the level of the Bira River began to increase being the cause of flooding in Belogorsk region. Here 53 areas were flooded.

As a result, Belogorsky region suffered the most.

TREATMENT OF BREAST CANCER CONSIDERING RECEPTOR FIELD OF TUMOR AND HORMONAL RECEPTION

Prokofyeva N. – the 3rd year student

Scientific leaders – T.N. Korobkova, O.I. Katina

The incidence of breast cancer is characterized by a tendency to steady increase. Since the end of the last century, the disease is among the leading cancer pathology in women. Each year about 1.5 million new cases of the disease are diagnosed. Breast Cancer - is a heterogeneous group of malignancies. Depending on the type of cancer, its size, location, growth characteristics, presence of metastases, and some other parameters the tactics of treatment and prognosis of the disease will vary. One of the manifestations, indicating the breast cancer, is the type of expressed (presented on the cell surface) specific receptors of tumor.

The main receptors in the membrane of breast tumor cells include: estrogen receptor, progesterone receptor and receptor of epidermal growth factor (EGFR) with its HER2 tyrosine protein kinase family of epidermal growth factor receptor.

According to the type of hormone receptor on the surface of tumor cells 2 types of breast cancer are defined: hormone-dependent and hormone-independent. About 75% of all breast cancers are hormone-positive. This means that there are receptors on the membrane of tumor cells. And they can connect with the receptors of the female sex hormones. Hormones play an important role in the regulation of normal growth and development of breast cancer, as well as its tissue homeostasis. However, the role of hormones is twofold. The stimulating effect of hormones on the growth of malignant tumors was revealed.

The last two decades have led to a breakthrough in the treatment of breast cancer - preparations of punctuate affection on the modified cancer cells are included in clinical practice. They are called "targeted" - or drugs of target. They affect the molecular structures - external and intracellular receptors, proteins produced by tumor cells and blood vessels growing around the tumor. These are the "targets" of functioning of tumor cells. And their defeat leads to the death of the latter. Since 1990 about 15 targeted therapies have been registered.

Hormone therapy in breast cancer aims to deny the possibility of hormones to influence the cells. Drugs of one of the three major schemes of hormone therapy are used. They differ in mechanisms of action:

1) reduction of estrogen levels in blood by reducing the functioning of the organs that produce it (ex. ovarian) or inhibiting the production of estrogen by using an aromatase inhibitor (Femara, Arimidex, Aromasin);

2) blocking the estrogen receptors (tamoxifen);

3) the destruction of estrogen receptors (faslodex).

Hormone therapy can increase the effectiveness of other cancer treatments (surgery, radiation therapy, and chemotherapy) reducing the risk of relapse. At present hormone therapy is not used as independent method of treatment.

HER2 receptors – are protein molecules located on the cell surface. Normally due to them the body controls the process of growth, division and recombinational repair of

healthy breast cells. Approximately 25% of patients with breast cancer have an increased content of similar receptors. As a result the cell receives commands to increased cell division and begins to grow and multiply in an uncontrolled manner. This cancer is called HER2-positive and is characterized by an aggressive course, early metastasis, resistance to chemotherapy and hormone therapy. The drug called Trastuzumab (also known as Herceptin) was developed for the treatment of HER2-positive breast cancer. It is a kind of monoclonal antibody. Herceptin attaches to the HER2 protein and prevents human epidermal growth factor to achieve breast cancer cells and stimulate their growth. Herceptin is only effective if a person has a high level of HER2 protein. At present targeted therapy is the most promising direction in oncology. As with its use it is possible to realize an impact on determining mechanisms of tumor development minimizing the damage of healthy tissue. In the world a number of new targeted therapies for the treatment of breast cancer were developed. They include lapatinib, pertuzumab, T-DM1, neratinib, afatinib.

NEUROCYSTICERCOSIS

Aniskova Y. – the 5th year student

Scientific leaders – T. A. Dolgykh, O.I.Katina

Cysticercosis is biohelminthosis caused by parasitizing with larval stage of *T.Solium- cysticercus* inside human's tissues and organs. The infection is a result of autosuperinvasion or catching the parasite's eggs. Brain cysticercosis is widely spread in the Southern and the Central America, the Africa, India, China, Ukraine, Belorussia, Georgia, Siberia. As for the Western Hemisphere, it is spread from Mexico to Chili. For example, in Mexico about 10 % of hospitalizations and above 25 % of skull trepanation are based on this disease.

Clinical manifestations of this helminthosis are quite diverse. They depend on localization, quantity and development stage of the parasite. Personal responsiveness of human organism also matters.

41-82 % of accidents are the result of cysticercus being inside the brain. When the parasites are located in large brain hemispheres arachnoidite takes place. The affliction starts with sudden consequently increasing accesses of high ICP with light intervals which can last for months and years. These accesses are accompanied with headache, emesis, convulsions, paralytic strokes, paresis, Jacksonian's epileptic seizures. Also there can be periodic psychiatric disorders as delirium and hallucinations. Eventually the infected person gets mental problems and loop of intellect. Basal brain surface syndrome has the same symptoms as arachnoidite does. The last one spreads over cranial nerves, cerebral peduncles, bottom of the III cerebral ventricle. Liquor drainage breaks down and hydrocephaly begins. Sometimes it causes additional cerebellar problems. Located in the IV cerebral ventricle cysticercosis is shown by a hypertensive syndrome. There signs of damaging V, VI, VIII craniocereberal nerves appear. Breath violations are frequent. Sudden death is possible.

The diagnosis is determined on the basis of the anamnestic, clinical, epidemiological and laboratory data. And it is confirmed with instrumental and immunological researches. To identify cerebral lesions CT and MRT, angiography, ultrasonic investigation of brain are used. In the cerebrospinal fluid there is pleocytosis with prevalence of eosinophils and lymphocytes, increased protein level. Later when calcifying the cysticercus, they can be detected by means of a radiological exploring of cranial bones.

Indications for removing the parasite with trepanation occur when cysticercus settles inside cerebral ventricles and may cause peracute obstruction of liquor canals. In case of localization in other departments of the brain antihelminthal therapy is used. As indications for surgical intervention are less due to dissemination of the process and intensity of inflammatory changes.

Considering serious course of this disease, the adverse forecast, need of lifelong observation and treatment of patients, it is required to pay much attention to developing of nonspecific methods of prophylaxis and new ways of maintaining patients with a neurocysticercosis.

SODOKU

Fedotov S. – the 5th year student

Scientific leaders – T.A.Dolgikh, O.I.Katina

Sodoku - is a zoonotic disease from the group of wound infections caused by spirillae and characterized by recurrent fever, lymphadenopathy, and rash.

The first descriptions of the disease associated with the bite of rats appeared in Japan for more than two thousand years ago (*so* – “rat”, *doku* – “poison”). The cases of infection were registered in the US, Western Europe, Australia and Africa. But the highest infestation of rats is in East Asia. The disease can lead to serious consequences such as affections of the CNS (paresis, paralysis, mental disorders), the heart (myocarditis, endocarditis, pericarditis), the respiratory system (spirillizion bronchopneumonia), kidneys (nephritis).

The causative agent of this disease is *Spirillum minus*, kind *Aquaspirillum*.

The main source of infection is the rats. Spirillums are the saprophytic inhabitants of the oral cavity of a rat and they are detected in the blood and viscera. Also, the other sources of infection are rodents, dogs and cats. The infection can be transmitted from the one animal to another through bites, eating spoils of animals died from sodoku, through milk and transplacental. A sick person is not contagious, but the infection of the recipient is possible by the transfusion of infected blood. Human susceptibility to sodoku is high. Most often the sporadically cases occur among hunters, plumbers, slaughterhouse employees.

The incubation period – is from 3 days up to 2 months. The disease begins acutely with increasing the body temperature to 39-40 ° C, chills, headache, joint and muscle pain. At the site of the bite there is a hyperemia area with the painful seal in the center (primary affect). Then in its place a vesicle appears resulting in a deep ulcer with pitted edges. It cicatrizes in a few days. There is a regional lymphadenitis and lymphangitis. Febrile seizure lasts 4-7 days. At 5-7 day a critical drop of temperature is marked being accompanied by a collapse. Another attack takes place as the previous one, but with the absence of the ulcer. On the background of fever rash appears first on the site of the bite and then it spreads as throughout the body, so as one-sided, in the form of a “sleeve”, “half-trousers”, “jacket”. Polymorphism of rashes is characteristic. Totally from 5 to 20 febrile episodes separated by apyrexia periods are noted. Such a long course of the disease exhausts patients. Against this background cachexia is registered. Also the joining of bacterial infections and death is possible. Severe course is characterized by intoxication syndrome, as well as the possible development of multiple organ failure.

Pathogen is found in the blood under phase contrast microscopy or in the dark field. A thick drop of blood is analyzed. Serological methods – are the reaction of spirillae lysis

with the serum of patient's blood, RA, RW. Biological samples are also used on white mice or guinea pigs.

The penicillins, cephalosporins III generation, carbapenems, tetracyclines are used as a causal therapy. Prognosis is mostly favorable.

Thus, considering the diversity of clinical forms of sodoku, it is necessary to pay attention to the differential diagnosis with other infectious diseases. The paramount importance at diagnosis should be given to the collection of epidemiological anamnesis.

FASCIA OF LOWER LIMBS AND THE SPREAD OF PYOGENIC INFECTIONS

Lobanova N., Grichanovskaya K. - the 2nd year students

Scientific leaders – Cand.Med.Sc. S.S.Seliverstov, O.I.Katina

Fascia – are membranes of fibrous connective tissue covering the muscles, blood vessels, nerves, some internal organs and forming them fascial bed, vagina, and lining cellular spaces. In the lower limb the following fascia are identified: gluteal, iliac, wider, shin fascia and the fascia of the foot.

Purulent infection – is an inflammatory process of various localization and nature. It takes one of the main places in the surgical clinic and makes the essence of many diseases and postoperative complications. A third of all surgical patients have purulent-inflammatory diseases.

A number of fasciae promote or prevent the spread of purulent processes. Fasciae of muscles counteract the spread of pus or blood, and fasciae of neurovascular bundles contribute to the spread of pus from one area to another. Fasciae are involved in the formation of anatomical channels both in normal and pathological conditions.

The doctrine of the fasciae and cellular spaces is important for understanding the dynamics of the spread of purulent processes and foundation for the selection of rational sections for draining abscesses. These processes are developed and distributed in the subcutaneous and intramuscular fat, in the course of vaginas neurovascular bundles, through fascial and interfascial fissurae.

Purulent processes in the lower limbs extend in a downward direction and are typically more severe. There are a large number of cellular spaces, cracks and anatomical channels in the buttocks and on a thigh. They contain important neurovascular structures that communicate with the cellular spaces of adjacent areas. In femoral hernia a channel leading from the abdomen to the front of the thigh is formed.

With a contact distributing of pus purulent streaks, periodontitis, osteomyelitis, septic arthritis, abscesses and phlegmon may develop. The most severe complication of septic wounds is sepsis.

SKIN AS AN ORHAN OF HUMAN IMMUNE SYSTEM

Grichanovskaya K. - the 2nd year student

Scientific leaders - V.S. Kozlova. O.I. Katina

The skin is the largest holistic multifunctional organ directly containgct with the external environment. It consists of epidermis (the epithelial tissue) and dermis (the connecting base).

Epidermis is the external part of the skin. It is represented by stratified squamous keratinizing epithelium. Its thickness varies from 0.05 mm on the eyelids to 1.5 mm on the palms. About 95% of the epidermal cells are keratinocytes (derived from ectoderm). while

cytodifferentiation they edge from basal membrane towards the skin. It consists of five layers:

- the basal layer formed by keratinocytes, melanocytes, Merkel cells, Langerhans cells and cambial cells;
- prickly layer comprising keratinocytes and Langerhans cells;
- granular layer consisting of 3-4 layers of oval shaped keratinocytes where proteins keratin, filaggrin, involucrin and keratolinin are synthesized;
- lucid layer formed by flat keratinocytes;
- horny layer consisting of horny scales.

The dermis is divided into two layers - the papillary and reticular.

As an immune organ the skin is capable of isolation, pressure, presentation of antigens and the development of local immune response. The skin contains immunocompetent cells of bone marrow origin, such as resident histiocytes, mast cells, Langerhans cells, lymphocytes and granulocytes.

Langerhans cells induce antigen-specific T-cell activation and promote the generation of cytotoxic T-lymphocytes (CTL). Due to the antigen-presenting ability these cells play a decisive role in the contact sensitization and immune defense against viruses.

T-cells make up 90% of all skin lymphocytes and are located primarily in the upper layers of the epidermis and dermis. A small part of B-lymphocytes is found in the medium and the deep dermis. A small number of antigen-specific T-lymphocytes are believed to be in the same areas of former sensitization for a long period being the substrate of specific immunological memory.

During inflammation keratinocytes begin to express antigens HLA - DR and produce cytokines promoting the development and modulation of immune and inflammatory responses.

The skin is often affected in primary and secondary immunodeficiency. At the same time, the immunological structures of the skin allow it to carry out some of the pathological processes independently.

There is an expressed antigenic stimulation of the skin as the barrier organ. Other endogenous and exogenous factors can cause damages of one or several parts of the immune system of the skin. It results in many immunopathological manifestations. All types of immunopathological reactions can be implemented in the skin. That can be observed in a number of various dermatoses.

ENZYMES MARKERS OF MYOCARDIAL INFARCTION

Dudnik M., Grichanovskaya K. - the 2nd year students

Scientific leaders - E.V. Egorshina, O.I. Katina

Myocardial infarction is ischemic necrosis of the area of cardiac muscle appearing due to balance disturbance between the myocardium need of oxygen and its delivery through coronary vessels. The main reason for increasing the activity of enzymes in the serum content in patients with acute myocardial infarction is the destruction of cardiomyocytes and passage of free cellular enzymes into the blood.

On admission of a patient to a hospital after manifestations of clinical signs of myocardial infarction it is necessary to determine the activity of some enzymes: creatine kinase (CK) and its isoenzyme (CK-MB), lactate dehydrogenase (LDH) and its isoenzymes (LDH1-2), aspartate aminotransferase (ASAT), and also cardiospecific markers (troponin of T and I).

At infarct development the increase of KK activity in the blood is noted usually in 6-8 hours after an attack. By the end of the first days the enzyme level exceeds the norm in 3-20 times. In 3-4 days after the onset of a disease it returns to reference values. The increase of KK activity in the blood is determined almost at all patients with myocardial infarction.

Lactate dehydrogenase (LDG) – is a cytosolic protein with five isoenzymes. Because of late concentration increase in the blood serum the LDG marker isn't used at early diagnostics of a myocardial infarction. Rising of the general activity of LDG at a myocardial infarction is caused by augmentation of activity of its isoenzyme - LDG 1.

The diagnostic criterion is not only an increase in the activity of isozymes but also a change of relation of LDG1 / LDG2. In patients with myocardial infarction it is 0.76 or above at normal rate of 0.45-0.74. The sensitivity of this index as a diagnostic of myocardial infarction test is 40-95% and specificity - 85%.

Aspartate aminotransferase (AST) - is contained in large amounts in the liver and has a low specificity for myocardial necrosis. For the diagnosis it is used in combination with the sensitivity and specificity markers. Normally, the blood concentration of ACAT in women is less than 31 U / l, in men - less than 37 U /L.

Troponin complex, found in the composition of the thin filaments in muscle contractile apparatus, consists of three protein subunits: troponin I, troponin T and troponin C. The concentration of cardiac troponin I in the blood used in the diagnosis of myocardial infarction increases in 4-8 hours after the cardiac muscle damage. And it remains high for several days.

KIDNEY ENDOCRINE APPARATUS

Zhorov N. – the 2nd year student

Scientific leaders – Cand.Med.Sc. D.A. Semenov, O.I.Katina

Endocrine kidney apparatus is a differentiated cell complex, located in the vascular pole of the glomerulus between the afferent and efferent glomerular arterioles with closely adjoining departments of the distal tubule.

Kidney endocrine apparatus includes juxtaglomerular apparatus (JGA) releasing renin and erythropoietin, interstitial cells (IC) of medulla producing prostaglandins, as well as the external layer of JGA capsule. There are four components in this apparatus: granular epithelioid cells (juxtaglomerular cell); thick spot cells; Goormaghtigt cells; mesangial glomerular cells.

Juxtaglomerular cells are located beneath the endothelium in the wall of the afferent and to a lesser extent – efferent arterioles. They are oval and contain in the cytoplasm renin granules, isolating them into the blood. Renin contributes to the increase of blood pressure catalyzing the formation of angiotensin that has vasoconstrictor action.

Thick spot – is a wall portion of the distal area of nephron that is at the renal corpuscle between the afferent and efferent arterioles.

Juxtavascular cells (Goormaghtigt cells) are located in the area of vascular pole of renal corpuscles, in the triangular space between the afferent and efferent arterioles and thick spot. Goormaghtigt cells are a kind of mesangiocytes - the so-called extraglomerular mesangia. Mesangiocytes have contractile microfilaments and receptors for vasoconstrictor substances. Juxtavascular cells and mesangiocytes begin to produce renin at exhaustion of juxtaglomerular cells. But besides renin juxtaglomerular apparatus of the kidney produces erythropoietin - erythropoiesis stimulating factor.

Kallikrein-kinin system of kidneys is presented by nephrocytes distal tubules, which produce the enzyme kallikrein. After the secretion into the lumen of the distal tubule it interacts with kininogenom resulting in the formation of biologically active compounds - kinins. As prostaglandins kinins have pronounced vasodilative properties.

FORM OF A CHEST AT THE AGE FROM 16 TO 25 YEARS

Bugera R., Brunina S. – the 2nd year students

Scientific leaders – Cand.Med.Sc. S.S.Seliverstov, O.I.Katina

Depending on the constitutional type there are normosthenic, asthenic and hypersthenic forms of the chest in healthy people.

Normosthenic (conical) chest resembles a truncated cone with the base facing upward. Epigastric angle (between the costal arches) is 90°. Scapulae contour unsharply.

Asthenic thorax is flat, narrow, elongated (anterior-posterior and lateral sizes are reduced). Epigastric angle is less than 90°. The shoulders are lowered, the muscles of the shoulder girdle are underdeveloped, and scapulae are decline from the back.

Hypersthenic chest wide and resembles a cylinder. Epigastric angle is oblique, scapulae closely adjoin the chest. Its musculature is well developed. Epigastric angle is more than 90°.

MENINGOCOCCAL DISEASE

Zhumikova Ju. - the 5th year student

Scientific leaders – O.S. Yutkina, O.I. Katina

Meningococcal disease is a bacterial infection causing two very serious illnesses: meningitis and septicemia.

CLINICAL MANIFESTATIONS. Many people carry the bacteria in their noses and throats without any clinical manifestations. They are called healthy carriers. Healthy carriers can spread the bacteria to other people.

Meningococcal disease generally occurs in 1–10 days after the infection and results in meningitis in $\geq 50\%$ of cases. Meningococcal meningitis is characterized by sudden onset of headache, fever, and stiffness of the neck, sometimes accompanied by nausea, vomiting, photophobia, or altered mental status.

Up to 20% of people with meningococcal disease get meningococcal sepsis, known as meningococcemia. Meningococcemia is characterized by a sudden onset of fever and a petechial or purpuric rash. The rash may progress to fulminant purpura. Meningococcemia often involves hypotension, acute adrenal hemorrhage, and multiorgan failure. Among infants and children under 2 years old meningococcal disease may have nonspecific symptoms. Neck stiffness, usually seen in people with meningitis, may not occur in this age group. Other syndromes associated with meningococcal disease may include arthritis, conjunctivitis, otitis media, urethritis, and pericarditis.

DIAGNOSIS. Diagnosis is generally made by isolating *N. meningitidis* from blood or CSF (cerebrospinal fluid) through culture, by detecting meningococcal antigen in CSF by latex agglutination, or by evidence of *N. meningitidis* DNA by PCR.

TREATMENT. Treatment as emergency care usually involves immediate intramuscular injection of benzylpenicillin. And then a patient is transported to hospital for further care. In the hospital the antibiotics are used. As a rule there is a wide choice, usually broad spectrum of cephalosporins of the 3rd generation, e.g., cefotaxime or ceftriaxone.

Supportive measures include infusion therapy, oxygen, inotropic support, e.g., dopamine or dobutamine and decrease of high intracranial pressure. The injection of steroids is possible.

PREVENTION. Several vaccines are registered in Russia: polysaccharide (Meningococcal vaccine A; The polysaccharide meningococcal A + C (meningitis A + C); Mencevax ACWY. Conjugated Vaccine - Menjugate). Vaccinations of children from 2 months to 18 years of high risk groups are carried out.

IL-17 – FRIEND OR ENEMY?

Omelich E., Tiku D., Savelieva K., Danko K. – the 4th year students

Scientific leaders – I.V. Kostrova, O.I Katina

Asthma was once thought to be a uniform disease triggered by one type of immune cell. Researchers are now revealing the complexity of the condition and hope to invent new drugs for unresponsive to steroids forms.

According to textbooks, type 2 helper T cells (Th2 cells) regulate asthma. T-cells are a subset of the white blood cells known as lymphocytes. And asthma attack is considered to occur when Th2 cells secrete a certain set of immune-signaling proteins called cytokines. They inflame the lungs, irritate the chest and cause asthma's characteristic wheezing. However, another cytokine, interleukin-17 (IL-17) that does not belong to Th2's signature set, has been found in lung tissue, sputum and the blood of asthmatic patients. The detection of IL-17 in the lungs of some asthmatics has drawn attention to IL-17-producing cells previously thought unrelated to asthma.

Implicating IL-17 in asthma and proposing new disease subtypes has solved several problems. For example, in many asthmatic patients the eosinophils (other types of white blood cell) accumulate in the lungs. But in individuals with the most severe form of asthma yet another type of immune cell – neutrophils present. Normally, these neutrophils, lured there by IL-17, surround the area of an acute infection or injury to protect the body. In asthma IL-17 appears to draw neutrophils into the lung — but they do not help with their protection. Instead, they worsen asthma attacks.

Furthermore, compared to people with mild asthma, individuals with severe asthma not only have more IL-17, but they tend to have more of the cells known to secrete IL-17, so-called Th17 cells. Research has also shown that in a common treatment for asthma with steroids mice with more Th17 cells get little breathing relief, but severe asthma patients rarely respond to this therapy.

By secreting IL-17 and other cytokines, Th17 cells constrict the lungs' airways. What triggers Th17 cells to churn out these lung-damaging molecules, however, is less well understood.

Another possible factor in the role of Th17 in asthma is vitamin D. This vitamin seems to slow the production of cytokines by Th17 cells. So a vitamin D deficiency may lead to the over-production of cytokines by Th17 cells.

Personalizing asthma treatment

Figuring out what cells produce IL-17 in response to certain stimuli should help to work out new medicines for asthma treatment in patients unresponsive to current steroid therapy. In order to test any new drug, patients must be clearly classified in the forms of the main pathology. Otherwise, a drug tailored for one form of asthma can be ineffective in treating a different form of the disease.

In the United States, the multicentre Severe Asthma Research Program (SARP) has thus far assessed about 1600 patients and outlined three main types of severe asthma.

CAUSES OF PREMATUREITY IN PEDIATRIC PRACTICE

Maltseva I., Buryak L. – the 5th year students

Scientific leaders - Cand.Med.Sc. E.L. Chupak., O. I. Katina

Each year, as a result of spontaneous preterm birth or artificially induced abortion in late pregnancy 5-10% of children of the total number of newborns are born prematurely.

Premature are considered to be children born before 37 weeks of gestation with a birth weight less than 2500 grams and height less than 45 cm. As the World Health Organization suggests viable children are those born weighing from 500g in 22 weeks. Such infants have all the organs, and they can exist apart from the mother.

The causes for the birth of a premature baby can be: genetic abnormalities and fetal malformations; late toxicosis; immunological incompatibility between mother and fetus (Rh-conflict); maternal age younger than 18 and older than 35 years; insufficient or inadequate maternal nutrition before and during pregnancy; general disease of a mother; chronic (cardiovascular diseases and endocrine system, kidneys), acute infectious diseases (SARS, influenza); mother gynecological diseases, including infections, sexually transmitted infections, most syphilis, gonorrhoea, cytomegalovirus, a viral infection, herpes, ureaplasmosis, trichomoniasis; uterine changes (scars after surgeries, including caesarean section, uterine fibroids, chronic endometritis); cervical incompetence when, after previous unsuccessful delivery or abortion the cervix does not fully close, but remains slightly open, and the fetus is not retained in the uterus; mother's bad habits (smoking, alcohol abuse); occupational hazards; maternal injuries, including psychological.

PEAK FLOWMETRY AS A METHOD OF BRONCHIAL ASTHMA CONTROL

Buryak L., Maltseva I. – the 5th year students

Scientific leaders - Cand.Med.Sc. I.V. Kostrova, Cand.Med.Sc. S.A. Goryacheva, O. I. Katina

The success of treating asthma is a good medication, convenient inhalers and effective cooperation between the asthmatic patient and his doctor. Peak flowmetry will help you actively participate in the control and treatment of asthma.

Peak flowmetry is a method of study of peak expiratory flow (PSV), i.e. the maximum speed at which a person can exhale after a full inhalation. This is an important indicator for bronchial asthma, because bronchial constriction manifests itself primarily by a decrease in expiratory flow.

Peak flow meter – is a portable, simple and affordable device: a plastic tube with a mouthpiece in which it is necessary to blow. The air flow moves on the arrow to the scale, which indicates the value of PSV.

There are different types of peak flow meters. To track the dynamics of PSV, it is important to use the same device as the PSV values may vary when using different devices by almost 20%.

Normal PSV values of different people can vary up to 30%, so PSV is better to compare with the individual values measured on the same peak flow meter. Individual PSV rate is the maximum PSV value registered 5 times or more in good health, including the treatment of hormonal drugs. For its determination it is necessary to measure PSV in the

next 2-3 weeks at least once a day after noon. Every six months this indicator should be reassessed considering the progression of the disease, as well as the growth of children. If peak flowmetry is made for the first time or there are no data about individual PSV norm, it is possible to use the average calculated norms (called nomograms). They are calculated for all types of peak flow meters depending on height, race, gender and age and are located to the device.

To keep a special diary for self-monitoring and to note daily the symptoms and the results of PSV is very important for the successful treatment of asthma. The peak flowmetry is taken twice a day with an interval of 10-12 hours in the morning, immediately after waking up and before the inhalation of bronchodilator drugs when the values of PSV are close to the worst values and in the evening after inhalation when the values of PSV reach their best values. Every time one needs to measure PSV three times to choose the maximum value and mark it on the chart in the appropriate column - the morning or evening of a particular date.

The earliest sign of exacerbation of asthma – is a stable decrease in the morning values of PSV, the so-called “morning dip”. In the comments to the diary one should record the circumstances which could affect the course of asthma: the common cold, physical exercise, contact with a possible allergen, a change in therapy, etc.

The main benefits of regular peak flowmetry are: 1) diagnosis of asthma; 2) identification of factors triggering asthma; 3) self-control of asthma; 4) early detection of exacerbations; 5) evaluation of the effectiveness of the therapy.

The peak flowmetry should not be considered as an alternative to measurement of respiratory function. This is the method of assessing pulmonary function, which has its own niche - the self-control of asthma. Peak flowmetry allows asthmatics to cooperate better with the doctor, and in worsening of the condition - to self-regulate the treatment. It definitely decreases the dependence on sickness and gives the opportunity to have more active lifestyle what is difficult to overestimate in modern conditions.

THE INCIDENCE OF HIV INFECTION IN RUSSIA AND THE AMUR REGION

Nogai V., Buryak L., Rozhkova E. – the 5th year students

Scientific leaders – O.A. Agarkova, O.I. Katina

According to experts at present Russia is under a generalized HIV epidemic. It means that the disease spreads beyond the high-risk groups. From 2007 to 2015 the number of new cases among Russian citizens has increased from 44 to 93 thousand per year and continues to grow. At 07.01.2016, 1057042 persons with HIV were registered in Russia. More than 200000 died. In Yekaterinburg every 50th citizens is infected with HIV: 1826 people per 100 thousand of the population, i.e. 1.8 percent of the population. Doctors say that this is just officially registered cases. Actual number is usually higher.

Doctors have concluded that the disease has penetrated the prosperous layers of the population. Now the patient with HIV - is not necessarily a drug addict or a young man.

In 2015, 130 cases of HIV infection in Russia were registered, including 89 cases among citizens of the Amur region. Most cases of HIV infection were in the age group 20-39 years. They accounted 77.1% for the entire period of registration. Since 2000, cases of HIV infection among 16-19 years old people have been registered each year (3%). This fact indicates a risk behavior among the general population of reproductive age. Among HIV-infected patients in the Amur region throughout the years of registration men are dominated. Currently the proportion is 61.7%.

The Amur region refers to areas with low levels of morbidity. The region has an unstable population, low population density and high rates of migration. It has an impact on the nature of the HIV epidemic.

RELEVANCE OF ENDOSCOPIC SURGERY IN THE WORLD OF MODERN TECHNOLOGY

Prokofyeva N. – the 3rd year student

Scientific leaders – Doc.Med.Sc. V.V. Grebenyuk , O.I. Katina

Actuality: Endoscopic Surgery – is a modern alternative to the classical wide access surgery. When performing an open surgery the surgeon needs to make the cut, providing an access to the organs in which the operation is done. Until recently, the section of the body covering tissue was the only method that allowed the surgeon to perform the operation.

Today, endoscopic technique eliminates the need to make large incisions. Operations are carried out with the help of tools, manipulators, that are introduced into organs or cavities through small incisions (punctures) or natural physiological holes due to the endoscope and other flexible fibroapparatus (complex optical systems that are connected to the camcorder). This allows the surgeon to control the instruments and perform manipulation under visual control while looking at the monitor.

Currently Endosurgical technology is widely spread throughout the world. The new method enfolds many surgical specialties. The greatest progress has been made in the treatment of gallstone disease and gynecological diseases, where the advantages of endosurgery are manifested most clearly. One of the most important advantages compared to conventional operations are the following:

- 1) reduction of traumatism of surgery. The amount of dissected tissue, blood loss and the magnitude of the pain after surgery are much smaller;
- 2) reduction in the incidence and severity of complications;
- 3) less infection of operating area;
- 4) reduction of the duration of hospital stay after surgery;
- 5) period of disability and return to normal life is shorter in 3-4 times;
- 6) decrease in the cost of treatment by reducing hospital period, consumption of drugs and the rapid rehabilitation of the patient;
- 7) cosmetic effect is extremely important, especially for the female population.

Increasingly, endoscopic surgery is becoming the subject of patient choice. We carried out a survey of 2nd year students on the theme: "The choice between traditional and endoscopic operations in the need of its emergency and the reasons for choosing (eg. appendectomy and cholecystectomy)". For scientific research 100 people were included in the group of 2nd year students. They had already been acquainted with the concept of endoscopic surgery.

Results: 85% would choose endoscopic surgery. The most common causes are a small traumatism and better cosmetic effect. At the same time, 14% would prefer the traditional method of operation considering it to be a proven and reliable. 1% would rely on the choice of doctor without singling out one method of operation to another. Professor of the Department of Anatomy and Operative Surgery Doctor of Medical Science, V.V. Grebenyuk constructed a medical trainer of his own design to develop the skills of Endoscopic Surgery (RF patent for the invention № 147842 from 10.16.2014). The purpose of the medical simulator was to develop a base of manual laparoscopic skills, motor

coordination training and the adaptation of the visual analyzer to the two-dimensional image on the screen.

Conclusion: Thus, the role and place of the modern endosurgery is determined not only by a variety of possibilities of endoscopic techniques, but also the understanding of the need for further development of the method, the constant emergence of new techniques of endoscopy and high professional level of medical personnel working in the profession. Further development of the students' practical training in the field of endosurgery will improve their professional level in the future and motivate students to increase the number of medical staff in this area.

THE MORPHOLOGY OF THE FEMALE PELVIS AT THE AGE OF 16-25 YEARS

Ostapenko Ya, Urmancheeva V. – the 2nd year students.

Scientific leaders - Cand.Med.Sc. S.S. Seliverstov, O.I.Katina

Bone pelvis is a solid container for internal hollow organs and surrounding tissues. Female pelvis forms the birth canal through which the fetus is born.

Differences of female pelvis from the male one begin to be detected at puberty and are distinct in adulthood.

The pelvis is made up of four bones: two pelvic, sacrum and coccyx.

Pelvic (unnamed) bone (os coxae). Up to 16-18 years it is composed of three bones connected by cartilages: iliac, ischiatic and pubic. At 25 years after ossification cartilages accrete together forming a nameless bone.

Flank bone (os ilium) has two parts: the body and the wing. The body makes short and thickened part of the bone, and participates in the formation of the cotyloid cavity.

Knowledge of sizes of the external pelvis is very important in obstetrics as they are used while defining the size of the pelvis. Measurements are made with pelvimeter. There are four sizes: three transverse and one straight.

Distantia spinarum - the distance between the anterosuperior axes of iliac bones. It is typically 25-26 cm.

Distantia cristarum - the distance between the most distant points of the iliac crests. Usually it is 28-29 cm.

Distantia trochanterica - the distance between the greater trochanters of femur. It makes 30-31 cm.

Conugata externa - outer conjugate, i.e. the straight pelvis size. A woman is laid on its side, the underlying leg is bent at the knee and hip joints, the overlying one – is pulled. Buttons of one branch of pelvimeter is set in the middle of superexternal edge of symphysis. The other end is pressed against the suprasacral pit that is located between the spinous processes of the 5th lumbar vertebra and the beginning of the middle sacral crest (suprasacral fossa coincides with the upper corner of the sacral crest). In norm it is 20-21 cm.

Conugata vera - true conjugate. To determine conugata vera it is necessary to subtract 9 from the outer conjugates, then we get the true size. The difference between the true and the outer conjugates depends on the thickness of the sacrum, symphysis and soft tissue. So the difference is not always exactly correspond to 9 cm. Or it is possible to subtract 1.5-2 cm from the size of diagonal conjugate.

Conugata diagonalis - - diagonal conjugate – is the distance from the lower edge of the symphysis to the most prominent point of the promontory of the sacrum. It is determined by vaginal examination. When normal pelvis it is 12.5-13 cm.

SCOLIOSIS IN PEOPLE AGED FROM 16 TO 25 YEARS

Podgorbunskaya E., Moiseenko A. – the 2nd year students

Scientific leaders – Cand.Med.Sc. S.S. Seliverstov, O.I.Katina

Scoliosis is the abnormal curvature of the spine causing the deformation of the spine and rib cage.

Frequency. In 75% of cases the etiology of the disease in younger people is unknown.

The code of the International Classification of Diseases is ICD-10:

M41 Scoliosis

Causes - Etiology

- I group: scoliosis of myopic origin. The basis of curvature is developmental disorders of muscle tissue and ligaments

- II group - neurogenic scoliosis (on the background of poliomyelitis, neurofibromatosis, syringomyelia, etc.).

- III group (congenital scoliosis) - scoliosis on the basis of vertebral and rib malformations (wedge-shaped additional vertebrae, unilateral synostosis of ribs and the transverse processes of the vertebrae)

- IV group - scoliosis due to the thorax and spine diseases (scarring after empyema, burns, plastic surgery, trauma)

- V group - idiopathic scoliosis.

Symptoms, signs - Clinical picture

- I degree scoliosis - a slight lateral deviation of the spine and a small degree of torsion, detected radiologically; angle of primary arc of curvature – is no more than 10 °

- Scoliosis of II degree - a significant deviation of the spine in the frontal plane, expressed torsion; angle of primary curvature arc is in the range of 20-30 °

- III degree scoliosis - severe deformation, large costal hump, deformation of the chest; angle of primary curvature arc – is 40-60 °

- IV degree scoliosis - expressed deformation of the trunk, the thoracic spine kyphoscoliosis, pelvic strain, deforming spondylarthrosis. The angle of primary curvature reaches 60-90 °, pulmonary - cardiac complications are possible.

Diagnostics

- The examination is necessary to determine the cause of scoliosis. It is made in forward and flexed positions of the patient's back. Thus it is necessary to pay attention to asymmetry of the spine, scapula and muscles. The symmetry of the shoulders and hips is checked, the length of the legs is measured.

- It is required to carry out the X-ray of the spine in two projections in the horizontal and vertical positions of the patient's body. X-ray can determine any curvature of the spine greater than 10 °.

SPASTIC STRUMPELL'S PARAPLEGIA

Lapanik T. – the 4th year student

Scientific leaders - Doc.Med.Sc. V. N. Karnaukh, O.I.Katina

Hereditary spastic Strumpell's paralysis – is a chronic progressive hereditary degenerative disease of the nervous system characterized by bilateral lesion of the pyramidal tracts in the lateral and anterior spinal cord.

Causes. The disease in most cases is inherited with autosomal or dominant inheritance types.

Pathology. Most often the lumbar and thoracic spinal cords are affected, rarely - the brain stem. Hereditary spastic paraplegia is characterized by glial degeneration of the pyramidal tracts in the lateral and anterior cords on thoracic and lumbar levels of the spinal cord, Gault's bundles.

The clinical picture. The development of disease is gradual, it progresses slowly. Often the first symptoms appear during the second decade of life. Spasticity usually prevails over the phenomena of paresis. Complete paralysis usually is not observed. Characteristic spastic gait develops, varus and equinovarus feet deformity appear, tendon and muscle contractures. Central paraparesis of the lower extremities develops. Cutaneous reflexes in most cases remain; pelvic organ functions are not affected. Disorders of sensitivity are absent. Intellect is preserved.

Patient - 10 years old. Complaints according to his mother: a change of gait. Child is from 1 pregnancy. He grew and developed according to his age. The first signs of the disease appeared at the age of 2. Parents noticed that the child began to walk on tiptoes. Heredity: the patient's father has the similar pathology.

The disease developed gradually, with the progression of the central paraparesis of the lower extremities. There was no prolonged effect from the treatment. Surgical treatment was aimed at eliminating the orthopedic defect: 4 years - achilloplasty (Achilles tendon lengthening) on the right foot, in 4 achilloplasty was done on the left leg. In 2015 he was made the injection of the calf muscles with Botox, physiotherapy, massage, exercise therapy. In 2015 the operation by Ulzibat method was performed (elimination of muscle contractures).

Intellect is preserved, sociable, the syndrome of attention deficiency with hyperactivity. Cranial nerves are without pathology.

Paraspastic gait. Active and passive movements in the distal and proximal parts of the lower limbs are limited due to the ankle joint contractures, hypertonus of proximal part of lower extremities, decrease of muscular strength in both limbs. There is a moderate hypotrophy of right thigh muscles. Posture is changed, lumbar lordosis is pronounced. Tendon reflexes: the knee and ankle are elevated on both sides. There is the Babinski syndrome on both sides. All kinds of sensitivity are kept. He is slightly unstable in Romberg's posture. Finger - nose test is not broken. Heel-knee test is performed with difficulty. Speech is not changed. The functions of the pelvic organs are not violated.

Conclusion. The peculiarity of the case is that the disease started to develop at an early age (about two years) and resulted in significant violations of walk, early development of contractures. That required the surgery and orthopedic correction.

TOOTH STRUCTURE AND ITS CHANGES DURING THE LIFE

Matyushonok A. – the 2nd year student

Scientific leaders - V.S. Kozlova, O.I. Katina

Teeth - are the structures necessary for normal human life requiring a thorough and careful handling. Deciduous tooth is laid at the end of the 2nd month of fetal development. Later on there is the foundation of a permanent tooth. Initially they are placed in a common bone alveolus. Eventually osseous septum is formed between them. Teething occurs differently: first teeth begin to erupt at 6-8 months of age. Then their active replacement on permanent begins at the age of 6 years.

Enamel – is the hardest tissue of the human body covering the crown of the tooth outside and protecting the dentin and pulp from external stimuli. It contains 95% of minerals (hydroxyapatite, fluorapatite, carbonateapatite), 1.2% of organic, and 3.8% of water. Enamel functions are: protective, trophic (tooth-CSF).

Dentin – is a calcified dental tissue penetrated with dentinal tubules. It forms its bulk and form. The crown area is covered with enamel and in the root area there is cement. Dentin contains 70% of inorganic substances (hydroxyapatite), 20% of organic (collagen type 1), 10% of water. Intercellular substance is collagen fibers bound with hydroxyapatite crystals. Functions of dentin: protective, supportive, reparative, passive eruption.

Pulp – is a loose fibrous connective tissue with a large number of nerve endings, blood and lymph vessels. It fills the cavity of the tooth. Pulp cells – are odontoblasts, fibroblasts, to a lesser extent - macrophages, dendritic cells, lymphocytes, plasma and mast cells, eosinophilic granulocytes.

Change of teeth occurs between the ages of 6-12 years and begins with the eruption of permanent tooth and the subsequent loss of the milk one. The rudiment of permanent tooth begins to grow and pressures on the osseous septum separating it from the milk tooth; simultaneously osteoclasts activate and break down the bone septum and the root of the first tooth. As a result the growing permanent tooth pushes the remaining crown of the milk one and erupts.

When there is a complex influence of unfavorable external and internal factors on the tooth, the tooth decay may develop. Caries is a pathological process manifesting in demineralization and progressive destruction of hard tooth tissue with the formation of a defect in the form of a cavity in the dentin. The destruction of the hard tissues of the tooth takes place with the participation of microorganisms that may gradually lead to inflammation of the dental pulp, and its necrosis - pulpitis and tooth destruction.

PRECANCEROUS DISEASES OF THE CERVIX

Gracheva D.-the 3rd year student

Scientific leaders – Doc.Med.Sc. I.Y. Makarov, A.I. Patrokov, O.I. Katina

Cervical cancer is the malignant degeneration of epithelial tissue of the cervix in the form of various exophytic, or endophytic infiltrating growths capable of infiltration of surrounding tissues and metastasis to distant organs. The proportion of cervical cancer among cancer of the genital organs is 70-80%. Age of women affected with cervical cancer is 40-60 years. Contributing factors are generic and abortion trauma, violation of ovarian-menstrual function, chronic inflammatory processes.

Also higher factors of cervical cancer include:

- infection of sick human with papillomavirus (HPV), as well as genital herpes viruses and cytomegalovirus;
- the use of hormonal contraception and the rejection barrier one (condom, contraceptive caps);
- earlier initiation of sexual activity - from 13 to 18 years of age;
- frequent change of sexual partners;
- smoking.

The human papillomavirus (HPV) is a common virus that causes a variety of diseases for both women and men.

At present there are about 100 different types of human papilloma virus. Different types of virus can cause various diseases.

About 30 types cause damage of the female genital organs.

The most dangerous of them are the types of human papilloma virus with a high cancer risk – i.e. the virus with the greatest ability to cause cancer of the reproductive organs, particularly cervical cancer. Such viruses include human papilloma virus (hpv) 16, 18, 31, 33, 35, 39, 45, 51 and 52 types.

The most important manifestations of human papilloma virus infection in women are pointed and flat condylomas, dysplasia and cervical cancer.

Cervical erosion – is a violation of integrity, ulceration or defect in the mucous membrane of the vaginal part of the cervix. It may occur in women of any age and requires a thorough examination and timely treatment, as cervical erosion may be an early precancerous or cancerous changes in the epithelium. Patients with the human papilloma virus (HPV) of the high-risk types (16, 18, 31, 33 type) cause particular caution. In this case, the risk of cervical cancer increases in several times.

When viewed in the mirrors the erosion looks like the area of red color located ostium of the uterus, different size from 2 mm to 2 cm. Pseudo erosion can exist for months and years.

Leukoplakia –a dystrophic disease resulted in a change of the mucous membrane accompanied by cornification of the epithelium.

It is characterized by the appearance in the vulva area dry white plaques of various sizes. They are the areas of increased keratinization with subsequent sclerosis and scarring of tissues. In addition to the vulva, leukoplakia can be localized in the vagina and on the vaginal part of the cervix.

MORPHOFUNCTIONAL CHANGES IN THE IMPLANTATION OF ARTIFICIAL HEART VALVES

Krasulina E., Lokonov R. – the 3rd year students

Scientific leaders – Doc.Med.Sc. I. Y. Makarov, S. A. Peschanskaya, O. I. Katina

At violation of any of the 4 heart valves — their narrowing (stenosis) or excessive extension (failure) — there is a possibility of their replacement or reconstruction with artificial analogues. Artificial heart valve is a prosthesis that provides the desired direction of blood flow by the intermittent overlapping of the ostia of the venous and arterial vessels. The main indication for the prosthesis is an abrupt change in the valve cusps leading to significant violation of blood circulation.

There are two main types of artificial heart valves: mechanical and biological models. Each of them has their own characteristics, advantages and disadvantages. Mechanical heart valve is reliable, durable and does not need to be replaced. But it requires constant use of specific medicines that reduce blood clotting. Biological valves may gradually deteriorate. The duration of their work greatly depends on the patient's age and comorbidities. With age, the process of destruction of biological valves is significantly reduced. The decision about which valve is most appropriate should be made before surgical intervention, during the obligatory conversation between the surgeon and the patient.

People with prosthetic heart valves belong to the category of patients with very high risk of thromboembolic complications. The fight against thrombosis is a basis of strategy of management of such patients. And its success largely determines the prognosis. Life with an artificial heart valve requires a number of restrictions. The patient has to take antithrombotic drugs, in the vast majority of cases - indirect anticoagulants. They should

be taken by almost all patients with mechanical heart valves. The choice of biological prosthesis does not preclude the need for use of Warfarin, especially in patients with atrial fibrillation. In order to avoid dangerous bleeding, patients constantly taking Warfarin should better avoid daily activities and entertainment associated with an increased risk of injury (contact sports, working with cutting items or high risk of falls even with his own height).

The most important aspects of medical monitoring of the patient with an artificial heart valve include: control of blood clotting; the active prevention of thromboembolic complications using anticoagulation. It is important to note that currently European and American experts believe the levels of antithrombotic therapy to be too intense, though previously they were recommended for the majority of patients. Modern approaches to risk assessment allow to select subgroups of individuals at highest risk of thromboembolic complications and active antithrombotic therapy. For other patients with prosthetic heart valves less aggressive antithrombotic therapy is sufficiently effective.

FEATURES OF CLINICAL COURSE OF RARE FORMS OF ERYSIPELAS

Shpinyov A. - the 5th year student

Scientific leaders - T.A. Dolgih, O.I.Katina

Erysipelas - (pol. roza - Rose) – is an infectious anthroponosis disease caused by a B - hemolytic streptococcus of group A. It occurs in the acute (primary) or chronic (recurrent) form with the expressed intoxication syndrome, skin manifestations and lymphadenitis.

According to statistics, currently the incidence of erysipelas in the European part of Russia is 150-200 per 10 000 population. In recent years there has been the rise of the incidence in the United States and some European countries. At present patients under the age of 18 years are registered only singular cases of erysipelas. From the age of 20 the incidence increases. And in the age range from 20 to 30 years men are infected more often than women due to the predominance of the primary erysipelas and professional factor. The majority of patients - are those aged 50 years and older (up to 60-70% of all cases).

The incubation period lasts from a few hours to 3-5 days. The disease begins with a headache, general weakness, fever, myalgia, nausea and vomiting (25-30% of patients). In the first hours there is an increase of the temperature up to 38-40 ° C. After 1-2 days, symptoms of the disease are at their maximum. For the erysipelas of the scalp the intense headache in the inflammatory focus is characteristic. It is hidden by hair, without erythema. Erysipelas of the upper limbs is rare (5-7% of patients). It develops on the background of postoperative lymphostasis in women operated on for breast cancer. Erysipelas of perineum and genital skin is characterized by edema in men - the scrotum and penis, in women – large pudental lips. Periodic erysipelas occurs in women during each menstrual period, but with the onset of menopause there are continuing episodes of recurrences replacing menstruation. During "gelatin" Virchow's erysipelas arising due to lymphostasis, the skin is blond-yellow, crimson or brown. Erythema is slight. White erysipelas of Rosenberg-Unna develops in patients with tuberculosis, syphilis, leprosy. It manifests by soreness and violent skin edema. Erythema is absent. Erysipelas of newborns often starts with the umbilicus or toes. It has the ability to migrate ("traveling erysipelas", "wandering erysipelas"). Erythema is not intense. Swelling, infiltration of the skin and subcutaneous tissue are observed at all times. The edges of the lesion have a twisted contour, but the limiting torus is not expressed. The disease begins with high fever and chills. There are

dense areas of skin hyperemia, warm to the touch. Sometimes the onset of the disease can be insidious - without or with a slight increase of the temperature. Then the disease progresses. The child becomes flaccid, refuses the breast, there are digestive disorders, phenomena of myocarditis, nephritis, meningitis, and sepsis develops. The mortality rate of newborns from erysipelas is extremely high. Erysipelas is equally dangerous for children in the first year of life. The criteria for the severity of erysipelas are considered to be the severity of intoxication and the prevalence of the local process.

Therefore, considering the prevalence of the disease, the risk development of atypical manifestations and localization process, relapsing forms, severe course in newborns, there is a need of methods for rapid diagnosis, timely causal therapy and patients' adherence to the prevention of erysipelas.

PECULIARITIES OF CLINICAL COURSE OF HAEMOPHILIC MENINGITIS IN CHILDREN

Pakhomov S. – the 5th year student

Scientific leaders - T.A. Dolgih, O.I. Katina

Haemophilic meningitis – is an acute anthroponosis infectious disease with aerosol mechanism of transmission. It is characterized by a primary lesion of the respiratory tract and the brain membranes.

The urgency of the problem of haemophilic meningitis is due to the fact that this pathology takes the second place in the structure of bacterial meningitis in children under 5 years. There is often a long and undulating course of the disease and a high incidence of residual effects and adverse effects, such as the progression of hydrocephalic-hypertensive syndrome and hearing loss. Certain value has a relatively late appearance of meningeal syndrome leading to diagnostic difficulties and frequent hospitalization in non-core hospitals.

The causative agent - is the bacterium *Haemophilus influenzae* type of *Haemophilus* (Pasteurellaceae family). The sources of infection – are patients with any clinical form of Hib-infection, as well as healthy carriers. Susceptibility is due to the lack of human immunity and the anatomical and physiological characteristics of children under 5 years.

Haemophilic meningitis develops most often on the burdened premorbid background: organic CNS lesions - 42.7%, frequent acute respiratory diseases - 34.8%, pathology of pregnancy and childbirth - 20.3%. The disease begins subacute: a cough, runny nose, and increase of body temperature to 38-39 ° C. In some patients in the initial period dyspepsia may dominate. This period lasts from several hours to 2-4 days. Then the child's condition worsens: enhanced intoxication syndrome, disorders of consciousness, convulsions, and in 1-2 days - focal symptoms, body temperature reaches 39-41 ° C, increasing headache, vomiting, meningeal symptoms. Fever in Haemophilic meningitis is often remittent or irregular. It is registered even on the background of antibacterial therapy, the average duration 10-14 days. Catarrhal symptoms in the form of pharyngitis are noted in more than 80% of patients. Often there is hepatosplenomegaly, lack of appetite, confusion of consciousness, weakness. Focal neurological symptoms are seen at least in 50% of patients. Often there is paresis of cranial nerves, hearing impairment, focal seizures, ataxia, muscle tone disorders for extrapyramidal type, rarely paresis of the extremities. Meningeal syndrome (e.g. protrusion of cerebellum) and hanging symptom are expressed moderately. Neck stiffness of muscles is usually typical for children older than 1 year. And Brudzinsky and Kernig symptoms in some patients are mild or absent.

The most accurate diagnosis is to identify the causative agent from blood and CSF during bacteriological examination, RAL and PCR.

Drugs of choice for the treatment of Haemophilic meningitis are Ceftriaxone and Meronem. In the absence of the effect fluoroquinolones of the second generation (Pefloxacin, Ciprofloxacin, Ofloxacin) or a combination of cephalosporin (Ceftriaxone) and fluoroquinolones are administered.

Thus, considering the prolonged and sinuous course of the disease, a high risk of residual effects and adverse effects, it is necessary to pay more attention to timely vaccination of the disease.

A CASE OF SUCCESSFUL TREATMENT OF JUVENILE RHEUMATOID ARTHRITIS WITH GENETIC ENGINEERING BIOLOGICAL DRUGS

Abuldinov A., Abuldinova O., Safronova D. – the 6th year students

Scientific leaders – Cand.Med.Sc. M.V. Pogrebnaia, O.I. Katina

Patient S., 18 years old, was admitted on 24 March 2016 in the rheumatology department of the Amur regional clinical hospital with clinical diagnosis: Rheumatoid arthritis, seropositive, deployed stage, activity I, non-erosive (radiographic stage 1), ACCP (–), FC I; complications: secondary amyloidosis with renal impairment, osteoporosis with pathological fractures.

The patient had been ill since 2006, when pain in the ankle and knee joints appeared for the first time. Over the next year the condition worsened accompanied by pain in the wrist joints, there was swelling of the knee and limitation of motion in the aforementioned joints. He was examined in the cardiology department of the Amur regional children's clinical hospital. Diagnosis: Juvenile rheumatoid arthritis. Treatment with prednisolone at a dose of 30 mg/day, showed a slight effect. In 2007, the pulse therapy treatment with methylprednisolone 1000 mg No3, cyclophosphamide at a dose of 1000 mg No2 (1 per month), prednisone 1.5 mg/kg/day was made. The patient constantly took methotrexate at a dose of 10 mg/week in combination with folic acid. In 2008, there were pronounced swelling on the face in the periorbital area and on the feet. The examination revealed massive proteinuria, hydrothorax and hydropericardium. A patient was directed to Russian children's clinical hospital in Moscow for further examination, diagnosis and determining further management of patients. A biopsy of the kidneys was made and due to its results the diagnosis was: Juvenile rheumatoid arthritis. Secondary renal amyloidosis. In 2012, in the RAMS Institute of Rheumatology the diagnosis of rheumatoid arthritis, secondary amyloidosis of the kidneys was confirmed. Since 2014 the patient receives infliximab at a dose of 200 mg 1 time every 8 weeks. The present hospitalization is planned in connection with the achievement of the age of eighteen and the transition under the supervision of an adult rheumatologist.

By the results of additional methods of examination there is no clinical, laboratory and radiological disease activity at the moment. The patient continues to receive treatment of methotrexate 15 mg per week in combination with folic acid 5 mg per week, infliximab 200 mg 1 time every 8 weeks via intravenous infusion pump.

The interest of the case lies in the fact that the early onset of active basic treatment of juvenile rheumatoid arthritis prevented the progression of destruction of joints, disability of the patient, neutralized the manifestations of amyloidosis and nephrotic syndrome and improved the quality of life in general.

FASCIAE OF UPPER EXTREMITIES AND WAYS OF PURULENT INFECTION SPREAD

Chernikova P., Nevedomskaya O., Mihailov I. – the 2nd year students
Scientific leaders – Cand.Med.Sc. S.S.Seliverstov, O.I.Katina

Fascia – is a connective tissue tunic covering various organs, mainly muscle. Collagen and elastic fibers intersect with each other in different directions forming at the same time the separate layers. There are typically numerous blood vessels, lymph, spaces, fissures, vessels as well as nerves in the mass of the connective tissue. Its vessels deliver nutrition to the muscles and organs causing the tissue exchange between them. Fasciae also play an important role in pathological processes in the body.

The source of the fasciae in embryogenesis is mesenchyme turning into a loose unformed tissue. The process of fasciae forming is in indurations of the embryonic tissue and development in it connective tissue fibers, produced by young connective tissue cells - fibroblasts.

Fasciae of limbs are surrounded by muscles or groups of muscle, forming for them fascial or osteofascial cisterns. Fasciae covering the upper limb differ in thickness. Fascial plates in some places form a well-defined the sheaths and line holes and channels of different size. The fasciae of the upper limb consist of fasciae of the girdle and free upper limbs. In the area of girdle of the upper limb there are the following: a) deltoid, b) supraspinal, c) infraspinal, g) subscapular. Axillary fascia. Shoulder fascia. The fascia of the forearm. Fascia of a hand.

There are several functions of fascia: biomechanical (support); protective (barrier); nucleating; reparative.

Possible pathways of pus from the primary tumor (streaks) in the adjacent field divided into two groups: primary and secondary. Primary - purulent processes occur without destruction of the anatomical structures, the gradual "melt" in the natural fiber and interfascial and intermuscular spaces, often under the influence of gravity in the lower located parts of the body. Secondary accompanied by the destruction of the anatomical elements and structures, a breakthrough, from one relatively closed fascial sheaths, or intermuscular intervals to neighboring. This process is associated with the virulence of microorganisms, their proteolytic activity, and also the state of the patient's immune system.

FEATURES OF INGUINAL SPACE STRUCTURE

Volodina I., Kolesov B. - the 3rd year students
Scientific leaders – Cand.Med.Sc. S.I. Piskun, O. I. Katina

In herniology the problem of forecasting of inguinal hernias occurrence is still relevant. At present surgeons are deeply aware of the producing factors of inguinal hernias, while predisposing factors are not well studied. That was the basis for realization of this study.

Chernykh A.V., Liubykh E.N., Zakurdaev E.I., Popov M.P. particularized the data of variant anatomy of the inguinal space with the new linear parameters of anatomical structures of the inguinal canal. The work was carried out on the floating corpses of 123 people who died suddenly from diseases not related to the pathology and abdominal injuries.

1. When slotted oval-shaped inguinal space, the height was 1.3 (1.1, 1.6) cm, length - 5.5 (5.2; 6) cm, and the area - 5.3 (4.4; 5.5) cm². The width of the falciform aponeurosis was 2.6 (2.3, 2.8) cm.

2. Oval-transitional forms of inguinal space. Height was 1.5 (1.3; 1.7) cm, length - 5.6 (5.1; 5.8) cm, and the area - 5.2 (4.8; 5.5) cm². The width of the falciform aponeurosis was 2.7 (2.4; 3) cm.

3. When the triangular shape of the inguinal space, the height was 2.7 (2.5; 2.8) cm, length - 6.2 (6; 6.4) cm and the area - 6.6 (6.1; 6.8) cm². The width of the falciform aponeurosis was 1.6 (1.5; 2) cm.

Conclusion: The structure of the inguinal space was concretized. Its forms differ in variability of structure of the lower edges of the internal oblique and transverse abdominal muscles, the size and width of the sickle-shaped fascia. That is important to consider to practicing surgeons.

GALACTOSEMIA

Mikhailov I. – the 2nd year student

Scientific leaders – Assoc.Prof. E.V.Egorshina, O.I.Katina

Galactosemia – is an inherited disorder of metabolism caused by deficiency of activity of enzymes involved in galactose metabolism. In pediatrics and genetics galactosemia refers to a rare genetic disease occurring with a frequency of one in 10 000 - 50 000 of newborns.

The transformation of galactose to glucose (the metabolic pathway of Leloir) occurs with the participation of 3 enzymes: galactose-1-phosphatidylserine (GALT), galactokinase (GALK) and uridinediphosphate-galactose-4-epimerase (GALE). In accordance with the deficit of these enzymes the 1 (classic version), 2 and 3 types of galactosemia are distinguished.

The allocation of three types of galactosemia is not the same as the order of action of enzymes in the metabolic process of the Leloir's way. Galactose enters the body with food, and also is formed in the intestine by hydrolysis of the disaccharide lactose. The way of galactose metabolism begins with its conversion by the enzyme GALK into galactose-1-phosphate. Then, with GALT assistance the galactose-1-phosphate is converted into UDP-galactose (uridyldiphosphogalactose). Then, using the GALE the metabolite is transformed into UDP – glucose (uridyldiphosphoglucose).

On the severity of the clinical course there is severe, moderate and mild galactosemia.

Complications of galactosemia include liver cirrhosis, sepsis, hemorrhage into the vitreous, primary amenorrhea, and the syndrome of exhaustion of ovaries. If galactosemia, in 50% of preschool children a motor alalia is revealed. It is characterized by the difficulty of organization and coordination of speech movements, poverty of vocabulary, an abundance of paraphasia and perseveration in intact understanding of reversed speech.

To reduce the risk of development of complications in galactosemia the early detection of the disease is necessary. Prenatal diagnosis of galactosemia is possible. It includes the conducting of chorionic villus sampling, amniocentesis with subsequent investigation of villi and amniotic fluid.

The main role in the treatment of galactosemia belongs to the diet. Feature of food in galactosemia is life-long exclusion from the diet foods containing lactose and galactose: any milk (female, cow, goat, infant formula, low-lactose mixtures, etc.), all dairy products,

bread, pastries, sausages, candies, margarines, etc. With galactosemia it is forbidden to take vegetable and animal products containing potential sources of galactose, and galactosides (beans, soy) and nucleoproteins (kidney, liver, eggs, etc.).

Children with galactosemia get the disability.

THE CLINICAL CASE OF ANGELMAN SYNDROME

Blokhina E.– the 5th year student

Scientific leaders – Cand. Med. Sc. O.S. Yutkina, O.I. Katina

Angelman syndrome is a chromosomal pathology localized in the 15th chromosome and manifested in severe delayed of psycho - speech and motor development, coordination disorder, behavioral disorders, the particular qualities of the emotional sphere ("happy" face in combination with laughter bursts, smiling, credulity), stereotypes (flapping hands or pat), epileptic cases. Karyotype is the 46 XX or XY, 15q-. Usually the syndrome is caused by a spontaneous chromosomal defect, when there is no large adjacent area of 3-4 million base pairs of DNA in the q11-q13 of the chromosome 15th.

According to the results of several independent researches, the cause of Angelman syndrome may be a mutation in the gene UBE3A. The product of this gene is enzyme's component of a complex system of protein degradation.

In the clinical case there is the history of a boy with a clinical diagnosis: the myoclonic status with non-progressive encephalopathy on the background of chromosomal pathology, Angelman's syndrome. There was an organic CNS lesion, atonic - astatic syndrome, rough delay of mental and speech development, GMFCS IV level.

In this case, one can see all the features of Angelman's syndrome; to follow how started and changed epileptic cases and EEG picture; the efficiency of the therapy.

Prognosis depends on the level of injury of 15th chromosome. So people who have only a mutation of a gene are able to serve themselves and communicate, while others having a rough chromosomal pathology are not able to talk and even walk. Quality of life is associated with severity of disease. Longevity is average. Such patients need special care of relatives. Most often, these children are directed to special schools, where they can not only learn, but also adapt to the society.

FEATURES OF THE EAR STRUCTURE OF ASMA STUDENTS OF 1990-1991 YEARS OF BIRTH

Dyachuk S., Talpe V. - the 1st year students

Scientific leaders- A.E. Pavlova, O.I. Katina

While conducting the study, we described the floor of the auricle in size, position, protruding and shape. In size it can be: small, medium or large. The shape can be: round, oval, rectangular, square and triangular. Protruding may be: a) general - when the entire free edge of the ear is distant from the head; b) lower - farthest lobule; c) the top - the curl is furthest from the head. The lack of protruding - when ears are pressed to the head.

We examined 70 first-year students. Among them there were 42 female and 28 male. In female students:

a) the average length was 32 physiological case s- 6 cm, 6 cases- 5.5 cm, and in 4 cases it was 7 cm.

b) the average physiological width in 4 cases was- 4 cm, in 32 cases - 3.5 cm, in 6 cases - 3.0

In male students: the average physiological length in 15 cases were - 6.7 cm, in 10 cases - 10.0, in 3 cases - 7 cm.

According to the examination both in female and male students predominates:

- the oval form of the floor of the auricle;
- the middle size of the ear;
- the upper protruding.

RUSSIAN PHILOSOPHY

Dyachuk S. – the 1st year student

Scientific leaders – Cand.Hist.Sc. V.A. Pushkarev, O.I. Katina

Russian philosophy – is a phenomenon of world philosophy. Its singularity lies in the fact that Russian philosophy developed entirely autonomously, independently, irrespective of the European and world philosophy, and was not under the influence of Western philosophy. At the same time Russian philosophy is distinguished by the depth, versatility, sometimes incomprehensible to the West.

Characteristic features of Russian philosophy are:

- a strong exposure to religious influence, especially Orthodoxy;
- large role of morality issues;
- widespread among the masses, understandability to the common people;
- integrity.

Stages of Russian philosophy:

- The period of establishment of Old Russian philosophy in Russia.
- The philosophy of the period of the Mongol-Tatar yoke, origin, formation and development of the centralized Russian state.
- Philosophy of the XVIII century.
- Philosophy of the XIX century.
- Russian and Soviet philosophy of the XX century.

Russian philosophy of the XVIII century includes two major stages in its development:

- The philosophy of the reforms of Peter the Great.
- Materialist philosophy mid XVIII century

The first direction concerns the creativity of F. Prokopovich, V. Tatishchev, A. Kantemirova. Based on the direction of their philosophy was a socio-political:

- Questions of Monarchy.
- Imperial power, its divinity and inviolability.
- Emperor's rights (penalty, mercy).
- War and peace.

The philosophy of the direction was also engaged in other issues - knowledge, moral values.

The main representatives of the materialist trend were M.V. Lomonosov, A.N. Radishchev.

M.V. Lomonosov (1711-1765) was a supporter of the philosophy of mechanistic materialism. He found the materialist tradition in Russian philosophy. Also the theory of the structure of matter has been suggested by Lomonosov. According to it all the objects around and the whole matter consists of tiny particles, i.e. atoms - monads material.

A.N. Radishchev (1749-1802) paid much attention to the social and political philosophy. Its credo – was the fight against the autocracy for democracy, legal and spiritual freedom.

THE ANALYSIS OF A MATERNAL MORTALITY IN RUSSIA

Sakhratulaeva A.- the 5th year student

Scientific leaders - Doc.Med.Sc. L.N. Voit, O.I. Katina

Every day, about 830 women die from preventable reasons connected to pregnancy and childbirth. 99% of all maternal deaths occur in developing countries.

Higher rates of a maternal mortality are observed among women living in rural areas and among poorer communities. Girls of adolescence are at higher risk of developing complications and death as a result of pregnancy than older women.

Due to qualified assistance before, during and after childbirth it is possible to save the lives of women and newborn babies.

During the period 2005-2015, maternal mortality in the world decreased almost in 44%. In 2013 MD rate in Russia amounted 11.5 per 100,000 of live births. The structure of main reasons of MD was: extragenital pathology – 21.9%; obstetric embolism - 15.8%; edema, proteinuria, hypertension during pregnancy - 11.6%; bleeding during childbirth and the postpartum period - 10.7%; bleeding due to the detachment and previa - 8.8%; sepsis during childbirth and the postpartum period - 5.1%; uterine rupture - 3.7%; abortion initiated outside the facility - 3.7%; medical abortion - 2.3%; complications of anesthesia - 2.8%.

In 2014 on the territory of the Far East there were no cases of MD in the Amur and Magadan Regions, and in Chukotka. In 2014 14 women died. Their death has been assigned to category of MD.

The largest number of MD cases occurred in the Republic of Sakha (Yakutia) - 42.86%; in the Primorsky region - 28.57%. The rest of cases of MD were in the Jewish Autonomous Region - 7.14%; Kamchatka region - 7.14%; Khabarovsk Territory - 7.14%; Sakhalin Region - 7.14%.

FLOOD IN SOUTHERN AUTONOMOUS REGIONS OF RUSSIAN FEDERATION IN 2016

Dombrova T. – the 2nd year student

Scientific leaders – Cand.Biol.Sc. L.A.Guba, O.I.Katina

Krasnodar's flood

In the 1st of June a heavy rain falls on the capital of Cuban. Lesser then for two hours the roads becomes like rivers. Many houses and allotments suffered because of massive volume of water. All emergency services and squads of volunteers participated in the elimination of this situation. Among other things, in the center of Krasnodar 17 year old teen took a heavy electrical damage. Ambulance doctors could not save his life.

Flood in the Kurgan region

From 18s of April to 1st of May the Kurgan region was under a heavy flood. As the result 970 garden allotments as well as dozens of local areas were damaged. According the data, the water level in the Tobol River was 7 meters and 89 centimeters. There were no casualties. Data on the amount of damage is registered.

AIDS IN THE RUSSIAN FEDERATION

Golumbievskaya E., Saryglar Ch., Urmancheeva V. – the 2nd year students

Scientific leaders – Cand.Biol.Sc. L.A. Guba, O.I. Katina

Acquired Immune Deficiency Syndrome – is a disease affecting the body's defense system against infections.

Even the most minor infections insignificant for a healthy organism can lead to serious consequences in AIDS patients. AIDS is caused by the human immunodeficiency virus (HIV) that infects CD4-lymphocytes (cells that destroy infectious agents and pathogens). By reducing the number of CD4-lymphocytes there is a malfunction of the immune system. And definite infectious processes and malignant tumors begin to develop in a patient. In HIV infection the number of CD4-lymphocytes in the blood is no more than 200. This state is called AIDS. The effectiveness of the immune system is decreased. It may take about 10 years from the time of HIV infection to AIDS. Expanded AIDS stage is regarded as incurable and fatal. Patients die on average in 5 years after ascertaining the expanded AIDS. HIV can be detected by a blood test for antibodies to the virus. HIV infection immediately after analysis may give false results as it takes on average from 6 to 12 weeks to generate antibodies. Sometimes a positive HIV test result can be obtained only in 6 months after infection. Treatment of HIV and AIDS does not yet exist, but there are many drugs that slow down the destruction of the immune system and can thus significantly extend the lives of HIV-infected.

The biological substrates of human, through which the infection is possible: blood, sperm and pre ejaculate, vaginal and cervical secretions, maternal breast milk.

One of the most important ways of prevention - is to have sex with only one partner; have no contact with prostitutes, casual acquaintances, drug addicts using intravenous needles; have the group contacts. Use condoms to protect against HIV. Use only your own hypodermic needles, toothbrushes, razors. Insist on using only sterile disposable instruments during surgery (including dental), acupuncture, tattooing, or piercing. If you are supposed to have an extensive operation, pre-negotiate the possibility of autotransfusion (blood transfusions for subsequent transfusion to himself).

The total number of Russians infected with HIV registered in the Russian Federation in December 31, 2015 reached 1,006,388 people. Among them 212 579 HIV-positive died due to various reasons.

Over the entire period of observation in the Russian Federation since 1985, it was revealed 27579 HIV-positive foreign nationals, including 3567 - for the 2015. The incidence rate in 2015 was 63.6 per 100 thousand of population.

In 2015, in terms of morbidity in the Russian Federation the leading regions were: the Kemerovo region (registered 234.5 new HIV cases per 100 thousand people.), Sverdlovsk (183.6), Tomsk (155.1), Novosibirsk (145.7), the Chelyabinsk (140.0) region, the Altai Territory (132.7), Perm (123.6), Samara (121.2), the Irkutsk (118.9) regions, the Khanty-Mansi Autonomous Region (114.9), the Krasnoyarsk region (114.8), Kurgan (108.3), Tyumen (106.6), Ulyanovsk (97.2), Orenburg (96.9), Omsk (87.7), Leningrad (80.1), Nizhny Novgorod (72.9) area. Cases of HIV infections have been registered in all the regions of Russia.

In the Russian Federation in 2015 among HIV-infected people men are still dominated (63.0%). Most of them were infected through drug use. By the end of 2015, there were more than 372 thousand HIV-infected women. In most cases they were infected through sexual contact with men. In 2015, HIV infection was detected mainly among

Russians aged 30-40 years. The proportion of HIV infections in the age group 20-30 years decreased from 64% in 2001-2004 years to 26.2% in 2015.

FIRES IN THE REPUBLIC OF TYVA IN 2013-2016

Oorzhak Y., Khovalyg S., Many-Khaya S., Bexa A. – the 2nd year students
Scientific leaders – Cand.Biol.Sc. L.A.Guba, O.I.Katina

In 2013 there were 11 active forest fires on a total area of 841 hectare. Among them:

- Kaa-Khem coal district - 4;
- Barun-Khemchik district - 3;
- Piy-Khem coal district - 4.

In 2014 11 forest fires appeared on a total area of 1028 ha. They were:

- Tes-Khem coal district - 3;
- Chedi-Khol district – 5;
- Dzun-Khemchik district - 3.

In 2015 20 forest fires were registered on a total area of 43.1 ha. Among them:

- Todzhu district - 10;
- Tere-Khol district-5;
- Tandeski district - 5.

In 2016 2 there were 2 forest fires on a total area of 17.5 hectares:

- Sut-Khol district - 1;
- Todzhu district - 1.

The causes of fires are human error and natural disasters.

FACIAL PROPORTIONS OF PEOPLE FROM 16-25 YEARS

Molokin D., Kurbanova S., Nikitina A. – the 2nd year students
Scientific leaders – Cand.Med.Sc. S.S. Seliverstov, O.I. Katina

The man's face can be divided into three parts. The first part is from the hairline to the eyebrows. The second part is from the eyebrows to the base of the nose. The third part is from the base of the nose to the chin. Perfectly balanced face has almost equal values of these segments.

The nose

The nose is the most vivid distinctive feature of Europeoids. In people of this origin nose is usually intensely favored on a face. It has a high base, bridge and pinned wings.

Asian type of nose has a small size, low bridge of the nose and almost does not protrude. A typical Asian nose is flat, with projecting wings, which are directly integrated with the tip of the nose. Asian nostrils (and African) type can be seen in front, while at the Europeoids - only on the sides or not visible.

Humpback "broken" profile.

The hook: the tip is very low, like in an old man.

Eagle: shaped like a beak. Actually it has a more or less pronounced curvature.

Rome: a small hump-like aquiline nose.

Greek: it goes straight from the forehead, without basins.

Buttons: round and small. It has an upturned tip, but the nostrils cannot be seen. This form is common to all children.

Perked: unlike aquiline nose, its nose bridge is concaved inside.

Snub: short and upturned nose. Common in Asians.

"Funnel": characteristic for the Africans, but not for everyone!

Forehead

In the aesthetically proportionate face forehead and eyebrows occupy the top third.

Width of forehead is usually equal to half of its height. Forehead can be divided into two parts: upper and lower. The lower part corresponds to the supraorbital region and glabella area (the glabella). Bone basis of the bottom of the forehead affects the aesthetics of the eyebrows, the upper eyelid and the root of the nose, because of the direct structural support. Its shape is changed with the development of the frontal sinus, angularity and stronger protrude forward in men.

The upper part of the forehead is located above the supraorbital region and consists of a small vertical and transverse convexity. Tangible to the touch and often visible to the eye edge of the temporal fossa is a lateral boundary of the forehead.

Eyes

The almond-shaped eyes are characterized by elevated outer area.

In gated eye the skin hides the natural shape of the eyelid. These eyes can be in a person at birth, and may appear with age.

With deep-set eyes, the upper eyelid is hidden in the shadow because the fold of the eyelid is quite deep.

Round eyes seem to be larger because of the curved lower eyelid.

Sleepy eyes are called so because of the curved shape of the upper eyelid.

The last type of the eye is when the movable lid is lowered down to the outer corner of the eye.

Others, namely the ethnic types of eye, require more careful consideration.

Asian type

The easiest way to observe this type of eyes is on epicanthus. This is the upper eyelid fold running from the nasal septum and overlying the inner corner of the eye. As a result, the inner corner looks lower than it actually is, and the eye is like a slight slope. There is variability in the way how much the inner corner is hidden and as a fold on the outside corner is expressed. It is also important to note that even when the eyes are closed, their inner corners are downwards.

There are two types of Asian eye. One is known as "double eyelid" when the lid has a shape similar to the eyes of the Western type. Another type - is a "single eyelid". In this eye there are no folds on the movable eyelid.

HEALTH OF INFANTS BORN FROM SMOKERS MOTHERS WITH CHRONIC BRONCHOPULMONARY PATHOLOGY

Kanash T., Sakhratulaeva A., Zubkova M. - the 5th year students

Scientific leaders - Cand.Med.Sc. O.B. Prihodko, O.I. Katina

According to statistics over 24% of smokers among women are older than 15 years. They have more intense negative effects of tobacco consumption than men, especially in connection with the development of chronic obstructive pulmonary disease. Tobacco is the basis of many respiratory diseases: chronic obstructive pulmonary disease, lung cancer, a factor of bronchopulmonary pathology worsening. Smoking during pregnancy has adverse effects on a fetus.

In Russia, there are 52-55% of smokers among pregnant women, and there are 20-25% of those smoking during the whole period of pregnancy.

The effect of chronic nicotine intoxication in pregnant women on exacerbation of a disease is proved. In pregnant smokers gestational complications and fetal diseases are often observed.

Our patients are 26 pregnant women with asthma.

68 pregnant women are with unobstructed HB, among them:

- 38 pregnant women with chronic nicotine intoxication;
- 30 non-smoking pregnant women;
- 30 healthy pregnant women.

A clear link between smoking and frequency of exacerbations of chronic bronchitis and asthma with the development of gestational complications with the pathology of a fetus was detected. So, smoking cessation is an important therapeutic and preventive measure. It promotes both clinical improvement of chronic bronchitis and the reduction of the incidence of gestational and perinatal complications.

GAS EXPLOSIONS IN RUSSIA

Vasiliev Y., Kherel Ch., MaliShewski D. – the 2nd year students
Scientific leaders – Cand.Biol.Sc. L.A.Guba, O.I. Katina

According to the JSC "Rosgazifikatsiya", annually there are about 230 different incidents associated with the use of gas in the residential sector. On average, 130 people die (80% as a result of poisoning with carbon oxide, 20% in the explosions of gas-air mixture and fires).

To achieve the lower explosive limit with an extinguished torch of average size about five hours (large 2.5) is enough. An explosive composite near the fireless torch can be formed much earlier (10-15 minutes) that will also result in explosion, but of less power. For the explosion of gas and air composite a source of fire is required. It can occur from a spark when turning on the electricity or the water heater where a "fuse" is constantly on.

Definitely one can blame the careless inhabitants among them there are a lot of older people, and childish pranks can cause prolonged gas leak. However, the main problem is that in most of our apartments there are steam gas rangette. They don't have automatic gas cut – off ("stop-gas") in its leakage. Modern rangette is equipped with another system and automatic gas kindling. In the latest models of gas rangette there is a protection from children that disables the stove during the absence of adults at home. But such models fitted with universal protection are quite expensive. In any case, operating gas equipment must not be left without supervision of the person.

The danger of gas explosion increases significantly for single persons, elderly with elements of dementia. In such a situation it is advisable to install a kitchen induction equipment that is significantly safer and more economical.

Unfortunately, there is no legal basis for the mass replacement of technically obsolete plates in explosion-proof. It is sad that the population is not informed about the need to acquire modern gas equipment, as well as monitoring the health of gas equipment (for safety regulations it is necessary to control every four years). If there were the mass installation of rangette with "stop gas", they would be quite available to the public at a price. It should also be noted that gas rangettes have a low efficiency: for gas burners, it is 60%, and the oven one - only 6%. In economy of gas the efficiency is much higher (80%). Replacement of gas rangette on electric one, especially induction, can give a great effect both on the economy as fuel, and lower explosive limits (efficiency induction hobs 90%).

And the energy of gas explosion is significant: one kilogram of gas is equal to the explosion of 8-9 kg of TNT. Sad statistics: at 100 explosions, buildings are ruined and people die in 90-95 cases. Surprisingly, the installation of plastic windows is also fraught with negative consequences. Since the destructive properties of the explosion depend on the strength of the windows, the destruction in the house will be more with plastic windows. High strength of modern windows with triple glazing leads to a significant increase of excess pressure that promotes the destruction of the walls of the building.

Another problem is that natural gas itself and the soil under the houses often contain radioactive radon gas. The installation of plastic windows requires supply and exhaust ventilation in the house to prevent increase in the concentration of radon in the apartment (especially in the first and second floors of the house).

Conclusions:

1. to stop the installation of explosive gas rangette in new buildings;
2. gradually change the old gas rangette for explosion-proof;
3. to inform the public about defects of the old gas rangette;
4. to provide financial assistance in the acquisition of explosion-proof plates of those residents who belong to the category of high risk of explosion (elderly, disabled, etc.);
5. to explain the rules for the safety of gas appliances;
6. to state those residents who are unable to use gas safely due to various reasons;
7. to develop criteria for the ban on the use of gas equipment in residential construction (floors, region, etc.);
8. frame with glass should be made in the form of hinged windows;
9. to equip the building with exhaust ventilation when there is a mass installation of plastic windows;
10. to install in the apartments demodectic and gasoducto, especially on the first floor;
11. to carry out the repair of house gas networks and equipment;
12. to provide preferential loans when all the apartments of the house have explosion proof gas equipment.

EVALUATION OF PHYSICAL DEVELOPMENT OF MALE AND FEMALE FIRST YEAR STUDENTS OF THE MEDICAL ACADEMY BY ANTHROPOMETRIC DATA

Bukhanovskaya Y. – the 2nd year student

Scientific leaders – L.G. Zherepa, O.I. Katina

The catastrophic decline in the quality and level of health of the population as a whole and especially in children and adolescents - is an undeniable fact that causes concern among experts. A person, of course – is the absolute value of the society and his health - is a guarantee of the harmonious development of the society.

Health – is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

One of the indicators of health is physical development. Physical development - is a process of quantitative and qualitative changes in all indicators (body height, body weight, circumference of the various parts of the body).

Total picture about the physical development is obtained due to three basic dimensions: height, weight, circumference of the chest. Having received the

anthropometric data, it is possible to estimate the correspondence of analyzed parameters to age norms of harmonious development and to identify the type of constitution.

Identification of deviations in parameters of physical development may be risk factors or symptoms of certain diseases. Therefore, the ability to assess the obtained results of the measurements properly may contribute the education of stance on a healthier lifestyle.

Some factors may not only disrupt the sequence of development, but also cause irreversible changes. These include: external - adverse intrauterine development, social conditions, poor nutrition, lack of exercise, bad habits, work and rest, the environmental factor; domestic - family history, the presence of disease.

When assessing the anthropometric data and physical development of 90 girls and 40 boys of the first year students of the Medical Academy, a tendency to decreased growth among girls and boys was found. And the decrease in the level of development of subcutaneous adipose tissue among girls and, on the contrary, the increase of the level of fat among boys was noted. It may indicate a tendency to overweight and obesity.

DIFFERENCE OF HUMAN AND ANTHROPOIDS BONES

Ivchenko A., Martynova K – the 1st year students

Scientific leaders – A.E. Pavlova, O.I. Katina

There are a number of significant differences of human limbs from the anthropoids. In the upper limbs the humerus is relatively enlarged and the bones of the forearm and hand are shortened. An intense torsion of humerus diaphysis is characteristics of human. It compensates the bend of the head of the humerus medially, respectively the position of the scapula. In a hand there is more intense development of 1 and 2 rays. Thumb and forefinger play a particularly important role in the subtle movements of the hand of the human.

Human lower limbs feature with powerful development, great length, straight in the knee joints. Their peculiarities are due the adaptation to the vertical position of the body. Human pelvis is wider and shorter than in anthropoids. Pelvis is bulkier. Its transversal size prevails over the sagittal one, while in monkeys the correlation is inversed. In the course of anthropogenesis the rotation of the pelvis axis occurred. Sacrum leaned back and iliac wings moved forward changing the position of the pelvis towards the spine. Human pelvis has pronounced sexual differences that are almost imperceptible in animals.

Human femur is the longest bone in the skeleton. It accounts for nearly a quarter of the body length. Individual differences of body growth depend mostly on the femur. The bend of the femur diaphysis and its distal end inward as well as outward bend of the tibia are characteristic. It plays an important role in the mechanism of walking.

Human foot is a dedicated support structure. It is the most specific part of human limbs. Unlike monkeys, in humans it has powerfully developed proximal part made by calcaneus and talus. At the same time, the toes are shortened. In the process of hominization there was the reinforcement of the 1 ray and the reduction of the lateral toes, especially the little finger where the fusion of middle and distal phalanges is often observed. Along with the longitudinal vault the foot acquired the cross vault. The human foot is pronated and generally represents the twisted plate. Behind it leans the calcanean tuber and in front - on the heads of metatarsal bones.

Architecture of cancellous foot is determined that from the lower end of the tibia there are two systems of tension lines extending through the talus. One of them goes to the calcaneal tuber, the other one goes to the concavity of the foot to the head of the metatarsal

bones. These trajectories are perpendicular to the articular surfaces and are not broken by the joints. There are intersecting systems of bone beams in the calcaneus. They extend in the back and plantar directions. The powerful ligament apparatus, especially the long plantar ligament and the plantar aponeurosis plays a big role in the strengthening of the arch of foot. The last one connects both ends of the foot and keeps them from disperse.

MYOCARDIAL INFARCTION

Vasiliev D., Barannikov S. – the 3rd year students

Scientific leaders – Cand. Med. Sc. S.S. Perfilieva, O.I. Katina

Myocardial infarction is ischemic necrosis of cardiac muscle. Therefore clinically, in addition to changes in the electrocardiogram, it is characterized by enzymemia. Usually, this is ischemic (white) infarction with hemorrhagic halo.

Myocardial infarction is often localized in the apex, anterior and lateral walls of the left ventricle and anterior parts of interventricular septum. A heart attack rarely occurs in the posterior wall of the left ventricle and posterior parts of interventricular septum. When the main trunk of the left coronary artery and both of its branches are exposed to atherosclerotic occlusion, a gross myocardial infarction develops.

Myocardial infarction can affect the various parts of the cardiac muscle so there are subendocardial, subepicardial, intramural and through all thickness of the heart muscle - transmural infarctions.

The course of myocardial infarction has two stages: necrotic and stage of scarring.

At histological examination in necrotic stage the area of infarction is a necrotizing tissue where "islands" of unaltered myocardium are preserved perivascularly. The area of necrosis is separated from the surviving myocardium by area of plethora and leukocyte infiltration (demarcating inflammation). This stage is characterized not only by necrotic changes in the focus of infarction, but also the deep vascular and metabolic disorders out of this center. They are characterized by foci of uneven blood supply, hemorrhages, disappearance of glycogen in cardiomyocytes, the appearance lipids in them, destruction of mitochondria and sarcoplasmic network, necrosis of individual muscle cells. Vascular disorders also appear outside the heart, for example in the brain where irregular hyperemia may be detected, stasis in capillaries and diapedetic hemorrhages.

Stage of scarring (organization) of a heart attack starts basically when macrophages and young cells of fibroblastic series arrive to change on leukocytes. Macrophages participate in the resorption of necrotic masses. Lipids and products of tissue detritus appear in their cytoplasm. Fibroblasts, having a high enzymatic activity, are involved in fibrillogenesis. The organization of infarction occurs as from a zone of demarcation, so as from the "islands" of surviving tissue in the area of necrosis. At first the newly formed connective tissue is loose like a granulated tissue. Then it matures into scar tissue where islands of hypertrophied muscle fibers are seen around the blood vessels. In the pericardial cavity adhesions appear in the outcome of fibrinous pericarditis. Vessels anastomosing with the extracardiac collaterals are often formed in them. It helps to improve the blood supply to the myocardium.

Thus, at the organization of a heart attack a dense cicatrix is formed on its place. In such cases the postinfarction large-focal cardiosclerosis is meant. The surviving myocardium, especially along the periphery of the rumen, undergoes regenerative hypertrophy.

THYMUS AND ITS ROLE IN THE REGULATION OF LYMPHOPOIESIS

Shusharina V. – the 2nd year student

Scientific leaders – V.S. Kozlova, O.I. Katina

Thymus (thymus gland) — is an organ of human lymphopoiesis in which the maturation, differentiation and immunological "training" of the T cells of the immune system occur.

The lymphocytes are derived from blood stem cells migrating to the thymus from the liver in the early stages of fetal development.

In the lobule tissue the medulla and cortical substance are distinguished. There are pillar cells in the cortical substance: form the "framework" of the tissue and hemato-thymus barrier; stellate cells: secrete soluble thymus hormones — thymopoietin, thymosin and other hormones that regulate the processes of growth, maturation and differentiation of T-cells and the functional activity of mature cells of the immune system; "nurse"-cells: have intussusceptions where the lymphocytes develop; hematopoietic precursor cells: lymphoid series: maturing T-lymphocytes; macrophage series: typical macrophages, dendritic cells and interdigitate.

Directly under the capsule the dividing T-lymphoblasts are dominated in the cellular composition. Deeper there are maturing T-lymphocytes, gradually migrating to the brain substance. In their maturation process the rearrangeable of genes and the formation of the gene encoding the TCR (T-cell receptor) occur. Then they undergo the positive selection: interacting with epithelial cells the "functionally fit" lymphocytes are selected. They are capable to interact with HLA. While the development, the lymphocyte can differentiate in a helper or a killer. The next stage, the negative selection of lymphocytes, occurs at the boundary with the brain substance. Interdigitate and dendritic cells — the cells of monocytic origin — select lymphocytes capable to interact with antigens of their organism, and trigger the apoptosis. In the medulla mainly ripened T-lymphocytes are contained. From here they migrate into the venule bloodstream with increased endothelium and settle on the body.

Age involution of the thymus. The thymus gland finally progresses to 3 years of life. Up to 20 years the thymus is in a stable position. Then it undergoes the age-related involution. Thus, the connective tissue of capsule and trabeculae grow and adipose tissue develops. Simultaneously, T-lymphocytes disappear from the cortex and the medulla of the lobules of the thymus. As a result, the thymus turns into the adipose body.

Temporary involution of the thymus occurs in injury, illness, intoxication, stress. A large amount of glucocorticoids is produced in the adrenal cortex. Under their influence the cytolysis of lymphocytes or their uptake by macrophages occurs. As a result the cortical substance of the lobules of the thymus is as bright as a brain. Temporary involution continues until the illness or stress last. After that, the state of the cortex and the medulla returns to normal.

EMERGENCY SITUATIONS ON WATER TRANSPORT IN RUSSIA FOR THE LAST SIX YEARS

Soboleva A., Kudryashova D. – the 2nd year students

Scientific leaders – Cand.Biol. Sc. L.A.Guba, O.I.Katina

2011

18 Dec. 2011 the drilling platform “Kola” has turned over in the Okhotsk Sea. Only 14 of 67 people being on board were saved.

July 10, 2001 the two-deck diesel-electric “Bulgaria” sank. The crash occurred during a storm in the Kuibyshev headwaters in Tatarstan, three kilometers from the shore. At the moment there were 201 people. 122 of them died.

2012

1 June, 2012 in the Saratov region, in the waters of the Volgograd reservoir, 8 people on a private boat «Kazanka - M» clashed with a floating tree and overturned. 3 people died, including one child.

2013

17 August, in the Omsk region on the Irtysh river passenger ship «Polesye-8» clashed with a barge. According to preliminary data, the ship was holed. There were 56 passengers and four crew members on board. As a result 35 people were injured and four people died.

2014

4 Jun, 2014 in the river port of Yakutsk, in the water of the Lena River a private boat “Volga” clashed with a timber. There were 14 people – the captain and 13 passengers. One person died.

2015

On the night of 2 April the big trawler “Far East” sank in the Okhotsk Sea in 300 kilometers from Magadan. 132 fishermen (including 54 foreigners) were on board at the moment. Rescuers pulled from the icy water 119 people. 57 of them died, others were seriously frostbite, and 12 people reported missing.

2016

The wreck of two boats on Lake Sumozero in Karelia during the storm took the lives of 11 children. There were 26 people (two adults and others were children). 10 children died, 13 people were rescued. Two more were missing.

THE SYNDROME OF THE SUPERIOR MESENTERIC ARTERY

Vasylev D., Azadov S. – the 3rd year students

Scientific leaders - N.V. Korshunova, O.I. Katina

The syndrome of the superior mesenteric artery - is an external compression of the duodenum in the position of a child on his back as a result of a rapid weight loss. It is believed that the cause of the syndrome is the reduction of fat in the mesentery and the compression of the duodenum between the superior mesenteric artery (anterior) and the aorta (posterior).

The loss of fat around the second and third parts of the duodenum is considered to be the possible cause. It leads to the press of these parts to the spine in the supine position.

A classic example would be a teenager who has vomiting occurring after applying the plaster corset during orthopedic surgery. Other associated factors include anorexia, prolonged bed rest, weight loss, abdominal surgery, pronounced lumbar lordosis. Diagnosis is based on X-ray data - characteristic "break" of the duodenum to the right of the midline. Obstruction of the duodenum may be accompanied by dilatation of the proximal part of it, or stomach.

Treatment of this acute condition is to eliminate the obstructions and improve the diet to restore the normal anatomic correlation of the duodenum and surrounding

structures. Changing of the position of the body (the patient turning on his side or abdomen) promotes the shifts of the duodenum to the side and the possibility of the resumption of food intake.

In some cases, it is advisable to administer prokinetics - metoclopramide or cisapride. If the change in body position does not normalize the patient's condition, nasojejun tube is set and feeding begins. Some patients require the total parenteral nutrition for the recovery of fat or surgery.

DEPENDENCE OF HAND SIZES ON THE PARAMETERS OF GROWTH AMONG MALE STUDENTS OF ASMA 1991-1992 YEARS OF BIRTH

Varvarin G. – the 1st year student

Scientific leaders – A.E. Pavlova, O.I. Katina

The length of hands of 24 men was made to obtain the results of the research.

Height:

160-169 cm - in seven men;

170-179 cm - in ten men;

180-194 cm – in seven men.

Average hand's length in men with growth:

160-169 cm – 17 cm;

170-179 cm – 19 cm;

180-194 cm – 20 cm.

As a result, while studying these parameters we learned to use height meter and tape- measure. We realized that the anthropometric data have a great clinic value as deviation from the average parameters may indicate some diseases.

VIBRATION DISEASE PREVENTION

Hertek S. – the 3rd year student

Scientific leaders - E.A. Litovchenko, Doc.Med.Sc. N.V. Corshunova, O.I. Katina

Vibration disease - is an occupational disease that occurs as a result of long-term effects on the body of such physical phenomena as vibration.

The basis for preventing the vibration disease is maximum possible reduction of vibration effect on the body. This is the introduction of remote control over the vibration processes, the improvement of hand tools by reducing the vibration at the source of its formation and through its path, the installation of shock absorbers for machines that dampen the vibration. It is necessary to follow hygiene regulations at work and make sure that the vibration level does not exceed the maximum permissible level.

Work with vibrating equipment usually must be carried out in rooms with temperatures at least 16 ° C at 40-60% humidity. If the organization of such conditions is impossible (outdoors or underground work), special heated rooms must be provided for the periodic heating with the air temperature at least 22 ° C. It is also important to use personal protective equipment, namely gloves with palm pad of elastic material and special shoes with thick flexible soles.

The correct organization of work is of great importance in the prevention of occupational vibration disease. Time of work with vibrating tools should be strictly limited in intervals. It is necessary to make a 10-minute break after every hour of operation and lunch break is mandatory. Also two breaks for complex production gymnastics and

physiotherapy (20 min in 2 hours after the beginning of the shift and 30 minutes in 2 hours after the lunch break) are necessary. Duration of a single continuous vibration should not exceed 15-20 min, the total time of exposure to vibration - 2/3 of the total working time. After the work physiotherapy is recommended: showering (fan or Charcot-type), a warm bath for the hands and the massage of the upper extremities. In order to prevent the disease vibration the course of ultraviolet irradiation in suberythermal doses is carried out. Also the fortification, physical hardening, good nutrition, organization of active recreation is very important. Preventive treatment is recommended (1-2 times per year).

To work with vibrating machinery and equipment is allowed to persons over 18 years of ages who received the appropriate qualifications, passed a minimum of technical rules security and are medically available. Periodic medical examinations are carried out once a year with the participation of the therapist, neurologist, and otolaryngologist. People with Raynaud's syndrome, diseases of the central and peripheral nervous system, cardiovascular diseases, chronic diseases of the musculoskeletal system, gastrointestinal tract, lesions of the vestibular and hearing aids are not allowed to a work related to exposure of vibration.

THE CAUSATIVE AGENTS OF CATHETER-RELATED INFECTIONS

Goncharova A., Alkhimova N. – the 3rd year students

Scientific leaders - A. V. Prokopenko, O.I. Katina

There is great number of operations performed every day. Most of the operations require the necessity to keep in body cavities drainages and catheters for a long time. But they being in contact with the external environment become infected. All catheters can be colonized by bacteria as a result of destruction of the skin in the injection area, contamination during insertion or maintenance of catheters and bacteremia in patients with distant foci of infection. Patients receiving parenteral nutrition are more sensitive as a high concentration of glucose promotes the growth of microorganisms.

Most often in catheter – associated infections are:

1. Coagulase-negative staphylococci (*S. epidermidis*, *S. Saprophyticus*) – 34-49.1%;

2. *Staphylococcus aureus* is 11.9-17%. Staphylococcal infections are acute bacterial anthroponosis diseases with different mechanisms of transmission, characterized by a polymorphic clinical picture. Among them coagulase-negative staphylococci (*S. epidermidis*, *S. Saprophyticus*) and coagulasepositive (*S.aureus*) cause catheter – associated infections. Staphylococci – are fixed gram-positive cocci, the cell diameter is from 0.6 to 1.2 microns. *S.aureus* spreads by air-droplets and by contact-household. It is pathogenic for the organism. Due to coagulase activity there is an early blockade of lymphatic vessels that leads to limiting the spread of infection and clinically is manifested by the appearance of the infiltrative necrotic and suppurative inflammation. Epidermal *Staphylococcus* is an opportunistic. It inhabits all mucous membranes or any area of the skin. The vast majority of infections occur in weakened people. Through vascular and urethral catheters it pierces the body and can cause blood poisoning and endocarditis. *S. aureus* is an opportunistic microorganism. It often causes inflammation of the bladder (sometimes kidney) in women.

3. *Enterococcus spp.*(*Enterococcus faecalis*) – 5.9-6%. The genus *Enterococcus* belongs to the facultative anaerobic asporogenous chemoorganotrophic gram-positive

bacteria. These bacteria are consorbents of human intestines. They survive in the soil and food products and multiply at room temperature. The spece *E. Faecalis* is of primary importance in human pathology as it causes sepsis, inflamation of the urinary and digestive pathways and organs, skin and subcutaneous tissue in a weakened organism. Strain *E. faecalis* is antagonist for other pathogens.

4. *Candida* spp. (*Candida Albicans*, *Candida Parapsilosis*) – 7.2-9%. Fungi of the genus *Candida* consist of oval budding yeast cells (4-8 µm), pseudohyphas and septate hyphas. *C. albicans* forms chlamydo spores. Incorrect prescription of antibiotics, immune deficiencies, increased skin moisture, damage of the skin and mucous membranes facilitate the development of candidosis. Candidiasis is often caused by *C. albicans* producing proteases and integrirovanie molecules for adhesion to extracellular matrix proteins and other virulence factors. *Candida* cause visceral candidiasis (candidiasis of the urinary system), candidiasis of skin and nails, allergies to the antigens *Candida*.

5. *Pseudomonas* spp. (*P. Aeruginosa*) is 4.9-6%. These are gram-negative motile aerobic microorganisms (0.5-0.6 x 1.5 microns) in the form of sticks with a flagellum without a distinct capsule. *P. aeruginosa* grows better in a humid environment and can accumulate in the hospital dust. The pathogenic effect of *P. aeruginosa* is implemented using the complex of exoproducts: pigments, enzymes, toxins. Boric and formic acids, potassium permanganate affect it destructively.

6. Enterobacteriaceae (*Escherichia coli*) is 1-2%. *E. coli* are gram-negative rods (2-6 microns), paraneoplasia, facultative anaerobic bacteria. Source of infection is sick people or a carrier. It is pathogenic and highly virulent.

Diagnosis. In order to obtain material for microbiological examination of catheters without removing them a special nylon brushes attached to the conductor were developed. They allow to collect the bioenvelop from the inner surface of the catheter. As a shortcut method it is also proposed to conduct the microscopy of blood samples stained by the gram stain or acridine orange, obtained from the suspected catheter. The study of the precipitate obtained during centrifugation of native blood is also possible.

Catheter colonization was defined as growth of less than 10⁵ CFU/ml. Infection of the catheter is determined with the growth of more than 10⁵ CFU/ml without signs of systemic infection and in case of negative results of blood culture. Cattery sepsis is defined when the growth of 10⁵ or more CFU/ml in a patient with positive results of blood culture, signs of sepsis or both of these indicators. And this tube should be either removed or replaced with a new one.

Treatment. When proven catheter infection, the treatment should continue from 7 to 15 days. In patients with impaired immunity or patients with sepsis it may take a longer period. If within 48-72 hours the patient does not respond to the treatment, the catheter should be removed and sent for inoculation. And scheme of antibiotic therapy should be corrected.

Prevention. Hand washing or their treatment using products based on alcohol (the 2% solution of chlorhexidine gluconate) as before the catheter's appliance so as during manipulations with it are the most important measures that can significantly reduce the spread of infection. Maximal amount of aseptic technique during catheterization is proved to reduce the incidence of catheter-related infections significantly.

Conclusion. Recognition of the relevance of the problem, development of organizational - methodological guidance and standards for cannulation and care of the catheters, training of medical personnel on these issues will reduce the number of emerging catheter-related infections.

THE PLACENTA. A HEALTHY PLACENTA – A HEALTHY BABY

Subanov G. – the 2nd-year student

Scientific leader - PhD. D. A. Semenov

Placenta – a temporary female body. There is this body only during pregnancy and is critical for the child and for mother. From the functioning of the placenta affects the development and growth of the unborn child. When dividing the egg cells are formed, providing a contact of the fetus with the maternal organism. And from the first minutes of fertilization begins the formation of the placenta. Nutrients the fetus receives from the tissues of the female body. Through the placenta establishes the exchange of nutrients between the child and the mother. As needs change, growing organism the structure of the body changes. The placenta reaches full maturity by the end of 35 weeks of pregnancy. The main task of the placenta is providing the fetus with oxygen from maternal blood. Through the placenta in the opposite direction of the transported carbon dioxide. Nutrients required for development and fetal growth, delivered through the placenta. In addition, waste products from the fetus also gets rid of through the placenta. It supports and provides immunological protection of the fetus.

Pathology of the placenta today are quite common. The most common pathology of the placenta: previa, abruption in pregnancy, low placentation, placental dense attachment of the placenta accreta, early or late maturation of the placenta, the change of the lobed structure, infectious inflammation, the change in the thickness of the placenta, placental infarcts. Often a complete placenta previa. However, the uterine cavity is almost completely blocked by the placenta. And partial placenta previa. The anomalies of placenta eclipses last only a portion of the lumen of the internal OS.

The mechanical location of the placenta in the uterus almost completely depends on the location of the uterine wall, in which is embedded blastocyst. The fact that the placenta is born in this place and growing around him, increasing in size. Of course, this is a very simplified explanation, but the fact remains — in order to further the placenta is situated normally, the egg should implant in the upper half of the uterus. Exactly what usually happens. But if the introduction of it into the uterine wall occurs in the lower half, the developing placenta remains nothing, except to occupy the region of the internal OS. From this it follows that the frequency of pre-lying placenta is affected, or changes in the uterine wall, or the properties of the ovum. Anything that contributes to degenerative changes in the uterine wall for example; abortion, inflammatory diseases, a large number of previous pregnancies, old age, sickness with blood circulation in the pelvis, automatically raises the risk of an incorrect implantation of the blastocyst.

THE HOT ISSUES IN THE DIFFERENTIAL DIAGNOSIS OF THE BRONCHIAL ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Makarova A., Borodin P. – the 6th year students

Scientific leaders – doct. of med. sc., ass. prof. Prikhodko O.B., cand. of med. sc.

Kostrova I.V.

Today there are about 300 million patients with bronchial asthma (BA) over the world. The incidence of asthma in Russia is 2.2% (about 7 million people), while the

mortality is quite significant - 28.6 per 100 000 people. That means that about 43 thousand people die of asthma each year in Russia.

Chronic obstructive pulmonary disease (COPD) ranks 4th place in the world in the causes of death. According to official statistics, COPD diagnosed in 1% of Russians. According to the first international epidemiological study of chronic respiratory diseases in Russia, it is revealed that more than 15% of Russians have COPD symptoms. In spite of this, experts are sure that the real incidence is even higher.

In recent years, the permanent debates of the problems of differential diagnosis of bronchial asthma and chronic obstructive pulmonary disease are performed.

BA and COPD are two independent and the most common chronic diseases of the respiratory system. Despite the definite differences between them in the mechanisms of development, clinical manifestations, prevention principles and treatment, these two diseases have some common features. That is the reason of the certain difficulties in the practical work of even well-qualified physicians.

BA and COPD are common as they are based on a chronic inflammatory process that determines the clinical picture. In BA, the inflammatory process is allergic and is localized mainly in the airways, while there is a completely different situation in COPD. In GOLD, inflammation in COPD is named as "abnormal inflammatory response" - an abnormal inflammatory response to environmental factors aggression. The distinguishing feature of COPD is the localization of inflammation. Just as in asthma the inflammation is localized predominantly in the peripheral airways, but unlike BA is not limited and extends to the interstitial tissue and the lung parenchyma, leading to the destruction of the alveolar walls and the formation of pulmonary emphysema. This mechanism is a major component in the formation of irreversible airflow obstruction. Another important feature of COPD is a progressive nature of the disease, which is not typical for classical asthma. In clinical features, BA is characterized by reversibility of waviness and respiratory symptoms. In COPD, there is slow but steady increasing of the dyspnea, which is poorly controlled by conventional bronchodilators.

Differential diagnosis of BA and COPD is based on the integration of the basic clinical data, functional, and laboratory test results.

For patients with asthma there is a plenty of risk factors - allergens, causing the development of the disease. As for COPD, the primary risk factor is smoking (90%). For the majority of patients with asthma it seems probable to find genetic predisposition, which is not typical in patients with COPD. At the same time, the BA may start in any period of life of the patient, and COPD manifests in the second half of the life, due to the accumulation of risk factor exposures for many years.

The analyzing of the clinical manifestations is the most significant component of the diagnostics. Here are revealed well-defined and fundamental differences. Asthma symptoms are characterized by undulation, the severity of the clinical manifestations and their reversibility either spontaneously or after the treatment. The severity of the condition in BA is not determined by the duration of the disease and can be serious at the onset. After that, by taking the adequate therapy the condition may become better up to the complete disappearance of the clinical symptoms. The severity of COPD increases gradually with the age.

Functional differences between asthma and COPD are likewise considerable. Changes in respiratory function are the distinctive features of these two diseases - wave-like symptoms are typical for BA and absent in COPD. Herewith, such functional changes are progressive in COPD and lead to the patient disability.

PRIMARY AND SECONDARY PREVENTION OF MYOCARDIAL INFARCTION IN TRADITIONAL CHINESE MEDICINE

Borodin P. – the 6th year student

Scientific leader – cand. med. sc., ass. prof. Molchanova Ye. Ye.

Coronary heart disease (CHD) is the underlying disease of the cardiovascular system. Myocardial infarction (MI) as a consequence of CHD is the leading cause of mortality in most countries over the world including Russia. Atherosclerosis of the coronary vessels is the predominant cause of CHD. Thus, special treatment and wellness programs are required for the atherosclerosis prevention, and consequently, for the prevention of myocardial infarction.

Among the standardized guidelines for the primary and secondary prevention of MI are isolated medication and non-drug methods. Medication methods are: the regular intaking of antihypertensive drugs, glucose control with hypoglycemic agents (Diabetes mellitus), intaking of the antiplatelet agents (aspirin / clopidogrel), anticoagulants (heparin), and statins (atorvastatin, rosuvastatin. Non-drug methods include quitting smoking and moderate use of alcoholic drinks, diet correction, normalization of body weight, increasing of physical activity, avoidance of emotional stress, regular monitoring by the cardiologist.

Unfortunately, the treatment of CHD in Western medicine is not efficient enough. On the other hand, the effectiveness of Traditional Chinese Medicine (TCM) is proved by thousands of years of medical experience. Nowadays, the oriental therapies, such as herbal medicine, acupuncture, energy healing massage and others, are successfully practiced in many medical centers around the world. The benefits of TCM methods are lack of drug intoxication, stimulation of the own adaptive capacity of the organism, homeostasis normalization, the almost complete absence of contraindications, individual approach for the each individual patient, simplicity and accessibility of the most methods for implementing them directly by the patient. But, the patients who had MI in the past, must be regularly consulted by the medical specialist and stay on dispensary observation.

The one way of the vitality massage is influence on the Heart meridian to correct mental activity and to stimulate circulation. Massage is carried out by dynamic stimulation of the proximal phalanx dorsum of the little finger for 1-3 minutes. Reducing of pain indicates the restoration of the energy circulation in Heart meridian.

In TCM, patients are also prescribed for the sessions of hirudotherapy. Leeches have antitrombotic and antiplatelet effect, reducing the risk of MI.

Phytotherapy is one of the basic methods of therapy in TCM, which can be effectively used to restore the functioning of the cardiovascular system. Tincture or fluid extract of hawthorn is shown as an anti-arrhythmic and antispasmodic drug. The tincture of ginseng or lemongrass, lemon balm mixture, valerian root and motherwort are shown for stress resistance. Raspberry fruits, fruits and leaves of the sea buckthorn, daisy flowers pharmacies, oats, grass seed, dandelion roots, etc. are well for the prevention of atherosclerosis.

Breathing exercises are also used for the prevention of MI in TCM. Chinese doctors recommend to perform it early in the morning, at the sunrise. In particular, patient should stand facing east, relax, breathe shallowly and bring the chin to the chest, hold breath. Legs should be slightly bent at the knees and the body should be lean forward. Then abdomen should be tighten up as deep as possible to maintain and patient

have to count from 1 up to 10 in his mind. Patient have to start with the greatest possible numbers and add 1-2 seconds per day, bringing a breathing delay up to 30 seconds.

Secondary prevention of MI is to prevent the complications development and recurrent MI, and is performed after the course of rehabilitation with the monitoring of a cardiologist. Acupuncture performing is allowed no sooner than after 180 days of MI development in the points of xin-shu (BL15), jue-yin-shu (BL14), nei-guan (PC6), tan-zhong (RN17), xi-men (PC4) , tsu-san-li (ST36), sheng-tang (BL44), tun-li (HT5). Thin needles and both "bu-fa" and "se-fa" techniques are used, needles delay is of 20-30 minutes.

Auriculotherapy is effective in combination with minor pressure in reflex points of the heart, breast, brain (pituitary gland), small intestine and liver (thin needles, moderate stimulation and needle delay of 20-30 minutes). Thermopuncture is used in the points of tan-chung (RN17), ge-shu (BL17), sing-shu (BL15), tsu-san-li (ST36) (warming by wormwood cigarette for 10-20 minutes per point, 1 time / day).

DISEASE OSGUT-SHLYATTER (OSTEOCHONDROPATHY OF TIBIAL TUBEROSITY)

Lopatina E., Ondar S. – the 6th year students

Scientific leaders - Cand.Med.Sc. Dudarykov S.A., Kostina V.V.

Osgood- Shlyatter is called aseptic destruction of the tibial tubercle and its kernel, which is caused by a chronic injury during their intensive growth of the skeleton. It usually occurs in children and adolescents aged 10-18 years old. The causes of the disease are often the following factors: direct trauma (fractures and dislocations of the patella or tibia, knee joint damage); constant microtrauma of knee associated with contact sports. As a result of overload, constant microtrauma of knees, as well as excessive patellar ligament tension occurring during contractions of the quadriceps femoris muscle, there is a violation of the blood supply in the area of the tibial tubercle. It is accompanied by minor bleeding, rupture of patellar ligament fibers, aseptic inflammation in the bags, as well as changes in necrotic nature of the tibial tubercle.

The first symptoms of the disease are not intensive pain in the knee during the squat, going up and down the stairs, and when bending the knee. After considerable physical loading pain intensifies, there is swelling of the knee, which smooths the tibial tuberosity.

Crucial in the diagnosis of osteochondropathy tibial tubercle is a radiography of the knee. On the radiograph in lateral projections there is observed characteristic "proboscis" in the tibial tuberosity isolated small size bone fragments, in 1-3 amounts. The picture is very diverse, reminiscent of crushing, or fissuring of curvature of the epiphyseal bone.

Treatment is usually conservative, outpatient and is supervised by traumatologist, surgeon or orthopedics. First of all, one must exclude physical load, and maximum comfort of knee is provided. Drug treatment of Osgood-Shlyattera disease is based on the use of painkillers and anti-inflammatory drugs. There is used various methods of physical therapy: magnetic therapy, mud therapy, shockwave therapy, UHF, massage of the lower limbs, paraffin. Surgical treatment is carried out only in severe destruction of bone of the head of the tibia. The operation removes necrotic foci, and filed a bone graft, which fixes the tuberosity of the tibia.

ENDOGENOUS DEPRESSION

Voronina A. - the 6th year student

Scientific leaders - Brush N.G., Kostina V.V.

Endogenous depression (melancholia) is an atypical sub-class of the mood disorder, major depressive disorder (clinical depression). Endogenous depression occurs due to the presence of an internal (cognitive, biological) stressor instead of an external (social, environmental) stressor. Endogenous depression includes patients with treatment-resistant, non-psychotic, major depressive disorder, is characterized by abnormal behavior of the endogenous opioid system but not the monoaminergic system.

Symptoms. The forefront indication of a depressive episode is manifesting is the sudden loss of energy or motivation in daily routines. When this occurs, it is not uncommon for individuals to seek medical attention with excessive worrying or anxiety that a more severe, physiological disease may be the underlying issue. However, without an actual disease present, this neurotic thinking often results in severe anxiety, sleep disturbance, and mood swings which may hinder social relationships. Individuals with endogenous depression may experience inconsistencies in symptom severity ("the swing of affect") which is often the reason for delayed treatment. If left untreated, symptoms may progress to a major depressive episode.

Treatment. Individuals suffering from endogenous depression require treatment plans that focus on the internal, cognitive thought processes since internal stressors are the root of somatic symptoms. Individual cognitive therapy (ICT) is therefore a common treatment used to gain insight to the individual's internal conflicts or thoughts that are motivating their distressing symptoms. Once the cause of the symptoms are identified, sessions are used to develop new coping skills, behavior modification, and changes in beliefs. As preventative measures, pharmaceuticals such as SSRI's and antidepressants may also be utilized to avoid further development or progression to Major Depressive Disorder. There have been few treatments targeted specifically toward Endogenous Depression; therefore, symptoms are often managed similarly to Major Depressive Disorder. One such treatment is electroconvulsive therapy (ECT). ECT is used as a treatment option for endogenous depression in adults, however, practitioners avoid the use of ECT in young adolescents due to rates of injury.

CHRONIC TRAUMATIC ENCEPHALOPATHY

Prygunov V., Marushko L. - the 3rd year students

Scientific leaders – Can.Med.Sc. N.V. Menschikova, N.R. Levchenko, E.A. Volosenkova

Chronic traumatic encephalopathy (CTE) is deterioration of the brain caused by the accumulation of tau protein. Damage of the brain during CTE can lead to serious mental and physical disabilities. Disease worsens over time. CTE is caused by multiple blows to the head, resulting in a concussion. Brain Injuries lead to disorders of consciousness and thinking, physical problems, emotional and behavioral disorders, which may occur years later. Single or series of concussions do not necessarily cause the development of CTE. CTE is a neurodegenerative disease and leads to progressive damage of the nerve cells and noticeable changes in the brain. Some of these changes can be seen in brain scans, but an accurate diagnosis can be established only after the death of the patient. Now methods of CTE diagnostics are being developed with patient's life. CTE, formerly known as the missed shock syndrome, dementia or boxers dementia pugilistica, was first established in

boxers. People involved in contact sports, in which repeated blows to the head occur (martial arts, football, rugby and others), are at increased risk of CTE. The disease can develop in soldiers injured in the explosions. The exact causes of CTE are not quite clear for science. Currently CTE is incurable.

FIBROELASTOMETRY OF THE LIVER

Belukhin V., Belyaeva Y. – the 4th year students

Scientific leaders - Can. Med. Sc. M.V. Sulima, E.A. Volosenkova

Fibroelastometry of the liver is - innovative research of the liver state without surgery. The basis of this research method is the determination of the velocity of electromagnetic impulses that are sent to the patients liver using a special device Fibroscan. Initially, the impulses pass through the skin, liver, and then spread throughout the body. On the side of the chest of a human a special sensor is attached the purpose of which is to capture the impulse. The slower the signal passes through the tissue, the higher the probability of their damage by any pathology is. For information about the status of all body areas fibroscanning of the liver is repeatedly performed from different perspectives. Then all the figures are added up, the average value is displayed, indicating the state of the organ tissues. The values resulting from scanning are interpreted with the following organ conditions: healthy - to 6 kPa; the 1 stage of fibrosis - 6 - 6.6; the 2 stage of fibrosis - 6.6 - 8.5; the 3 stage of fibrosis - 8.5 - 10.3; the 4 stage of fibrosis - 10.3 - 20.8; clinical cirrhosis is more than 25.6. Fibrosis is the replacement of normal liver tissue with scar tissue that disturbs the functioning of the organ. The amount of scar tissue connective tissue provides an indication of the stage of liver disease.

Indications for the study: chronic viral hepatitis, liver cirrhosis, cryptogenic hepatitis, autoimmune hepatitis, fatty liver, alcohol induced liver disease with evidence of cytolysis and cholestasis, toxic liver disease, sclerosing cholangitis.

Contraindications: patients age to 18 years, the presence of ascites, patients with pacemakers, pregnant women.

Fibroscanning method gives complete information about the structure of the liver that allows to differentiate the pathology and appoint competent treatment.

HEADACHES IN THE 4TH YEAR STUDENTS OF THE AMUR STATE MEDICAL ACADEMY

Gonakova V., Belyaeva Y. – the 4th year students

Scientific leaders - Doc. Med. Sc. V.N. Karnaukh., E.A. Volosenkova

Topicality: headache (HA) is one of the most frequent complaints, with which patients come to doctors of various specialties, is a general medical problem. HA is the most common cause of long-term disability and loss of quality of life, that gives it an important social and economic significance. Fruitless searches of structural changes in the brain in HA and the lack of effectiveness of treatment create diagnostic and therapeutic difficulties for doctors of different specialties.

Epidemiology: Headache is a common symptom and according to some authors detected in approximately 85% of individuals in the general population. HA is more typical for women (88%), for men it is less typical (69%).

Objective: To carry out a survey among students of the 4th year of the Amur State Medical Academy, in order to identify the shape and character of HA.

Results: A survey of 40 students of the 4th year of the Amur State Medical Academy, aged 19 to 23 years was carried out. Answering the question of "localization of HA" 31 people said that the whole head hurts, especially the parietal and occipital regions in 7 patients pain in the eyes and forehead, in 2 persons- one half of the head; Answering the question of the nature of pain, 20 people indicated squeezing pain, 11 - throbbing pain and 9 persons bursting inside pain Answering the question "how often are attacks of HA repeated?" the majority of people (33) reported 1-2 times a month or less, 6 people 2, 3 times a week and only 1 had pain every day; Answering the question: "Does the weather conditions provoke headache" 35 people said "yes" and "15" does not; Answering the question "How long does a headache last?" 33 people said that HA lasted a few hours; 2 people said that it lasted up to the day or a few days, and 5 people said the pain lasted all day. To the question "what is the HA accompanied by?" 35 students noted no symptoms, and only 5 point to nausea and sensitivity to light;

Conclusion: The survey showed that the majority of students were concerned about tension headache. Also, there are those who have symptoms, which are characteristic of migraine. They are 11 respondents; and 7 students experienced clustered pain.

ENDOGENOUS DEPRESSION

Shelikhan O., Belyaeva Y. – the 4th year students
Scientific leaders - N.G. Brush., E.A. Volosenkova

Endogenous Depression is a mental disorder, the classic manifestations of which are depressed mood, motor inhibition and slow thinking.

Etiology: this emotional disorder refers to diseases of predisposition. It may be caused by a genetic factor. The reduced adaptive human capabilities, dysregulation of certain substances in the body, such as serotonin, norepinephrine, dopamine are transferred hereditarily, there is a shortage of these substances in the body. The development of the disease may be caused by an external action - traumatic situation, internal diseases, taking certain medications, neurological pathology.

The main symptoms of depression are depressed mood, slow thinking and motor retardation. These symptoms are called as the triad of Kraepelin.

The mainstay of treatment of endogenous depression is the use of drugs. The most common antidepressants are - sertraline, fluvoxamine, citalopram, fluoxetine. Another group of drugs used for the treatment and as maintenance, preventive therapy are mood stabilizers. This group of drugs includes lamotrigine, valproate. Prolonged use of mood stabilizers helps stabilize mood, prevents the development of depressive episodes. Psychotherapy is used only as an adjunct to medical treatment. Psychotherapy contributes to the solution of problems and conflicts.

People suffering from this mental disorder, should avoid an excessive load on the psyche, work at night, alcohol abuse, they must maintain a healthy lifestyle.

NODULAR ERYTHEMA

Belyaeva Y. – the 4th year student
Scientific leaders - Doc. Med. Sc. V.V. Schimko., E.A. Volosenkova

Nodular erythema is inflammation of the skin and subcutaneous vessels having an allergic genesis and formation of dense manifested painful inflammatory hemispherical nodes of

various sizes. Very often the process is localized on the symmetric parts of the lower extremities.

The basis of the formation of nodular erythema is the sensitization of any origin. Causes: infections (tuberculosis, streptococcal infections, yersiniosis); autoimmune diseases (ulcerative colitis, Crohn's disease); intake of a number of drugs (iodides, antibiotics, bromides); vaccination; sarcoidosis; oncological diseases; heredity

Symptoms: nodular erythema is characterized by the features – dense to the touch nodes sometimes without clear boundaries; with hemispherical shape; painful; without pruritus; of up to 5 cm in size.

Skin, located on them, is hyperemic and smooth; with indistinct borders; localized mainly in front part of the shins.

According to variants of the clinical course: acute; chronic nodular erythema are distinguished.

The first of them occurs suddenly and is accompanied by a rise in temperature, joint disease. The duration of the acute variant is about a month. Chronic case lasts for months, in addition to skin manifestations patients suffer from joint pain.

Treatment: hypoallergenic diet; antibiotics (erythromycin, doxycycline, penicillin); anti-inflammatory drugs (hormonal and non-hormonal); desensitizing agents; hemosorption and plasmapheresis; physiotherapy (magnetic therapy, ultraviolet irradiation, laser therapy, phonophoresis).

Treatment prognosis of nodular erythema is favorable for the patient.

HEALTH BENEFITS OF PING PONG / TABLE TENNIS

Kanarsky N. – the 2nd year student

Scientific leaders – prof. Borodin E.A., ass. Volosenkova E.A.

Table tennis originated in Victorian England, where it was played among the upper-class as an after-dinner parlour game. It has been suggested that makeshift versions of the game were developed by British military officers in India in around 1860s or 1870s, who brought it back with them. The game is widespread in Europe and Asia in XX century and became extremely popular in some countries like China.

Whether you're playing doubles or singles, table tennis, or ping pong, can be a fast-paced competitive sport. In fact, when played at an intense rate, it can be a great way to burn calories and get fit.

Top 10 Health Benefits of Ping Pong:

- **Playing improves hand-eye coordination** and it stimulates mental alertness, concentration and tactical strategy. This makes it the perfect game for young people to sharpen reflexes, and for older people to refine tactics.
- **Develops mental acuity.** The speed, spin and placement of the ball are crucial in table tennis, and practiced players are highly skilled in both creating and solving puzzles involving these three attributes.
- **Improves reflexes.** Due to the fast-paced, short-distance nature of the sport, both gross and fine muscle movements are improved. The game is distinguished by bursts of exertion and recovery, leading to fast-twitch muscle development.
- **It's easy on the joints.** Have you had knee surgery, back problems, tired of twisting your ankles? Try table tennis. It's a great way to improve your leg, arm and core strength without overtaxing your joints.

- **Burns calories.** A 150-pound person can burn 272 calories by playing table tennis for an hour. Considering the fact that the sport is entertaining and addictive, it can be a fun and easy way to burn calories.
- **Offers a social outlet.** Whether you play in the community center or at home with friends, table tennis offers a great way to bond with other people while you lose weight. Because young and old people can play the game, it can help improve communication and build relationships, irrespective of age. Playing at home with siblings or parents can bring family members closer and enable them to spend more quality time with each other.
- **Keeps your brain sharp.** *Alzheimer's Weekly* reports a clear increase in motor skills and cognitive awareness from playing table tennis, after a series of preliminary clinical studies in Japan found that table tennis markedly increases the flow of blood to the brain, and could possibly even prevent dementia.
- **Improves coordination.** Following the ping pong ball as it moves quickly toward you, and following its trajectory as your opponent hits it helps improve hand-eye coordination.
- **Improves balance.** Staying balanced and being able to quickly change direction are key to being successful in a ping pong rally. This is especially important for the elderly.
- **Stimulates various different parts of the brain.** By anticipating an opponent's shot, a player uses the prefrontal cortex for strategic planning. The aerobic exercise from the physical activity of the game stimulates the hippocampus, the part of the brain that is responsible for allowing us to form and retain long-term facts and events.

FEATURES OF PREGNANCY IN WOMEN WITH MILD CARDIAC ANOMALIES

Lukianova K., Cherednichenko O. – the 6th year students

Scientific leaders – A.P.C.M.S. O.N. Sivyakova, E.A. Volosenkova, O.A. Dedkova

Functional disorders and conditions associated with minor cardiovascular abnormalities (MCA) are very important in the structure of cardiovascular diseases. Nowadays, MCA are associated with undifferentiated dysplasia of the connective tissue. Undifferentiated diffuse connective tissue is of the special interest in obstetrics and may cause different complications in pregnancy and baby birth. Basically, cardiologists have no objection to carry a pregnancy.

The aim of the study was to determine the peculiarities of the pregnancy and baby birth and condition of the newborns.

Materials and methods: individual cards of the pregnant women, case histories of pregnant and clinical records of patients with MCDA and congenital heart diseases (CHD) who have record in the maternity consultation centre №1 in Blagoveshchensk.

Results: Case histories of 17 women with middle age of 27,3±1,48 years was studied. 9 of them (52,9 %) are primipara and 8 of them (47,1 %) are deutipara. 2 of them (11,7 %) are up to 20 years old, 8 (47,1 %) are 20-29 years old, 4 (23,5 %) – 30-34 years old, 3 (17,6 %) are over 36 years old.

7 women had mitral valve prolapse (MVP) of the 1 st. degree and 1 women had MVP with no regurgitation. Every second pregnant women (9 women, 52,9%) had atrial septal aneurysm, 3 woman (17,6%) had patent foramen ovale (PFO), and one case of

ASD, VSD, and open aortic flow (OAF) respectively. Every third pregnant woman (29,5%) had additional chord in the left ventricle and myocardiodystrophy.

Compensated chronic fetoplacental insufficiency (CFI) was the most common complication of pregnancy and was diagnosed in 9 women (52,9%). Preeclampsia moderate severity and gestational diabetes were diagnosed in 17,6%.

The average rating of newborns by Apgar score was 8/8.

Conclusions cardiovascular system decompensation (tachycardia and cardiac overload) was diagnosed in 2 women of 17 (11,7%). Various pregnancy complications were identified in more than half of the cases.

THE EXPERIENCE OF APPLICATION OF DETOXICATION PLASTERS IN COMPLEX TREATMENT OF PATIENTS WITH DISEASES OF BILIARY SYSTEM AT THE OUT-PATIENT AND POLYCLINIC STAGE

Bairamova A., Lukyanova K., Glushkova N. - the 6th year students
Scientific leaders - O.M. Goncharova, E.A.Volosenkova

There is a great number of patients with gastroenterologic diseases at both on incidence indicators, and on number of polyclinics including both: morbidity indices and the number of visits to the doctor.

Recently, the role of a polyclinic stage increased in treatment of patients with diseases of biliary system which consists of carrying out a basic course of treatment, and further in implementation of a wide complex of rehabilitation actions.

Purpose. To study the efficiency and tolerance of impact of detoxication plasters with tourmaline on acupuncture points in patients with diseases of biliary system.

Materials and methods. 30 patients at the age of 45-66 years, were examined. All patients were divided into 2 groups. The first group (15 patients) received standard treatment, according to the established diagnosis. In the second group (15 patients) against the background of complex treatment, on feet in a zone of a projection of a liver and gall bladder detoxication plasters with tourmaline were applied.

Results. In all patients of both groups who received complex treatment indicators of cytolytic and holestatic syndromes decreased and normalized (81% and 92% according to groups). According to ultrasonography, in all patients positive dynamics of a biliary tract was observed: (70% and 85% respectively), Thus, the conducted research showed that application of the detoxication plasters in complex treatment of patients with chronic cholecystitis and fatty dystrophy of a liver gives the chance to achieve of more expressed positive dynamics in patients.

BIOCHEMICAL COMPOSITION OF BILE

Stepanshina T., Savich M. – the 2nd year students

Scientific leaders - Assoc. Prof., Doc. Med. Sc. E.V.Egorshina, E.A.Volosenkova

The human bile mainly contains cholic, chenodeoxycholic and deoxycholic acids. Also in human bile in small quantities lithocholic acid, allocholic and ureodeoxycholic acid are contained. Bile acids present in the bile in a conjugated form, i.e. as glycocholic, glycodeoxycholic, glycochenodeoxycholic or taurocholic, taurodeoxycholic and

taurochenodeoxycholic acids. These compounds are called paired bile acids, since they consist of two components - of the bile acid and glycerol or taurine. Bile pigment bilirubin is an excreted product of hemoglobin metabolism and gives the bile its characteristic golden yellow color. In hepatocytes bilirubin forms water soluble conjugates and, in small quantities, with sulfates. Urine pigments and urobilinogen, urochrome and stercobilin are formed of the bile pigments.

Pathologies. Cholelithiasis Biochemistry of cholelithiasis consists of the following main principles. The formation of cholesterol stones. Normally, the liver secretes a certain amount of cholesterol in the composition of bile. In case of the original excess of cholesterol with bile produced its excess can form small crystals deposited in the gallbladder. Elevated bile concentration leads to the fact that these small crystals gradually stick together, forming an increasingly large concretions. Ultimately, this stone is able to completely block the lumen of the bile ducts and cause severe pain. The formation of pigment stones. Together with cholesterol in the bile secreted by the liver a certain quantity of bilirubin enters. Bilirubin may be present in two fractions: free and bound. In the free fraction excess of bilirubin in bile it interacts with minerals (particularly with calcium). The result of this interaction is the formation of small pigment stones, which gradually increase in size and become quite solid in weight in the development of gallstones.

BRONCHOALVEOLAR LAVAGE

Maysak A. – the 2nd year student

Scientific leaders –Doc. Med. Sc. Prof. N. P.Krasavina, E. A.Volosenkova

Bronchoalveolar lavage is a bronchoscopic way of receiving washout from a surface of a bronchial tree and alveolar structures of the lungs for cytologic, microbiological, biochemical and immunologic researches. As a result of the procedure of bronchoalveolar lavage various portions of lavage liquid – the bronchial washout (BW) and bronchoalveolar washout (BAW) are received.

Now the research of cellular structure of the BAW, the so-called endopulmonic cytogram is most widespread. The normal cellular structure of BALF in non-smokers per 100-300 ml of liquid is presented by alveolar macrophages (to 90%), mainly band leukocytes (1–2%), lymphocytes (7–12%), and also cells of an epithelium of bronchial tubes (1–5%).

Research BALL also allows to estimate a condition of surfactant system of lungs by means of measurement of the interfacial tension and studying of phospholipid composition of surfactant.

The main immunologic indicators of structure of BALF are alveolar macrophages which play an important role in immunity reactions, and this responsibility depends on their viability and the functional state. Also important biochemical indicators of composition are leukocytes, and lymphocytes. V-lymphocytes make 5-10%, zero cells - 19%. Of particular interest are researches of cytokines — proteins mediators of various cellular reactions.

Research of BAW allows to estimate a degree of activity of inflammatory process in infectious diseases and effectiveness of the carried-out therapy. Also on cytologic changes in composition of the BAW one can judge about various pathologies of a bronchial tree.

THE PROBLEM OF PROTEIN MALNUTRITION IN THE DEVELOPING COUNTRIES

Chernysheva A., Maysak A., Leshtaeva U. – the 2nd year students

Scientific leaders – Assoc. Prof., Doc. Med. Sc. E.V. Egorshina, E.A.Volosenkova

Protein deficiency can occur in two ways. Firstly, the food can contain sufficient energy, but not protein. It is common in parts of Africa, where the staple food is maize or cassava, i.e. cultures - rich in starch, and therefore energy, but poor in protein. The corn flour lacks the essential amino acid tryptophan, without which proteins can not be synthesized. In areas where wheat grows, protein deficiency is rare.

The second cause of protein deficiency is the low energy content in food. In this situation, as a power source the body's own proteins are used.

Kwashiorkor. For the first time the disease was described in 1935 in Ghana; its name comes from the word for "sick child that is weaned of the breast immediately after birth."

Symptoms of Kwashiorkor include: 1) the hair become thin, brittle, sparse, easy to fall and often lose their pigmentation; 2) the salivary glands are affected; they are greatly increased, resulting in a distinctive face, "crescent-shaped" appearance; 3) abdomen becomes swollen due to accumulation of gas in the intestine, where excessive growth of bacteria occurs; 4) swelling appears resulting from fluid accumulation in the tissues of the body, 5), muscle dystrophy, underweight and stunted growth; mental development is also slow; 6) spotty skin pigmentation and spider veins occur; skin becomes rough; wound healing is difficult; jaundice may occur; 7) interest in the outside world weakens, there is irritable apathy; 8) fatty liver;

9) vitamin deficiency diseases lead to characteristic symptoms of these conditions, especially with a deficiency of vitamins A and D; 10) decreased resistance to infection. Kwashiorkor is often fatal.

INFLUENCE OF SYMPATHETIC NERVOUS SYSTEM

Leshtaeva U., Chernysheva A., Maysak A. – the 2nd year students

Scientific leaders - Can.Biol. Sc. S.N.Gasanova, E.A.Volosenkova

Phenomenon of Orbeli-Ginetsinsky was discovered in 1923. In experiments on neuromuscular preparation motor fibers were stimulated by electrostimulator. Isolated muscle contracted in response to each of the rhythmically repetitive stimuli, and on the tape of kymograph typical curve of muscle contraction was recorded. The amplitude of the curve decreased at fatigue. After stimulation of the sympathetic nerves, there was an increase in the amplitude of muscle contractions, and kymograms showed a new wave of increased activity. Later, the phenomenon was confirmed in mammalian muscles during normal blood supply.

LA Orbeli put forward an idea of a universal adaptive-trophic function of the sympathetic nervous system, which regulates the functional properties of all organs and tissues, setting them at an optimum level for the given conditions. This regulation is not limited to smooth muscles and glands, it covers all parts of the reflex arc - receptors, central nervous system, nerve guides, and skeletal muscles.

At the heart of the phenomenon of Ginetsinsky Orbeli-activation of the sympathetic nervous system lies. Further investigations revealed a common effect of the sympathetic nervous system and the reticular formation of the brain on restoration muscle health.

SAYANO-SHUSHENSKAYA POWER STATION ACCIDENT

Bivzyuk E., Bivzyuk V. - the 2nd year students

Scientific leaders - E.V. Egorshina, E.A. Volosenkova

On the 17th of August, 2009 at 8:13 AM, the hydro-electric plant suffered from a catastrophic accident caused by flooding the turbine room, and explosion of two electric generators under the water as a result of a short circuit. All other machinery was damaged to some extent, and only four hydro-aggregates were ultimately restored; the remaining six ones required replacement. 76 persons, including 1 pregnant woman, were confirmed dead.

Power generation from the station ceased completely following the incident, with the resulting [blackout](#) in residential areas being alleviated by diverting power from other plants. [Aluminium plants](#) in [Sayanogorsk](#) and [Khakassia](#) were completely cut off from the grid before power supplies were replaced using alternate power sources. Russia warned that in the longer term it might lose up to 500,000 tons of aluminum output due to the power shortage, and called for accelerating the construction of the [Boguchanskaya hydroelectric power station](#) to replace lost generating capacity.

The accident caused an [oil spill](#) with at least 40 tonnes of [transformer oil](#) released, spreading over 80 km downstream of Yenisei.

LIPODRENE

Peshkova D., Hvatov I. – the 2nd-year students

Scientific leaders – E.V. Egorshina, E.A. Volosenkova

Lipodrene - one of the best fat burners provided on the sports nutrition market. Unlike competing-lipotrop additives in its composition it has only ingredients, which effectiveness and safety are verified directly by experiment.

The main advantages of the use of Lipodrene

- It is an excellent termogen, accelerates metabolism –
- Blunts excessive appetite, makes it easy to stick to your diet –
- Improves performance, mental activity –
- Removes the accumulation of new fat deposits –
- Allows you to get rid of fat as soon as possible –

The main components of Lipodrene :

Ephedra. Ephedrine stimulates the central nervous system and reduces the feeling of hunger. It speeds up metabolism and increases muscle endurance.

Acacia Rigidula. Yields adrenaline. It activates the thyroid gland, which helps the body convert excess of fat into energy. It improves attention and concentration, which are significantly worse during diet.

Citrus Aurantium. Characterized by active fat-burning effect, formed due to the increase in body temperature. Also reduces appetite, it adds energy and increases endurance during exercise.

1,3-Dimethylamylamine (geranium). It has a similar effect to the effect of caffeine. But it is much stronger than it. It provides a powerful energy charge.

Cassia Nomame. Expels the excess water from the body. That will protect you from edema and hypertension. It improves bowel function.

Evodiamine. Burns fat and charges the body with energy. It improves metabolism.

Yohimbe. It dilates blood vessels, which helps muscles be better saturated with oxygen and nutrients. In this regard, tolerance increases and metabolism improves. It improves mood.

Naringen. It improves the digestibility of all components of Lipodrene Hardcore. It improves glucose metabolism.

6,7 Dihydroxybergamottin and **5-Methoxytryptamine HCl** prolong operation of the components contained in the preparation. For CNS stimulation in Lipodrene hardcore mixture Tri-Xanthine is responsible which contains Yerba Mate Extract, Green Tea Extract, Theobroma Cocoa, less rich with less harmful caffeine analogues.

THE PREVENTION OF HEMATOGENOUS THROMBOPHILIA THROMBOTIC COMPLICATIONS

Kolnauz T. – the 6-th year student.

Scientific leader - Voitsekhovskiy V.V.

The World Health Organization and ISTH consider hematogenous thrombophilia as unusual tendency to thrombosis with the beginning in early ages, family heredity, severity of thrombosis, which is disproportionate to well-known causal factor and episodes of thrombosis recurrence. During the diagnosis determination we used the recommendations of the American Association of Thoracic Antithrombotic and Thrombolytic Therapy Physicians (2008) who determined the thrombophilia as the presence of one or more signs: deficiency of antithrombin, proteins C and S, resistance to activated protein C, mutation of V Leiden factor, mutation of prothrombin G20210A, hyperhomocysteinemia, homozygous carriage of the thermolabile variant of MTHFR, antiphospholipid antibodies, increased activity of factor VIII or reduced levels of protein Z.

Recently new oral anticoagulants has appeared, for example, the direct thrombin inhibitors dabigatran (dabigatran etexilate) and factor XA – rivaroxaban and apixaban.

In the Amur Region dabigatran (pradaxa) was given to 30 patients with hematogenous thrombophilia in age from 20 to 50 years in order to prevent blood clots. All patients have a combination of several thrombogenic factors. There is an information in their histories: 18 patients have the pulmonary embolism (recurrent in 12 cases), 4 patients have the ischemic stroke, 2 patients have the myocardial infarction, 26 patients have a vascular disorder of the lower extremities. The drug was not appointed for patients with antiphospholipid syndrome. The patients took dabigatran from five years to several months. The dose was selected individually from 150 to 220 mg per day. 6 patients had hyperaggregation platelet except all the other factors and their therapy was combined with acetylsalicylic acid. The protein C and antithrombin III in their congenital deficiency were also used. After using dabigatran the recurrence of life-threatening thrombotic complications was not noticed as well as hemorrhagic complications. 12 patients lived in long-distanced areas and could not regularly monitor their koagulograms.

CLINICAL COURSE AND MODERN APPROACHES TO THE TREATMENT OF PNEUMONIA

Alieva A. – the 5th year student

Scientific leaders - Dr.Med.Sc O.B. Prikhodko, ass. I.V. Kostrova

Respiratory pathology now has the leading role in morbidity structure of adult population. The incidence of pneumonia in the Amur region is an average of 574.1 cases

per 100 thousand citizens, which is higher than the all-Russian level by 31% (396.8 per 100 thousand.). In connection with this there is an interest in studying of the clinical characteristics of the course and approaches to the treatment of pneumonia at the current stage.

163 case histories of patients were analyzed for the period 2014. The clinical and radiological features of CAP flow, distribution of patients by sex, age, the severity of the pneumonia, outcome of the disease, presence of complications, terms of the initiation of antibiotic therapy, the clinical efficacy of the initial antibiotic and antiviral therapy were studied.

It was revealed that there were 96 men (58.8%) and 67 women (41.1%) among the patients with pneumonia. The age structure was as follows: at the age of 18-40 years - 32 patients (19.6%), 41-60 years - 59 (36.1%), 61-80 years - 51 (31.2%), 81 or older - 21 (15.4%). The diagnosis of pneumonia and the using of antibacterial therapy during the first day of onset noted in 31 cases (19%) within 7 days of onset - in 125 cases (76.6% men), for 14 days or more - 7 cases (4.2%). By the degree of severity of pneumonia patients were distributed as follows: in 97 cases (59%) - to moderate in 68 (41.7%) - heavy.

From the first day of treatment in hospital patients received antibiotics following pharmacological groups: aminopenicillins advantageously inhibitors-protected, cephalosporins basically III generation, modern macrolides, respiratory fluoroquinolones, carbapenems. 78.5% of patients (128) were on combination therapy: antibacterial and antiviral (Ingavirin, oseltamivir).

Effect of receiving treatment was assessed by clinical and radiographic dynamics of the disease: a positive trend within 7 days from the start of treatment was observed in 125 patients (76.6%), for 14 days - in 34 (20.8%). The dynamics of X-ray pictures of patients receiving antiviral therapy was studied: a positive trend - in 115 cases (89.8%), for 14 days or more - in 13 (10.1%). In a satisfactory condition were discharged: 144 patients (88.3%), with the formation of morphological defects - 14 (8.5%), death - 4 (2.4%). In one patient outcome could not be traced - refuse of further treatment (0.6%).

According to the analyzed data, sequential approach to the appointment of antibacterial therapy is carrying out which is assuming a two-stage application of antibiotics. The main idea of sequential therapy is to reduce the parenteral antibiotic therapy, which provides a significant reduction in the cost of treatment and reduce of patient's length of stay in the hospital while maintaining high clinical efficacy.

THE EFFECT OF HIGH AND LOW TEMPERATURES ON THE HUMAN BODY

Palachik T., Doenina O – the 3rd year students

Scientific leaders - E.V. Litovchenko, E. A. Volosenkova

Even in ancient times, our ancestors knew that health and all the vital processes also depend on the weather and other natural phenomena.

The effect of temperature on the body is most pronounced in the industrial environment where there may be high or very low temperatures. Long stay of a person in such conditions causes stress of thermoregulatory mechanisms, which is regarded as a stressful situation. Low air temperature, increasing the heat creates the risk of hypothermia. Abrupt decrease in the air temperature is especially harmful to human health.

Cold reduces aggression, rejuvenates and prolongs life, improves sleep, helps to heal diseases, lose weight and get rid of depression.

Under the influence of bath procedure, the body's ability to work and its emotional tone increase recovery processes after intense and prolonged physical activity accelerate. As a result of regular visits to the bath the body's resistance to colds and infectious diseases increases. Stay in the sweating room causes dilation of blood vessels, increases blood circulation throughout the body. Under the influence of high temperature sweat is intensively exuded to assist the removal of harmful products of metabolism from the body.

For a long time scientists thought the warmer weather was more comfortable for the human body, but, having studied the effect of the cold in detail, they found that the low temperature is more useful for health. Scientists of Harvard University have proved that heat for a human is five times more dangerous than the cold. Mortality in severe cold, increases by 1.59%, but it is still lower than the mortality rate in the intense heat, which increases by 5.74%.

POLYNEURITIS

Sechkareva M., Khnykina I., Buryachenko T., Cherepanov A – the 3rd year students
Scientific leaders - Can. Med. Sc. N.N.Dorophienko, E.A. Volosenkova

Polyneuritis -is a disease characterized by multiple disorders of peripheral nerves. It is manifested in the form of a paresis, desensitization, and also in the form of various disorders of trophic type.

Causes:

- Complications after infectious diseases
- Complications of systemic diseases;
- Intoxication
- Metabolic disturbances in uremia, nephritis or diabetes;
- Malabsorption of nutrients
- Hypovitaminosis associated with a deficiency of vitamin B1;
- Autoimmune disorders.

Symptoms:

The disease begins with formication, cooling and numbness in hands and feet, feeling chill in them, even in hot weather, the appearance of aching or shooting pains in the extremities. Gradually weakness in the legs, unsteady gait occur, it becomes difficult to keep things in the hands. Limb muscles are reduced in volume (atrophy).Desensitization occurs, especially in the hands and feet - the type of "Gloves" and "socks".

Treatment:

In the acute period bed rest is necessary. In addition to drug treatment, to physiotherapy, exercise therapy may be administered in the chronic course - spa treatment. Prevention of polyneuritis with common infectious diseases and metabolic disorders is possible if the underlying disease is treated in a timely manner. To prevent toxic polyneuritis in the respective industries rigorous safety regulations are developed. If these rules are followed then entering toxic substances into the body is excluded. When working with pesticides polyneuritis can be avoided if you follow the instructions on the use of these substances.

HARDENING

Tsyrenzhapova I., Sechkareva M. – the 3rd year students
Scientific leaders - E.A. Litovchenko, E.A. Volosencova

Hardening is a system of preventive measures aimed at the body's resistance to adverse environmental factors. Revitalizing hardening helps the body to enhance adaptation to environmental conditions. That is a seasoned body even at considerable fluctuations in the environment temperature maintains the temperature of the internal organs in a fairly narrow range.

Besides human tempering increases stamina, strengthens the nervous system, enhances immunity and resistance to disease. Hardening is considered to be one of the best ways to maintain health.

Principles of hardening:

- ✓ individual approach;
- ✓ gradualness and succession;
- ✓ consistency;
- ✓ a combination of local and general procedures;
- ✓ a variety of forms and means;
- ✓ self-control;
- ✓ active lifestyle.

The main methods of hardening include:

1. Air baths are the impacts of natural air to completely naked body.
2. Sunbathing is direct sunlight influence on the human body for its healing and prevention.
3. Barefoot walking in the cold time walking is in a short time, after getting used to it the walking time increases.
4. Contrast douche - is pouring with cold and hot water (in turn).
5. Pouring with cold water - less than 1 time a day.
7. Rubbing with snow – it is necessary to start gradually you can even drag a towel first time in the snow and dry yourself with it.
8. Bathing in the hole is for the most hardened people.

GASTRIC LEIOMYOMA

Kadeneva V., Rudenko A. - the 3rd year students

Scientific leaders - Can.Med. Sc. L.A. Volkov, E.A.Volosenkova

Benign gastric tumors without epithelization make up refer to rare diseases and 0.5-5% of all gastric tumors. Leiomyoma – is a benign tumor which develops in the gastrointestinal tract smooth muscle tissue. Among BGT, leiomyoma is the most common. It may be localized in the esophagus, stomach, intestines. Leiomyoma of the stomach is formed in patients aged 16-18 years and manifests to 30-50 years. It is more common in the combination with gastric ulcer, chronic gastritis, sometimes with other gastric tumors, including malignant. Leiomyoma is usually a single tumor. With long-term existence of the tumor its surface becomes uneven, sometimes ulcerated.

At the break leiomyoma has grayish-pink color, fibrous structure, clear contours. According to the nature of the growth tumors with endogastral, xogastrlan, intromuralnym spread are isolated. Clinical manifestations are diverse. Often, they are asymptomatic. The disease can first appear with such complications as gastric bleeding, perforation of the tumor. Patients may complain of epigastric pains, indigestion, weight loss, weakness, tarry stools. In some patients, the tumor is palpable. For the diagnosis of leiomyoma endoscopic, radiological, ultrasonic methods, computed tomography are used. Treatment is only operative. The volume of the operation depends on the size and location of the tumor: the tumor enucleation – is a wedge and partial gastrectomy.

ACUTE PANCREATITIS

Pak E., Pushkov A. – 3rd year students

Scientific leaders - Doc. Med. Sc. - I.Y Makarov, S. A. Peschanskaya, A. I. Petrakov, E.A. Volosenkova

Primary acute pancreatitis complicates many infectious and non-communicable diseases. Acute pancreatitis, uncomplicated by necrosis of the pancreas, has the vague clinical picture. The penetration of infection in the pancreas may be hematogenous, canalicular — through the pancreatic duct and the contact.

According to the nature of the process there is serous, catarrhal and purulent pancreatitis. Pancreas with serous pancreatitis is swollen, opaque, pink. Cloudy swelling of the epithelium and edema of the interstitial tissue with lympholeukocyte infiltrations are observed microscopically. Catarrhal pancreatitis is characterized by a mucopurulent exudate in the ducts with epithelial desquamation and leukocytic infiltration of the interlobular connective tissue and all layers of the ducts. Catarrhal pancreatitis may be complicated by stone formation or suppurative pancreatitis, which occurs in two forms — pertaining to apostema phlegmonous. All forms of acute pancreatitis can turn into the acute necrosis of the pancreas.

FACTORS AND MECHANISMS OF NONSPECIFIC ANTI-INFECTIOUS DEFENSE OF THE BODY

Pushkov A., Pak E. – the 3rd year students

Scientific leaders - Can. Med. Sc. O.V. Bubnets, E.A. Volosenkova

The state of macroorganism is very important along with the properties of the pathogen in case of infection. It is determined by a complex set of factors and mechanisms that are closely related to each other, is characterized as the susceptibility (sensitivity) or immunity (resistance) to infection.

The innate factors of nonspecific immune defense of the body include: skin and mucous integuments, lymph nodes, lysozyme and other enzymes of the oral cavity and the gastrointestinal tract, normal microflora, natural killers (NKK) and phagocytic cells.

The skin and mucous membranes. For most microorganisms, including pathogens the intact skin and mucous membranes are a barrier to their penetration into the body. Constant desquamation of the upper layers of the epithelium, secretion of sebaceous and sweat glands help to remove microorganisms from the skin surface. However, the skin is not only a mechanical barrier, it also has bactericidal properties associated with the action of lactic and fatty acids, various enzymes secreted by sweat and sebaceous glands. Therefore, various microorganisms that are not included in the number of permanent inhabitants of the skin, quickly disappear from its surface.

The lysozyme. Lysozyme is a heat stable protein of mucolytic enzyme type. It is contained in tissue fluids of animals and plants. Lysozyme is produced by monocytes and tissue macrophages. It causes lysis of many saprophytic bacteria, providing a less pronounced lytic effect on the number of pathogenic micro-organisms and is inactive against viruses. Mechanism of bacteriolytic action of lysozyme is the hydrolysis of bonds between N-acetylmuramic acid and N-acetylglucosamine in the polysaccharide chains of peptidoglycan layer of the cell wall of bacteria. This leads to a change in its permeability, accompanied by the diffusion of cellular content into the environment, and cell death.

The importance of the microflora of the human body. The normal microflora is one of the factors of nonspecific resistance of the organism. It possesses antagonistic properties against pathogenic and putrefactive microflora, participates in water - salt metabolism, regulation of gas composition in the intestine, the metabolism of proteins, carbohydrates, fatty acids, cholesterol, nucleic acids, and also in the production of biologically active compounds: antibiotics, vitamins (K, of B group, etc.), toxins, etc. Carries on the digestion and detoxification of exogenous substrates and metabolites.

PREVENTION OF INFECTIOUS DISEASES IN PRESCHOOL EDUCATIONAL INSTITUTIONS

Krichko M. - the 6-th year student.
Scientific leaders – P.K Soldatkin.

Children with suspected infectious diseases are not allowed. The following is necessary: timely identification of patients and carriers of infection, their isolation from the healthy ones; avoiding contact of healthy persons with contaminated objects healthy; strict observance of sanitary-hygienic and sanitary and anti-epidemic regime in institutions and at home. If you suspect a child is isolated disease. Medical employee must fill out an emergency notification card and send it to the Federal Service; notify the institution's management. Sanitary and anti-epidemic measures, are conducted all measures are taken to control all the children and staff contact.

Preventive measures: the formation of the body immunity in children, isolation of groups, observance of sanitary regulations, the air mode, quartz treatment of group premises. Classes in physical training and aesthetics are necessary as well. Air mode is an essential element of prevention of respiratory diseases. Proper organization of child nutrition. Physical education and tempering.

Epidemiology: medical check-ups; systematic observation; preventive vaccinations.

FAR EAST SCARLET-LIKE FEVER - A DISEASE OR SYNDROME

Ondar S. - the 6th year student
Scientific leaders – P.K. Soldatkin, E.A. Volosenkova

In 1959, in Vladivostok there was a major outbreak of a previously unknown disease. Because of the similarity with scarlet fever it was called "far East scarlet-like fever" (DSL). DSL is a new clinical-epidemiological form of pseudotuberculosis of a person. The source and reservoir of infection are pets and animals (rodents), soil. Infection occurs with the use of products not subjected to thermal treatment (cabbage, carrots, apples). In a total morbidity the proportion of children aged from 1 to 14 years is quite high.

Clinic: scarlatina-like form is the most common form of pseudotuberculosis, characterized by fever, scarlatina-like rash and symptoms of general intoxication, which are combined with symptoms of pharyngitis, scleritis. Symptoms of local lesions are mild or absent. Children often combine this form with hepatic, intestinal, angina and arthralgic form.

Treatment: antibacterial drugs (chloramphenicol, furazolidone). In severe forms chloramphenicol succinate is administered intramuscularly at 30 - 50 mg/kg of body weight. During intoxication, infusion therapy is conducted, proteolysis inhibitors on a background of diuretics, desensitizing medications and vitamins. The prognosis is favorable.

BILIARY ATRESIA

Dashieva D., Ondar S. – the 6th year students

Scientific leaders – S.N. Nedid, E.A. Volosenkova

Atresia of bile ducts (biliary atresia) - is a progressive necroinflammatory idiopathic disease, occurring with lesions of extrahepatic bile ducts, leading to the development of cholestasis manifested in the newborn period, and in the later stages of the process intrahepatic bile ducts are involved as well.

There are 3 types of biliary atresia:

- Atresia, stenosis of the common bile duct with the formation of a cyst. It is an absolutely correctable disorder.
- Atresia or stenosis of the common hepatic duct with residual lesion of the right or left lobar duct.
- Atresia of internal and external bile ducts is a severe disorder.

With the rapid increase of biliary hypertension, Kasai operation is being performed, it includes the creation of an anastomosis between the liver and the intestines. Liver transplantation is carried out only in case of the damage of patency of intrahepatic bile ducts and increasing liver failure.

Biliary atresia – is a progressive disease that can only be stopped by drainage of the biliary tract. The key prognostic factors are experience of the surgeon and the patient's age. This operation is performed for children at the age of 2 months, in this case it provides more than 70% survival. Children older than 2 months of age have 27% and over 3 months of age - only 11% survival rate.

BIOPHYSICAL BASES OF SOUND PERCEPTION

Bazarsadueva N. – the 2nd year student

Scientific leaders – Assoc. Prof. T.L. Ogorodnikova, E.A. Volosenkova

SOUNDS are mechanical vibrations perceived by the ear.

The world around us can be called a world of sounds. There are people's voices, the music, the sound of wind, the chirping of birds, the roar of engines and rustling leaves around us. Hearing the sound, a person may experience a variety of feelings. A wide variety of emotions is caused by the most complex set of sounds that we call music. Sounds are the basis of the speech, which is the main means of communication in human society.

A sound source is vibrating body (for example, speaker cones, the membrane phones and string musical instruments). For sound propagation elastic medium such as air is necessary. The moon has no atmosphere, so there is no sound there. Elastic bodies are good sound's conductors. Most metals, trees, gases and liquids are elastic bodies and so they are good sound conductors. So, under the water sounds of propellers and hitting stones are clearly audible. The fish hear steps, the voices of people on the beach, it is well known to fishermen. The sound of a moving train can be heard if you put your ear to the rails, as the sound travels by them better than by air. By applying your ear to the ground, you can hear the clatter of a galloping horse.

And now look at how sound is perceived. Receiver of sound in a person is the hearing organ. Sound perception is produced by special cells of the organ of Corti, which are called fibrous.

Man usually perceives sounds with a frequency of 15 to 20,000 Hz (range 10-11 octaves). In children, the upper limit is up to 22,000 Hz, with age, it decreases. So, in the elderly the

upper limit of sound perception is reduced to 6000 Hz. They do not hear, for example, a mosquito squeak, which produces sounds with a frequency of approximately 20,000 Hz.

THE EFFECT OF HIGH AND LOW TEMPERATURES ON THE HUMAN BODY

Palachik T., Doenina O – the 3rd year students

Scientific leaders - E.V. Litovchenko, E. A. Volosenkova

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Cold reduces aggression, rejuvenates and prolongs life, improves sleep, helps to heal diseases, lose weight and get rid of depression.

Under the influence of bath procedure, the body's ability to work and its emotional tone increase recovery processes after intense and prolonged physical activity accelerate. As a result of regular visits to the bath the body's resistance to colds and infectious diseases increases. Stay in the sweating room causes dilation of blood vessels, increases blood circulation throughout the body. Under the influence of high temperature sweat is intensively exuded to assist the removal of harmful products of metabolism from the body.

For a long time scientists thought the warmer weather was more comfortable for the human body, but, having studied the effect of the cold in detail, they found that the low temperature is more useful for health. Scientists of Harvard University have proved that heat for a human is five times more dangerous than the cold. Mortality in severe cold, increases by 1.59%, but it is still lower than the mortality rate in the intense heat, which increases by 5.74%.

EPIDEMIOLOGICAL FEATURES OF PNEUMONIA

Markova T., Danchenko C., – the 4th year students

Scientific leaders - Doc. Med. Sc. O. A. Tanchenko, E. A. Volosenkova

The improvement of preventive measures against infections of the upper and lower respiratory tract is one of the most important activities of Federal Executive bodies exercising the state sanitary-epidemiological supervision.

According to the CPS since 2009, the CPS introduced operational weekly monitoring for community-acquired pneumonia (CAP) in constituent entities of the Russian Federation. As a result of analysis of materials submitted to the Federal service for 5 years, we can say that the structure of the patients with CAP in Russian Federation includes mostly the adult population, but children under 17 years constitute about 30.0%. Town-dwellers, constituting about 80 % of the victims, are more common.

In 2015, the incidence of CAP in the whole Russia made up 337.8 per 100 thousand population. The excess of the indices in comparison with average levels across the country was in 45 regions.

According to the forms of state statistical observation over the 2011-2013 43-44%, in 2014 – 31,8%, and in 2015 – 30.2% of the CAP had a bacterial nature.

Pneumonia is contagious, so you should limit contacts with sick people, in times of epidemics avoid visiting places with large crowds. As there are vaccines against many pathogens of pneumonia, it is necessary to conduct vaccination among children and persons over 65, and people with severe chronic diseases - specific prophylaxis of pneumonia. At present for such vaccination three kinds of products are used: prevenar, pneumo 23, ACT Hib. The most common complications of lobar pneumonia are pleurisy, pericarditis, focal nephritis, abscesses and gangrene of the lungs, acute respiratory failure, infectious-toxic shock.

Thus, compliance of epidemiological regime, timely diagnosis, optimal doses of medicine can improve the situation of pneumonia, and avoid complications.

ARTERIAL HYPERTENSION IN PATIENTS WITH METABOLIC SYNDROME

Bigun A., Gamza B., Usik O. - the 3rd year students

Scientific leaders - Can.Med.Sc. I.V. Sklyar, E.A. Volosenkova

The aim of our study was to evaluate the effectiveness of the blocker of receptors AT II- losartan and angiotensin-converting enzyme inhibitor (ACE) - enalapril in the treatment of arterial hypertension (AH) in patients with metabolic syndrome (MS).

The study included 58 patients with MS. Women made up 71.4%, men - 28.6%. The average age of the patients - $57,3 \pm 6,3$ years. Waist - $106,9 \pm 4,9$ cm.

Depending on the assigned antihypertensive therapy, the patients were divided into 2 groups: group 1 (n = 30) received Losartan ("Prezartan», IPCA, India) 50 mg / day, group 2 (n = 28) - enalapril. ("Enalapril", LLC "Ozone", Russia) 20 mg / day. In the main clinical, laboratory and instrumental parameters the groups did not differ significantly.

All patients underwent a complete clinical and laboratory research. Quality of life (QoL) was assessed using a common questionnaire SF-36. The survey was conducted before and after 6 months of treatment.

Results showed that after the treatment in group 1 target blood pressure (BP) was in 28 (93.3%) patients, and in the 2nd group – in 20 (71.4%) patients. Patients in both groups showed significant improvements in intracardiac hemodynamics. On the background of therapy in the 1st and 2nd groups indicators of lipid blood spectrum, the level of glucose, plasma potassium concentration were not significantly changed. Before the treatment, 12 (40%) and 11 (39.3%) patients of the 1st and 2nd groups had microalbuminuria accordingly. By the end of follow-up, more significant decline in microalbuminuria ($p < 0.01$) was detected in patients of the 1st Group compared with patients of the 2nd Group ($p < 0.05$). After treatment, patients in both groups increased life quality parameters on the scales: assessment of general health ($p < 0.01$), vitality ($p < 0.01$), physical activity, social activity, the role of emotional problems in the vital activity restriction ($p < 0.05$), while in group 1 QOL indices were higher than in the 2nd group.

Thus, treatment of AH with losartan in MS contributes to the achievement of target level of blood pressure, improves the indices of intracardiac hemodynamics, reducing the risk of developing cardiovascular complications, improves the quality of life of these patients.

MICROBIOLOGICAL DIAGNOSIS OF CANDIDIASIS

Dmitrieva D., Homenko K. – the 3rd-year students

Scientific leaders - Bubinets O.V., Volosenkova E. A.

Candidiasis (candidiasis) is an opportunistic infectious disease of the skin, mucous membranes and internal organs, caused by yeast fungi of the *Candida* genus of the Cryptococcaceae family of the Deuteromycetes class. The main causative agent is *Candida albicans*, rarely - *C. tropicales*, *C. krusei*, *C. guilliermondii*, *S. lusitaniae*. Microbiological diagnosis of candidiasis includes microscopy of pathological material, isolation of pure cultures of fungi, conducting serological tests and putting allergy tests. In local and systemic forms of the disease material for research is taken from affected areas - skin flakes, scrapes from nails, mucus, pus, sputum, urine, bile, cerebrospinal fluid, stool, in generalized - blood, punctuates of abscesses, biopsy material from cadavers - blood from the heart, pieces of parenchymal organs.

The relevance of our work is the problem of candidiasis at the present stage in our society.

PROBLEMS OF MORBIDITY OF ELDERLY PEOPLE

Burumbaeva V., Galagan D. - the 5th year students

Scientific leaders – Assoc.Prof., Sundukova E.A., Volosenkova E.A.

The severity of the problem is determined by the fact that, in particular, the incidence of elderly patients (61-75 years) 2 times, senile (76-90 years) - 6 times, the need for outpatient care - 2-4 times, for stationary for certain types of specialized care (cardiology, endocrinology, pulmonology, urology, ophthalmology, neurology, psychiatry, oncology, etc.) - 1.5-3 times is higher than that of people of working age.

The development of geriatric services in Russia is dictated by the progressive aging of the population, the rising morbidity of the elder people, features of pathology of older age groups of people and the need to improve the organization of their social and psychological support.

General morbidity of Russia's population is growing. It has increased from 158.3 million cases in 1990 to 207.8 million cases in 2005, ie, for 31%. Morbidity of individuals aged 60 and older is 1.5-2 times higher than the morbidity for average aged people. As it was expected, the incidence of elderly Russians is characterized by polymorbidity, when each one of the patients has 3-5, and often a larger number of diseases.

There are the following features of the pathology of elderly people: polymorbidity, a chronic course of disease (diseases), effacement of the clinical picture and the severity of the process, the drug pathomorphosis, delays in seeking for medical care, changeable pharmacokinetics and thus pharmacodynamics of drugs, forced to polytherapy and quite rather frequent polypharmacy in conjunction with drug addiction, very often impossibility to receive adequate medical care, a complex tangle of personal, social, household and medical problems which led to the appearance of a new for Russia specialty "physician geriatrician."

Currently, there are a number of barriers that negatively affect the state of health of the elderly, which need to be addressed within the health system development in Russia.

The health status of elderly and senile patients is characterized by:

- 1) Progressively increasing with age, exposure to diseases - disease of the cardiovascular system, diseases of the respiratory and digestive organs, chronic diseases of the joints, organs of vision and hearing, diabetes, diseases of the central nervous system and cancer are allocated among them;
- 2) The presence of several simultaneously occurring chronic diseases (polymorbidity);
- 3) The combined effect on the body condition of pathological and age-related changes, which leads to the "atypical" clinical manifestations of disease;

- 4) Decrease of the effectiveness of functional and adaptive mechanisms.
- 5) Gradually growing loss of the ability to self-service, which is most often caused by diseases of the musculoskeletal system, diseases of the cardiovascular and nervous systems, the organs of sight and hearing diseases and diabetes;
- 6) Decompensation, exhaustion and failure of adaptive-compensatory homeostatic mechanisms which are progressing in conjunction with senile infirm and old age diseases.

NEW FACTS ABOUT CHOLERA VIBRIO

Kiselko M. – the 5th year student

Scientific leaders - P.K.Soldatkin, E.A.Volosenkova

"Secretory system of type VI» (T6SS) - molecular complex consisting of proteins of viral origin, whereby bacteria-killers pierce shell of neighboring cells and introduce toxic substances. Neighbors killing with T6SS in cholera vibrio relate to the borrowing of genetic information from dead cells. These genes are included in response to adverse conditions. Insertion of foreign genes occurs by substituting its own DNA fragment to fragment like borrowed (horizontal gene transfer). Genes of vibrio necessary for "natural transformation", are included in response to the same signals as the genes responsible for the formation of T6SS, a neighboring cell killing dramatically increases the likelihood of integration of victims genes in the genome of killer cells.

Each strain of vibrio has the immunity to the toxic "effector" produced by itself. Several genes which are necessary for the absorption of a foreign DNA are involved in response to a combination of the two stimuli. The first stimulus is chitin. In the presence of chitin vibrio begins to produce a regulatory protein-TfpX (transformation protein X).

The second signal is the high density of vibrio population, that microbes evaluate for concentration of substances secreted by them (autoinducer) using quorum sensing system.

Thus cholera vibrio through HGT can quickly adapt to changing conditions, including a new antibiotic, transferring resistance genes from one strain to another.

BACTERIAL ACUTE INTESTINAL INFECTIONS, FEATURES OF THEIR OCCURRENCE

Labzenko S. - the 5-th year student.

Scientific leaders - P.K.Soldatkin, E.A.Volosenkova.

Acute intestinal infections continue to be relevant in connection with a high incidence, especially in the life of 1 year old children.

Shigellosis. Shigella - causative agent of dysentery. The main factor of shigella virulence is the ability to the invasion and intraepithelial proliferation.

Salmonellosis. The main factors of pathogenicity of Salmonella is their ability to penetrate into macrophages and multiply in them, as well as the production of endotoxin.

Ehsherihioza are presented by 5 groups. EPKP - occur in young children and are evident as diarrhea with symptoms of intoxication and the development of sepsis process EIKP - occur in older children. Acute illness begins with fever, weakness, headache, vomiting, cramping pains abdominal. Intoxication is short. ETKP - diarrhea, cramping abdominal pains, nausea and vomiting. Stool is watery, bristling, without patologic contaminants and odor. EGKP - with expressed signs of intoxication, severe cramping abdominal pains, copious stool with color of "meat slops", intense abdominal pains, the development of

hemolytic-uremic syndrome. EAKP - cause dehydration in children with immunodeficiency, affecting the small intestine, biliary, urinary system with the development of purulent inflammation.

Thus, knowledge of the peculiarities of the AII caused by the PM, will enable the correct use of antibiotics in the complex therapy to solve the problem.

MANIFESTATIONS AND TREATMENT OF SHIFT-LIKE SCHIZOPHRENIA

Ermolaev I., Minko E., Moskvitin D., Gushin D. - the 4th year students

Scientific leaders – Bagrova M.I., Volosenkova E.A.

Shift-like schizophrenia is an episodic-like progressive form of the disease among the most common types of pathology. Its characteristic feature is the combination of two types of pathological process - batch and continuous. Each new attack is accompanied by the appearance of new positive symptoms, in contrast to other forms, where the predominant violations worsening available earlier in history. The pathogenesis of schizophrenia today is generally not fully understood. A significant factor in the development of shift-like form is considered to be genetic and constitutional factors. More aggressive course was observed in men than in women. Most pathology takes its development even during adolescence, so that after a while becomes cancerous in nature and often leads to dementia. Characteristically the occurrence of acute episodes with clear intervals between attacks. Some of them pass without a trace, others leave permanent mark on the psycho-emotional background of the disease. The problem of drug treatment is lifelong reception of drugs that can lead to the development of Parkinson drug. Along with medication therapy is important. Support the patient, both on the part of the attending physician and relatives. Irritability and skepticism to delusions can only lead to the patient's aggression and its detachment from relatives. Treatment can take place either in a hospital or on an outpatient basis, the choice depends on the patient's condition. If there is a danger to himself or the environment, when the patient overcomes thoughts of suicide or a murder in this case it is necessary to start treatment in a hospital, in order to avoid an accident. The decision on the need, or lack of it takes psychiatrist who observes the patient.

TREATMENT AND MODES OF CHEMOTHERAPY IN PATIENTS WITH TUBERCULOSIS

Ruditsa N., Dashieva D. – the 6th year students

Scientific leaders - O.A. Karakulova, E. A. Volosenkova

Treatment of tuberculosis patients includes 5 chemotherapy regimens:

The first chemotherapy regimen is prescribed to all TB patients with bacterial, excretion confirmed by microscopy and bacterial seeding; newly diagnosed TB patients with bacterial excretion confirmed by microscopy and drug-resistant pathogen; patients with recurrent TB, TB patients with established molecular-genetic method of drug susceptibility of pathogen; TB patients with extrapulmonary localizations without bacterial excretion.

The second mode of chemotherapy is prescribed to patients with tuberculosis when it's determined with molecular-genetic and the cultural methods that the pathogen is resistant to isoniazid or isoniazid in combination with other drugs, but susceptible to rifampicin.

The third chemotherapy mode is prescribed to patients without bacterial excretion confirmed by microscopy and culture seeding; newly diagnosed TB patients, except cases of significant contact with TB patients;

The fourth standard chemotherapy mode is prescribed to patients with established TB drug resistance of pathogen to rifampicin only or isoniazid and rifampicin with unknown drug sensitivity to other drugs.

Fourth individualized chemotherapy mode is prescribed to TB patients with established drug resistance of pathogen to isoniazid and rifampicin, and susceptibility to ofloxacin.

Fifth chemotherapy mode is prescribed to patients with established TB drug resistance.

LABORATORY DIAGNOSIS OF BACTERIAL INFECTIONS

Dashieva D. – the 6th year student

Scientific leaders - P. K. Soldatkin, E. A. Volosenkova

The main methods used for the laboratory diagnosis of bacterial infections are a direct microscopy, culture method, immune and enzyme analysis, immunofluorescence reaction and the polymerase chain reaction. The material for the study are blood, urine, feces, cerebrospinal fluid, mucus from the throat or nose, vaginal or cervical scraping, scraping of the urethra.

Bacteriological method includes collection of the material from the patient, isolation of pure culture and its identification with the definition of sensitivity to antibiotics and chemotherapeutic drugs.

Sensitive methods, when the antigen of bacteria are sorbed on the surface of red blood cells (erythrocyte diagnostic tools) are applied.

Direct (PHA) and indirect hemagglutination (IHA). The reaction of precipitation in botulism and anthrax - is Ascoli reaction for its diagnosis in animals, complement fixation (brucellosis, toxoplasmosis, leprosy, glanders).

The cultural method is one of the most accurate methods, but its implementation requires considerable time. In IFA total antibodies and / or antigens of bacteria are determined by detecting various immunoglobulins. During the RIF antigens of the pathogen are being determined. PCR – is a definition of nucleic acids (RNA or DNA) of the pathogen in the biological fluids.

COCHLEAR IMPLANTATION

Avchelupova A.V. - the intern

Scientific leaders – Can. Med. Sc. V.V. Antipenko, E.A. Volosenkova

A cochlear implant is an electronic medical device that replaces the function of the damaged inner ear. Unlike hearing aids, which make sounds louder, cochlear implants do the work of damaged parts of the inner ear (cochlea) to provide sound signals to the brain. Whom can they help? Cochlear implants can help people who have from moderate to profound hearing loss in both ears or profound hearing loss in one ear with normal hearing in the other ear, in this case people may, receive little or no benefit from hearing aids . Many people suffer from hearing loss because their hair cells in the inner ear (or cochlea) are damaged. The cochlear implant enables the sound to be transferred to your hearing nerves and enables you to hear. A sound processor worn behind the ear or on the body, captures sound and turns it into digital code. It is transmits the digitally-coded sound through the coil on the outer side of the head to the implant. The implant converts the

digitally-coded sound into electrical impulses and sends them along the electrode array placed in the cochlea (the inner ear). Cochlear implant stimulates the cochlea's hearing nerve, which then sends the impulses to the brain where they are interpreted as a sound. What are the benefits of a cochlear implant? Many people with cochlear implants report that they hear better. They feel safely in the world as they can hear alarms.

FEATURES OF DIAGNOSTICS AND TREATMENT OF THE DIABETES MELLITUS OF TYPE 1

Timofeeva M., Polyashova A. – the 4th year students.

Scientific leaders - Assoc. Prof., Can. Med. Sc. O.A. Tanchenko, E.A. Volosenkova

Diabetes mellitus of type 1 is the most severe form of Diabetum (10% of all cases). The highest case rate is in children of 10-15 years.

Forms of diabetes mellitus of type 1: autoimmune and idiopathic. Development of an autoimmune form of a diabetes mellitus of type 1 begins at children's age more often. At the same time autoantibodies to structural components of β -cells are revealed. As a result of this process autoimmune disintegration of β -cells develops. Idiopathic form - is the lack of immunological and genetic factors of diabetes mellitus of type 1, but there are symptoms confirming absolute deficiency of insulin.

Diabetes mellitus of type 1 is a multifactorial disease. An etiological factor is the combination of genetic influences with influence of adverse factors of the external environment. Risk group includes children having an obesity, with low-active lifestyle, having diathesis, and frequent diseases. Secondary forms develop in endocrinopathies, pancreas diseases. It is interesting to note that in Diabetes mellitus of type 1 the beginning of a disease is acute, can become apparent by a severe form of a ketoacidosis or a diabetic coma. Hard proceeding viral infection can sometimes precede the beginning of a disease. Analyzing the last references on treatment of DM of type 1, the following algorithm of therapy is developed: 1) Insulin therapy. 2) Development of the special program of a diet. 3) Prophylaxis of hypoglycemia connected with physical activity.

Thus, knowledge of above-mentioned features of diagnostics and treatment of Diabetes mellitus of type 1 allows to make in due time the diagnosis and to carry out the adequate therapy referred on prevention of development of acute and chronic complications of diabetes mellitus of type 1 which sharply reduce quality and life expectancy.

VITAMINS OF GROUP D

Ionova N. – the 2nd year student

Scientific leaders – Assoc.Prof. G.K.Doroshenko, O.I.Katina

Vitamins of group D are formed under the influence of ultraviolet in tissues of animals and plants of sterols.

Vitamins of group D include:

D2 vitamin - an ergocalciferol; it is allocated from yeast, its provitamin is ergosterol;

D3 vitamin - cholecalciferol; it is allocated from tissues of animals; its provitamin –is 7-degidrocholesterin;

D4 vitamin - 22, a 23-dihydro-ergocalciferol;

D5 vitamin - 24-ethylcholecalciferol (sitocalciferol); it is allocated from wheat oils;

D6 vitamin - 22 dihydroethylcalciferol (stigma-calciferol).

At present two vitamins are called vitamin D. They are vitamins D2 and D3 - an ergocalciferol and cholecalciferol. These are crystals without color and a smell, steady in influence of high temperatures. These vitamins are liposoluble, i.e. they are dissolved in fats and organic compounds but are water-insoluble.

Vitamin D is formed in skin under the influence of sunshine from provitamins. In turn, the provitamins partially enter an organism from plants (ergosterol, a stigmasterol and sitosterin) and are partially formed in tissues from cholesterol (7-dehydrocholesterol (provitamin of D3 vitamin)).

The main function of vitamin D - is ensuring normal body growth and development of bones, the prevention of rickets and osteoporosis. It regulates mineral metabolism and promotes adjournment of calcium in a bone tissue and a dentine interfering with an osteomalacia (softening) of bones.

Vitamin D is unique. It is the only vitamin acting as vitamin, so as hormone. As vitamin it supports the level of inorganic P and Ca in blood plasma above threshold index and increases absorption of Ca in a small intestine.

D3 vitamin influences the nuclei of target-cells and stimulates a transcription of DNA and RNA that is followed by strengthening of synthesis of specific proteids.

However, the role of vitamin D is not limited in protection of bones. The organism susceptibility to skin diseases, heart troubles and cancer depend on it. There is an increased incidence with atherosclerosis, arthritis, diabetes in geographical areas where food is poor in vitamin D.

It prevents weakness of muscles, increases immunity (vitamin D level in blood serves as one of criteria for evaluation of the expected longevity of patients with AIDS), and is necessary for functioning of a thyroid gland and normal blood coagulation.

Vitamin D may reduce the effectiveness of cardiac glycosides.

Antacids and steroid hormones (cortisone) also influence vitamin D absorption.

Taking vitamin D in great doses may result in iron deficiency. This is due to the fact that vitamin D stimulates the calcium absorption in intestines. Calcium competes with iron for absorbability.

Vitamin D stimulates the magnesium absorption in intestines and also does not allow to lose phosphates with urine.

Normal metabolism of vitamin D in a liver (where the previous forms are activated) is impossible at a lack of vitamin E.

HISTOPHYSIOLOGY OF HEART AT NORM AND AT MIOCARDIAL INFARCTION

Adzhamoglyan A. – the 2nd year student

Scientific leaders – V.S.Kozlova, O.I.Katina

The heart is a muscular organ, which pumps blood through the blood vessels of the circulatory system. Blood provides the body with oxygen and nutrients, as well as assists in the removal of metabolic wastes. The heart is located in the middle compartment of the chest.

It receives blood from two hollow veins and the four pulmonary veins, and throws it into the aorta and pulmonary trunk. The heart wall is made up of three layers: the inner endocardium, middle myocardium and outer epicardium. These are surrounded by a double-membraned sac called the pericardium.

The innermost layer of the heart is called the endocardium. It is made up of a lining of simple squamous epithelium, and covers heart chambers and valves. It is continuous with the endothelium of the veins and arteries of the heart, and is joined to the myocardium with a thin layer of connective tissue.

The middle layer of the heart wall is the myocardium, which is the cardiac muscle. There are two types of cells in cardiac muscle: muscle cells which have the ability to contract easily, and pacemaker cells of the conducting system. The muscle cells make up the bulk (99%) of cells in the atria and ventricles. These contractile cells are connected by intercalated discs which allow a rapid response to impulses of action potential from the pacemaker cells. The intercalated discs allow the cells to act as a syncytium and enable the contractions that pump blood through the heart and into the major arteries. The pacemaker cells make up 1% of cells and form the conduction system of the heart. They are generally much smaller than the contractile cells and have few myofibrils which give them limited contractibility. Cardiac muscle tissue has autorhythmicity, the unique ability to initiate a cardiac action potential at a fixed rate – spreading the impulse rapidly from cell to cell to trigger the contraction of the entire heart.

The pericardium surrounds the heart. It consists of two membranes: an inner serous membrane called the epicardium, and an outer fibrous membrane. Blood vessels and nerves reach the cardiac muscle from the epicardium. These help influence the heart rate. These enclose the pericardial cavity which contains the pericardial fluid that lubricates the surface of the heart.

Acute myocardial infarction (MI) remains a leading cause of morbidity and mortality worldwide. Like any other muscle, the heart muscle needs a good blood supply. The coronary arteries take blood to the heart muscle. The main coronary arteries branch off from the aorta. The aorta is the large artery which takes oxygen-rich blood from the heart chambers to the body. The main coronary arteries divide into smaller branches which take blood to all parts of the heart muscle. While a heart attack a coronary artery or one of its smaller branches is suddenly blocked. The part of the heart muscle supplied by this artery loses its blood (and oxygen) supply if the vessel is blocked. This part of the heart muscle is at risk of dying unless the blockage is quickly removed. When a part of the heart muscle is damaged it is said to be infarcted. The term myocardial infarction (MI) means damaged heart muscle.

If a main coronary artery is blocked, a large part of the heart muscle is affected. If a smaller branch artery is blocked, a smaller amount of heart muscle is affected. After a heart attack, if part of the heart muscle has died, it is replaced by scar tissue over the following few weeks.

A CASE OF TOXOPLASMOSIS IN A 4 YEARS OLD CHILD

Nikishov A., Rasina A. – the 5th year students

Scientific leaders – Cand.Med.Sc. E. L.Chupac, O.I.Katina

Toxoplasmosis – is a parasitic disease of humans and animals caused by *Toxoplasma gondii*. In the vast majority of cases it is asymptomatic. The source of infection – is different species of domestic and wild mammals. Up to half of the world's population is infected with toxoplasmosis. In the US 23% of the population are the carriers, in Russia — about 20 %, and in some parts of the world the proportion of carriers reaches 95 %.

Patient T, 4 years old, was admitted to PCCH with complaints of nasal sniffe, obstructive dry cough during a day. From March 2015 he had ORI monthly and in 09.15 he suffered sinusitis. At the same time the patient received medical treatment in the hospital with a diagnosis of IDS, unspecified. There was the carriage of EBV, rubella. In the blood the moderate leucocytosis still persisted in dynamics. The child was examined by an infectionist, a pulmonologist, an allergist ambulatory. Respiratory allergosis was not excluded. Allergy tests with domestic, epidermal AG-negative were made. On admission the general condition was satisfactory. The child was active, contact. Physical development was average and harmonious. He had a good appetite. His sleep was not disturbed. The skin was pale pink, moist, clean, marbling was not expressed. Sclera was of normal color. Subcutaneous fat layer was developed satisfactorily, uniformly distributed. Peripheral lymph nodes: palpable submandibular, cervical front lymph nodes up to 1-1.5 cm in diameter. They were painless, not soldered to surrounding tissues. Joints visually unchanged, movement in joints was complete. Nasal breathing was difficult and nasal discharge was scanty. Fauses was steady; tonsils did not exude the ears, without patch. Chest had a correct form and participated in the act of respiration evenly. There was percussion lung sound, in auscultation the breathing was vesicular performed through all fields, no wheezing. The heart area was not visually changed. Apical impulse was palpated in the 5th intercostal space on 1 sm outside from L. medioclavicularis, localized, resistant. Heart tones were clear, rhythmic. Borders of relative dullness of the heart were within normal limits. Oral cavity was without visible pathology. On palpation the abdomen was soft, painless in all parts; a liver was on edge of a rib arch. The spleen was not palpable. Stool was daily, without features. The kidneys were not visually changed. There was no edema. Symptom of tapotement was negative on both sides. Urination was painless.

Additional research methods: CBA: leukocytosis to $12.3 \cdot 10^9$ l; the biochemical analysis of blood, OAM was normal. ELISA: antibody to Toxocara (+) KP=4.5, the antibody to Toxoplasma gondii - Ig M-a dubious, Ig G (+), KP=10.6. Further examination was recommended to exclude PCR toxoplasmosis (Toxoplasma DNA). PCR was carried out as an outpatient- AG of Toxoplasma was identified. The child must be followed-up by the doctor.

A HEALTHY LIFESTYLE OF STUDENTS OF ASMA

Rusakovich A. – the 5th year student

Scientific leaders – Cand.Med.Sc. E.A. Sundukova, O.I. Katina

According to WHO the health – is a state of complete physical, mental and social well-being and not only the absence of diseases and physical defects. The way and lifestyle largely qualify the health. And the theme of the health formation is always relevant and meaningful. So the anonymous questionnaires were conducted among students of the 1st, 4th and 6th courses. A total number of participants were 50 people at the age of 17 to 30 years.

The following results were obtained when carrying out the survey. 33% of first-year students, 40% of 4-th year students and 80% of sixth- year students answer that they are in good health. And 21% of first-year students and 7% of 4-th year students believe that they have a bad health condition. On the question concerning going in for sport 60% of first-year students, 86% of fourth year students and 53% of six-year students answered that they practice it. To the question "Do you smoke?" 26% of first-year students and 33% of students of the 4th and 6th courses replied that they smoked. As for the question about the

alcohol consumption, 60% of sixth year students responded that they consumed alcohol. The number of students of other courses for the same question was less: 67% of the 1st year students and 46% of 4-th year students. During the survey it was also revealed that 26% of the first year students and 33% of students of the 4th and 6th courses feel a lack of sleep, the rest of the interviewed pay enough time to sleep. 93% of first-year students, 54% of students of the 4th year and 73% of the students of 6th course answered that they did not keep to the diet. In the study it was found that students did not have any hereditary diseases except for CVD. 86% of first-year students, 73% of students of the 4th year and 67% of sixth year students replied that they spent more than 30 minutes on walking daily.

Thus, in the course of the survey among the students of the first, fourth, and sixth years of study it was revealed that most of them did not keep to the diet, some of them had nicotine dependence and more than half of students consumed alcohol. The 6th year students were mostly affected by this bad habit.

PECULIARITIES OF THERAPY OF CHRONIC BRUCELLOSIS

Nikishov A. – the 5th year student

Scientific leaders - T.A. Dolgich, O.I.Katina

Brucellosis remains one of the urgent problems of the Russian territories with an animal orientation of agriculture. The highest incidence of brucellosis in Russia is registered in the Republics of Dagestan, Tuva and the Stavropol region, where the incidence rate is 8-10 or more per 100 thousand of population. This pathology is accompanied by immunological disorders and the development of metastatic foci. It is characterized by a high frequency of chronicity.

One of the main goals of therapy for most patients with chronic form of brucellosis should be to improve the quality of life. So it is necessary to develop a comprehensive approach to the treatment of this disease.

According to the literature, the use of the vaccine has no positive influence on clinical manifestations of chronic brucellosis (CB) as in the period of exacerbation of the process so as in the long periods after treatment. On the contrary, the inclusion in the complex therapy of levamisole or cycloferon often has a significant effect, regardless of the degree of specific sensitization of the organism and lesions of various organs and systems. The use of metabolic drug cytoflavin allows reduce the frequency of manifestation and severity of myocardial dysfunction as well as the symptoms of intoxication and inflammation.

Etiotropic therapy of brucellosis cannot be regarded as satisfactory. The body of patients after a prolonged and combined antibiotic therapy is sanitized from *Brucella* not completely located intracellularly. Ciprofloxacin has the ability to penetrate and accumulate in phagocytic cells in an active form, and is a worthy alternative to the combined treatment with doxycycline and rifampicin. This antimicrobial drug significantly shortens the duration of focal inflammatory processes in CB. To increase the effectiveness of antibiotic therapy by increasing cellular immunity is necessary to use vitamin A.

Additionally, patients with CB receive different variants of physiotherapeutic treatment in 10-15 procedures: magnetic therapy on the affected joints and collar zone; the combination of the ozoceritotherapy on the affected joints and galvanic collar on Shcherbak (possibly with the introduction of a 2% bromine); a combination of ozocerit applications on the affected joints and darsonvalization of scalp and neck area by standard methods, in the presence of sinoviit; initially a short course of aspirin electrophoresis or

UHF-therapy on the affected joints. The choice of procedures is based on individual patient characteristics, contraindications, physiotherapy anamnesis, concomitant diseases, and pre-emptive complaints.

Thus, a significant percentage of disability and the systemic lesions in CB require an integrated approach to therapies aimed at different links in the pathological process in brucellosis.

IMMUNOFERMENTAL ANALYSIS IN THE DIAGNOSTICS OF HELMINTHIASES IN CHILDREN

Razina A., Nikishov A. – the 5th year students

Scientific leaders – Cand.Med.Sc. E.L. Chupack, O.I.Katina

Relevance: on the background of economic changes, environmental deterioration, inadequate and unbalanced diet, psychological stress associated with school congestion and social stress, and overall use of different drugs the violations of adaptation processes often occur and many well-known diseases change their clinical picture, including diseases caused by various parasites.

The aim of our study - is to identify children with elevated titers of antibodies to a variety of parasites by ELISA.

The principle of the method. Method for determination of G class immunoglobulins to parasite antigens is a solid phase of ELISA. During this method, interacting with the studied serum samples the binding of specific antibodies occurs in the wells plates with immobilized antigens parasite and there is the formation of the complex "antigen-antibody" on the surface of small cavities. Titer of analyzed serum model - is the highest dilution of the test sample, wherein its optical density is greater or equal to the diagnostic value of the optical density. KP reflects the number of times the optical density of the test serum sample is greater than the diagnostic value of the optical density.

The diagnosis of toxocariasis, clonorchiosis, giardiasis can be made in patients with antibody titer to antigens of 1: 800 or higher and MP> 1.2.

Results of the study. We have analyzed the medical case-histories of 72 children who received medical examination and treatment on the basis of the Children's Clinical Hospital in the period from December 2014 to November 2015. Most of the children complained of gastro-intestinal tract: abdominal pain, nausea, loss of appetite, unstable chair, as well as complaints about frequent colds. Among them 52 received medical examination and treatment with the diagnosis of chronic gastroduodenitis, which is 72.2%. And with diagnoses of secondary immunodeficiency 20 people (27.8%) were treated. The survey revealed that nearly one third of children (29.17%) had increased titers of Ig G to clonorchiosis, toxocara, roundworm, giardia. Antibodies to Giardia were detected in 14.66% of cases, to toxocara - at 8.52%, to clonorchiosis - at 5.99%, a roundworm - 1.39%, mixed invasion - by 4.2%. A positive result of the study is considered to be KP> 1. It indicates the infection of the body or that the invasion took place in the past. According to ELISA results the children were administered with antihelminthic therapy drugs: nemozol, mebendazole, biltricid, praziquantel.

Conclusions. In 1/3 of children observed with chronic gastroduodenitis and immunodeficiency antibodies to clonorchiosis, giardia, toxocara, and roundworm are found. It is necessary to administer additional examination methods to children with KP> 1.1-1.2 indicating an infestation. These are PCR, feces to identify lamblia cysts, toxocara, clonorchiosis and others. Treatment was administered in 15.3% of cases by ELISA results.

AFRICAN ONCHOCERCIASIS

Razina A. – the 5th year student

Scientific leaders – T.A. Dolgikh, O.I.Katina

African onchocerciasis – is a transmissible filariasis manifested in dermatitis, formation of subcutaneous dense, mobile, often painful connective nodes (onchocercoma) and eye lesions.

The particular relevance of the problem of onchocerciasis is due to the prevalence of the disease: in 2016 there are more than 100 million cases in 32 countries in Africa. Of particular importance is the struggle against threatening complication – blindness. It occurs in 10% of infected people. The disease causes the economic damage: 25 million hectares of abandoned arable land are not used for settlement and cultivation of crops as a result of habitat there midges kind *Simulium*. This puts the problem of hunger in developing countries in Africa on the first plan.

The causative agent of African onchocerciasis – is a roundworm *Onchocerca volvulus* (fam. Filariidae.). The only source of infection – is a man sick with onchocerciasis (final host). The mechanism of transmission - is transmissible. Carriers and intermediate hosts are the kind of midges *Simulium*. Susceptibility: universal.

Incubation period is about 1 year. The disease begins with general malaise and fever. The dry and flaky skin and itchy papular rash are noted. Sometimes papules transform into pustules forming ulcers. In significant defeat by microfilaria the skin is similar to "lemon peel". With further progression of the process there is hypertrophy of the skin with loss of elasticity ("elephant skin"). Over time, the areas of skin depigmentation appear particularly on the front surface of the tibia ("leopard skin"). A frequent symptom of onchocerciasis - is reactive proliferation of connective tissue around the dead or the living adult worms. They are usually dense, painless (except the location over the joints) and mobile. Often there is damage of eyes in the form of small inflammatory lesions caused by penetration of microfilaria. There are a pannus keratitis, iridocyclitis and chorioretinitis. Optic atrophy develops in severe cases.

Accurate diagnosis is the detection of microfilaria in the surface of the skin biopsies and autopsy by removing onchocercoma.

In the treatment of patients with onchocerciasis microfilaricide (diethylcarbamazine and ivermectip) and macrofilaricide drugs (surmip and trimelarsan) are used. Onchocercoma, especially localized in the head near the eye, are removed surgically. Abscesses are treated by conventional in conjunction with causal therapy. With the development of allergic reactions (due to the collapse of the mass of worms during treatment) antihistamines and corticosteroids are prescribed.

Thus, taking into account the polymorphism of the course of onchocerciasis, there is the risk of severe complications of not only this disease, but also as a result of causal treatment. It is necessary to pay more attention to prevention efforts and new approaches to the treatment of helminthiasis.

THE INFLUENCE OF INDUSTRIAL FACTORS ON THE REPRODUCTIVE FUNCTION

Balashova Y., Dorzheeva M.- the 4th-year students,

Scientific leaders - Can.Med.Sc. Goryacheva S. A., E.A.Volosenkova

Some of the factors of work conditions and types of employment (working hours, weeks, severity of labor, a combination of several types of employment) are permanent at the exposure to a person and are associated with his physical, mental and reproductive health. They can affect health along with other social factors. Diseases of the genital organs and the disorder of women's reproductive health are conditionally occupational disease, developing as a result of long influence of adverse factors of production environment and labor process.

Among the factors that determine the state of reproductive health endogenous and exogenous factors are highlighted. Endogenous factors: - hereditary - a condition of physical health of parents, health status of the mother during pregnancy, and reproductive health of the mother and father, children's history and the period of formation of reproductive function in parents etc. Exogenous factors: - factors of working conditions - environmental factors - socio-economic indicators of life - quality of care - the conditions of life, balanced nutrition (during pregnancy). Exogenous factors, namely working conditions play an important role in the reproductive function of women. The non-observance of certain conditions can lead to irreversible consequences in the human body

ASBESTOSIS

Bednik D., Salomatova A. – 4- the 4th year students.

Scientific leaders - Can. Med.Sc. –S.A. Goryacheva , E.A. Volosenkova.

Asbestosis - a form of pneumoconiosis, is caused by prolonged inhalation of asbestos-containing dust and characterized by diffuse fibrosis of the lung tissue. The risk of asbestosis is not only in the development of diffuse fibrosis of the lung tissue, and threatening long-term consequences - increased risk of asbestoculosis, mesothelioma of the pleura and peritoneum, adenocarcinoma of the lung and stomach.

The immediate cause of this form of pneumoconiosis is a long-term inhalation of asbestos fibers. Asbestosis can develop both in the length of service less than 3 years, and after 15-20 years after cessation of occupational exposure to asbestos dust. By the nature of their professional activities in close contact with asbestos are workers employed in the asbestos and the processing industry, construction, mechanical engineering, shipbuilding, aviation industry. These persons are at increased risk of developing asbestosis. In addition, there are cases of disease asbestosis at relatively short and of low intensity exposure of asbestos-containing dust, such as women, washing work clothes of men, painters and electricians, or working in a place where asbestos-containing materials are used.

Asbestosis clinic is characterized by symptoms of chronic bronchitis and emphysema. All complaints and objective manifestations fit into the three groups of symptoms: somatic, signs of respiratory lesions and respiratory failure. Non-specific symptoms are presented malaise, fatigue, paleness, weakness, anorexia, and weight loss. Often on the hands and feet warty growths - the so-called «asbestos warts», appear.

PHENYLKETONURIA

Kadeneva V., Palachik T– the 3rd year students

Scientific leaders - Can.Med.Sc. N. N. Dorofienko, E. A. Volosenkova

Phenylketonuria is an inherited disorder of amino acid metabolism caused by the deficiency of liver enzymes involved in the metabolism of phenylalanine to tyrosine.

The cause is a disease with autosomal recessive inheritance character. It means that for the development of clinical signs of phenylketonuria child must inherit one defective copy of the gene from both parents who are heterozygous carriers of the mutant gene. The development of phenylketonuria is caused by gene mutation encoding the enzyme phenylalanine 4-hydroxylase and located on the long arm of chromosome 12. Pathogenesis: hereditary enzyme deficiency of phenylalanine-4-hydroxylase in phenylketonuria leads to disruption of phenylalanine oxidation contained in food, as a result its concentration in the blood (phenylalaninemia) and cerebrospinal fluid significantly increases and the level of tyrosine decreases, respectively.

Symptoms: flaccidity, weakness, muscular dystrophy, convulsions, vomiting, mouse urine odor, microcephaly, enamel hypoplasia, mental retardation, heart defects, sweating, acrocyanosis, blond hair and skin.

Diagnosis: Screening test is performed on the 3-5 day of life of a full-term newborn and the 7th day of the life of a premature baby by capillary blood sample on a special paper form. In hyperphenylalaninemia more than 2.2 mg% the child is sent to a pediatric genetics specialist for re-examination.

PKU treatment

A fundamental factor in the treatment of PKU is a diet, restricting protein intake in the body. Treatment is recommended in case of a concentration of phenylalanine > 6 mg%. The basic diet includes low-protein foods - fruits, vegetables, juices, protein hydrolysates and amino acid mixture. Patients should receive mineral compounds, B vitamins, etc.; according to indications - nootropics, and anti-convulsants. In the complex treatment of phenylketonuria massage, exercise therapy, acupuncture are widely used.

TOURETTE'S SYNDROME

Rustamova L., Trimanova S., Rogozina V. - 4th year students

Scientific leaders - Doc. Med. Sc. V.N. Karnaukh, E.A. Volosenkova

Tourette's syndrome - a progressive disease of the extrapyramidal system, is characterized by different varying in duration and course motor and vocal tics, and behavior disorders. The incidence of the disease in males is significantly higher than that in girls and women - 4: 1. Several studies have noted the high prevalence of the disease among the Jews. There are the following theories of the origin of the disease: 1) symptom of Tourette's is transmitted in an autosomal dominant pattern of inheritance with incomplete penetrance; 2) the development of post-streptococcal autoimmune process; 3) a change in the structure and function of the basal ganglia, neurotransmitters and neurotransmitter systems. The most common early symptoms of Tourette's syndrome occur between the ages of 5 - 6 years. Children make a grimace, stuck out a tongue, wink, clap their hands. As the disease progresses, the process involves the muscles of the trunk and the legs. Tics may be dangerous, as patients are able to bump their head, press the eyes. Sometimes patients cough for a long time, breathe heavily through the nose. Such manifestations of Tourette syndrome can be mistaken for other diseases symptoms. Often there is echopraxia, imitation of the movements of other people, and kypropraxia, offensive gestures. The differential diagnosis of Tourette's syndrome is carried out with a wide range of diseases and conditions - from idiopathic tics, blepharospasm, myoclonus-epilepsy, rheumatic

chorea to progressive degenerations - a children's form of Huntington's chorea, deforming muscular dystonia, and mental illnesses - hysteria, schizophrenia. The greatest difficulties arise in the differential diagnosis of Tourette's syndrome and hereditary progressive diseases with extrapyramidal symptoms. Against the background of the treatment better condition is possible in 50% of patients after their entry into adolescence or adulthood. If tics cannot be eliminated, it is possible to conduct treatment throughout life.



DEUTSCHE ABTEILUNG



BESONDERHEITEN DER GELENKKNOCHENTUBERKULOSE

Schiwtschenko N. – die Studentin des 6. Studienjahres.

Wissenschaftliche Leiter – Karakulowa O. A., Tkatschjowa N. A.

Tuberkulose der Knochen und Gelenke ist eine Erkrankung des Muskel-Skelettsystems, die durch fortschreitende Zerstörung von Knochen gekennzeichnet ist. Sie führt zu einer anatomischen und funktionellen Störung der betroffenen Teile des Skeletts.

Die Krankheit ist ansteckend und wird von Tuberkulose-Bakterien verursacht. Wenn die Krankheit schreitet fort, werden die Gelenke Abszesse und Fisteln gebildet und können schließlich völlig zerstört.

Man unterscheidet folgende Typen von osteoarticulare Tuberculosis:

- Spondylitis Tuberkulose;
- Knie-tuberkulose ;
- Coxtuberkulose ;
- Schultergelenktuberkulose;
- Die Tuberkulose der Sprunggelenke und Knochen des Fußes;
- Tuberkulose der Handgelenken;
- Tuberkulose der Rohrenknochen.

DIE DYNAMIK DER ENTWICKLUNG DER HERZ-KREISLAUFKRANKHEITEN IN RUSSLAND

Nagijew M., Sachnowa O. – die Studenten des 5. Studienjahres

Wissenschaftliche Leiter – Agarkowa O.A., Tkatschjowa N.A.

In Russland, wie in vielen anderen Ländern, sind Herz-Kreislaufkrankheiten seit 1975 die führende Todesursache. Jedes Jahr sterben auf diesem Grund ungefähr eine Million Menschen, aus denen mehr als ein Drittel im arbeitsfähigen Alter und vorwiegend Männer sind. Dies verursacht den Verlust der Arbeitskraft des Landes. Die ernste Gefahr für die soziale und wirtschaftliche Wohlfahrt der russischen Gesellschaft einsehend, hat die Landesregierung seit 1980 umfassende Massnahmen zur Bekämpfung mit den Herz-Kreislauf-Krankheiten veranlasst. Damals wurden Risikofaktoren der Entwicklung von diesen Krankheitsgruppen schon identifiziert. Arterielle Hypertonie war und bleibt auch heute der Hauptrisikofaktor. Auf diesem Grund wurden grosse Anstrengungen als auf die Suche und Behandlung der Kranken mit arterieller Hypertonie, auch auf die Informierung der Bevölkerung über die Risikofaktoren und Forderung einer gesunden Lebensweise gerichtet. Dies wurde zusammen mit dem Abfall von Lebensqualität zur fortschreitenden Erhöhung der Sterblichkeit wegen der Herz-Kreislaufkrankheiten geführt. Seit 2002 wurde eine Realisierung des Föderalen Zielprogramms "Vorbeugung und Behandlung der arteriellen Hypertonie in russischen Föderation" angefangen. Die Umsetzung des Programms lässt sich prinzipiell die Situation der hohen Sterblichkeit an der Herz-Kreislaufkrankheiten in unserem Land verändern. Namlich seit 2003 begann der Rückgang des Morbiditätsindex von Herz-Kreislaufferkrankungen. Inzwischen hatten die Ärzte die Möglichkeit, moderne Antihypertensiva zu benutzen. Als Ergebniss verbesserte sich die Behandlungseffektivität der Patienten, die an der arteriellen Hypertonie gelitten haben. Seit 2008 begann in Russland die Realisierung des nationalen Projektes «Medizinische Hilfeleistung den Kranken mit den akuten Herz-Kreislaufkrankheiten», was auch einen Beitrag zu der nachfolgenden Morbiditätssenkung von Myokardinfarkt und Insult geleistet.

Zusammenfassend, ist es zu bemerken, dass von der positive Dynamik der Mortalitätskennziffer abgesehen, bleibt sie immer noch auf hohem Niveau.

INFEKTIONE KOMPLIKATIONEN IN DER TRAUMATOLOGIE

Maxjuta D. – der Student des 3 Studienjahres.

Wissenschaftliche Leiter: Prof. G.I. Tschubenko, N.A. Tkatschjowa.

Eine Besonderheit vieler chirurgischen Eingriffen in der Unfallchirurgie und Orthopädie ist die Implantation von Fremdkörpern: Endoprothesen, Platten, Stiften und anderen Materialien. Das Risiko von infektiösen Komplikationen der chirurgischen Eingriffen und Langzeitwirkungen für Operationen ohne Einsatz von Implantaten ist niedriger als für die Eingriffe, die nach solchen Einzätzen Fremdkörper bleiben. Es gibt 3 Gruppen von infektiösen Komplikationen. Erstens, Wundinfektionen als Ergebnis der Verschmutzung der Wunde aus der äußeren Umgebung, z. B. anaerobe Erreger. Gasbrand ist die ungünstigste Wundeinfektion von allen bekannten. Ihre Erreger sind *Cl.perfringes*, *Cl.oedematiens*, *Cl.septicum*, u.a. Zweitens, infektiöse Komplikationen treten durch das Eindringen des Erregers von der Haut des Patienten oder aus der Luft des Operationsaals auf. Dies ist aufgrund Ihrer Anwesenheit auf der Oberfläche der Haut und in den tieferen Schichten bedingt, wobei der Abbau von Mikroorganismen bei der Verarbeitung des Operationsfeldes unwirksam ist. Die häufigsten Erreger sind *Staphylococcus aureus* und koagulasonegative Staphylokokken, (*Staphylococcus epidermidis*), da Fibrin und Fibronektin zur Adhäsion von Staphylokokken auf der Oberfläche des Implantats beitragen. Sie können zu langwierigen Krankenhausaufenthalt, chronische Schmerz syndrom, Sepsis, Entfernen des Stahlbaues, Amputationen führen und in der Regel sind die Lebensbedrohliche Infektionen. Die Infektionen in der Unfallchirurgie und Orthopädie sind durch opportunistische Mikroorganismen verursacht und sind ein wichtiges medizin-soziales Problem. Bei der Störung der Infektionskontrolle in der medizinischen Organisation sind sie in der Lage nosokomiale Infektionen verursachen

ANFORDERUNGEN DER ERNAHRUNG FÜR SPORTLER

Damdyn-ool A. - die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Korschunova N.W., Tkatschjowa N.A.

Nach einem intensiven Training wird eine große Menge an Energie verloren, die wiederhergestellt werden muß. Diese Funktion ist gerade Ernährung erfüllt. Sie gibt dem Körper das Material für die Schaffung neuer Zellen. Das Menü des Sportlers wird auf Grundlage der Erfüllung bestimmter Aufgaben gestellt: Gewichtskontrolle, da es Situationen, Gewicht abzunehmen oder zuzunehmen gibt, wenn es notwendig ist; die Aktivierung und Normalisierung der Stoffwechselfvorgänge. Dafür sind die natürlichen Zusatzstoffe und Wirkstoffe verantwortlich; die Zunahme der Muskelmasse, sowie eine Verringerung der Ablagerungen von Fett; das Erhalten von Vitaminen, Mikroelementen und Kalorien. Der Körper verliert Energie wegen der Belastungen auf die lebenserhaltenden Organen. Und wenn ihm Nährstoffe ungenügend ist, ist das Ungleichgewicht von Energie nicht zu vermeiden, und es droht seiner Erschöpfung. Komponenten für die richtige Ernährung: welche Elemente enthält die Ernährung des Sportlers und welche Rolle spielen sie?

Wasser: Mehr als 50% des menschlichen Körpers besteht daraus.

Die Kohlenhydrate. Sie spielen eine entscheidende Rolle bei der Energie- und Stoffwechselprozessen.

Proteine. Die Ernährung enthält Proteine, sie erfüllen mehrere Funktionen im Körper: Katalytische Funktion..

Die Vitamine. Sie werden nicht vom Organismus synthetisiert, deshalb sind sie von außen, zusammen mit der Nahrung aufzunehmen.

Mineralstoffe. Quelle der Mineralstoffen ist pflanzliche Nahrung (Gemüse und Obst).

DIE SONNENSTRAHLUNG UND IHRE HYGIENISCHE BEDEUTUNG

Warenik N. – die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Korschunowa N. W.; Tkatschjowa N. A.

Der Strom der Strahlungsenergie der Sonne, laut der Wellentheorie, stellt in Form von den elektromagnetischen Schwingungen mit verschiedener Länge der Wellen vor, die in den Meßschrauben gemessen wird (mgr). Die Atmosphäre lasst zur Erdoberfläche nur optische Teil des Sonnenspektrums, die die unsichtbare ultraviolette Strahlen (290—400 mgr), die sichtbaren Lichtstrahlen (400—760 mgr) und die unsichtbare Infrarotstrahlen (760—2500 mgr gehören) enthält. Bei der Erdoberfläche bildet der ultraviolette Teil nur 1 %, sichtbare — 40 %, auf den Anteil der Infrarotstrahlen fällt es am meisten 59 %. Die Intensität der Sonnstrahlung ist bei der Grenze der Troposphäre höher als bei der Erdoberfläche, da ihr Niveau von der Höhe des Stehens der Sonne über dem Horizont, der Sauberkeit der Atmosphäre Luft, der Wetterbedingungen u.a., abhängt.

Die Sonnstrahlung wirkt auf den Stoffwechsel im Organismus, seinen Tonus und die Arbeitsfähigkeit, stellt den mächtigen Gesundheits- und prophylaktische natürlichen Faktor dar. Die meiste biologische Aktivität hat der ultraviolette Teil, der allgemeine biologische, antirachitische und die bakterizide Wirkung prägt. Die Allgemeine biologische Wirkung besteht in der Bildung im Organismus mittels der photochemischen Reaktionen der aktiven Stoffen, die Eiweiß, Fette, - Mineralsalzaustausch, das Immunsystem fördern, was stärkt und tonisiert den Organismus. Die antirachitische und bakterizide Wirkung ist den Strahlen mit der Länge der Welle von 320 bis zu 290 mgr eigen. Die Strahlen mit der kürzeren Länge der Welle sind für die lebendige Gewebe verderblich, aber sie gehen bis zur Erdoberfläche nicht, da von der Ozonschicht absorbiert und in der Atmosphäre zerstreut werden.

ESSGEWOHNHEITEN DER KINDER

Garifullina A. – die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Korschunowa N.W.; Tkatschjowa N.A.

Der Organismus von Kindern und Jugendlichen hat eine Reihe von wesentlichen Funktionen. Er besteht um 25% aus Proteinen, Fetten, Kohlehydraten, Mineralstoffen und 75% aus Wasser. Grundumsatz erfolgt in 1,5-2-mal schneller als bei einem erwachsenen Menschen. Bei Kindern und

Jugendlichen herrscht der Prozess der Assimilation über Dissimilation. Im Zusammenhang mit erhöhter Muskelaktivität sind bei ihnen gesamte Energieausgabe erhöht. Der durchschnittliche Verbrauch von Energie pro Tag (kcal) auf 1 kg Körpergewicht der Kinder des verschiedenen Alters und Erwachsenen beträgt: bis zu 1 Jahr - 100; von 1 bis 3 Jahre - 100-90; 4-6 Jahre - 90-80; 7-10 Jahre - 80-70; 11 bis 13 Jahre - 70 bis 65; 14-17 - 65-45; Erwachsene - 45 kcal.

Große Aufmerksamkeit in der Ernährung der Kinder und Jugendlichen wird dem Proteingehalt und Aminosäurezusammensetzung als Basiskunststoffmaterial, aus dem die neuen Zellen und Gewebe aufgebaut werden, geschenkt.

Tierisches Eiweiß soll für kleinen Kindern 65-70%, für den Schulkindern - 60% des täglichen Bedarfs an diesem Nährstoff sein. Nach Balance von essentiellen Aminosäuren des Proteinprodukts ist der beste Lebensmittel in der Kindheit Milch und Milchprodukte. Für Kinder bis zu 3 Jahren soll in der täglichen Ernährung mindestens 600 ml Milch und in Schulalter nicht weniger als 500 ml sein. Außerdem soll die Ernährung der Kinder und Jugendlichen auch Fleisch, Fisch, Eier enthalten, d.h. Produkte, die vollständige Proteine mit reichen Aminosäurezusammensetzung.

Fett spielt eine wichtige Rolle bei der Entwicklung des Kindes. Sie spielen die Rolle des Kunststoffs, der materiellen Energie und versorgen den Körper mit den Vitaminen A, D, E, Phosphatide, mehrfach ungesättigten Fettsäuren, die für die Entwicklung eines wachsenden Organismus notwendig sind.

DIE FOLLIKEL DER SCHILDDRUSE

Moltschanow A. – Der Student des 2. Studienjahres

Wissenschaftliche Leiter: Prof. I.Y. Sajapina, N.A. Tkatschjowa

Die Schilddrüse ist das peripherische Organ des endokrinen Systems, das jodhaltige Hormone produziert Tiroxin und Trijodtironin. Eine strukturell funktionale Einheit der Schilddrüse ist der Follikel. Die Wand des Follikels ist durch die Schicht T-Tirozide (der Follikelzellen) und S-Tirozide (der Parafollikelzellen) ausgelegt. Die Follikelhöhle ist vom Kolloid gefüllt. Beim Eingang der notwendigen Zahl des Jods in den Organismus befindet sich die Schilddrüse im Zustand der Normfunktion. Bei normalen Bedingungen sind die Bildungsprozesse des Kolloids und seine Resorptionen in den Follikeln ausgeglichen, die Follikelzellen haben eine kubische Form und runde Kerne. Das lässt zu, den Körper mit notwendiger Zahl jodhaltiger Hormone zu versorgen.

Bei ungenügender Inkorporierung des Jods strebt die Schilddrüse, das Defizit jodhaltiger Hormone aufzufüllen, dabei geht ein Teil der Follikel in den Zustand der Überfunktion über. Die Zellen des follikularen Epitheliums erwerben eine palisadenartige Form, das Kolloid wird verflüssigt, seine Zahl verringert sich, an apikalen Oberflächen der Follikelzellen erscheinen zahlreiche Resorptionsvakuolen, die auf aktive Absorption des Hormons und Absonderung der Hormone T3 und T4 ins Blut aufweisen.

Bei der Überfunktion der Schilddrüse entwickelt sich die Erkrankung Thyreotoxikose. Bei der Hypofunktion der Schilddrüse wird die Entfernung der Hormone aufgehalten. Die Follikel nehmen an den Umfängen zu (quellen auf), in der Höhle wird das dicke Kolloid angesammelt, es fehlen Resorptionsvakuolen, das follikulare Epithel verdichtet sich. Bei den Erwachsenen bringt die Hypofunktion der Schilddrüse zur Entwicklung des pathologischen Zustandes — zum Myxodem. Wenn sich die Mangelhaftigkeit der Funktion im Kindesalter entwickelt, so bringt das zur Wuchsstockung, dem Verstoß der körperlichen Proportionen, der sexuellen und der geistigen Entwicklung. So ein pathologischer Zustand heißt Kretinismus.

DIE ERNÄHRUNG BEI DER SCHWANGERSCHAFT

Kutscherskaja N. – die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Prof. Korschunowa N.W., Tkatschjowa N.A.

Ernahrung, zusammen mit anderen Faktoren (den richtigen Modus, Arbeit, Beseitigung von Stress, usw.) ist eine der wichtigsten Voraussetzungen für einen günstigen Verlauf und das Ergebnis der Schwangerschaft, die richtige Entwicklung des Fetus und der Geburt Kindes eines gesunden.

In der ersten Hälfte der Schwangerschaft erfordert Ernährung werden der Mutter keine Änderungen. In der zweiten Hälfte der Schwangerschaft wird der Bedarf der Frauen von Nährstoffen erhöht. Es wird aufgrund des starken Wachstums des Fetus bedingt.

Eine schwangere Frau sollte mit einer ausreichenden Menge an Protein versorgt werden, die für Organe und Gewebe des Fetus nötig ist. Der Proteinbedarf der Schwangere (von 5 - 9 Monate) beträgt von 100 g / Tag, was auf 30% höher als Bedürfnisse von gesunden Frauen im gebarfähigen Alter ist. Es ist auch die Erhöhung des Anteils von tierischem Eiweiß in der Ernährung von Schwangeren vorgesehen, die 60% des Gesamtproteins sein sollte.

Energiebedarf der Schwangeren erhöht sich auf 2900 kkal, das auf 400 kkal höher als der Bedarf der gesunden Frauen im gebarfähigen Alter (2500 kkal pro Tag) ist. Fast 2fache erhöht sich der Bedarf an Kalzium. Das beträgt 1500 mg pro Tag.

DAS GEDACHTNIS DES MENSCHEN

Tarassowa Ja. – die Studentin des 1. Studienjahres.

Wissenschaftliche Leiter: Professor E.N. Gordienko, N.A. Tkatschjowa.

Das Gedächtnis haben alle lebendige Wesen, aber das höchste Niveau der Entwicklung wird beim Menschen erreicht.

Das Gedächtnis des Menschen ist eine Form der psychischen Reflexion, die in den Ansammlungen, in Befestigung, Erhaltung und nachfolgenden Wiedergabe vom Individuum eigenen Erfahrungen besteht.

Das Gedächtnis ist mit dem Bewusstsein, dem Unterbewußtsein, dem Willen, der Aufmerksamkeit eng verbunden.

Die Hauptforderung, die zum Gedächtnis des Menschen vorgelegt wird: die Information sicher, lang und ohne Verlust zu bewahren.

Die Information in unserem Gedächtnis wird in der unveränderlichen Art, wie die Dokumente im Archiv, bewahrt.

DAS ASPERGER-SYNDROM

Ruder M. - Studentin des 4 Studienjahres.

Wissenschaftliche Leiter: Brasch N.G., Tkatschjowa N.A.

Diese Krankheit ist eine leichte Form der autistischen Störung bei den Kinder, die eine erhaltene Intelligenz innenhaben. Die Besonderheit dieser autistischen Störung ist die erhaltene Redefähigkeit unter den solchen Symptome wie tiefgreifenden Entwicklungsstörungen. Das Syndrom ist von der Erziehung eines Kindes, seinen individuellen Besonderheiten oder sozialen Umstände unabhängig.

DIE STRUKTUR DES GEKRÜMMTEN KANÄLCHEN UND SEINE ROLLE BEI DER REGULATION DER SPERMATOGENESE

Smetana E. - die Studentin des 2. Studienjahres

Wissenschaftliche Leiter: Prof. Krasawina N.P., Tkatschjowa N.A.

Das Bindegewebe um das gekräuselten Hodenkanälchen ist mit einem dichten Netz von Lymphohaemokapillaren durchgedrungen, die Spermaiozyt mit Nährstoffen versorgen. Haemokapillare werden mit lockere Bindegewebe begleitet, in deren sich Lejdig-Zellen befinden. Die innere Inhalt umfassen Stütz- und spermatogene Zelle.

Sertoli-Zelle stellen die normale Entwicklung der Spermaiozyten, beteiligen in Phagozytose der cytoplasmatischen Wirkstoffen der Spermatischen. Trophische Funktion besteht in Sauerstoff lieferung von Nährstoffen aus der Gewebeflüssigkeit. Sie sondern Wachstumsfaktoren, Steroide.

Blut-Hoden-Barriere steuert die Spermatogenese und Fruchtbarkeit, isoliert autoantigene Geschlechtszelle vom Immunsystem des Körpers.

Im Prozess der Spermatogenese wird die Bildung von Spermien geschehen, die durch Hormone reguliert wird.

Spermatogonien werden durch Mitose geteilt. Der Prozess beginnt während der fetalen Entwicklung. Nach der zweiten Teilung der Spermiozyten entsteht aus jeder Spermiozyte der zweiten Ordnung zwei haploide Zelle, Spermatische.

Während der Spermatogenese werden Spermatische in Spermatozoide transformiert. Aus 1 Spermatogonie werden 4 Spermien gebildet.

Leydig-Zelle sondern Testosteron und Wachstumsfaktoren ab. Lokale Regulation wird von Hypothalamus und Hypophyse kontrolliert. Die Spermien und Spermatischen exprimieren spezifische Antigene.

Die Spermien schwimmen immer gegen den Strom: Eine der Gründe dafür ist das, dass der Weg der Spermien so lange dauert und sie bewegen sich gegen den Fluidstrom.

DIE ROLLE VON DIABETES MELLITUS BEI DER ENTSTEHUNG VON SCHLAGANFÄLLEN

Ruder M. - die Studentin des 4 Studienjahres

Wissenschaftliche Leiter- Prof. Kornauch V.N., Tkachjowa N.A.

Diabetes mellitus ist eine der führenden Ursachen für akute Störungen der zerebralen Durchblutung.

Auf dem Hintergrund von Diabetes entwickelt sich eine diabetische Mikroangiopathie der Hirngefäße. Diese Änderungen vom Kreislaufsystems führen zu einer erhöhten vaskulären Permeabilität, Anhäufung von Cholesterin und zugleich Verdickung der Gefäßwand. Dies führt zu der Entwicklung von Atherosklerose vom Mikrogefäßsystem. Arteriosklerose ist einer der Faktoren des Risikos der akuten Störungen der zerebralen Durchblutung.

DIE GENETISCHEN GRUNDLAGEN DER ENTSTEHUNG DER INVERSION DES GESCHLECHTS. SWYER-SYNDROME

Ruder M., Kurilowa I., Suworowa A. – Studentinnen des 4. Studienjahres

Wissenschaftliche Leiter: Chupak E.L., Tkatschjowa N.A.

Das Swyer-Syndrom ist eine Störung der sexuellen Entwicklung bei Jungen, obwohl der männliche Chromosomensatz in den Keimzellen im Normbereich liegt. Dabei entwickeln sich die Geschlechtsorgane in Richtung der Ausbildung der weiblichen Geschlechtsorgane. Selbst diese Krankheit kann aufgrund von verschiedenen subtilen Defekten im Genmaterial liegen. Unter den Patienten mit voller Gonadendysgenese die

häufigste Ursache von Geschlechtsinversion sind Punktmutation, Deletion und Translokation des SRY-Gens.

EINE PERSONLICHKEITSSTORUNG

Schiwtschenko N. – Die Studentin des 6. Studienjahres.

Wissenschaftliche Leiter – Brasch N. G., Tkatschjowa N. A.

Personlichkeitsstörung ist Komplex der tiefverwurzelten Starren der von adaptiven und rigiden Persönlichkeitsmerkmalen, die die spezifische Wahrnehmung und Haltung gegenüber sich selbst und zu anderen bestimmen; dabei werden der sozialen Anpassung und in der Regel und das subjektive emotionale Beschwerden und Leiden bemerkt.

Es gibt viele Klassifikationen von Persönlichkeitsstörungen.

Betrachten wir die detaillierteste kognitiven Persönlichkeitsstörungen:

- 1) Paranoide Persönlichkeitsstörung.
- 2) schizoide Persönlichkeitsstörung.
- 3) antisoziale Persönlichkeitsstörung.
- 4) hysterische Persönlichkeitsstörung.
- 5) Obsessive – kompulsive Persönlichkeitsstörung.
- 6) Alarmierende Persönlichkeitsstörung
- 7) narzisstischen Persönlichkeitsstörung.

DIE ALLGEMEINE CHARAKTERISTIK DER LEPPRA

Warenik N. – die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Menschikova N. W., Tkatschjowa N. A.

Lepra, d.h. chronische Granulomatose wird von *Mycobacterium leprae* hervorgerufen und verläuft mit der überwiegenden Schädigung der Haut, des peripherischen Nervensystems, manchmal der Vorderkammer des Auges, der oberen Atemwege über Kehlkopf, den Hoden, sowie an den Händen und Füßen. Der Erreger der Lepra war in 1873 in Norwegen von H. Hansen geöffnet.

Die Formen der Lepra sind: 1) Frühere Lepra; 2) Tuberkuloide Lepra; 3) Lepromatöse Lepra; 4) Die Grenzlepra.

Die Granulombeschreibung: die Hauptzelelemente lepromatöser Granulome sind lepromatöse Zelle, die zu den Makrophagen verhalten. Die charakteristische Besonderheit des Makrophagen ist die Anwesenheit und die Vermehrung der großen Menge Mykobakterien der Lepra, d.h. die Erscheinung unvollendeter Phagozytose. Bei tuberkuloidem Typ wird die Hauptmasse von Granulom von Epithelozyten gebildet, die im Zentrum und nach den Peripherien aus den Lymphoidzellen umgeben sind. Im Laufe der Verschärfung wird in Granulom der Überfluss der polymorphen-nukleären Leukozyten beobachtet. Die morphologischen Strukturen, die für beide Typen der Lepra charakteristische Elemente erhalten, und seien als Übergangsstadium zwischen den polaren Typen, die für den Grenztyp der Lepra typisch sind.

Symptome: die Schädigung der inneren Organe (die Leber, die Milz, das Knochenmark, die Schleimhaut der oberen Atemwege, die Hoden, die Nebennieren, die Lymphknoten), Amyloidose der inneren Organe (amyloido-lipide Nephrose der Nieren), die langwierige nicht heilende trophische Geschwüre und die chronische Knochenmarkentzündung.

KLINISCHE UND ANATOMISCHE MERKMALE DES SCHADELSGROÖBE DER JUNGEN DER 1. UND 2. STUDIENJAHRE, DIE 1980-1991 GEBOREN WURDEN

Dantschinow D. - der Student des 1 Studienjahres.

Wissenschaftliche Leiter: Pawlowa A.E., Tkatschjowa N.A.

Kraniometrie ist eine Wissenschaft, deren Richtung die Messung der Größe des Schädels ist.

Zur Durchführung dieser Studie wurde verwendetes wir Kraniometrie, die im 19. Jahrhundert von Paul Broca erschaffen wurde. Bei der Arbeit haben wir folgende kraniometrische Punkte verwendet:

-Bregma (Bregma-b) ist der Ort der Kreuzung der koronalen und sagittalen Nähten.

-Glabella (Glabella-gl) ist vor dem prominentesten Punkt der Stirn zwischen den oberen Kanten der Augenhöhlen.

-Opisthokranion (opisthokranion-op) ist der Protuberantia occipitalis externa.

-Eurion (EURion-eu) ist das am weitesten entfernte Punkt der Hügel des Scheitelbeins.

Die Länge ist der Abstand von der Glabella zu Opisthokranion.

Die Breite ist der Abstand zwischen Euryone.

Wir haben 52 Schädel untersucht, darunter 30 Mädchen und 22 Jungen waren.

Nach der Messung der Länge und der Breite für Formbestimmung des Schädels waren (Breite \ Länge \ 100) folgende Berechnungen der zentralen Index gemacht :

	Jugendliche	Mädchen
Dolichocephale (Lang-Schmalkopfige)	10	5
Mesocephale (Die Länge ist etwa gross als die Breite)	8	20
Brachycephale (Kurz- Breitkopfige)	4	5

Aufgrund der Daten, machen wir Schlussfolgerungen, dass bei den Mädchen mesocephale Form des Schädels dominiert. Bei den Jungen dominiert dolichocephale Form.

AKUTEN LEUKAMIEN

Kowalenko T., Chamizevitsch E. – die Studentinnen des 6. Studienjahres

Wissenschaftliche Leiter: Prof. Wojzechowski V.V., Gorjatschjewa S.A., Tkatschjowa N.A.

Jedes Jahr werden 35 neue Fälle von akuter Leukämie auf der 1 Million Einwohner registriert. Akute Leukämie ist eine ziemlich schwere Krankheit. Ihre rechtzeitige Diagnose und Behandlung können das Leben des Menschen auf viele Jahre zu verlängern und sogar auf Jahrzehnte. Damit jeder Arzt in der Lage sein muss diese Pathologie zu erkennen. Es ist wichtig für die nachfolgende Weisung den Patienten an einem Spezialisten für Hämatologie.

Akute Leukämie ist eine maligne Krankheit des hämatopoetischen Systems, dessen morphologische Substrat die Blastenzellen sind.

Die Klassifizierung der akuten Leukämie wird auf den Zeichen der Zugehörigkeit der Tumorzellen zu einem bestimmten Keimhamatopoese basiert. Die Zugehörigkeit der Tumorzellen kann durch das Verfahren auf zytochemischen Nachweis im Zytoplasma dieser Zellen spezifischen Einschlüssen bestimmt werden. Ausserdem wird für die Histogenesebestimmung der Tumorzellen immunologisches Verfahren (Immunphanotypisierung) verwendet, das auf zytoplasmatischen Zellmembrane Antigene erfasst, was auf die Herkunft der Zelle und ihrer Reifegrad erweist.

Heute wird für die praktische und wissenschaftliche Zwecke der Franko-Ameriko-Britanische (FAB) Klassifikation der akuten Leukämie verwendet. Die Klassifizierung aller akuten Leukämien gliedert sich in zwei Hauptuntergruppen: akute nonlymphoblastische Leukämien (ca. 70% aller akuten Leukämien) und akute lymphatische Leukämien (30% aller akuten Leukämien).

Das klinische Bild der akuten Leukämie bilden solche Syndrome wie hyperplastische, haemorrhagische, anämische, Tumorsyndrome der Intoxizität und infektiösen Komplikationen. Verschiedenen Arten von Leukämie ist verschiedene Schweregrad der oben genannten Krankheitsbilder gekennzeichnet.

Diese Krankheiten haben eine Vielzahl von Behandlungsprotokollen. Aber die Behandlungsstadien sind für gleiche akute Leukämie identisch: Induktion der Remission, Konsolidierung, Prävention der Neuroleukämie und weitere Erhaltungstherapie.

MIKRODELETION DES CHROMOSOMS 10

Laptewa M, Dulskaja T. - die Studentinnen des 5. Studienjahres
Wissenschaftliche Leiter - Chupak E.L., Tkatschjowa N.A.

In dem menschlichen Körper werden bei ionisierender Strahlung als Veränderungen auf molekularer auch genetischer Ebene ausgesetzt. Als Ergebnis dieser Exposition können mehrere Punktmutationen und Anomalien entwickeln.

Mikrodeletionen sind die Art von Chromosomenanomalien, die zu einem Verlust der kleinen chromosomalen Regionen zur Folge haben. Im Gegensatz zu anderen chromosomalen Syndromen kann Mikrodeletionssyndromen unabhängig vom Alter der Mutter auftreten. In den letzten Jahren werden in kinische Zytogenetik neue molekulare genetische Technologien auf Basis von fluoreszierenden Hybridisierung der Nukleinsäuren - in situ (FISH) eingebettet ist. Das er ermöglicht, komplexe Formen Chromosomsanomalien, zu studieren einschließlich die Bestimmung der chromosomalen Mikrodeletionen.

Die Diagnose kann durch molecular-zytogenetische Method mit Verwendung der chromosomeigenen Proben von DNA gestellt.

DIE ABHANGIGKEIT DER FUßGRÖÙE VOM WUCHS BEI JUNGEN DER ASMA, DIE IN 1991-1992 GEBOREN WURDEN

Shulgowatij D., Fedina A. - die Studenten des 2. Studienjahres
Wissenschaftliche Leiter: Pawlowa A.E, Tkatschjowa N.A.

Heutzutage wird den anthropometrischen Studien eine große Aufmerksamkeit geschenkt. Vor diesem Hintergrund untersuchen wir die Beziehung der Fußgröße der Jünglingen aus ASMA von ihrem Wachstum.

Um dieses Verfahren durchzuführen, wurden 25 Jungen untersucht, die in 1991-1992 geboren wurden.

Wachstum von 180-194 cm haben 8 Personen
 170-179 cm - 10 Personen
 160-169 cm - 7 Personen.

Sie haben folgende Körperbau:

	Normosthenik	Asthenik	Hypersthenik
160-169 cm	4	2	1
170-179 cm	4	3	3
180-194 cm	6	1	1

Durchschnittliche Fußlänge beträgt:

- A) Beim Wachstum von 160-169 cm - 23 cm
- B) Beim Wachstum von 170-179 cm - 25-27 cm
- B) Beim Wachstum von 180-94 cm - 29 cm

Schlußfolgerung: die Größe des Fußes ist in der Regel dem Wachstum proportional. Kleinwüchsige Jungen haben kleine Fußgröße, junge Männer mit hohes Wachstum haben größere Füße.

JUXTAGLOMERULAREN APPARAT DER NIERE

Fedina A. - die Studentin des 2. Studienjahres

Wissenschaftliche Leiter: Sajapina I.Ju., Tkatschjowa N.A.

In den Nieren gibt es 3 endokrinen Systems: Renin-Angiotensin, ein Prostaglandin und Kallikrein-Kinin. Diese Systeme spielen eine wichtige Rolle in der Regulation der Lebensfunktionen. Das Ziel meiner Forschung ist das Studium der strukturellen Komponenten des juxtaglomerularen Apparates und ihre Teilnahme am Leben des Organismus.

Juxtaglomerulare Komplex ist eine Reihe von Zellen in das Eingabefeld in den Nierenglomerulus der zuführenden Arteriolen und im Ausgang der abführenden Arteriolen, die Renin erzeugen. Es umfasst juxtaglomerulare und extraglomerularen Mesangialzellen und dichten Polstern der Zellen. Dieses Thema ist sehr aktuell, weil juxtaglomerularen Apparat sich an der Regulation des Blutflusses und Urinbildung in den Nieren beteiligt, es wirkt sich auf die gesamte Hamodynamik und Wasser-Salz-Stoffwechsel im Körper. Es wird in das Blut Renin sezerniert, das die Bildung von Angiotensin in den Körper durch den Hypothalamus und Aldosteron in der Nebenniere ADH katalysiert.

Nebenkorbzelliger Komplex besteht aus juxtaglomerularen Zellen, die sich in der Wand der afferenten Arteriole befindet und bilden um sie herum eine Manschette. Diese Zellen sind Baroreceptors und empfinden die Veränderung des Blutdrucks, bei der Senkung des Druck sondern Renin ab. Spezialisierte Zellen "kompakten Fleck" befinden sich in der Wand des distalen Tubulus des Harnkanalchens und sind Osmorezeptoren; Sie empfangen die Information über die Änderungen in der Konzentration von Natriumionen in der Flüssigkeit der distalen Harnrohre und geben sie zu juxtaglomerularen Zellen über. Extravaskuläre Zellen Gumargtigs befinden sich im Raum zwischen kompakten Fleck und Korbzelle der Nieren. Man vermutet, dass diese Zellen die Information von Zellen kompaktes Fleckes zu Arteriolen übertragen.

Somit spielt der juxtaglomerularen Komplex eine wichtige Rolle in unserem Körper, die nicht hoch genug eingeschätzt werden kann. Die Kenntnis der Struktur dieser Organe und seiner Funktionen sind für die Zukunft des Arztes sehr wichtig, da sie den Mechanismus der Regulierung der Nieren und deren Pathogenese zu verstehen helfen.

GNOSIS UND IHRE STORUNGEN

Morosowa X., Basarowa D. - die Studentinnen des 2. Studienjahres
Wissenschaftliche Leiter: Pawlowa A. E., Tkatschjowa N. A.

Gnosis (erkennen, Erkenntnis) bezeichnet die Fähigkeit Gegenstände nach sinnlichen Wahrnehmungen zu lernen. Das Erkennen ist eine komplexe Funktion der einzelnen Analysatoren und wird im Laufe des Lebens nach der Art der bedingten Reflexe ausgearbeitet.

Agnosie (Störung des Erkennens) entwickelt sich mit der Niederlage der sekundären Zonen innerhalb eines einzigen Analysators. Dabei werden elementaren Formen der Empfindlichkeit gespeichert. Die komplexe Form der Analyse und Synthese werden innerhalb des Analysators verletzt.

I. Die Verletzung des "Sehapparates", tritt bei Schädigung der äußeren Teile der Hirnrinde der occipitalen Anteile (Felder 18, 19, 39). Der Patient kann Objekte und ihre realistische Bild nicht erkennen. Er nimmt nur ihre einzelnen Merkmale wahr und vermutet die allgemeine Bedeutung des Gegenstandes oder dessen Bild. Zum Beispiel, wenn man eine Brille betrachtet, sagt: «Ring und noch einen Ring, Reck – wahrscheinlich ist ein Fahrrad». Oft sagen die Patienten selbst «weiße nicht», «sehe nicht», aber sie sehen Gegenstände, und umgehen sie.

a) Apperzeptive Agnosie: der Patient empfindet nur die einzelnen Zeichen des Gegenstandes und sein Bild, aber kann ihn im allgemeinen nicht bestimmen;

b) Assoziative Agnosie: Der Patient nimmt deutlich, Gegenstände als ganzes Bild wahr, aber kennt sie nicht und kann nicht nennen.

II. Auditive (akustische) Agnosie («geistige Taubheit») ist durch eine Störung der Fähigkeit, Gegenstände durch ihre charakteristische Geräusche zu erkennen, ohne sie zu sehen (Hund nach Bellen, Wasser durch Rieseln usw.) gekennzeichnet. Die Wahrnehmung von Ton selbst ist nicht gestört, sondern Verständnis seiner Signalwerte. Es ist möglich die Verletzung des Erkennens von bekannter Musik, d. h. Amusie. Akustische Agnosie tritt bei Läsionen des schlafennappen dominanten Hemisphäre auf.

BEHANDLUNGSMETHODEN VON TUMOREN DER HARNBLASE

Ruder M. - Studentin des 4. Studienjahres

Wissenschaftliche Leiter: Welitschko D.N., Tkatschjowa N.A.

Die Wahl der Behandlungstaktik bei Tumoren der Harnblase ist abhängig von der Art und dem Stadium der Tumorentwicklung. Es gibt die operative und konservative Methoden. Zu den operativen Methoden zählen: Radikale Zystektomie, die Resektion, transurethrale Resektion, Laser-Vaporisation, Kryotherapie, HIFU. Zu den konservativen Methoden zählen Immuntherapie, Chemotherapie.

ADIPOSITAS

Damdyn-ool A. - die Studentin des 3. Studienjahres

Wissenschaftliche Leiter: Menschikowa N.W., Tkatschjowa N.A.

Adipositas ist eine chronisch rezidivierende Erkrankung, die durch übermäßige Gehalt an Fettgeweben im Körper (bei Männern nicht weniger als 20 %, bei Frauen 25 % vom Körpergewicht, Body-Mass-index über 25-30 kg/m²) charakterisiert. In den wirtschaftlich entwickelten Ländern leiden an Fettsucht 25-30 % der Bevölkerung.

Ätiologie und Pathogenese der Adipositas: Einer der wichtigsten pathogenetischen Mechanismen ist auf den modernen Vorstellungen, die zur Entwicklung der Krankheit führt, ein Energie-Ungleichgewicht, der in der Diskrepanz zwischen der Anzahl der Kalorien aus der Nahrung und die Energiebedarf des Körpers besteht. Dies geschieht häufig aufgrund von Eßstörungen: übermäßige Einnahme von Energie mit der Nahrung im Vergleich zu Energiebedarf, qualitative Abweichungen im Verhältnis von Nährstoffen von den anerkannten Normen einer ausgewogenen Ernährung oder Regimstörung der Ernährung den bevorzugten Anteil der täglichen Kalorienzufuhr auf den Abend. Fettgewebe ist der wichtigste Depot der Energiereserven. Überschüssige Energie, die mit Nahrung in Form von Triglyceriden aufgenommen wird deponiert, in den Fettzellen, d.h. Adipozyten und wird eine Zunahme ihrer Größe und Zunahme des Körpergewichts verursacht. Nicht nur übermäßige oder falsche Ernährung kann dazu führen, oft zu große Masse des Körpers ist eine Folge der Verletzungen der Energiedurchfluss im Körper, die durch verschiedene fermentative metabolische Störungen des oxidativen Prozesse, des Zustandes der sympathischen Innervation verursacht wird.

DIE KLINISCHE UND EPIDEMIOLOGISCHE CHARAKTERISTIK DER CHOLERA

Nagijew M., Sachnowa O.– die Studenten des 5. Studienjahres
Wissenschaftliche Leiter – Gawrilow A.W., Tkatschjowa N.A.

Die Cholera gehört trotz der Erkenntnisse moderner Medizin zu einem der besonders gefährlichen Infektionskrankheiten und stellt die Gefahr für die Menschheit meistens in den wirtschaftlich schwach entwickelten Ländern dar. Die wichtigste Gründe der breiten Verbreitung der Cholera unter armen Ländern sind einerseits die Vernachlässigung der persönlichen Hygiene, andererseits – das Nichtvorhandensein des entwickelten Systems der Wasserversorgung und Kanalisation. Es ist in der Menschheitsgeschichte die sieben Fälle der Pandemie bekannt, die eine nach der anderen ununterbrochen folgten und Millionen von Menschen daran starben. Die Kunstmaler der damaligen Zeiten malten die Cholera als Sensenmann, der als auf der schmutzigen Thames unter Abwasser schwimmt auch unheilbaren Kranken macht. Der Hauptfaktor der Pathogenität der Cholera vibrio ist das Exotoxin Cholera toxin, das die verstärkte Sekretion der Flüssigkeit und Elektrolyten ins Darmlumen verursacht. Klinisch manifestiert es sich als der häufige flüssige Stuhl, der zusammen mit dem beitretenen Erbrechen zum raschen Austrocknen des Körpers führt. Das Austrocknen des Körpers ist das führende pathogenetische Glied der Erkrankung. Daher ist die Behandlung auf die Auffüllung des Elektrolyt- und Flüssigkeitsverlusts des Organismus gerichtet. Bei der rechtzeitigen angemessenen Behandlung ist die Prognose günstig. In der letzten Jahre registriert man in Russland, wie in vielen anderen entwickelten Ländern, meistens die sporadische von Touristen eingeführte Fälle. Es ist bekannt, dass die letzte Pandemie durch die Mutation der Cholera vibrio verursacht wurde. Es ist nicht ausgeschlossen, dass sich solcher Hergang der Ereignisse in der Zukunft wiederholt. Aber die Menschheit kann von Cholera völlig frei sein, wenn jeder das Wesen dieser Krankheit begreift und befolgt einfache Regeln der persönlichen Hygiene.

EIN MODERNER ANSATZ FÜR DIE DIAGNOSTIK UND BEHANDLUNG DES BECKENVENENSYNDROMS BEI FRAUEN

Nagijew M. – der Student des 5. Studienjahres
Wissenschaftliche Leiter – Lisjak D.S., Tkatschjowa N.A.

Das Beckenvenensyndrom ist immer noch wenig untersucht. Nach Aussage der verschiedenen Autoren beträgt die Auftretshäufigkeit dieser Erkrankung 10-25% bei Frauen im gebärfähigen Alter. Die hauptsächliche klinische Manifestation dieser Pathologie sind chronische Unterleibsschmerzen, die bei kranken Frauen physische und körperliche Leiden verursachen und zum Verlust der Arbeitsfähigkeit und sexuelle Unzufriedenheit führen. Gegenwärtig gibt es von dieser Krankheit keinen allgemeinen anerkannten Auffassungen der Pathogenese, keinen deutlichen Algorithmen der Diagnostik und Behandlung. Dadurch ist es wichtig, Fragen über Prinzipien der rechtzeitigen Diagnostik und adäquaten Behandlung des Beckenvenensyndroms zu diskutieren. Als instrumentelle Diagnoseverfahren benutzt man eine Ultraschalluntersuchung des Beckens, Magnetresonanztomographie, Computertomographie, diagnostische Laparoskopie, retrograde Phlebographie der Beckenvenen. Die Letzte ist die informativste und gleichzeitig minimal-invasive Diagnosemethode. Eine wichtige Rolle für die Behandlung des Beckenvenensyndroms spielt die medikamentöse Therapie. Wenn diese Therapie unwirksam ist, führt man den chirurgischen Eingriff durch. Die medikamentöse Behandlung wird auf die Erhöhung des Tonus der Krampfader, auf die Erhöhung ihrer Resistenz, die Verbesserung der Mikrozirkulation und die Unterdrückung der Schmerzen gerichtet. Das Ziel der operativen Therapie besteht in der Unterbrechung der hamodynamisch relevanten Refluxströmung durch die erweiterten Ovarialvenen. Die bestmögliche Methode dabei ist die endovaskuläre Embolisation der Eierstockvenen. Die Wirksamkeit dieser Prozedur erhöht man durch die zusätzliche Einführung des Sklerosierungsmittels. In seltenen Fällen werden laparoskopische oder operative Ligatur der Ovarialvenen durchgeführt. Das Beckenvenensyndrom ist ziemlich verbreitete Erkrankung. Ungenügende Information über dieser Erkrankung von Chirurgen, Gynakologen und anderen Fachärzten führt zum großen Anzahl der Diagnosefehler, was falsche Behandlungstaktik bedingt.

ERNAHRUNGSGEWOHNHEITEN DER BEVÖLKERUNG, DIE IM GEBIET MIT ERHOHTEN STRAHLUNG WOHNEN

Maxjuta.D – der Student des 3. Studienjahres.

Wissenschaftliche Leiter: Prof. N.W.Korschunowa, N.A. Tkatschjowa.

In Russland wird sich radioaktive Verschmutzung des Geländes in Folge der Unfälle von Tschernobyl und die Explosion in radiochemischen Fabrik im Radio «Majak» (Tscheljabinsk) gebildet. Im gebildet, das infolge des Unfalls in Tschernobyl mit Radionukleiden verschmutzt wird, lebten 1991 nach Angaben des Amtes FR Statistik lebten 4,87 Millionen Personen, darunter auf dem Territorium Russlands 1,553 Millionen, in der Ukraine - 1,462 Millionen und in Belarus - 1,86 Millionen Menschen. Für die Prävention der schädlichen Auswirkungen von Strahlung wurde ernährungseinlaß entwickelt. Die Ernährung der Kinder und Erwachsenen sollte in diesen Bereichen auf die vollständige Befriedigung der Bedürfnisse des Körpers an Nährstoffen und Energie, die Prävention von möglichen nachteiligen biochemischen Störungen (Verstärkung der Lipidperoxidation, eine Verletzung der Stabilität und Permeabilität der biologischen Membranen) und Erkrankungen, die mit diesen Störungen verbundene sind, gerichtet sein. Die Hauptprinzipien des Ernährungsregimes eines Erwachsenen und Kindes sind: Erhöhung des Anteils an Proteinen bis zu 15% von Energiewert der Nahrung, vor allem durch Proteine tierischer Herkunft; die relative

Beschränkung des PUFA-mit einem Gesamtgehalt von Fett in der Nahrung nicht mehr als 30% Energiegehalt; Gehalt an antioxidativen Vitaminen (A, E, C), das auf 20-50%, ist erhöht die Steigerung auf 20-30% des Inhalts der Pflanzenfasern, die normale Motilität des Darms und die unspezifische Adsorption von Radionukliden gewährleisten; Erhöhung der Calcium- und Kalium, niveau die Ausscheidung der Radionuklide Strontium und Cäsium beziehungsweise fordern; genügender Inhalt von JOD in der Ernährung, die auf die Kompensation des Defizits in in der biogeochemischen Provinzen mit niedrigem Gehalt an JOD in Boden, Wasser und Lebensmitteln gerichtet ist. In der Ernährung sind Fleisch, Geflügel, Fisch, Innereien (Eiweiß mit hoher biologischer Aktivität und Vitamin A), Milch, Quark und Käse (komplettes Protein eine leicht verdauliche und Kalzium), Gemüse und Obst, Natürliche Säfte mit Fruchtfleisch (Vitamin C, Carotin, Kalium, Pektin, Zellulose). Für Bedürfnisse zu einschließen an JOD und Faser soll Ernährung sollte Fisch und Meeresfrüchte erhalten. Für die vollständige Versorgung des Körpers an Vitaminen ist die regelmäßige Aufnahme von Multivitamin - empfohlen.

ARALSEES KATASTROPHE

Subonow G, Mirzoewa S, Subonkulowa Sch. – die Studenten des 2. Studienjahres
Wissenschaftliche Leiter: K. m. W. Guba L. A., Tkatschowa N.A

Aralsee ist jetzt fast ausgetrocknet, ein Salzsee, der heute wie eine große Salz-Wüste aussieht. Seine Austrocknung gilt als einer der großen ökologischen Katastrophen der Gegenwart, denn es erst vor 50 Jahren zu vier größten Seen unseres Planeten gehörte. Der Prozess des Verschwindens des Sees begann im Jahr 1961 und war sehr ungestüm: pro Tag fielen das Wasser auf ein paar Dutzend Meter von der Küste entfernt ab. Zuerst teilte sich die See in zwei — Kleine und Große Aral. Heute unterteilt sich Große Aral noch in mehrere kleine Gewässer in Folge des Austrocknens. Es gibt eine große Anzahl von Theorien des Verschwindens. Das Wasser für die Bewässerung zu trockenen und ungeeigneten für diesen Zweck Territorien begannen gerade der wichtigsten Nebenflüsse Aral See — Sir-Darja und Amu-Darja wegzunehmen. Aus diesem Grund erreicht ein großer Teil des Wassers mehr, bis das «Meer» überhaupt nicht. Infolge der Verringerung der Menge an Frischwasser und der Erhöhung der Konzentration von Salz im See starben eine große Anzahl von Tieren und Pflanzen.

Der Boden des Sees verwandelte sich in eine sandige Wüste, die mit Salz und Pestiziden mit Plantagen Baumwolle wird. Und starke Winde waren die Ursache für gesundheitsgefährdenden Sandstürme. Jedes Jahr wird an diesem Ort rund 75 Millionen Tonnen Salz. Staubstürme verschwindet. Staubstürme führen dazu, dass für die Bewässerung noch mehr Wasser benötigt, dies wiederum der Kreis und es wird die Ursache des schnellen Verschwindens des Aralsees schließt sich. Abgesehen davon, trägt diese ökologische Katastrophe noch eine tödliche Bedrohung. In der sowjetischen Zeit befand sich der Insel der Wiedergeburt Testgelände zur Erprobung von biologischen Waffen. Heute kann die Verbindung dieser Länder mit dem übrigen Land kann die Ursache für die ungehinderte Ausbreitung der tödlichen Bakterien sein.



SECTION du
FRANCAIS
et du LATIN



BASES DE LA THERAPIE DES INFECTIONS INTESTINALES

Pnuchtina M., Pnuchtin O. – et-ts de la 6-eme annee.

Les chefs scientifiques – Soldatkin P.R., Nazarkina S.I.

L'évolution grave de nombreuses maladies infectieuses peut entraîner au développement des états critiques et exigent beaucoup de soins intensifs. Les malades avec les infections intestinales aiguës indépendamment de l'étiologie et du type de la diarrhée peuvent traiter dans l'hôpital et à la maison. Les directions principales du traitement sont : l'alimentation rationnelle, la rehydratation orale et infusée, la thérapie de désintoxication, de l'enzymothérapie, symptomatique, pœcidromale et le traitement d'étiotropisme.

Dans la période aiguë, indépendamment de la gravité de la maladie et du type de la diarrhée, ne sont pas recommandés les produits alimentaires qui augmentent le péristaltisme intestinal, le processus de fermentation. Ayant choisi des mélanges d'enfant il faut préparer les aliments probiotiques thérapeutiques et prophylactiques et les aliments pour les nourissons avec des nucléotides. Les probiotiques, les entérosorbents et des médicaments avec des effets immunomodulateurs sont les moyens « de la monothérapie étiotrope » très efficaces. Les antibiotiques sont utilisés uniquement pour la diarrhée bactérienne avec l'évolution grave. Les médicaments, qui utilisent plus souvent, sont : aminopénicillines, céphalosporines, carbapénèmes, monobactames, aminoglycosides, tétracyclines, chloramphénicol, polymyxines, quinolones (plus souvent). Outre des antibiotiques on utilise largement les antiseptiques intestinaux (enterofuril, intetrix et enterosedif) et les bactériophages spécifiques. La thérapie de désintoxication et de rehydratation (85-95% de cas) peut réaliser par voie orale et seulement 5-15% - par voie intraveineuse. Pour la rehydratation par voie intraveineuse on prend trisol, quatrasol ou chlosol. La rehydratation orale est effectuée par rehydron ou la décoction avec la carotte et le riz, l'ORS-200, qui doit combiner avec des solutions sans sel et ils ne peuvent pas se mélanger. En cas de la prédominance du syndrome de l'intoxication ci-dessus du syndrome de déshydratation il faut prendre des solutions colloïdales.

Les indications pour la thérapie de rehydratation infusée sont une toxicose avec l'exsiccose de deuxième ou troisième degré, c'est un choc hypovolémique.

Pour la cessation du syndrome de la douleur du météorisme on utilise des préparations enzymatiques, s'il y a des spasmes des muscles lisses de l'intestin on prend buscopan, duspataline, s'il y a des vomissements fréquents on utilise ceroucale, pipolfène, novocaïne. Pour les patients qui tombent malade plus souvent, il faut prendre méthyluracilum, préparations d'échinacée. Pour la prévention et le traitement de dysbiose intestinale on prend des préparations bactériennes biologiques.

Ainsi, la cause seule de la thérapie pathogénétique et étiotrope complète des malades avec les infections intestinales aiguës est déterminée par le pronostic et une thérapie de la maladie.

SIGNES DU CANCER DU COL DE L'UTERUS

Glouchakova D., Oorjak M. - et-tes de la 5-eme annee.

Les chefs scientifiques – Lychiak D.S., Nazarkina S.I.

Le cancer du col de l'utérus est la deuxième forme la plus fréquente de cancer chez les femmes à l'échelle mondiale après le cancer du sein.

Le dépistage des lésions précancéreuses est possible grâce à la pratique du frottis de dépistage. La découverte des lésions précancéreuses et notamment des dysplasies sévères

ou carcinome au lieu de sa formation permet d'effectuer un traitement, assurant une guérison de la patiente avec un très faible taux de la récurrence.

Le principal signe est un saignement par les voies génitales, provoque plus souvent pendant d'un rapport sexuel, et ce, en dehors de la période des règles. Mais tout saignement anormal, quelles que soient ses caractéristiques, peut révéler un cancer. Aux stades avancés, à l'examen au spéculum, on voit une lésion soit bourgeonnante soit ulcéreuse du col de l'utérus ou même parfois ulcéro-bourgeonnante. Le toucher vaginal permettra d'évaluer l'extension du cancer au-delà du col de l'utérus : vagin, paroi latérale du col de l'utérus, cul-de-sac latéral du vagin à travers lequel on palpe les paramètres qui peuvent aussi être envahis, vessie et rectum (au toucher rectal). En cas de lésion non visible, la coloscopie permet de retrouver la lésion et diriger la biopsie. La biopsie de la lésion est l'examen clé du diagnostic et confirme le caractère invasif du cancer, son type histologique et son grade de différenciation.

Le cancer du col est la 1^{re} cause de mortalité par le cancer chez la femme dans nombreux pays du tiers monde et représente 20% à 30% des cancers de la femme dans ces pays contre 4% à 6% des cancers féminins en Amérique du Nord et Europe. Il a la particularité de toucher la femme relativement jeune, ce qui en fait le cancer responsable de la perte de plus années de vie dans le tiers monde.

Son aspect MST semble à être sous-estimé en raison d'une sous-estimation de l'importance des infections à papillomavirus. De même ses liens avec le tabagisme ont pu être mésestimés ou avoir fait pendant quelque temps l'objet de biais d'observation. Des écoulements vaginaux sont aussi une manifestation surtout en cas d'infection surajoutée. La douleur est très tardive.

Le traitement du cancer relève, le plus souvent, d'établissements spécialisés et expérimentés. Il n'existe pas un traitement unique mais de multiples possibilités de traitement. Enfin, la rapidité de l'évolution des connaissances médicales impose le recours à des médecins bénéficiant d'une formation médicale adaptée.

ROLE DES MARQUEURS DE L'INFLAMMATION SYSTEMIQUE AVEC LA MALADIE DES POUMONS OBSTRUCTIVE CHRONIQUE

Pnuchtina M., Pnuchtin O. – et-tes de la 6^{eme} année.

Les chefs scientifiques – Kostrova I.V., Prikhodko O.V., Nazarkina S.I.

La broncho-pneumopathie obstructive chronique est caractérisée par la présence de la réponse inflammatoire pathologique dans les poumons. L'inflammation est qualitativement et quantitativement différente l'inflammation chez les fumeurs et chez les personnes avec la fonction pulmonaire intacte et préservée après la cessation de la fumée. Nous avons les données qui constatent la présence d'une inflammation systémique qui trouve son origine dans les poumons. Ce fait joue un rôle important dans la pathogenèse des maladies associées avec la broncho-pneumopathie obstructive chronique, en particulier, avec le système cardio-vasculaire. Pour prédire les résultats et la réponse à la thérapie on présente la détermination quantitative perspective des marqueurs de l'inflammation.

Dans les pays développés, la cause principale de cette maladie est une inspiration de la fumée de cigarette. Elle contient un grand nombre de toxines qui peuvent provoquer une réponse inflammatoire dans les voies respiratoires. Il est important de comprendre que ce caractère est une réponse normale. Selon les données actuelles, la nature du processus inflammatoire chez les patients atteints la maladie des poumons obstructive chronique, est

presentee par les personnes fumees avec susceptibilite hereditaire a l'influence de la fume de cigarette, differente par les indices quantitatifs et qualitatifs et preserve apres la cessation du tabac.

La base de la pathogenese de la maladie presente l'inflammation diffuse chronique des petites voies aeriennes. En consequence cette inflammation developpe une hypertrophie des muscles lisses et un epaississement des parois des bronchioles. Dans le processus de l'inflammation entraine l'entourage petit des bronchioles, tout ce qui fait le developpement du cercle vicieux de l'inflammation et la destruction des membranes interalveolaires. L'inflammation progressive attire les cellules-neutrophiles actives, des macrophages, des cellules immunitaires qui sont des sources principales des mediateurs de l'inflammation. La balance du systeme des mediateurs pro-inflammatoires et anti-inflammatoires determine le degre de la gravite de l'inflammation. Le processus de l'inflammation a une nature multifactorielle et presente le systeme complexe de la liaison des cellules de l'inflammation et une activation de la reponse des recepteurs du processus inflammatoire. L'activation du systeme des cytokines et des eicosanoides est un marqueur de la maladie progressive. A present on sait que l'inflammation de la maladie des poumons obstructive chronique ne se limite pas aux poumons, mais elle etend a la circulation systematique ou on peut participer au developpement de la pathologie associee.

Ainsi, pendant la maladie des poumons obstructive chronique du degres du pesanteur moyen et grave de l'evolution de cette maladie est activee par les mediateurs pro-inflammatoires et qui sont les marqueurs du type Th1 de la reponse et de la reaction inflammatoire systemique. En outre avec un etat de sante stable et une certaine amelioration de la fonction de la respiratoire externe l'inflammation systemique chez les patients avec cette maladie n'est pas compartimentee par la therapie traditionnelle de medicaments et exige le developpement des methodes du traitement et de la rehabilitation des malades avec cette pathologie.

EXERCISSEUR MEDICAL POUR TESTER LES COMPETIONS MANUELLES DE LA TRAUMATOLOGIE ET DE L'ORTHOPEDIE DU MEMBRE INFERIEUR

Pnuchtina M., Pnuchtin O. – et-ts de la 6-eme annee.

Les chefs scientifiques – Borozda I.V., Nazarkina S.I.

L'etude par la simulation en traumatologie est un composant obligatoire de la formation professionnelle qui aident a etudier les pratiques, les habilités et les competances professionnelles en conformite avec les standards et les moyens de porter des soins medicaux.

Le probleme de l'invention est une fixation et une extension des possibilites fonctionnelles du travail des manipulations au membre inferieur par les traumatologistes et les etudiants mais aussi l'amelioration de la technique de l'execution du blocage a novocaine au lieu de la fracture a Bellaire. Ce sont l'application de l'extension squeletique aux fractures des membres inferieurs, la ponction des articulations du membre inferieur, la fixation anti-choc des os des membres inferieurs et l'application du garrot Esmarche pour arreter un hemostase externe des blessures des membres.

L'exerciseur represente un systeme des os polymeres realises sous la forme du squelette du membre inferieur de l'homme. Il est enferme dans une matrice polymere qui imite des tissus moux et des faisceaux vasculaires et nerveux, selon des regions anatomoques et topographiques du genou et de la cheville du membre inferieur avec 6 conducteurs dans les zones mediales et laterales des articulations du genu et de la cheville

pour l'application de l'extension squelettique et pour la ponction des articulations et deux conducteurs situées latéralement dans le tiers du fémur et de jambe. Les conducteurs pour l'extension squelettique présentent les cavités, passant entièrement, qui sont remplies par le polymère. Les orifices vasculaires pour l'application du garrot Esmarche présentent les cavités, qui sont remplies par le liquide et qui mis dans une capsule de caoutchouc.

Le résultat technique de l'utilisation de l'invention est conclu à l'extension des possibilités fonctionnelles de l'exploitation des compétences manuelles des étudiants, ainsi que l'amélioration de la technologie de la réalisation des manipulations nécessaires à la chaire de traumatologie et orthopédie. À présent on fait l'approbation de cette invention pendant les études à la chaire.

FORMES ANATOMO-CLINIQUE DE L'ENDOMETRIOSE

Glouchakova D., Oorjak M. - et-tes de la 5-ème année.

Les chefs scientifiques – Lychiak D.S., Nazarkina S.I.

L'endométriose est définie comme la présence de tissus endométriaux comportant à la fois des glandes et du stroma en dehors de la cavité de l'utérus (accord professionnel).

La présence de lésions histologiques n'est pas synonyme de l'existence d'une maladie clinique (NP1). L'aspect microscopique des lésions est généralement évocateur (NP2), mais un examen histologique (pièce opératoire ou biopsie) est recommandé (accord professionnel). Une histologie négative ne permet pas d'exclure la maladie (grade C).

Microscopiquement, il est décrit trois formes d'endométriose externe : l'endométriose péritonéale (ou ovarienne) superficielle, le kyste endométriosique de l'ovaire et l'endométriose sous-péritonéale profonde (NP1). Il n'y a pas de données établissant que la physiopathologie et l'histoire naturelle de ces lésions sont différentes.

En l'absence de définition validée de l'endométriose sous-péritonéale profonde, le groupe retiendra pour la suite des recommandations celle de lésions d'endométriose qui infiltrent le rétro-péritoine ou bien les viscères (rectum, vagin, utérus, vessie, uretère, intestin grêle, etc) (accord professionnel).

Évaluation clinique et biologique de l'endométriose. Quels sont les signes fonctionnels évocateurs d'endométriose ?

Les lésions d'endométriose peuvent être responsables de symptômes douloureux divers (NP1). Le caractère cyclique des symptômes est évocateur d'endométriose (NP2), mais aucun symptôme douloureux (dysménorrhée, dyspareunie, etc), n'est pas spécifique de cette affection (NP2). Le délai entre le début des symptômes et le diagnostic est de plusieurs années (NP3). L'existence d'une symptomatologie douloureuse pelvienne sévère et persistante doit conduire à rechercher la maladie (grade C).

Traitement de première intention

L'endométriose minimale ou légère est parfois responsable d'hypofertilité (NP1). Cette relation semble plus nette dans les stades 3 et 4 (NP3). Aussi, dans le cadre d'un bilan d'infertilité, il est recommandé de recourir d'emblée à la coelioscopie en cas de suspicion clinique ou échographique d'endométriose (accord professionnel).

MUCOVISCIDOSE

Glouchakova D., Oorjak M. - et-tes de la 5-ème année.

Les chefs scientifiques – Tchoupak E.L., Nazarkina S.I.

La mucoviscidose (“la maladie des mucos visqueux) ou fibrose kystique est une maladie genetique, affectant les epitheliums glandulaires de nombreux organes. C’est la maladie genetique letale a transmission autosomique recessive la plus frequente dans les populations de type europoide, alors qu’elle est tres rare dans les populations africaines et asiatiques. Elle est liee a des mutations du gene CFTR sur le chromosome 7, entrainant une alteration de la proteine CFTR (sigle pour cysticfibrose transmembrane conductance regulator). Cette proteine est un canal ionique permeable au chlore au thiocyanate SCN^- , dont la fonction est de reguler le transport du chlore a travers les membranes cellulaires. Son dysfonctionnement provoque une augmentation de la viscosite du mucus et son accumulation dans les voies respiratoires et digestives. La maladie touche de nombreux organes mais les atteintes respiratoires sont predominantes et representent l’essentiel de la morbidite. La forme clinique la plus frequente associe troubles respiratoires, troubles digestifs et troubles de la croissance staturoponderale. D’evolution chronique et progressive, la maladie s’exprime souvent tot des la petite enfance meme s’il existe des forms frustes de diagnostic tardif.

Le diagnostic biologique repose sur le test de la sueur est confirme par une identification des mutations genetiques. Le depistage neonatal, generalise en France depuis 2002 permet un diagnostic et une prise en charge precoce alors que le conseil genetique permet a un couple heterozygote connu de ne pas avoir un autre enfant malade. Il n’y a pas de traitement curatif mais les progress de la prise en charge ont permis d’ameliorer la qualite et l’Esperance de vie des patients; ainsi en France, l’esperance de vie a la naissance est passe de sept ans en 1965 a 47 ans en 2005.

Connue depuis le Moyen Age, la maladie est decrite scientifiquement par le pediatre suisse guido Fanconi en 1936. Elle identifiee deux ans plus tard Dorothy Hansine Andersen comme une entite pathologique atteignant le pancreas d’ou son nom historique de fibrose kystique du pancreas. Elle conserve ce nom en anglais : cystic fibrosis.

SYNDROME DES JAMBES FATIGUEES

Terentieva E., Margasova A. - et-ts de la 4-eme annee.

Les chefs scientifiques - Chimko V.V., Nazarkina S.I.

Le syndrome des jambs fatigues (vient du mot anglais “restless leg syndrome” – RLS). Cette maladie est caracterisee par une sensation a la brulure, le rempement des fourmis, et d’autres sensations desagrees dans les jambes, qui diminuent pendant des mouvements intentionnels. Par consequant, dans ces moments les patients sentent le besoin de remuer des jambes jusqu’au moment quand le derangement cesse. D’habitude les symptomes de ce syndrome se fait sentir pendant la soiree, au moment de coucher. Ce sont les troubles du mouvement, le syndrome des jambes fatigues, le syndrome de l’homme immobilise.

Etiologie. Les causes de cet etat ne sont pas connus, mais le facteur hereditaire a lieu dans 50% de cas. Il y a deux formes de ce syndrome des jambes fatigues, ce sont un primaire syndrome et le secondaire syndrome dans le cas d’une maladie. Le syndrome symptomatique (secondaire) peut etre cause par le deficit en fer, uremie, diabete, amylose, crioglobulinemie, resection de l’estomac, deficit des vitamines du groupe B, de magnesium, d’alcoolisme, maladies des poumons obstructives chroniques, d’hypothyreose et thyreotoxicose, arthrite rhumatoide, syndrome Chegrene, porphyrie, maladies oblitteratives des arteres ou de l’insuffisance veineuse chronique des membres inferieurs.

Pathogenese. L'efficacite dopaminergique des moyens et la possibilite d'une aggravation des symptomes sous l'influence des neuroleptiques indiquent qu'un maillon cle de la pathogenese du syndrome des jambes fatiguees est une defectivite des systemes dopaminergiques. Le rythme clair de vingt-quatre heures des manifestations cliniques peut refleter des structures de l'hypothalamus, en particulier du noyau supraxiasmale.

Clinique. Le syndrome des jambes fatiguees est caracterise par l'apparition dans les membres inferieurs (plus souvent au profondeur des jambes) des sensations desagrees. D'habitude elles sont en cas de repos (assis ou couche), mais elles diminuent en mouvement. Pour faciliter cet etat, les malades sont obliges de tirer ou tourner les pieds, les secouer, frotter et les masser, se retourner dans le lit, se lever et marcher dans la chambre. Pendant le mouvement les sensations desagrees diminuent, mais si le patient commence a se coucher ou parfois il suffit simplement s'arreter, comme les sensations deviennent plus fortes.

Le traitement du syndrome des jambes fatiguees doivent realiser les neurologues. La therapie doit etre adreesee a la correction de la maladie primaire (par exemple, avec la nature du diabete, normaliser l'usage du glucose et de l'insuline avec la metformine qui mene a la disparition de la douleur dans les membres inferieurs) ou le complettement du deficit (fer, acide folique, magnesium, etc).

CIRRHOSE HEPATIQUE

Katsuba S., Savelieva K., Danko K. – et-ts de la 4-eme annee.

Les chefs scientifiques - Krougliakova L.V., Nazarkina S.I.

La cirrhose hepatique est une maladie qui est caracterisee par une degenerescence du tissu parenchymateux du foie dans le tissu fibreux conjonctif.

La cirrhose se caracterise par l'apparition au tissu de foie des nodules du tissu conjonctif, par la croissance du tissu conjonctif, par la formation des lobules « faux ». On distingue la cirrhose par la dimension des nodules petites formees sur le tissu (beaucoup de nodules jusqu'a 3 mm de diametre) et des nodules grandes (les nodules surpassent 3 mm de diametre). Dans la plupart de cas la cause du developpement de la cirrhose du foie est un abus d'alcool et les hepatites virales B et C.

Le patient se plaint de faiblesse, fatigue, baisse de la capacite de travail et de l'appetit, troubles dyspeptiques (nausee, vomissement, gout ame dans la bouche, eructation, intolerance aux aliments gras, alcool).

Les maladies sentent la lourdeur et la douleur dans l'abdomen, surtout dans la partie sous-costale droite de la region hypogastrique. Parmi les signes de la cirrhose du foie ont « les signes hepatiques » sous la forme de rougeurs de la paume de la main, « des etoiles » vasculaires (dans la plupart de cas sur la peau de la moitie superieure du corps). Il y a souvent des hemorragie dans la peau et une augmentation des seignements des muqueuses. On distingue le perit cutane et les douleurs dans les articulations. La temperature du corps s'eleve moderement ou reste normale.

Le diagnostic est effectuee par un gastroenterologue ou hepatologue a la base de l'ensemble des donnees de l'anamnese et de l'examen physique, des tests de laboratoires, des reactions fonctionnelles, des methodes du diagnostic instrumental. La therapie des malades avec la cirrhose hepatique doit effectuer les taches suivantes : interrompre la degenerescence progressive du tissus hepatique pour compenser les troubles fonctionnels, pour reduire la charge sur les veines de la circulation sanguine collaterale, pour prevenir le developpement des complications.

CANCER DU REIN

Savelieva K., Danko K., Baymitcheva D. – et-ts de la 4-eme annee.
Les chefs scientifiques - Velitchko M.D., Nazarkina S.I.

Le carcinome a cellules renales (cancer du rein), c'est une tumeur maline du rein, qui pousse dans la plupart des cas de l'epithelium des canalicules proximaux de nephrons ou du systeme de collecte du rein. Le cancer du rein occupe la 10-me place au niveau de la morbidite parmi les neoplasmes malines, et au niveau de leur croissance ne cede qu'au cancer de la prostate. Dans la structure de la mortalite des maladies oncologiques de la population en Russie le cancer du rein chez les hommes compose 2,7 %, chez les femmes est 2,1%. Le cancerogene specifique ne se revele pas. La science ne peut pas expliquer les causes qui menent a cette maladie, mais identifie exactement les facteurs de son developpement. Ce sont tabagisme, obesite, diabete, heredite, traumas, hypertension, anomalies d'evolution.

Clinique. Les symptomes communs sont : aggravation de l'etat de la sante, faiblesse, perte d'appetit, perte de poids, fièvre, frissons. La triade des symptomes locaux sont: hematurie (30-70%), douleurs aux reins (en general sourdes, douleurs du type de colique nephretique), tumeur palpable, c'est un symptome le plus caracteristique, cependant plus rare et plus tardif. Il y a encore la varicocele. Les symptomes de metastases tumorales sont varies, plus souvent aux poumons et aux os du bassin.

Les methodes de diagnostiques sont : diagnostic a ultrasons, tomographie, angiographie, KT, MRT avec l'amplification du contraste dans le regime angiographique, biopsie en ponction, nephroscintigraphie, urographie commune et excreteuse, uretropyelographie retrogarde. L'analyse generale du sang est une augmentation de la vitesse de sedimentation des erythrocytes (VSE), l'anemie. Dans l'analyse de l'urine il y a l'erythrocyturia, leucocyturia, proteinuria. Les methodes biochimiques comprennent l'etude des ferments, des proteines et les fractions albuminees. Le signe inspecifique caracteristique pour le cancer primaire est une augmentation de l'activite des phosphatases alcalines et les autres ferments dans le serum du sang. Il faut faire le diagnostic differentiel avec les maladies kystiques et purulentes destructives du rein, la hydronephrose, la polykystose, l'abcès et la tuberculose du rein. La seule methode radicale du traitement des tumeurs renales malines est une operation. Les types d'accès chirurgical pour nephrectomie sont transperitoneal, retroperitoneal, thoracoabdominal. La therapie de rayon et hormonale utilise comme une mesure palliative. L'immunotherapie avec l'interferon-alpha recombinant, l'interleucine-2 en combinaison avec le fluorocile-5 a un effet positif. L'utilisation de la chimiotherapie pour le cancer des cellules renales est inefficace. Dans les grandes villes on utilise une nephroectomie radicale a robot.

METHODES DE RECHERCHES DANS LA PRATIQUE NEUROLOGIQUE – AIGUILLETAGE LOMBAIRE ET SUBOCCIPITALE

Terentieva E., Margasova A. - et-ts de la 4-eme annee.
Les chefs scientifiques - Karnaoukh A.I., Nazarkina S.I.

Ponction lumbaire. Les indications :

1. Le but medical, c'est un usage des antibiotiques avec les lesions infectieuses du systeme nerveux, des cytostatiques (l'oncologie) la destruction d'assainissement du liquide sanguin avec l'hemorragie sous-arachnoidien.

2. Le but diagnostique, c'est une détermination du cytose, les inflammations du système nerveux central, les lésions crâniennes-cérébrales (avec la différenciation de la commotion des confusions), des maladies vasculaires.

Les contre-indications :

1. Les signes d'hypertension intracrânienne, c'est un disque optique stagnante.
2. Les signes des syndromes de dislocation, les blocages des voies liquido-conduites, la dislocation des structures médianes.
3. Les lésions infectieuses de la peau ou des tissus mous dans la région lombaire.

Technique de la réalisation : l'introduction de l'aiguille pour le liquide céphalo-rachidien au-dessus du niveau L 2 est dangereux, car on peut mener aux lésions de la moelle épinière. Pour déterminer la place de la ponction de l'aiguille on passe la ligne, qui relie les crêtes des os iliaques. L'aiguille de ponction est introduite entre les processus épineux L 3-4 ou L 4-5.

La ponction suboccipitale, c'est une introduction de l'aiguille dans citerne cérébello-cérébrale.

Les indications : on produit en cas de la nécessité des examens du liquide cérébro-spinal, quand il est impossible d'effectuer la ponction lombaire avec la myélographie descendante, avec le but de déterminer la perméabilité de l'espace sous-arachnoïdienne de la moelle épinière.

Les contre-indications :

1. Les tumeurs crânio-spinaux.
2. Les processus volumineux dans la fosse crânienne postérieure.
3. Les anomalies du développement de la région occipito-temporale.
4. Les processus purulents locaux.
5. La rigidité exprimée des muscles occipitaux.

Technique de la réalisation : on transperce la peau, le tissu sous-cutané, la membrane entre le bord postérieur du foramen occipital grand et l'arc postérieur de l'atlas. C'est un neurochirurgien, qui doit faire la ponction sous le contrôle de la radioscopie.

TROUBLES MANIACALES EN PSYCHIATRIE

Terentieva E., Gourtsieva A. - et-ts de la 4-ème année.

Les chefs scientifiques - Brach N.G., Nazarkina S.I.

Le syndrome maniacal (vient du mot grec, qui signifie – « passion », « folie », « libido ») est un syndrome psychopathologique, caractérisé par une triade de symptômes : l'élevation de l'humeur de type de l'hyperthymie, la stimulation idéatoire et psychique à la forme de l'accélération de la pensée et de la parole (tachypsychie), l'agitation motrice. Pour le syndrome maniaque existe, mais ne se manifeste pas toujours, le renforcement de l'activité instinctive (augmentation de l'appétit, de la sexualité, renforcement des tendances d'autodéfense), de superstimulation de sa propre personnalité (atteignant parfois des idées délirantes de sa grandeur).

Types des troubles maniaques.

On distingue plusieurs types des troubles maniaques (épisodes).

La manie coléreuse. Ce sont irritabilité, chicanerie, colère, agression, qui prédominent. Les malades sont coléreux envers les autres, ils ne reconnaissent pas les actions et le comportement des autres.

La manie improductive. C'est une manie de l'élevation de l'humeur, qui vient au premier plan, mais il manque l'ambition de l'activité avec l'accélération du processus associatif.

La manie confusionnelle. C'est une manie quand l'accélération du processus associatif vient au premier plan (les processus de pensée liés avec des associations créées par le cerveau, leur violation c'est une violation des associations dans le processus de la pensée). Association. Association c'est une relation dans le processus de la pensée entre les éléments du psychisme à la suite duquel l'apparition d'un élément, dans les certaines conditions, évoque l'image d'une autre association, liée avec lui.

Les manies complexes. C'est une combinaison des différents troubles affectifs avec les symptômes d'autres syndromes psychopathologiques. Dans le contexte de ces troubles maniaques peuvent souvent se manifester des phénomènes suivants : la mise en scène, la confabulation, qui le malade comprend comme une réalité, l'onirisme (la qualité du trouble de la conscience), un état catatonique. On se développe des hallucinations différentes et les automatismes psychiques. Dans certains cas, dans le contexte des syndromes maniaques on voit des symptômes, en première vue, qui ne sont pas compatibles avec l'état du processus, comme la cénestopathie, le délire hypocondriaque, des tendances suicidaires.

Les états maniaques peuvent se développer avec le syndrome maniaco-dépressif, la cyclothymie, la schizophrénie, l'épilepsie, les différents types de psychoses et des différentes lésions organiques du cerveau. Les patients avec des troubles maniaques n'ont absolument pas de critique à sa maladie, c'est très difficile ces patients de motiver au traitement.

La plupart des états maniaques sont réversibles. Le traitement des patients avec des troubles maniaques il faut effectuer à l'hôpital, ou ils seront sous la surveillance de vingt-quatre heures.

PSYCHOSE MANIACALE ET DÉPRESSIVE

Savelieva K., Katsuba S. – et-ts de la 4-ème année.

Les chefs scientifiques - Brache N.G., Nazarkina S.I.

La psychose maniaco-dépressive est une maladie psychique qui prend la forme des phases dépressives et maniaques. La phase dépressive c'est une phase avec l'humeur faible et la phase maniacale c'est une phase avec l'humeur forte. Les troubles psychiques peuvent disparaître entièrement entre ces phases ou garder les propriétés essentielles de la personne.

On estimait que l'apparition des phases maniaques est liée avec l'augmentation du tonus du système adréno-sympathique, l'hyperfonction de la glande thyroïde, l'hyperfonction de l'hypophyse et la pathologie des glandes surrénales. Les troubles végétatifs avec la phase dépressive deviennent plus forts.

Certains auteurs présumant que le rôle déterminant de l'apparition des symptômes de la psychose maniaco-dépressive est une dysfonction de la région diencephalique. La pratique neurochirurgicale et l'étude de l'activité des médicaments neuroleptiques ont donné de nouveaux arguments en faveur de cette conception. À la suite des actions mécaniques (les tumeurs) et chimiques dans la région diencephalique et hypothalamique et les structures des grandes profondeurs des lobes temporaux peuvent produire les troubles qui sont pareils avec le développement clinique de la psychose maniaco-dépressive.

L'état dépressif et l'état maniacal peuvent provoquer les causes du caractère social et psychologique. Par exemple, l'homme qui souffrait du choc, « se défend » par l'activité fébrile : commence à travailler les jours et les nuits ou il s'amuse, mène la vie sexuelle désordonnée, prend l'alcool et les narcotiques. Et avec le temps quand l'organisme de l'homme se détériore, l'état maniacal devient comme l'état dépressif.

SYMBIOTIQUES DANS LE TRATEMENT DU SYNDROME DU COLON IRRITABLE

Gourtsieva A., Terentieva E., - et-ts de la 4-eme annee.
Les chefs scientifiques - Soulima M.V., Nazarkina S.I.

Les probiotiques sont des micro-organismes de la microflore intestinale normale. Les prebiotiques sont des substances qui assurent les conditions optimales pour la croissance et le developpement de la microflore normale, l'inhibition des micro-organismes pathogenes et conventionnels.

Les sembiotiques sont des preparatiions bacteriennes de l'action complexe, qui comprennent des probiotiques et des prebiotiques, qui presentent une synergie sur le corps humain.

Liste de medicaments :

1. Bifiliz. C'est un medicament du groupe des probiotiques combine avec le lysozyme, qui a un effet regenerant sur la microflore intestinale, normalise le processus de la digestion, stimule les forces immunitaire de l'organisme, et a encore un effet anti-inflammatoire et regeneratif. L'usage : 2 – 3 bouteilles par jour (pre-dilue avec de l'eau) par voie orale avec le repas principal.

2. Bilactine. La base de cette preparatiion ont les souches de bacteries « Enterococcus faecium », qui font partie de la microflore naturelle de l'intestin et produisent rapidement la forme-L de l'acide de lait. Ce sont les antagonistes puissants des micro-organismes pathogenes. Ils aident a restaures la microflore intestinale normale. On utilise la bilactine comme le complement des enterocoques probiotiques. Les adultes doivent les prendre comme une capsule 3 fois par jour au cours de repas pendant 30 jours.

3. Bifidobac. Le complexe bioactif contient « Bifidobacterium adolescentis » (les souches hautement resistantes de bifidobacteries), qui se trouvent dans le gros intestin et participent dans le metabolisme, dans la synthese des immunoglobulines et empechent a la croissance des micro-organismes pathogenes, produisent des vitamines. Les indications a l'usage des symbiotiques sont : les maladies chroniques des organes digestifs, des voies biliaires, du foie, de la malabsorption des aliments, de la therapie antibiotique, de l'acidite gastrique reduite. Bifidobac protege le milieu interne de l'organisme contre la penetration des micro-organismes nuisibles, nettoie l'intestin et stimule la digestion de la membrane. En outre, il favorise l'absorption du fer, de la vitamine D, des ions du calcium. Il faut le prendre : une capsule 3 fois par jour avec le repas par mois.

CEPHALGIE CHEZ LES ETUDIANTS DE 4-EME ANNEE DE L'ACADEMIE DE MEDECINE DE L'ETAT AMOURSKAJA

Gonakova V., Beliaeva Y – et-tes de la 4-eme annee
Les chefs scientifiques - Karnaoukh V.I., Chpiltchouk L.I

L'actualite : la cephalgie est une des plaintes les plus frequentes avec laquelle les patients s'adressent aux medecins de differentes specialites, est un probleme medical.

L'epidemiologie : les femmes (88%) souffrent plus souvent de cephalgie, les hommes un peu moins (69%).

Le but : le questionnement des etudiants de 4-eme annee, afin d'indetifier la forme et le caractere de cephalgie.

Les resultats : l'enquete de 40 etudiants de 4-eme annee ages de 19 a 23 ans. A la question de localisation de cephalgie 31 personnes ont repondu qu'ont le mal a la tete

entiere, principalement la zone parietale et occipitale, 7 personnes ont la douleur dans la zone des yeux et de front, 2 personnes ont la douleur dans une moitie de la tete. A la question du caractere de la douleur , 20 personnes ont note une douleur pressante, 11-pulsative et 9- la douleur d'eclatement de l'interieur ; A la question « comment se produisent souvent des crises de cephalgie ? » la plupart des personnes (33) ont note 1-2 fois par mois et moins de 6 personnes 2-3 fois par semaine est seulement 1 a souligne la douleur tous les jours.

La conclusion : l'enquete a montre que la plupart des etudiants derange la cephalgie de tension. Il y a aussi ceux qui a souligne les symptomes de la migraine (11) de repondants ; et 7 etudiants ont decouvert chez lui la douleur clistere.

NEUROFIBROMATOSE

Savelieva K., Danko K. – et-ts de la 4-eme annee.

Les chefs scientifiques - Karnaoukh A.I., Nazarkina S.I.

La neurofibromatose est une maladie qui determine la croissance des tumeurs sur les tissus nerveux et provoque toutes sortes d'anomalies cutanees, osseuses et d'autres. Le type de l'heredite est autosomique-dominante. La frequence de l'origine de la maladie chez les hommes et les femmes est egale, on l'observe a peu pres chez 3500 nouveau-nés.

Il existe deux formes essentielles de neurofibromatose :

1. la neurofibromatose de type I ;
2. la neurofibromatose de type II (centrale).

Les manifestations de la neurofibromatose de type I. Ce sont : taches sur la peau de couleur « cafe au lait » ; neurofibromes ; coloration renforcee dans les domaines de l'aisselle et de l'aine ; gliome du nerf optique ; nodules de Liche, ce sont les hamartomes colorede l'iris ; dysplasie de l'os, l'amincissement de la corticale des os longs avec la pseudoarthrose.

Les manifestations de la neurofibromatose de type II. Ce sont : neurinomes bilateraux ou unilateraux de VIII-eme paire de nerfs craniens ; neurofibrome ; meningiome ; gliome (astrocytome, ependymome) ; schwannome (y compris spinale) ; cataracte subcapsulaire posterieur juvenile.

Le diagnostic : caractere de la clinique, TMR, examen histologique, analyse genetique.

CANCER PRIMAIRE-MULTIPLE SYNCHRONE DE L'ESTOMAC ET DU COLON SIGMOIDE

Zoubkova D., Teoutschakova A. – et-tes de la 3-eme annee

Les chefs scientifiques -Volkov L.A., Nazarkina S.I.

Le cancer primaire-multiple est une combinaison de deux et plus de neoplasmes malignes d'apres la structure histologique, des localisations en voie de developpement synchronement ou dans les intervalles temporaire metachronement. La frequence des tumeurs primaires-multiples de l'estomac et du colon sigmoide fait 0,5% parmi les tumeurs du tractus gastro-intestinal.

La clinique du cancer primaire-multiple est definie par les symptomes de chaque tumeur et depend de la localisation. Le diagnostic moderne du cancer primaire-multiple consiste un examen complexe des divers organes des systemes aux troubles de leur fonction.

Le traitement du cancer primaire-multiple realise par les methodes combinee et complexe avec l'utilisation de la chimiotherapie et l'influence radiale. Les dernieres 5 annees deux malades avec le cancer primaire-multiple traitaient dans la section chirurgicale de l'hopital clinique municipal a Blagovetschensk. Une malade a ete operee au sujet du cancer de la glande thyroide, et dans 8 ans on a revele che lui le cancer du colon sigmoide. On a realise l'operation radicale, c'est une hemilectomie du cote gauche avec l'imposition de l'anastomose transverorectale. L'autre malade a ete diagnostique par le cancer de l'estomac synchrone et du colon sigmoide. On lui a fait la gastrectomie a travers la peritoine avec l'imposition de l'anastomose oesophago-intestinale a Guiliarovitch et l'hemilectomie du cote gauche avec l'imposition de l'anastomose transverorectale. L'examen histologique de la tumeur de l'estomac a revele le cancer non-differencie et l'adenocarcinome a la tumeur de l'intestin sigmoide. La periode post-operatoire etait sans complications. Apres 12 jours le malade etait donne l'exeat pour la suite de la chimiotherapie.

Ainsi, notre observation temoigne de la combinaison rare du cancer de l'estomac et du colon sigmoide. L'examen clinique instrumental chez les personnes avec le derangement ventriculaire et intestinal tout ce que permettait a reveler les tumeurs des diverses localisations et remplir les interventions operatoires radicales.

HISTOIRE DE SERVICE DES TRRANSFUSIONS DANS LA REGION D'AMOUR

Kouoular A., Khomouchkou Tch. – et-tes de la 3-eme annee

Les chefs scientifiques - L.A.Volkov, L.I.Chpiltchouk

Le debut de la transfusion sanguine dans la region d'Amour se refere a 1930, lorsque le medecin-stagiaire de l'hopital de la ville Belousov E.K. a effectue avec succes une transfusion sanguine pour la premiere fois a l'Extreme-Orient.

En 1934 ona ete organise le service de transfusion sanguine avec un personnel de trois specialistes a la base du service de chirurgie de l'hopital n.1 de la ville Blagoveschensk. Cette annee on a fait provision de 7,5 litres de sang. Peu a peu,le service a elabore et a recu le statut de la station de transfusion sanguine regionale. Le premier chef en medecine etait Gerchevich S.A.

Pendant la Grande Guerre nationale on a ete recolte 1 500 litres de sang qui ont permis de fournir en douceur le sang a tous les hopitaux de la region.

Depuis 1951 les stations de transfusion sanguine ont ete ouvert des laboratoires clinique, serologique et bacteriologique.En 1954 la station fabtiquait des serum standard. Depuis 1957 on a introduit la methode en deux etapes en pratique de la conservation du sang,maitrise la production de composants sanguins, et les annees subsequentes maitrise la production de substituts du plasma sec. Depuis 1963 les equipes mobiles largement utilises recoltes le sang et le don gratuit. De 1966-1991 le volume de la recolte la transformation du sang a augmente a 8 000-10 000 litres. La production du plasma antistaphylococcique et le fibrinogene, le cryoprecipite antihemophilique. On est ouverte la laboratoire de SIDA. Depuis 2007 le nombre de donneurs augmente, pour atteindre 11 000 personnes, 13 000 litres de sang est recolte. L'equipe se deplace tout au long de l'annee dans les villes, les districts et les regions dans la preparation de sang jusqu'a 150 fois. La station de transfusion sanguine fournit des composants sanguins toute la region.

Actuellement la station de transfusion sanguine regionale est le centre industriel et organisationnel et methodique puissant service de sang dans la region de l 'Extreme-Orient comprend 12 unites equipees par des equipements modernes.

La station de transfusion sanguine est la base de la formation des medecins et du personel paramedical dans la production et la transfusion clinique. Actuellement il y a plus de 2000 donateurs honoraires dans la region d'Amour.

CANCER DU COL DE L'UTERUS

Zoubkova D., Khomouchkou Tch. – et-tes de la 3-eme annee

Les chefs scientifiques - Pestchanskaia S.A., Nazarkina S.I.

Le cancer du col de l'uterus est une tumeur maline, q1ui se developpe habituellement dans la zone de la transition de l'epithelium stratifie plat de la portion vaginale du col de l'uterus a l'epithelium cylindrique simple du canal cervical.

La cause principale de l'apparition du cancer est une infection papillomovirale. On a constitue que des etats deprecancerose precedent au cancer du col de l'uterus. Ce sont des endocervicoses et des changements de precancerose sous la forme de la dysplasie de l'epithelium de la partie vaginale du col. Le cancer du col de l'uterus peut etre comme le cancer invasif et non-invasif. D'apres la structure histologique le cancer peut etre comme le cancer plat-cellulaire, glandulaire et glandulaire plat-cellulaire. Chaque cancer peut avoir le degre different de la differenciation .

D'apres du degre de la differenciation on subdivise ce cancer : en mature, en grandes cellules non-corne, en petites cellules non-corne.

Le cancer du col de l'uterus n'est pas homogene d'apres la structure histologique avec les sources differentes de son developpement. Les cellules sont caracterisees par les causes atypiques et par poliomorphisme des cellules de l'epithalium squameux.

ANALYSE CLINIQUE ET ANATOMO-PATHOLOGIQUE DE LA THROMBOEMBOLIE DE L'ARTERE PULMONAIRE

Gabrielian L. – et-te de la 3-eme annee

Les chefs scientifiques - Sklar I.V., Nazarkina S.I.

La thromboembolie de l'artere pulmonaire est une des complications dangereuses de nombreuses maladies. L'actualite de ce probleme est causee par sa gravite et sa letalite, mais aussi les diffucultes du diagnostic rapide de cette maladie a la cause du polymorphysme des symptomes cliniques. La frequence de la thromboembolie de l'artere pulmonaire sur les donnees des recherches anatomo-pathologiques est 7,2% parmi tous les morts. Outre cela, dans 50-80% cas la thromboembolie de l'artere pulmonaire ne diagnostique pas mais il y a beaucoup de cas, quand on fait le diagnostic suppose.

Le but de nos recherches etait une etude de la frequence et des causes du developpement de

la thromboembolie de l'artere pulmonaire. Parmi les morts les hommes composaient 12 (48%) et les femmes – 13 (52%). On peut expliquer une certaine predominance des femmes par leur predisposition aux maladies des veines, qui augmentent le risque de thrombose periferique. Nous les patientes etaient en etat grave. Nous avons souvent les plaintes sur la dyspnee cardiaque, les battements cardiaques, les douleurs thoraciques serrees, les hemiphysies, la temperature corporelle elevee. On observait plus rare les convulsions et les syncopes. Comme le resultat de la thromboembolie de l'artere pulmonaire, la plupart des malades avaient la thrombose dans le systeme des veines : cave inferieure, iliaque et femorale. En 3,4% de cas la thromboembolie de l'artere pulmonaire etait liee avec la thrombose dans les cavites droites du coeur. Dans la structure de cette maladie avec le

developpement de la thromboembolie de l'artere pulmonaire les maladies cardiovasculaires sont plus souvent (29,9%), les maladies cerebrovasculaires (26,6%), les tumeurs malignes(13,4%). La thromboembolie post-operatoire a ete observee chez 30% des malades. La thrombose des veines profondes passait latent chez les patients (88,%). Mais 11,7% des malades avaient les signes des lesions des veines profondes.

Ainsi, la thromboembolie de l'artere pulmonaire a ete observee chez les personnes agees. Ce sont les femmes, qui preобладаient avec cette maladie parmi les morts. Les maladies cardiovasculaires preобладаient dans la structure des maladies au developpement de la thromboembolie de l'artere pulmonaire. La thrombose dans le systeme de la veine cave inferieure est devenue une source de l'embolie pulmonaire chez la plupart des malades.

PREVENTION DE L'HYPOTHERMIE HOMEOTHERME DE L'ORGANISME

Zoubkova D., Koujuget A. – et-tes de la 3-eme annee

Les chefs scientifiques - Litovtchenko E.A., Korchounova N.V., Nazarkina S.I.

En Russie de grandes variations de temperature predominant, se passe l'adaptation de l'organismec'est pourquoi il faut appliquer certaines mesures de la prevention de l'hypothermie : il ne faut pas rester longtemps en plein air, quand il fait froid, surtout si l'humidite de l'air est elevee ; etant longtemps dans le froid, il ne faut pas rester sans mouvement, le sang doit circuler ; il n'est pas recommande prendre l'alcool. Il, comme le moyen de la dilatation des vaisseaux sanguins, favorise l'augmentation de l'afflux du sang aux membres et au tegument, creant ainsi l'illusion de la chaleur ; il n'est pas recommande fumer quand il gele tres fort, parce que le tabigisme reduit la circulation peripherique du sang et fait les membres plus vulnerables ; il n'est pas recommande sortir dans la rue avec la tete et les mains mouillees.

Ainsi, en gardant toutes les mesures de la prophylaxie, on peut eviter le refroidissement de l'organisme.

VITAMINE D

Kouoular A., Khomouchkou Tch. – et-tes de la 3-eme annee

Les chefs scientifiques - Dorofienko N.N., Nazarkina S.I.

Actuellement la vitamine D est presentee par deux vitamines D2 et D3 (le cholecalciferol et le ergocalciferol), c'est un cristal sans couleur et sans odeur, resistants a des temperatures elevees. Ces vitamines sont liposolubles, elles peuvent dissoudre dans les graisses et dans les combinaisons organiques, mais elles sont insolubles dans l'eau.

La fonction principale de la vitamine D est une assurance de la croissance normale et du developpement des os, la prevention du rachitisme et de l'osteoporose. Il regule le metabolisme mineral et favorise le depot de calcium dans les os et la dentine, ce qui empeche l'osteomalacie des os. Dans le corps, la vitamine D est absorbee dans la partie proximale de l'intestin grele avec la bile et une partie inconsiderable est absorbee dans l'ileon. Apres l'absorbation le calciferol detecte dans les combinaisons de chylomicrons sous la forme libre et partiellement sous la forme d'un ether.

La vitamine D est une vitamine unique qui fonctionne comme la vitamine et l'hormone. elle supporte le niveau de phosphore inorganique et de calcium dans le plasma au-dessus de la valeur de seuil et augmente l'absorbation de calcium dans l'intestin grele. L'hormone fonctionne comme un metabolite actif de la vitamine D (1,25), c'est un

dioxycholecalciferol, produite dans les reins. Il affecte aux cellules intestinales, des reins et des muscles.

La vitamine D3 influe sur noyau des cellules-cibles et stimule la transcription de l'ADN et l'ARN, qui est accompagnée par une synthèse des protéides spécifiques.

Le rôle de la vitamine D ne se limite pas par la production des os, elle détermine la sensibilité de l'organisme aux maladies cutanées, les maladies cardiaques et le cancer.

Hypovitaminose. Le principal symptôme de l'insuffisance en vitamine D est le rachitisme et le ramollissement des os (ostéomalacie). Les formes faciles du déficit en vitamine D se manifestent par des symptômes : absence de l'appétit, perte de poids, sensation de brûlure dans la bouche et dans la gorge, insomnie, aggravation de la vision.

Hypervitaminose. On ne peut pas prendre des doses inadéquates de la vitamine D parce qu'une intoxication aiguë ou chronique se développe pendant le traitement prolongé.

TRAITEMENT DE L'HYPERTENSION CHEZ LES PATIENTS AVEC LE SYNDROME METABOLIQUE

Khomouchkou Tch., Kouoular A. – et-tes de la 3-ème année

Les chefs scientifiques - Sklar I.V., Nazarkina S.I.

Le but de nos recherches était une étude de l'efficacité du bloc des récepteurs de l'angiotensine II. Ce sont

Dans cet examen nous avons 58 patients avec le syndrome métabolique. Les femmes présentaient 71,4% et les hommes – 28,6%. L'âge moyen des patients se composait 57,3 ± 6,3 ans. Le volume de taille faisait 106,9 ± 4,9. sm. Lors de la thérapie antihypertensive ordonnée les patients ont été divisés en 2 groupes : le premier groupe (n – 30) a reçu le losartane (presartane, IPCA, Inde) 50 mg par jour ; le deuxième groupe (n – 28) a reçu l'énalapril (énalapril, LLC, « Osone », Russie) 20 mg par jour. Ces groupes ne diffèrent pas par les paramètres cliniques, de laboratoire et instrumentaux. Tous les patients ont été soumis à un examen clinique de laboratoire complet. On a évalué la qualité de la vie à l'aide d'un questionnaire commun SF-36. On a fait l'examen avant et après 6 mois du traitement.

Les résultats de cet examen ont montré que après le traitement le niveau du but de la tension artérielle du premier groupe a été atteint chez 28 personnes (93,3%), dans le deuxième groupe on a observé les indices hémodynamiques intracardiaques chez 20 personnes. La thérapie dans tous les deux groupes a montré que les indices du spectre lipidique du sang, le niveau de la glucose, la concentration du potassium n'a pas été significativement modifiés. Avant le traitement 12 personnes (40%) et 11 personnes (39,3%), les patients de tous les deux groupes avaient la microalbuminurie. À la fin de la surveillance dans le premier groupe les patients avaient l'abaissement considérable des indices de la microalbuminurie ($p < 0,01$) par rapport avec les patients de la deuxième groupe ($p < 0,05$). Après le traitement les patients de deux groupes ont amélioré les paramètres de la qualité de la vie d'après l'échelle : une appréciation de la santé en général ($p < 0,01$), la vitalité ($p < 0,01$), l'activité physique, l'activité sociale, le rôle des problèmes émotionnels dans la restriction de la vie ($p < 0,05$), mais les indices de la qualité de la vie étaient plus élevés dans le premier groupe, que dans le deuxième groupe.

Ainsi, le traitement de la hypertension artérielle du losartane avec le syndrome métabolique contribue à l'atteinte du niveau de but de la tension artérielle, à une amélioration des indices de l'hémodynamique intracardiaque, ce qui réduit le risque du

developpement des complications cardio-vasculaires et ameliorer la qualite de la vie de ces patients.

GYMNASTIQUE HYGIENIQUE DU MATIN

Khomouchkou Tch., Saryg-ool Tch., Kouoular A. – et-tes de la 3-eme annee

Les chefs scientifiques - Korchounova N.V., Litovtchenko E.A., Nazarkina S.I.

Dans la societe moderne une personne souffre de toute une serie de facteurs defavorables : stress emotionel, surcharge d'information, les mauvaises conditions d'ecologie.

Une des mesures qui ont l'influence pour la sante de l'organisme est une gymnastique hygienique du matin. Pour la majorite de la population urbaine la gymnastique du matin est une etude unique des exercices physiques specialement organises.

Exercices pour la gymnastique du matin :

1. Les exercices en traction qui assurent la formation du corps humain pour mener a bien les charges plus lourde, stimulent la circulation du sang dans les muscles, augmentent le flux d'impulsion dea muscles et du systeme nerveux. On peut faire la traction a partir de differentes positions : debout, assis, couche au lit.

2. La marche stimule le travail des glandes endocrines, qui produisent les hormones et facilitent l'execution du travail musculaire (adrenaline, noradrenaline). Sous l'influence des hormones les vaisseaux sanguins du systeme nerveux et les muscles dilatent, facilitent les processus du travail du coeur et du systeme respiratoire et d'autres changements, qui font la capacite de travail favorable et augmentent les possibilites mentales et physiques pour resister les influence de stress.

3. Les exercices de developpement general. Ce sont : inclinaison, accouplements, rotations dans les articulations.

4. Les pour developper la flexibilite : inclinaisons aux pieds d'une position deboute ou assise, les fentes profondes. Ces exercices sont ressembles aux exercices de la traction, mais ils sont plus intenses traumatiques, c'est pourquoi on les conseille d'appliquer apres les exercices de developpement generaux.

5. La course developpe l'endurance generale, c'est une capacite pour une periode longue et effectuer efficacement le travail d'intensite moderee. Il faut savoir qu'il a y des gens toleres en course, on peut la remplacer par les mouvements de danse au moins de 5-7 minutes.

6. Les exercices de respiration sont utilizes pour restaurer le rythme de la respiration apres la charge. Les exercices de respiration sont : respiration abdominale, retards differents dans les voies respiratoires a la phase de l'inspiration ou l'expiration, combinaison de l'inspiration ou l'expiration avec les mouvements des bras et du torse.

Ainsi, la realisation des exercices de la gymnastique du matin augmente le niveau de l'activite physique totale de l'homme.

MALADIE PULMONAIRE OBSTRUCTIVE CHRONIQUE (L'ETIOLOGIE, LA PATHOGENESE, LA CLINIQUE)

Zoubkova D., Kadeneva V. – et-tes de la 3-eme annee

Les chefs scientifiques - Sklar I.V., Nazarkina S.I.

La maladie obstructive chronique des poumons, ce sont des maladies inflammatoires chroniques du systeme respiratoire avec le lesion des voies respiratoires avec l'obstruction

partiellement bronchique réversible, qui se caractérisent par la progression de l'insuffisance respiratoire.

Primordialement sous l'effet de divers aéropolluants (l'essentiel est la fumée du tabac) chez les personnes prédisposées à cette maladie. Dans ce cas il y a des changements structuraux des voies aérières et du tissu pulmonaire, comme le résultat sont violées les propriétés réologiques du secret bronchique. Tout cela mène au développement de l'inflammation endobronchiale et au rétrécissement de l'éclaircie des voies aérières, faisant la base de MPOC. Cependant dans le développement des aggravations de cette maladie le rôle principal appartient à l'infection du tube respiratoire. Les changements structuraux des bronches, ainsi que les troubles de l'immunité locale anti-infectieuse font les conditions, quand les facteurs protecteurs du macroorganisme ne sont pas entièrement capables d'éliminer des microorganismes, il apparaît la colonisation des bactéries à la surface de l'épithélium des voies respiratoires. Le résultat de la colonisation des voies aérières est la progression de l'inflammation endobronchiale, conditionnée par le dégagement des produits de l'origine microbienne et par le rejet pro-inflammatoire des médiateurs. Outre cela. Les microorganismes produisent les substances, amenant au développement de la dysfonction ciliaire, et stimulent l'hypersecretion de la muqueuse et font l'action directe d'endommageant sur l'épithélium des voies respiratoires. Les causes non-infectieuses principales de l'aggravation sont : l'influence des aéropolluants de l'environnement, la thromboembolie des branches de l'artère pulmonaire, la décompensation de l'asthme, etc.

Les signes cliniques sont : la dyspnée, le crachats purulents, avec la variante bronchique, c'est une cyanose diffuse, une hypoxémie (l'abaissement pO₂), une hypercapnie (l'augmentation pCO₂), avec la variante emphysémateuse c'est une absence de la cyanose, la composition de gaz normal du sang, avec le cœur pulmonaire chronique c'est une intumescence des veines cervicales, la croissance du foie et le syndrome œdémateux.

Avec l'examen objectif et instrumental on peut marquer le thorax emphysémateux, les vibrations vocales faibles, les bords des poumons s'agrandissent en haut et en bas, « le son en boîte », comme le murmure vésiculaire avec l'expiration allongée, des râles secs et la bronchophonie faible.

ENDOCARDITE SEPTIQUE

Roudenko A., Kadeneva V. – et-ts de la 3-ème année

Les chefs scientifiques - Pestchanskaia S.A., Nazarkina S.I.

L'anatomie pathologique est caractérisée et présentée suffisamment par les changements dans le cœur, les vaisseaux sanguins, la rate et les reins, et ces changements sont combinés avec les thromboembolies, les infarctus et plusieurs hémorragies. Les valves du cœur aortiques et mitrales sont affectées dans 50% de cas. L'endocardite polypeuse-ulcéreuse se développe dans les valves sclérosées et non-sclérosées. Comme d'habitude dans les valves sclérosées apparaissent l'application thrombotique comme des polypes, qui s'effritent facilement et sont imprégnés par les caux. Après l'ablation des applications polypeuses thrombotiques on trouve les défauts ulcéreux dans les valves sclérosées et déformées, parfois superficielles, parfois en violation de l'intégrité des valves de la formation de l'anévrisme aigu ou la destruction massive. Les applications thrombotiques sont situées non seulement dans les valves et à l'endocarde pariétal, mais aussi avec l'affection des valves aortiques, qui sont répandues à l'intima de l'aorte. Sous l'examen au microscope on peut constituer, que le processus commence à former les foyers de la nécrose tissulaire de la valve, autour de laquelle il y a une infiltration de cellules

lymphoïdes, des histiocytes des macrophages polynucléaires, les globules blancs, qui manquent. Dans les zones de la nécrose il y a les applications thrombotiques massives qui sont organisées. Le tissu granuleux déforme les valvules, tout cela mène à la formation du vice cardiaque. Dans le myocarde on marque une hypertrophie des fibres musculaires, exprimée dans les parois de la cavité du cœur et dépendant du caractère du vice. Dans le système vasculaire, en particulier dans le cours microvasculaire, on trouve les changements alternants-productifs. Ils sont présentés par la plasmorragie et par la nécrose des parois des capillaires, des artérioles et des veines, par des endovasculites et perivasculites. Les modifications inflammatoires dans les parois des artères de la dimension petite et moyenne mènent au développement de l'anévrisme, la rupture peut être létale (par exemple, l'hémorragie dans le tissu du cerveau). La rate, en résultat de l'hyperplasie du pulpe, augmente avec les infarctus différenciés. La glomérulonéphrite diffuse se développe dans les reins avec la sensibilisation de streptocoques. Il existe très souvent les infarctus et les cicatrices après les infarctus.

USAGE DE POLYOXYDONIE PAR LES ENFANTS MALADES AVEC L'INSUFFISANCE IMMUNE ET AVEC L'ALLERGIE ASSOCIATIVE

Gabrielian L. – et-te de la 3-eme année

Les chefs scientifiques - Rechetnikova L.K., Nazarkina S.I.

Les enfants, qui sont malades très souvent, présentent un contingent essentiel des patients à la polyclinique d'enfant. Dans de nombreux cas ces enfants ont les maladies allergiques et les maladies des organes et des voies respiratoires supérieures. Dans nos examens nous observons les enfants qui réalisaient le traitement dans un centre médico-diagnostique « Eugénie ». Nous avons sous la surveillance 20 enfants avec la rhinite atopique et allergique à l'âge de 3 à 12 ans. Les enfants (10 personnes) du premier groupe prenaient la préparation d'immunomodulateur « Polyoxydonie », qui outre la fonction immunostimulante possède la fonction anti-inflammatoire, anti-oxydante et anti-allergique. Les enfants du deuxième groupe (aussi 10 personnes) ne prenaient pas « Polyoxydonie ». Nous avons étudié les indices du système immunitaire avant et après le traitement par la méthode phénotypique. Nous comptons IRN et déterminons Ig A, Ig M, Ig G, Ig E totale par la méthode IPHA.

Les résultats des études immunologiques avant le traitement dans les deux groupes ont montré des troubles de l'immunité cellulaire, c'est-à-dire, un abaissement de la quantité de cellules CD 3 et CD 4. De l'immunité humorale nous avons noté une réduction de Ig G ($p > 0,05$) et une augmentation de la production Ig M et Ig E ($p > 0,05$), qui est associée avec la persistance de l'infection, mais une augmentation Ig E le risque de l'exacerbation des maladies allergiques concomitantes.

Après la thérapie chez les patients, qui ont utilisé « Polyoxydonie », on a noté la tendance importante vers la normalisation des changements immunologiques, mais dans le deuxième groupe on n'a pas noté les changements significatifs par rapport aux données d'origine.

CHEVKOUNENKO V.N. FONDATEUR DE L'ECOLE DE L'ANATOMIE TOPOGRAPHIQUE

Teutschakova A., Kadeneva V. – et-tes de la 3-eme année

Les chefs scientifiques - Piskoun S.I., Nazarkina S.I.

Victor Nikolaevitch Chevounenko (le 17 février 1872 – le 3 juillet 1952) était lieutenant-général du service médical, docteur en médecine, académicien de l'ASM de l'URSS, dirigeait la chaire de la chirurgie opératoire et de l'anatomie topographique de l'Académie militaire-médicale S.M. Kirov. Il est né dans la famille du marchand-pecheurs. En 1890 il a terminé la gymnase de Lomonosov avec la médaille d'or. Après avoir terminé l'Académie militaire-médicale d'Empereur en 1898 on l'a laissé pour le perfectionnement dans la clinique hospitalière chirurgicale du professeur Ratimov V.A. En 1898 il a soutenu la thèse « Traitement moderne du pied bot » du docteur en médecine. Après la mission étrangère et quelques ans de travail dans la clinique il a commencé à élaborer les problèmes de l'anatomie topographique et la technique des nouvelles directions à la chirurgie (la neurochirurgie, l'urologie). Pendant les années 1912 – 1948 il était à la tête de la chaire de la chirurgie opératoire et de l'anatomie topographique. En 1911 il a réalisé les vœux du professeur Delitsine C.N. a créé le laboratoire expérimental, le vivarium et a organisé la salle d'opération et la clinique pour les animaux. Chevounenko V.N. perfectionnait constamment la méthode des études pratiques, exigeait la grande indépendance dans le travail, il estimait que chacun devait éprouver dans le rôle de l'infirmière chirurgicale, de l'anesthésiologiste, de l'assistant et du chirurgien. Vers 1920 ses collaborateurs ont publié plus de 140 travaux. On étudiait les particularités de la structure du système vasculaire et osseux, les différences de la forme et la position des organes de la cavité du ventre, de la poitrine, les différences de la structure du crâne et beaucoup d'autres questions. La Société chirurgicale Pirogov N.I. a marqué les mérites de Chevounenko V.N., en 1920 on l'a élu comme le membre honoraire.

Chevounenko V.N. est un des fondateurs ASM de l'URSS, le membre de l'administration de Société scientifique des anatomistes, des histologistes et des embryologistes, le membre de l'administration de la Société scientifique des chirurgiens, le membre honoraire de la Société chirurgicale Pirogov.

CONTRIBUTION DE SAZON-IAROCHEVITCH A.J. AU DEVELOPPEMENT DE L'ANATOMIE TOPOGRAPHIQUE

Zoubkova D., Khomouchkou Tch. – et-tes de la 3-ème année
Les chefs scientifiques - Karnaoukh V.I., Chpiltchouk L.I.

Sazon-Iarochévitch A.J. (1894 – 1955) est chirurgien soviétique qui a développé les critères de l'accès chirurgical objectif. Il a décrit le degré d'espace dans la cavité de la plaie chirurgicale, permettant au chirurgien de manipuler librement avec l'organe opéré.

Critères :

1). L'axe de l'action opératoire est une ligne reliant les yeux d'un chirurgien avec le point le plus profond de la plaie ou l'objet le plus important de l'intervention chirurgicale. L'axe de l'action opératoire se prolonge axialement au cône de la plaie opératoire et présente la bissectrice de l'angle entre les parois latérales de la cavité de la plaie ;

2). L'angle d'inclinaison de l'axe de l'action, c'est un angle qui est formé par un axe de l'action opératoire et par la surface du corps du patient à l'intérieur de la zone opératoire ;

3). L'angle de l'action opératoire est un angle entre les parois de la plaie, qui définit la liberté de mouvements des doigts des mains du chirurgien et ses instruments dans la plaie ;

4). La profondeur de la plaie c'est une distance entre les cavités des ouvertures supérieure et inférieure de la plaie. La profondeur de la plaie est définie par l'axe du cône,

qui est une axe de l'action operatoire ou sur la bissectrice de l'angle de l'action chirurgicale. Ce segment de l'axe de l'action operatoire tourne de la cavite de l'ouverture de plaie a l'objet de l'intervention.

5). La zone de l'accès c'est une superficie reele du fond completement ouvert de la plaie, exprimee en centimetres carres.

A la selection de l'accès chirurgical il faut prendre en compte les conditions suivantes :

- 1) la constitution du patient ;
- 2) les caracteristiques de l'opewration ;
- 3) le risque de l'intervention operatoire ;
- 4) la presence d'une grande cicatrice du malade, subit en avant par l'intervention chirurgicale ;
- 5) la possibilite de l'infection de la plaie;
- 6) les considerations cosmetiques ;
- 7) l'observation des regles d'ablation ;
- 8) la presence de la grossesse.

ENZYMOPATHIE

Mikolacuk A. – et-t de la 2-eme annee.

Les chefs scientifiques - Egorchina E.V., Nazarkina S.I.

A present il est connu plus de 2500 enzymopathies hereditaires, ce sont les maladies hereditaires du metabolisme, mais seulement une partie d'elles (300) etablit un niveau exact de la trochlee metabolique et le caractere du defaut fermentatif. Jusqu'a present la plupart de ces maladies on ne peut pas diagnostiquer ou on les depiste trop tard, quand les troubles portent le caractere irreversibles. L'une des difficultes du diagnostic precoce c'est que dans la periode neonatale les enfants n'ont pas des troubles specifiques et plus tard le developpement est semblable phenotypiquement avec les maladies de la genese non-hereditaire. La deuxieme caracteristique manifeste dans les maladies hereditaires metaboliques qui sont caracterisees par le polymorphisme clinique et par l'heterogeneite genetique. On peut expliquer ce cas par la presence des mutations isoalleles multiples et par la possibilite des mutations dans les genes differentes. La cause de l'enzymopathie c'est la mutation des genes qui sont responsables pour la synthese du molecule de proteine enzymatique et sont exprimes dans la matrice ou des acides nucleiques ou au changement de leur structure. Il est possible qu'il existe des variantes suivantes de troubles de synthese des ferments, qui sont : 1) l'enzyme ne synthetise pas, car il n'y a pas d'acides nucleiques, c'est une matrice ; 2) une unite des aminoacides dans la molecule de l'enzyme est troublee ; 3) le coenzyme manque ou est mal synthetise ; 4) l'activite de l'enzyme est modifiee avec les anomalies dans les autres systemes enzymatiques ; 5) le blocage peut etre cause par la synthese des substances determinees genetiquement comme l'enzyme inactive.

Ainsi, actuellement l'enzymopathie est un des problemes essentiels dans la medecine. Si vous avez toute information disponible sur l'enzymopathie, vous pouvez marquer, qu'il existe beaucoup de moyens du traitement et de prevention. Mais on ne peut pas diagnostiquer la plupart des maladies a un age precoce, ce qui conduit a l'irreversibilite de la convalescence.

POINT DE LA JEUNESSE. OU L'ORGAN LE PLUS MESTERIEUX DU SYSTEME IMMUNITAIRE

Rozouvaieva M. – et-te de la 2-eme annee.

Les chefs scientifiques - Ogorodnikova T.L., Nazarkina S.I.

Le thymus c'est un organe central du systeme immun. Le mot « thymus » vient du mot grec et signifie « force de vie ». Le role du thymus est tres important dans l'enfance. Cet organe atteint la dimension maximale a la fin de la premiere annee de la vie de l'enfant. La vie du petit enfant en premieres deux-trois annees depend du bon fonctionnement de cette glande. Le thymus produit une sorte de « forces speciales » pour proteger l'organisme contre des infections, des virus et contre la formation de cellules tumorales. Avec l'age les dimensions du thymus diminue et remplace par le tissus conjonctif et adipeux et a l'age de 70 a 80 il a completement disparu. Tout cela, bien sur, n'est pas dangereux pour l'homme, en raison de sa courte vie, le thymus a cree beaucoup de cellules protectrices de lymphocytes-T, mais...

La science medicale affirme si le thymus s'eteint plus tard, une personne reste jeune. Outre des lymphocytes-T le thymus produit encore des hormones qui favorisent la regeneration de la peau. Le thymus est capable de relentir l'horloge biologique de l'organisme, c'est-a-dire il peut relentir le vieillissement.

Les immunologistes ont trouve un moyen de renouveler des glandes du vieillissement, pour cela il faut un peu : une suspension de cellules de tronc embryonnaires, une seringue et un medecin, qui les injectera directement au thymus. D'apres ce plan la manipulation simple fait se retablir cet organe, en revenant a son maitre la jeunesse. Les partisans de cette methode affirment que telle pique plus efficace que l'injection des cellules de tronc dans le sang, ou elles se detruisent rapidement, donnant seulement l'afflux court des forces, de l'energie et de la jeunesse.

PANNES DE TRANSPORT ET CATASTROPHES

Klotchkova V., Ivachenko V. – et-te de la 2-eme annee.

Les chefs scientifiques - Gouba L.A., Nazarkina S.I.

La France, le 24 mars, 2015. L'Aerobus, F- 320 volait du Barcelone a Dusseldorf. Il s'est ecrase au sol dans les Alpes francaises. 150 personnes et dont 6 membres de l'equipage se trouvaient au bord de cette avion. Tout le monde a peri. En fait, pendant le vol le pilote Andreas Lubitz a bloque la porte de la panne de la cabine du pilote et a braque l'avion de propos delibere au bas.

L'Indonesie, le 1 juillet, 2015. On a transporte 141 corps humains a l'hopital du lieu de la panne de la grande avion militaire de transport C-130 Hercules. Parmi les morts etaient les militaires et les habitants locaux. La majorite des victimes n'etait pas identifiee. On estime que la version essentielle de cet accident est la panne du moteur.

Nepal, 2016. On a trouve les fragments de l'aerobus. On l'a decouvert dans la region Soli Ghobtebchir. La plupart partie de l'avion a ete brulee, toutes 23 personnes ont peri.

Moscou, le 3 aout, 2016. L'avion de la ligne aerienne Emirates a pris feu du temps de son atterissage dans un des plus grands ports aeriens du monde Dubai. Boeing-777 a fait l'atterissage rate. Cette avion faisait le trajet EK 521 du port d'avion de l'Inde Thiruvananthapurame. Tous les passagers et les membres de l'equipe ont ete evacues.

L'Egypte, 2015. Le 31 octobre l'avion « Airobus A 321 » s'est envolé de l'aeroport de Charme-el-Cheikh a Petersbourg a 6 : 21, l'heure de Moscou, et au bout de 20 minutes

il a disparu des radars. Le pire s'est confirmé : les autorités égyptiennes ont découvert les fragments de l'avion au nord de la péninsule du Sinaï, dans les montagnes. Avant l'accident l'avion commençait brusquement à perdre l'altitude du vol. Plus tard on a précisé : 224 personnes ont péri. La majorité parmi eux étaient les Russes. La plus grande quantité sont les habitants de Pétersbourg. On nomme la version principale : un éclatement dans l'avion.

REGENERATION DU SYSTEME NERVEUX CENTRAL

Mikolacuk A. – et-t de la 2-eme annee.

Les chefs scientifiques - Ogorodnikova T.L., Nazarkina S.I.

Il est connu que le système nerveux central (SNC) des mammifères avec la capacité très faible pour la régénération, qui se caractérise par une absence des signes de l'apparition des cellules nouvelles dans le cerveau pour remplacer les cellules mortes en résultat du trauma des neurones. C'est pourquoi l'étude des mécanismes de la régénération du système nerveux central est une question essentielle et complexe dans la médecine moderne. La proportion forte des maladies neurologiques s'explique par la durée de la readaptation et le coût élevé du traitement. La création des méthodes nouvelles et de la technologie du traitement réalise la récupération pleine des cellules perdues et des liaisons synaptiques dans la garantie de la structure normale et de l'activité fonctionnelle des organes et des tissus pendant le changement de leur structure dans les conditions du fonctionnement.

Le processus essentiel de la régénération du système nerveux central est un neurogenèse par le quel les neurones sont générés à partir de cellules de tronc neurales et des cellules précurseuses. À l'aide des mécanismes génétiques précises de la détermination des différenciations des cellules on peut trouver les diverses variantes des excitateurs et inhibiteurs générés à partir de divers types de cellules neurales. Les néoplasmes neuronales ne se passe jamais dans le cerveau. En cas de leur destruction la restauration de leur fonction est possible seulement pour le compte de la régénération intracellulaire des neurones conservés. Actuellement il est connu que trois zones de SNC sont capables à l'activité proliférative au corps godronné de l'hippocampe, c'est une zone sous-ventriculaire au bulbe olfactif. Pour les cellules de la névroglie en particulier macroglie est caractérisée par la régénération de la forme des cellules, de sorte que les défauts du tissu cérébral sont remplacés par des cicatrices gliales.

Ainsi, le stade de neurogenèse chez l'adulte est écrit par la découverte des cellules nerveuses dans le tronc cérébral. Si vous généralisez toutes les informations sur la neurogenèse dans le cerveau adulte, on peut noter que la neurogenèse est un processus biologique complexe comme la genèse, la migration, la différenciation et la maintenance des neurones nouvellement formés. La neurogenèse du cerveau adulte fait les réseaux de neurones nouveaux pour les remplacer tout ce qui joue un rôle important dans le rétablissement du cerveau endommagé et sa plasticité.

ЭВОЛЮЦИЯ ТЕРМИНОЛОГИЧЕСКОЙ СИСТЕМЫ КАК РЕЗУЛЬТАТ РАЗВИТИЯ НАУКИ

Багаутдинова Ю. - 1 курс

Научный руководитель: Ткачева Н. А.

Благодаря трудам александрийских ученых медицинская терминология стала складываться в определенную систему, а апробированные александрийцами термины стали первыми терминологическими моделями, на которые

ориентировались ученые последующего времени. На Востоке, в странах Халифата, куда в средние века переместились центры науки, аналогичную функцию выполнял арабский язык.

В период эпохи Возрождения (XIV-XVI вв.) закладываются основы современной научной терминологии.

Становление подлинно научной анатомии и анатомической терминологии относится к XVI в., когда фламандский анатом Андреас Везалий (1514-1564 гг.) создал капитальный труд «О строении человеческого тела». К XVIII в. (эпоха Просвещения) сложилась устойчивая традиция обозначать научные понятия греко-латинскими терминами.

Во второй половине XIX в. появилось множество неогрецизмов и неолатинизмов - таких наименований, которые отсутствовали в греческом и латинском в классическую эпоху, но созданы по существующим в этих языках моделям на основе тех или иных словообразующих единиц.

В современном мире специалисты разных наук, в том числе медицинской, уделяют большое внимание упорядочению и стандартизации своего профессионального языка.

ТЕРМИНОЛОГИЯ В ЛАТИНСКОМ ЯЗЫКЕ - СИСТЕМА НАУЧНЫХ ПОНЯТИЙ

Гордеева Ю., Пономаренко Т. – 1 курс

Научный руководитель: Шпильчук Л. И.

Латинский язык [Lingua Latina]- один из индоевропейских языков италийской группы, на котором – приблизительно с 6 в. до н.э. по 6 в. н.э. – говорили древние римляне и который был официальным языком Римской империи; язык богатейшей, более чем двухтысячелетней литературной традиции, один из важнейших языков общечеловеческой культуры, в некоторых областях знания (медицина, биология, общенаучная терминология естественных и гуманитарных наук) продолжающий активно применяться и в настоящее время.

Термин [лат. Terminus предел, граница] – слово или сочетание слов, точно обозначающее определённое понятие, применяемое в науке, технике, искусстве.

Терминология – совокупность терминология, употребляемых в какой-либо области науки, техники, искусства и т.д.

Терминоэлемент - это регулярно повторяющийся в серии терминов компонент, за которым закреплено специализированное значение.

Non est via in medicina sine lingua Latina - Нет пути в медицине без латинского языка.

ЛАТИНСКИЙ ЯЗЫК – ЯЗЫК МЕДИЦИНЫ

Ситкова Ю. - 1 курс

Научный руководитель - Шпильчук Л.И.

Для полноценного овладения любой профессией человек должен обязательно знать терминологию своей специальности. Современный врач, даже когда на профессиональную тему говорит по-русски, употребляет более 60% слов латинского и греческого происхождения. Профессиональный язык врача, потому что латинский язык одна из дисциплин, имеющих большое значение при подготовке специалистов

в области медицины и фармации. Терминология современной медицины представляет собой одну из самых сложных терминологических систем. Общее количество медицинских терминов неизвестно - по оценкам специалистов, терминологический фонд современной медицины превышает 500 тысяч медицинских терминов. Медицинская терминология различается по трем направлениям: анатомическая, клиническая и фармацевтическая терминология. Латынь в наше время используется как международный научный язык в ряде медико-биологических дисциплин и номенклатур, что изучают и используют врачи и медицинские работники со всего мира.

О НЕКОТОРЫХ ТРУДНОСТЯХ ПРИ ИЗУЧЕНИИ ГРЕКО-ЛАТИНСКИХ ТЕРМИНОВ

Заика П., Пятых И. – 1 курс

Научный руководитель: Субачева Н.А.

Курс латинского языка в медицинском вузе носит как общеобразовательный характер, так и профессиональный. Уже на первых занятиях студенты знакомятся с историей возникновения языка, его грамматикой, крылатыми выражениями, со студенческим гимном «Гаудеамус». Таким образом, происходит расширение латинского мировоззрения, повышение культурологического аспекта, развивается логическое мышление студентов. Но всё же латинскому языку отводится в большей степени роль, как профессиональному языку. Он занимает прочную позицию среди изучаемых дисциплин в медицинском вузе и является основой профессиональной лексики на всех клинических кафедрах. Перед студентами стоит цель: научиться владеть основами греко-латинской терминологии.

В конечном итоге студент-медик должен не только знать анатомические, клинические и фармацевтические термины, но и уметь использовать их, владеть этими терминами и их составляющими (префиксы, суффиксы, частотные отрезки).

МЕДИЦИНСКАЯ СИМВОЛИКА И ЕЁ ЗНАЧЕНИЕ

Шамшина Ю., Голева А. – 1 курс

Научный руководитель – Назаркина С.И.

Медицинская эмблема – это условное изображение, которое символизирует медицинскую сферу, принадлежность к медицинской профессии, различные отрасли в области медицины и какие-то отдельные медицинские специальности. Многие медицинские эмблемы и символы, которые были общепринятыми в далеком прошлом, не утратили своего значения и в наши дни.

Существует ряд общих медицинских эмблем: изображение змеи, в том числе в сочетании с чашей; изображение горящей свечи, символизирующее определенное направление в медицине; символы терапии; символы хирургии; различные военно-медицинские эмблемы и другие.

В качестве официальной эмблемы врачевания символ змеи впервые был использован около II тысячелетия до нашей эры в Древнем Вавилоне. Наиболее известной медицинской эмблемой является чаша со змеей. В течение многих веков она символизировала труд представителей самой гуманной профессии в мире. В наше время чаша в медицинской эмблеме определена как чаша человеческого разума, объемлющего весь мир. Очень популярна эмблема – сердце, лежащее на

раскрытой ладони человеческой руки. Эта эмблема отвечает этическим принципам медицины.

Таким образом, существует множество медицинских символов и каждый из них наделён своим смыслом.

САЛЕРНСКИЙ КОДЕКС ЗДОРОВЬЯ

Оюн И. - 1 курс

Научный руководитель - Ткачева Н. А.

Эпоха европейского средневековья отмечается религиозной нетерпимостью к медицине. Многие университеты того времени серьезно занимались вопросом долголетия, укрепления здоровья. Так, медицинская школа Салерно, недалеко от Неаполя (Италия), воспитала целую плеяду талантливых ученых. Она была основана в IX веке и занималась лечением больных, а также обучением врачеванию, поэтому ее можно смело назвать первым медицинским «университетом» того времени, так как в школе проводилось обучение будущих лекарей.

В начале XIII века школа приобрела такую известность, что король Сицилии и германский император Фридрих II присвоил Салернской школе право выдавать диплом врача. Без этого дозволения никто в Германской империи не мог заниматься медицинской практикой. Ученики посещали школу в течение 5 лет, затем в обязательном порядке проводили практические работы.

Этот трактат на протяжении всей истории существования Салернской школы (до XIX века) оставался лучшим ее научно-поэтическим произведением, советы, изложенные в нем, являются полезными и в наши дни.

Российская научная медицина также начиналась с изучения лечебных трактатов на латинском языке, «Салернский кодекс здоровья» был одним из них. Впервые «кодекс здоровья» было переведено на русский язык профессором Московского медицинского института Ю. В. Шульцем в 1964 году. Совместно с В. Н. Терповским Ю. Ф. Шульц справедливо отмечал, что школа Салерно – это не только история медицины, в известной мере она современна и теперь. Салернские предписания не утратили своего значения и во многом соответствуют всем требованиям современной медицины.

Начиная с XIV века, врачебная школа Салерно постепенно утрачивала свой авторитет, уступая место другим медицинским учебным заведениям. Она перестала существовать в XIX веке, но ее научные труды так и не потеряли своей актуальности и в наши дни.

ЛАТИНСКИЙ ЯЗЫК В ТАБЛИЦЕ МЕНДЕЛЕЕВА

Мазеева Т. – 1 курс

Научный руководитель – Назаркина С.И.

В химических текстах можно встретить множество терминов, понятных только узким специалистам. Но есть слова, известные каждому грамотному человеку: названия химических элементов, многих веществ и методов их обработки. Чтобы рассказать о химическом элементе, нужно, как минимум, знать его название.

Этимология (etymologia: с греческого “*etymon*” – истина; “- *logia*” - учение, понятие) многих названий химических элементов достаточно занимательна и

способствует более осознанному овладению химическими понятиями и законами, развитию интереса к химии.

Большинство химических элементов названы в честь географических названий (например, по латинскому названию России – Ruthenia), фамилий учёных (Кюри, Менделев), выявленных свойств самих элементов (хлор – от греческого «желто-зелёный», радий и радон от латинского «испускающий лучи»), по способам их открытия (технеций – с греческого «искусственный») – был получен путём синтеза), а также некоторые химические элементы в честь богов и героев мифов и т.д.

Из 118 химических элементов (учёные уверены, что смогут синтезировать ещё как минимум 8 и всего их будет 126) четыре до сих пор не имеют постоянных названий. При введении в обиход каждого нового термина или элемента необходимо, чтобы было понятно значение элемента, запоминалось его название и происхождение.

ЛАТИНСКИЕ ЗАИМСТВОВАНИЯ В РУССКОМ ЯЗЫКЕ

Школа А. – 1 курс.

Научный руководитель – Шпильчук Л.И.

Цель исследования данной статьи – проследить некоторые заимствования из латинского языка, проанализировать их этимологию и указать смысловое значение в русском языке. Значительную часть состава русского языка составляют латинизмы. Латинская лексика проникала в русский язык в течение многих веков. Латынь встречается повсеместно в русском языке и круг заимствованных слов довольно велик: от научных терминов до имен, которые нам дают родители при рождении (например, слово «велосипед» произошло от латинского *vēlōx, ocis* быстрый + *pes, pedis* т нога, стопа, буквально «быстроногий»). Эти и другие заимствования из латинского языка мы используем каждый день, что доказывает: латынь – не мертвый язык и на нем никто не разговаривает. Да, давно уже нет народа, для которого латинский был бы родным. И все же, как это ни парадоксально, на нем говорят многие – в том числе и каждый из нас.

СЛУЧАИ УПОТРЕБЛЕНИЯ ТЕРМИНОЭЛЕМЕНТА "РНОВІА"

Будник В. - 1 курс

Научный руководитель: Ткачёва Н.А.

Медицинская терминология - это система, объединяющая терминологию ряда медико-биологических дисциплин. В анатомической терминологии употребляются преимущественно слова латинского происхождения. Слова греческого происхождения являются терминологической базой для всех клинических дисциплин.

Различают обычно начальные терминоэлементы - первые компоненты термина и конечные, которые ставятся в конце термина. Например, начальный терминоэлемент: *hyper-* над, сверх, превышение нормы; *hypo* – под, нахождение ниже; недостаток до нормы; *dys* – расстройство, нарушение функции; *anti-* против; конечный терминоэлемент: *-oma* – опухоль, *iasis* – болезнь невоспалительного характера, признаки болезней; *osis* - болезнь невоспалительного характера, часто связанная с превышением нормы в организме; *itis* – воспалительный процесс и т.д.

Некоторые слова, имеющие самостоятельное значение, могут употребляться как конечные терминологические элементы: necrosis, is f – некроз, отмирание ткани или органа, osteonecrosis, is f – остеонекроз, омертвление участка кости, algia- боль (без органических изменений) например, neuralgia – боль по ходу нерва, myalgia – мышечная боль; philia – склонность, предрасположение, например, haemophilia – предрасположенность к кровотечениям, phobia – боязнь, навязчивый страх, например, arachnophobia – боязнь паукообразных, erythrophobia- болезненная чувствительность к красному цвету и т.д.

Значение некоторых конечных терминологических элементов синонимичны и выражаются чаще всего двумя способами: 1) как самостоятельное слово в многословных терминах. 2) как составная часть производных и сложных слов. Примером этого являются названия многочисленных фобий, рассмотрим лишь некоторые из них.

Проведенный анализ употребления названного терминологического элемента позволяет выявить частоту его употребления. Так наука насчитывает около 40 000 терминов с частотным отрезком phobia. Мы проработали около 120 терминов, наиболее часто встречаемых в медицине.

ИМЕНА СОБСТВЕННЫЕ ЛАТИНСКОГО И ГРЕЧЕСКОГО ПРОИСХОЖДЕНИЯ

Ветчинкина Е., Степанова Е. – 1 курс

Научный руководитель: Назаркина С.И.

Насколько известно, личные имена существовали всегда и у всех народов. Традиции, связанные с происхождением имён, у разных народов были различными. У одних народов детям давалось имя при рождении, у других предопределялось именем родителей. В жизни имён собственных наблюдаются внезапные вспышки на те или иные имена и неожиданное исчезновение, казалось, самых распространенных. В России большинство имён имеют греческое или латинское происхождение. Например, в наше время самым популярным мужским именем считается Александр, а женским - Анастасия. В переводе с древнегреческого они означают «Защитник» и «Возвращенная к жизни». Популярно имя Максим, которое с латинского переводится как «Величайший». Такое преобладание греко-латинских имён объясняется тем, что Византия повлияла на самобытность и культуру нашей страны, после того как князь Владимир крестил Русь. Вместе с новой верой к нам пришли новые церковные книги, среди которых были святцы, содержащие в себе большое количество имён греко-латинского происхождения, довольно значительный вклад в культурное развитие Византии внесли римское и греческое наследие. Имён в мире – много, но надо помнить, что имя человеку даётся на всю жизнь и им надо дорожить.

АВИЦЕННА (АБУ АЛИ ИБН СИНА) – ВЫДАЮЩИЙСЯ УЧЕНЫЙ-МЕДИК

Григорьев Д. – 1 курс

Научный руководитель: Назаркина С.И.

Авиценна – выдающийся учёный средних веков. О ранних годах жизни Авиценны известно немного. О нём до нас дошла лишь скудная информация из автобиографического труда его ученика Джузьяни. Жадный до знаний, Авиценна обладал незаурядным умом и способностями к наукам. К десяти годам он знал

наизусть Коран и искал новые знания, где только мог. В возрасте шестнадцати лет Авиценна сосредотачивает свои усилия на медицине. Писать труды он начинает в 21 год. За всю свою жизнь Авиценна написал множество работ.

Один из самых значимых его трудов – это «Канон врачебной науки». Первый и второй тома посвящены физиологии, патологии и гигиене, третий и четвёртый тома – лечению заболеваний, а в пятом томе описываются составы и способы приготовления лекарств. Сложно переоценить значимость вклада Авиценны. Он сумел систематизировать громадный пласт знаний о медицине того времени. Его труд «Канон врачебной науки», переведённый на латынь, стал широко известен в Европе с XII века. Это сочинение носит энциклопедический характер. По нему велось преподавание медицины в университетах Европы в течение пяти веков. Когда был изобретён печатный станок, «Канон врачебной науки» оказался среди первых печатных книг, и по числу изданий соперничал с Библией.

Абу Али ибн Сина является поистине величайшим учёным, воспитавшим целую плеяду одаренных философов и медиков.

ЛЕЙКОПЛАЗМОЗЫ БЕРЕМЕННЫХ И ПЛОДА

Дорожкова Е.– 3 курс

Научные руководители: Прокопенко А.В., Шпильчук Л.И.

Микоплазмы - антропонозные инфекционные болезни, характеризующиеся поражением органов дыхания, мочеполовых органов, центральной нервной системы и внутриутробным поражением плода. Источником инфекции является только человек, больной микоплазмозом или здоровый носитель микоплазм. Передача инфекции может осуществляться воздушно-капельным путем и половым путем; от матери плоду (внутриутробно или во время родов).

Симптомов у микоплазмоза мало — он протекает скрыто и фактически половина больных заболевание не чувствуют. Микоплазма напрямую связана с самопроизвольным прерыванием беременности и с "замершей" беременностью. Защищает малыша от этой инфекции плацента, но вот воспалительный процесс, вызванный микоплазмами, очень опасен, поскольку со стенок влагалища и шейки матки может перейти на плодные оболочки. Внутриутробная гибель плода, замирание беременности, преждевременные роды – это самые страшные осложнения, которые может вызвать микоплазмоз во время беременности. Микоплазмоз может привести к довольно серьезным послеродовым осложнениям. Самым опасным из них является эндометрит, которое сопровождается высокой температурой, болевыми ощущениями внизу живота.

У новорождённых детей микоплазмы поражают не половые органы, а дыхательные пути. Данный микроорганизм проникают в легкие и бронхи, становятся причиной воспалительных процессов в носоглотке ребенка. Степень развития заболевания у малыша напрямую зависит от его иммунной системы. Не каждый ребенок может заразиться от инфицированной матери. Но данная инфекция может находиться в организме человека на протяжении долгих лет, и абсолютно никак себя не проявлять.

Лечат микоплазму во втором триместре беременности. Прописывают, как правило, антибактериальные препараты и стимуляторы иммунитета.

Своевременная диагностика и лечения подобных заболеваний — это залог здоровья матери и будущего малыша.

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